

N00101.AR.002604  
NAS SOUTH WEYMOUTH  
5090.3a

MINUTES AND AGENDA FOR RESTORATION ADVISORY BOARD MEETING HELD 9  
SEPTEMBER 2010 NAS SOUTH WEYMOUTH MA  
09/09/2010  
NAVAL AIR STATION SOUTH WEYMOUTH



# Naval Air Station South Weymouth, MA Restoration Advisory Board (RAB) Meeting Minutes September 9, 2010

## 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 front table. The sign-in sheet for the meeting is provided as Attachment A to this meeting summary. J. Goodrich asked if everyone had time to read the minutes from the July 2010 RAB meeting and if there were any comments. There were no comments on the minutes.

J. Goodrich reviewed the guidelines for the meeting and reminded the meeting attendees 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 and the Action Item Tracking List are provided as Attachment B to this meeting summary. 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 D. Barney to give a presentation on the Building 82 Feasibility Study (FS). Selected slides from the presentation are provided as Attachment C.

D. Barney stated that the FS was issued in this time last year, September 2009. Since then Navy has reviewed comments from the regulators and prepared responses to comments, and has also completed additional field work. Under CERCLA, after the FS is completed, a Proposed Plan and Record of Decision are then prepared. The Building 82 site, also referred to as Hangar 2, is located in the center of the Base (Slide 2).

The objective of the FS is to develop and evaluate potential remedial alternatives to address unacceptable risks to human health and the environment posed by contaminants in groundwater. Slide 3 presents the FS process, which consists of four key steps. After the media and contaminants of concern have been identified, remedial action objectives and criteria are developed. Remedial technologies are identified and remedial alternatives are then developed. Finally, the remedial alternatives are evaluated.

The first step, identifying the media and contaminants of concern, is basically the results of the RI and risk assessment process. The risk assessments included in the RI identified groundwater as a medium of concern. The RI determined that there is no unacceptable human health or ecological risk from exposure to soil, sediment, and surface water; they are not media of concern (Slide 4). Navy is performing a maintenance action separate from the FS to remove additional drainage piping, manholes, and some impacted soil near the new access road. Slide 5 presents the groundwater contaminants, primarily VOCs, identified at the Building 82 site.

The second step is to develop remedial action objectives (RAOs) and cleanup criteria that will protect human health and the environment and comply with regulations and standards. Two RAOs were identified in the FS. The first RAO is to prevent human exposure (including showering, drinking, and irrigation) to groundwater containing concentrations of trichloroethene (TCE), 1,1-dichloroethane (DCA), and N-nitroso-di-n-propylamine (NNPA) that cause unacceptable risk (total incremental lifetime cancer risk [ILCR] greater than  $1 \times 10^{-5}$  or hazard index [HI] greater than 1). The second RAO is to restore groundwater quality such that risks to human health allow for unrestricted site use. Slide 6 presents the shallow plumes for NNPA, DCA, and TCE and Slide 7 presents the deep plume for TCE.

The third step, identifying and screening potential technologies and evaluating them, is based on what would be effective for the media and contaminants of concern. There are two remedial technology types, or general response actions: 1) limited action, such as land use controls (LUCs), monitoring, and natural attenuation; and 2) in-situ treatment, such as biological (anaerobic and aerobic) or chemical applications (chemical oxidation). A combination of these technologies can be used to address the different areas and types of contamination. Four remedial alternatives were developed based on the screening and evaluation process (Slide 8). Alternative G-1 is no action – which must be evaluated as part of the CERCLA process for feasibility studies. The components of Alternative G-2 include chemical oxidation, natural attenuation with monitoring and land use controls (LUCs). As described on Slide 9, the Alternative G-2 components are: chemical oxidation, which would involve injecting an oxidizing chemical in the center of the TCE, 1,1,-DCA and NNPA plumes; natural attenuation with monitoring for areas outside the treatment zone of the TCE plume; and LUCs to prohibit groundwater use until the RAOs are achieved.

As described on Slides 10 and 11, the Alternative G-3 components are: enhanced bioremediation, which would involve injecting an electron donor (such as molasses) into the TCE plume to promote anaerobic biological degradation and injecting an oxygen-releasing compound into 1,1-DCA and NNPA plumes to promote aerobic biological degradation; natural attenuation with monitoring and LUCs, similar to Alternative G-2. As described on Slide 12, the components of Alternative G-4 are: natural attenuation with monitoring and LUCs. There is not an active treatment component of Alternative G-4.

