



TETRA TECH EM INC.

April 7, 2008

Dear RAB Members,

On behalf of the Navy, enclosed please find the February 6, 2008 final RAB meeting minutes for your information and records.

If there are any questions regarding the enclosed minutes, please contact Carolyn Hunter at (415) 222-8297 or Carolyn.hunter@ttemi.com.

Sincerely,

Carolyn Hunter
Community Relations Specialist
Tetra Tech EMI

FINAL
MEETING MINUTES
RESTORATION ADVISORY BOARD
INLAND AREA ENVIRONMENTAL RESTORATION PROGRAM
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD
CONCORD, CALIFORNIA
FEBRUARY 6, 2008

These minutes reflect general issues raised, agreements reached, and action items identified at the Restoration Advisory Board (RAB) meeting for the Inland Area Environmental Restoration (ER) Program at Naval Weapons Station Seal Beach Detachment Concord (NAVWPNSTA Seal Beach Det Concord), California. The meeting was held from 6:30 p.m. to 8:40 p.m. on February 6, 2008, at the Concord Senior Center Dianda Community Room in Concord, California. Agreements and action items are described by topic under Sections I through VI and are summarized in Section VII. A list of participants and their affiliations is included as Attachment A, and the meeting agenda is included as Attachment B.

I. WELCOME, INTRODUCTIONS, PUBLIC COMMENT, AND AGENDA APPROVAL

Welcome and Introductions

The RAB Community Co-Chair, Mary Lou Williams (Concord resident), called the RAB meeting to order and initiated a round of introductions for attendees.

The Navy Co-Chair, Darren Newton (Department of the Navy [Navy]) Base Realignment and Closure (BRAC) Environmental Coordinator (BEC), reviewed the agenda for the meeting on February 6, 2008.

II. NOVEMBER 2007 RAB MEETING MINUTES APPROVAL

Ms. Williams asked the RAB for comments on minutes from the RAB meeting held on November 7, 2007. No comments were received on the RAB meeting minutes for November 7, 2007. The Navy will finalize the minutes from the November 7, 2007, meeting and distribute them to the RAB.

Action Item

1. The Navy will finalize and distribute the RAB meeting minutes for November 7, 2007.

III. RAB ANNOUNCEMENTS

Ms. Williams opened the floor to RAB announcements. Mr. Newton reviewed the Navy and regulatory agency contact information for the RAB.

Mr. Newton introduced the Navy BRAC Implementation Guidance (NBIG) to the RAB and indicated an electronic version is available on the Navy BRAC website. Igor Skaredoff (Martinez resident) asked if the NBIG guidance is to cleanup property to the current use rather than future planned use. Mr. Newton said that cleanup decisions should be made according to the current use of the property and read the Navy NBIG 9.1 Policy:

DON policy is to protect human health and the environment by adhering to applicable statutory and regulatory authorities. Existing policies and procedures for environmental restoration of BRAC installations remain in effect as described in the NERP. All DON Components with environmental restoration responsibilities are to properly identify, investigate, and select protective and cost-effective remedies (see DON NERP Manual).

For BRAC properties, cleanup decisions should be made according to the current use of the property while adhering to applicable statutory and regulatory authorities to ensure the protection of human health and the environment. Close collaboration with LRAs can result in land use plans that accommodate the needs of the community, recognize historical uses and special environmental conditions and result in practical, cost-effective remedy selections that can be supported by all parties, including regulators. Response actions taken solely to achieve less restricted use of a property shall not be conducted, as they are considered property enhancement business decisions. It is the responsibility of the new property owner to take such actions and bear any resulting cleanup costs.

Ms. Williams stated that one example of the policy's implications is the Magazine Areas in the Inland Area. Those areas are considered industrial use, so the Navy's current cleanup goal would be to industrial uses of the property. If the city of Concord wants to use the Magazines for something other than industrial development, the additional cost would not be covered by the government.

Kent Fickett (Mount Diablo Audubon Society) asked why the Navy is not responsible for returning the Inland Area to condition prior to them owning the property. Mr. Newton stated that the NBIG details that environmental restoration to an unrestricted reuse of the property is an option that may be considered. The Navy looks at all of the options and selects what is protective and cost effective for the long term. The Navy may elect to remediate property to an unrestricted (residential) standard if it is protective, and cost effective.

John Kaiser (San Francisco Bay Regional Water Quality Control Board [Water Board]) asked who is responsible for instituting the Navy policies. Mr. Newton stated that Navy policy is determined at Navy Headquarters in Washington DC.