The fourth and final step in the FS process is to evaluate the remedial alternatives against seven of the nine criteria listed in the CERCLA regulations. Then the alternatives are compared against each other, using the same criteria. The nine criteria are separated into threshold, balancing, and modifying criteria. The two threshold evaluation criteria are: overall protection of human health and the environment; and compliance with laws and regulations, also referred to as applicable or relevant and appropriate requirements or ARARs. An example of an ARAR for groundwater is compliance with drinking water standards (e.g. MCLs). The five balancing evaluation criteria include: long term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. The modifying criteria (evaluated during review of Proposed Plan) are: state acceptance and community acceptance. Slide 13 presents the evaluation matrix for the Building 82 alternatives. The matrix shows that Alternative G-2 meets all the criteria; followed by Alternative G-3 and Alternative G-4. The No Action alternative, G-1, does not meet most of the criteria.

Slide 14 shows the status of the activities for Building 82. The final Building 82 RI report was issued in February 2010, with a Draft RI Addendum report issued in July 2010. The draft final FS will be issued in the fall of 2010; the Proposed Plan is anticipated in winter 2010-2011 with the ROD in spring 2011.

P. Scannell asked where the groundwater comes from and goes. D. Barney responded that groundwater flows from the northeast/east to the southwest/west.

M. Parsons asked about the location of Building 15 and if Building 81 was completed. D. Barney responded that Building 15 is located to the north of the Caretaker's office and to the east of Building 82. He stated that the Building 81 draft final RI will be submitted soon. She asked if there is a public comment period for the FS. D. Barney noted that the documents are sent to a wide distribution. The Building 82 Addendum Report documents work performed to further trace the extent of the TCE plume. Building 81 is a separate site and RI. The goal for Building 82 would be to get the groundwater to meet the MCLs and thus allow for unrestricted use.

H. Welch asked if they have checked everywhere at the site. D. Barney stated they have performed an RI and completed the evaluation of the nature and extent of contamination. The groundwater was divided between shallow overburden groundwater (0-10 feet bgs) and deep overburden groundwater (10-20 feet

bgs). The deep overburden groundwater was more contaminated. H. Welch asked how Navy can say the shallow groundwater is not a problem. P. Marchessault responded that the TCE is heavier than water, so it will sink within the aquifer. Therefore finding cleaner water in the shallow zone is not unexpected.

T. Pries asked how enhanced bioremediation worked. D. Chaffin explained how enhanced bioremediation works – that either microorganisms or nutrients are added to the subsurface to accelerate the natural biodegradation processes.

M. Parsons asked if the source of the contamination at Building 81 has been identified. D. Barney stated that a great deal of additional data has been collected and is being incorporated into the draft final RI.

D. Galluzzo asked when the Navy started this investigation. D. Barney stated that the investigation began in 1997 and there have been 6 to 8 series of investigations. The investigations were conducted to better determine the extent of the plume and complete a comprehensive study of the site.

D. Chaffin defined what an aquifer is in response to a question from D. Galluzzo. D. Galluzzo asked what the half life of TCE is. D. Barney said it varies but that Navy will take this as an action item for the next RAB.

P. Scannell asked if the bioremediation technology is proven. B. Olson responded that bioremediation is a proven treatment technology for everything but PCBs.

P. Scannell asked why the groundwater was not extracted. D. Barney stated that groundwater extraction was considered in the FS. This process was included in the technologies screened in the FS, along with a number of other technologies. P. Scannell stated that he is uncomfortable that the groundwater would be deemed drinkable following treatment.

M. Parsons asked when in the fall the Building 82 draft final FS would be issued. D. Barney responded that it would be issued within a month. M. Parsons commented that she would like a RAB presentation on Building 81. She also asked about Building 15. D. Barney responded that the Navy plans to combine Building 15 with Building 82, since it is the same contamination, TCE in groundwater.

M. Bromberg asked if chemical oxidation will work at Building 82, since it didn't work well at Building 81. D. Chaffin stated that it was a different situation at the Building 81 site.

T. Pries asked how much groundwater - how big is the aquifer at Building 82? D. Barney stated that groundwater is under the entire Base.

T. Pries asked how long will the enhanced bioremediation take. D. Barney responded that it would take 3 to 5 years based on the estimates in the FS. T. Pries asked if you would get carbon dioxide build up during bioremediation. D. Barney said that the gas buildup would be monitored as part of the remedy.

T. Pries asked if the cleanup successfully reaches the MCLs – can you safely put in a water supply well. D. Chaffin responded there is a regulatory process for approvals to install water supply wells. The Navy cleanup would get the property to unrestricted use, but this does not mean that the area would be then developed for a water supply. D. Barney added that the unrestricted used means no further monitoring is required.

M. Parsons asked what the permeability of the soil was. D. Barney stated that he did not know the K value, but a number of factors are involved in the permeability of soils. M. Parsons noted that a groundwater pump and treat alternative would then take awhile since water was difficult to extract.

H. Welch asked why chemical oxidation did not work at Building 81. D. Barney stated that it was really a pilot test at Building 81 and it did not work as well as anticipated. B. Olson stated that the electron donor at Deven's is molasses and lots of monitoring is performed. He noted that the key is to get the material delivered to the right part of the plume.

M. Bromberg asked if the floor drains being removed at Building 82 drained to the TACAN. D. Barney said yes. M. Bromberg asked where the manganese in the groundwater comes from. B. Olson stated that as the TCE breaks down the chemical changes can liberate manganese out of the bedrock. D. Chaffin added that the site is a former wetland area that had peat, which is high in manganese. M. Bromberg asked that precautions be taken during removal of the floor drains so that contamination does not get to the TACAN.

### **3. UPDATES AND ACTION ITEMS**

Action Items: None.

MassDEP Update: None.

IR/EBS Program Site Update: D. Barney stated that the August update was available as a handout.

The West Gate Landfill design reviews continue. Site prep activities include: erosion controls, moving the fence, setting up staging areas, and soil consolidation; these activities are planned to start the week of September 10<sup>th</sup>. The soil consolidation ESD was signed; excavated materials from the former Sewage

Treatment Plant and AOC 55C sites will be used in the WGL cover system. A work plan for additional soil delineation at the former Sewage Treatment Plant site is being prepared.

An ESD was signed for the RDA to clarify the ROD and include monitored natural attenuation as a groundwater remedy.

The final RI for the SRA site has been issued as has the draft FS. D. Barney suggested this as a topic for the next RAB meeting.

D. Barney presented recent photos of the final cap construction at the Small Landfill. D. Galluzzo asked if it was clean now. D. Barney stated that it was a closed landfill and signage would be up within the week. The post-closure use submittal documenting a passive recreation use will be submitted to the DEP Solid Waste Regional Office. D. Barney stated that the post-closure activities include a 30-year monitoring program, including facility inspections. This will be similar to the on-going activities at the RDA.

D. Galluzzo stated his objections to a post and rail fence at the WGL, which is the type of fence included in the current remedial design. There was a difference of opinion among the RAB attendees as to the cost/benefit of post and rail versus chain link fencing.

D. Barney concluded with the EBS updates as described on the August RAB Update handout.

D. Barney stated that FOST 5C, covering French Stream has been out for public comment; the comment period closes this week. At the request of a few RAB attendees, D. Barney allowed a 2-week extension of the FOST comment period, to September 24, 2010.

#### Conclusion/Next Meeting

J. Goodrich wrapped up the meeting. Since Veteran's Day falls on the second Thursday in November, the next RAB meeting will be the second Thursday in October (October 14, 2010). The meeting will again be held at the New England Wildlife Center, 500 Columbian St., Weymouth, MA.

Suggestions for topics for the next meeting include:

- SRA RI/ FS, or possibly just the SRA RI
- More detailed discussion of remedial alternatives

It was suggested that a table be added to the monthly update to show where each site is in the CERCLA process.



# AGENDA

## Naval Air Station South Weymouth, MA

### Restoration Advisory Board (RAB) Meeting Agenda

September 9, 2010

New England Wildlife Center, Weymouth, MA

7:00 PM

<i>Agenda Items</i>	<i>Item Lead</i>	<i>Projected Time</i>
<b>1. Introduction, Review of Meeting Notes</b>	<b>Facilitator</b>	<b>7:00 – 7:15</b>
<b>2. Building 82 Feasibility Study</b>	<b>Navy</b>	<b>7:15 – 8:15</b>
<b>3. Updates and Action Items</b>	<b>Navy</b>	<b>8:15 – 8:30</b>
<b>4. Questions, Agenda Items, Next Meeting</b>	<b>Facilitator</b>	<b>8:30 – 9:00</b>