Greg Glaser (Danville resident) asked how the NBIG policy aligns with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. Mr. Newton stated that the NBIG aligns with the CERCLA process for protectiveness of human health and the environment.

Phillip Ramsey (U.S. Environmental Protection Agency [EPA]) stated that the regulatory agencies will ensure the environmental restoration program for the Inland Area is protective. Mr. Newton said that the city of Concord has not yet provided the Navy with their reuse plan for the Inland Area. Once the reuse plan is developed by the city of Concord, the Navy will review the plan, and will then work with the city of Concord to develop a reuse plan that recognizes historical uses of the property, and any special environmental conditions for the Inland Area.

Ms Williams announced that Angie Lind (Navy Tidal Area RAB Co-chair) has been promoted and will be transferring off the Concord project. Mike Staggs (Navy) will take over the Tidal Area RAB Co-chair

position until the property is transferred to the Army in September 2008.

Public Announcements

Ms. Williams opened the floor to public announcements. No public comments were received.

IV. REMEDIAL PROJECT MANAGER (RPM) UPDATE

Navy Update

La Rae Landers (Navy) said the Navy prepared a RPM update handout for activities at the Inland Area that have occurred since the last Inland Area RAB meeting (see Attachment C). Ms. Landers reviewed the Navy's activities during November and December 2007 and January 2008.

Ms. Landers stated the Draft Site Investigation Work Plan for Site 24A will be submitted for review on February 14, 2008 and the RPMs will meet on February 19, 2008 to review the soil data at Site 27 to determine future step out sample locations.

The Navy is working with the California Department of Fish and Game on samples at Site 22 in order to address an ecological hot spot. Mr. Skaredoff asked what is the ecological concern at Site 22. Ms. Landers stated pesticides in surface soil are the ecological concern at Site 22.

The Navy is working on the draft final Military Munitions Response Program (MMRP) work plan now that the regulatory agencies concur with the response to comments. The RPMs had a meeting to discuss a reduction in the number of sampling locations for Site HE-5. The Navy is also working with the regulatory agencies on their comments on the remedial alternatives for the Solid Waste Management Unit (SWMU) Sites 2, 5, 7, and 18 prior to issuing the draft final feasibility study (FS).

EPA Update

Mr. Ramsey stated that EPA provided comments on the MMRP work plan in January 2008 and attended meetings and site walks for various Inland Area projects.

Water Board Update

Alan Friedman (Water Board) stated that the bulk of his time in the past few months has been attending meetings and reviewing documents. The regulatory agencies do their best to help move the various Navy projects along. Mr. Friedman said that the regulatory agencies are reviewing all of the Navy sites to ensure the proper cleanup levels are met.

Mr. Skaredoff asked if there are any concerns the regulatory agencies have on the Magazine Areas. Mr. Friedman stated there are a number of remedial alternatives which the regulatory agencies and Navy are thoroughly reviewing. Mr. Ramsey stated the regulatory agencies have suggested the Navy consider adding another remedial alternative to the Site 22 FS. A remedial alternative to excavate and consolidate the arsenic impacted surface soil in a containment unit onsite was added to the FS by the Navy.

City of Concord Update

Mr. Newton stated Michael Wright is currently the city of Concord contact until a City Reuse Manager is hired.

V. CONCORD STATE OF THE INLAND AREA PROGRAM CALENDAR YEARS 2007 - 2008

Mr. Newton provided a presentation on the State of the Inland Area Program for Calendar Years 2007-2008 which is located in Attachment D.

Mr. Skaredoff asked if the upcoming Historical Radiological Assessment (HRA) will evaluate spent uranium casings left in the Inland Area. Ms. Landers stated the HRA will look into all aspects of radiological activities that occurred at the Inland Area including storage, use, and disposal.

Julie Crosby (Navy RPM) stated the HRA will include researching past documentation, interviews, and hosting a hotline that will be advertised in various newspapers in order to get as much information as possible.

Mr. Fickett asked what types of activities will be going on until 2019 in the Inland Area. Mr. Newton said long term groundwater monitoring at the SWMU sites has been assumed in the Site Management Plan (SMP) schedule, which brings the schedule for the final Remedial Action Completion Report for the entire Inland Area to 2019.

Mr. Glaser asked if sites can be consolidated. Mr. Newton stated sites can be consolidated if they are in close proximity and have similar remedial needs. Mr. Ramsey stated that EPA suggested the Navy consolidate Sites 22 and 22A. Ms. Landers informed the RAB that Site 13, the Former Inland Burn Area, and the Railroad Siding Excavation Area have been combined into one MMRP site.