**Facilitator:** John Goodrich, Massachusetts Office of Dispute Resolution & Public Collaboration

#### Restoration Advisory Board (RAB) Members:

**Abington:** James Lavin, (Alternate: Steve Ivas); Phil Sortin (Alternate: Beth Sortin)

**Hingham:** no current representation

**Rockland:** no current representation

**Weymouth:** James Cunningham (Community Co-Chair); Ken Hayes; Dan McCormack; Steve White

**Navy:** Dave Barney (Navy Co-Chair)

**EPA:** Kimberlee Keckler (Alternate: Bryan Olson)

**MA DEP:** David Chaffin (Alternate: Ann Malewicz)

#### BRAC Cleanup Team (BCT) Points of Contact:

**Navy:** Dave Barney, BRAC Environmental Coordinator, Base Realignment and Closure, Program Management Office, Northeast (617) 753-4656  
Email: [david.a.barney@navy.mil](mailto:david.a.barney@navy.mil)

Brian Helland, Remedial Project Manager, Base Realignment and Closure Office, Program Management Office, Northeast (215) 897-4912  
Email: [brian.helland@navy.mil](mailto:brian.helland@navy.mil)

**MassDEP:** David Chaffin, Environmental Engineer, Federal Facilities (617) 348-4005  
Email: [david.chaffin@state.ma.us](mailto:david.chaffin@state.ma.us)

**EPA:** Kimberlee Keckler, Remedial Project Manager, Federal Facilities Section (617) 918-1385 Email: [keckler.kymerlee@epa.gov](mailto:keckler.kymerlee@epa.gov)

Paul Marchessault, Remedial Project Manager, Federal Facilities Section (617) 918-1388 Email: [marchessault.paul@epa.gov](mailto:marchessault.paul@epa.gov)

**MassDEP Ombudsman:** David DeLorenzo (617) 292-5774, Email: [david.delorenzo@state.ma.us](mailto:david.delorenzo@state.ma.us)



# ACTION ITEMS

## Naval Air Station South Weymouth, MA Restoration Advisory Board (RAB) Meeting

### September 9, 2010 – Next RAB Meeting

<i>Action Item</i>	<i>Item Lead</i>	<i>Deadline</i>
<b>ACTION ITEMS</b>		
None.		
<b>UPDATES</b>		
RAB Administrative Actions	D. Barney	Each RAB
MassDEP Update	D. Chaffin	Each RAB
IR Program Sites Update	D. Barney	Each RAB
EBS Review Item Areas/ Various Removal Action Update	D. Barney	Each RAB
FOST/FOSL Update	D. Barney	Each RAB
SSTTDC Update	J. Young	Each RAB
<b>RECENTLY COMPLETED ITEMS</b>		
Turtle nesting info/follow up on the turtle monitoring at Small Landfill (7/10)		
Status on option to use STP/AOC 55C soils at WGL (7/10)		
Provide EBS reports to the TAG's consultant (7/10)		
Evaluate possible methods to solicit new RAB members (3/10)		
Review of metals uptake by AOC 55C wetland trees (3/10)		

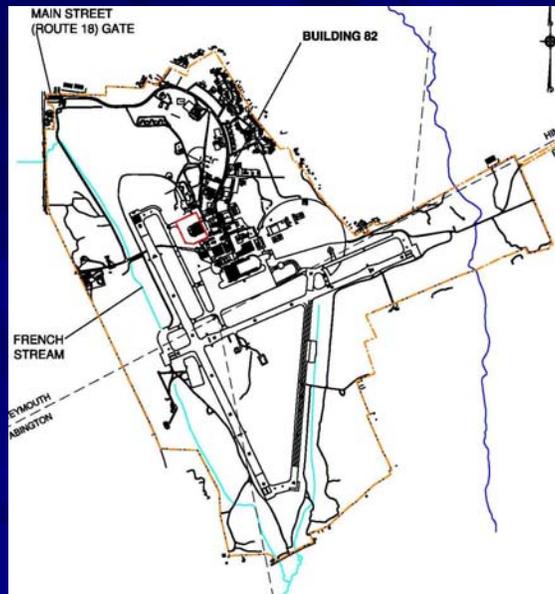
# NAS SOUTH WEYMOUTH BUILDING 82 FEASIBILITY STUDY

RESTORATION ADVISORY BOARD  
MEETING  
SEPTEMBER 9, 2010

David Barney  
BRAC Environmental Coordinator  
NAS South Weymouth



## BUILDING 82 SITE LOCUS



## FEASIBILITY STUDY PROCESS

- Identify media and contaminants of concern.
- Develop remedial action objectives and criteria.
- Identify remedial technologies and develop alternatives.
- Evaluate remedial alternatives.

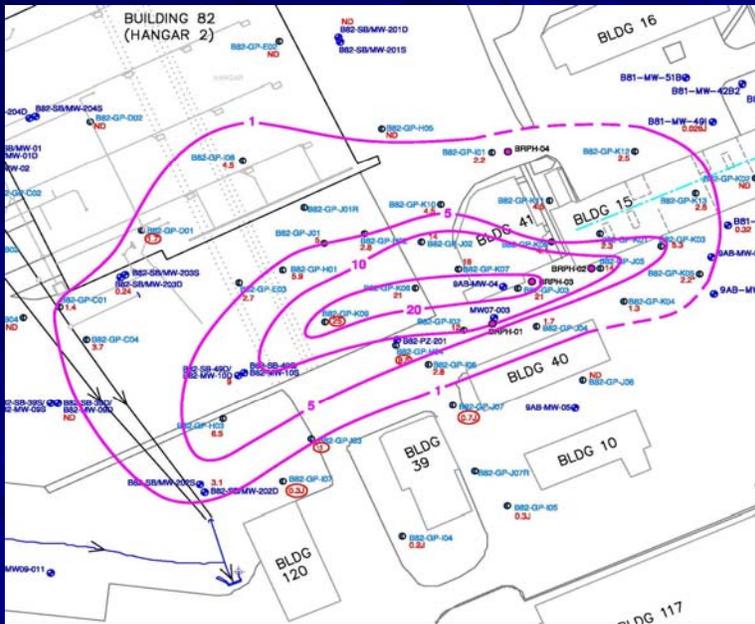
## BUILDING 82 CERCLA MEDIA OF CONCERN

- GROUNDWATER  
Contaminants may pose unacceptable human health risks ➡ **medium of concern**
- SOIL, SEDIMENT, and SURFACE WATER  
No unacceptable human health or ecological risks ➡ **not media of concern**

Note: Navy is performing a maintenance action separate from the FS to remove additional drainage piping, manholes, and soil.



## BUILDING 82 DEEP PLUME - TCE



## BUILDING 82 REMEDIAL ALTERNATIVES

1. G-1: No action
2. G-2: Chemical oxidation, natural attenuation with monitoring, and LUCs
3. G-3: Enhanced bioremediation, natural attenuation with monitoring, and LUCs
4. G-4: Natural attenuation with monitoring and LUCs

## ALTERNATIVE G-2 – THREE COMPONENTS

1. Chemical oxidation – Fenton's reagent or similar oxidizing chemical is injected into TCE, 1,1-DCA, and NNPA plumes.
2. Natural attenuation with monitoring – Portions of TCE plume outside of treated area are monitored for reductions in concentrations. Also monitor specific locations for manganese, PCBs, and MTBE.
3. LUCs – Prohibit groundwater use until RAOs are achieved.

## ALTERNATIVE G-3 – THREE COMPONENTS

1. Enhanced bioremediation – Electron donor is injected into TCE plume to promote anaerobic biological degradation. Oxygen-releasing compound is injected into 1,1-DCA and NNPA plumes to promote aerobic biological degradation.

## ALTERNATIVE G-3 COMPONENTS (Continued)

2. Natural attenuation with monitoring – Portions of TCE plume outside of treated area are monitored for reductions in concentrations. Also monitor specific locations for manganese, PCBs, and MTBE.
3. LUCs – Prohibit groundwater use until RAOs are achieved.

## ALTERNATIVE G-4 – TWO COMPONENTS

1. Natural attenuation with monitoring – TCE, 1,1-DCA, and NNPA plumes are monitored for reductions in concentrations.
2. LUCs – Prohibit groundwater use until RAOs are achieved.

## BUILDING 82 ALTERNATIVES EVALUATION

M = Meets the criteria; M- = meets the criteria but not as well; '-' = doesn't meet the criteria

Criteria	G-1: No Action	G-2: Chem. Ox., N.A. & LUCs	G-3: Bio, N.A. & LUCs	G-4: N.A. & LUCs
Overall Protection of Human Health and Environment	-	M	M	M-
Compliance with Laws and Regulations	-	M	M	M
Long-Term Effectiveness and Permanence	-	M	M	M-
Reduction of Toxicity, Mobility, or Volume through Treatment	-	M	M	M-
Short-Term Effectiveness	M-	M	M-	M-
Implementability	-	M	M	M-
Cost (Net Present Worth) in \$ Millions	0.067	2.1	1.7	0.6

## Building 82 CERCLA Status

- Final RI Report issued – February 2010.
- Draft RI Addendum Report issued – July 2010.
- Draft Final FS to be issued in Fall 2010.
- Proposed Plan anticipated – Winter 2010-2011.
- Record of Decision anticipated – Spring 2011.