The RAB is interested in receiving a general update of all the sites on an annual basis around the timeframe when the SMP is amended. Mr. Newton said the Navy will plan on a general update presentation on the Inland Area in June 2009.

VI. HUMAN HEALTH RISK ASSESSMENT PRESENTATION

Mr. Newton provided a human health risk assessment presentation which is located in Attachment E.

Mr. Skaredoff asked how the Navy addresses children at a site when calculating risk. Dan Stralka (EPA) stated that there are specific risk assessment assumptions that are when calculating risk for children for residential site use scenarios.

VII. OTHER TOPICS, NEXT MEETING, AND ACTION ITEMS

April 2008 RAB Agenda Approval

Mr. Newton reviewed the proposed agenda for the April 2, 2008 RAB meeting.

The Navy plans to provide the following presentations at the April 2, 2008 RAB meeting:

- SWMU Sites 2, 5, 7, and 18
- Site 27 Field Work Update

Ms. Williams asked the RAB to approve the April 2008 agenda. The RAB voted to approve the meeting agenda for April 2, 2008.

The next Inland Area RAB meeting is scheduled for 6:30 to 8:30 p.m. on Wednesday, April 2, 2008 at the Concord Police Department Community Room.

The following action items were generated during the RAB meeting on February 6, 2008.

| No. | Action Item | Target Date for Completion | Responsible Person | Completion Date (or Status) |
|------------|--|-----------------------------------|---------------------------|------------------------------------|
| 1 | The Navy will finalize and distribute the November 7, 2007, RAB meeting minutes. | 2/8/08 | C. Hunter | This action item was completed. |

ATTACHMENT A
ATTENDEES AND AFFILIATIONS
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA

FEBRUARY 6, 2008

(One Page)

**ATTENDEES AND AFFILIATIONS
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA
FEBRUARY 6, 2008**

| <u>Name</u> | <u>Affiliation</u> | <u>Telephone</u> |
|----------------------|------------------------------|------------------|
| Luis Garcia-Bakarich | EPA | (415) 972-3237 |
| Beth Byrne | Concord Resident | (925) 686-4815 |
| Harry Byrne | Concord Resident | (925) 686-4815 |
| Joanna Canepa | Tetra Tech | (425) 877-2806 |
| Julie Crosby | Navy, BRAC PMO West | (619) 532-0929 |
| Kent Fickett* | Mount Diablo Audubon Society | (925) 254-5156 |
| Alan Friedman | Water Board | (510) 622-2347 |
| Gregory Glaser* | Concord Resident | (925) 363-5570 |
| Carolyn Hunter | Tetra Tech | (415) 222-8297 |
| John Kaiser | Water Board | (510) 622-2368 |
| La Rae Landers | Navy, BRAC PMO West | (619) 532-0970 |
| Curtis Lindskog | Shaw Group | Not provided |
| Darren Newton | Navy, BRAC PMO West | (619) 532-0963 |
| Sheila Roebuck | Lennar | (707) 557-8223 |
| Igor Skaredoff* | Martinez Resident | (925) 229-1371 |
| Dan Stralka | EPA | (415) 972-3048 |
| John Warmerdam | Tetra Tech | (415) 222-8254 |
| Mary Lou Williams* | Concord Resident | (925) 685-1415 |
| Shon Wolf* | Clyde Resident | (925) 686-5942 |

Notes:

| | |
|-------------|--|
| * | Community Restoration Advisory Board (RAB) Member |
| BRAC PMO | Base Realignment and Closure Program Management Office |
| EPA | U.S. Environmental Protection Agency |
| Tetra Tech | Tetra Tech EM Inc. |
| Water Board | San Francisco Bay Regional Water Quality Control Board |

ATTACHMENT B

AGENDA

**RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA**

FEBRUARY 6, 2008
(2 Pages)

INLAND AREA AGENDA

NAVAL WEAPONS STATION SEAL BEACH (NWSSB) DETACHMENT CONCORD RESTORATION ADVISORY BOARD (RAB) MEETING

Wednesday, February 6, 2008
6:30 p.m. – 8:30 p.m.
Location: Concord Senior Center
2727 Parkside Circle
Concord, CA 94519

- 6:30 – 6:45 Call to Order
- Welcome
 - Introductions/Agenda Review
 - Approval of November 2007 Meeting Minutes (Last Inland Area Meeting)
 - Public Comment Period
- Lead: Community Co-chair
- 6:45 – 6:50 Announcements
- Review of Action Items
- Lead: Navy Co-chair
- 6:50 – 7: 30 Committee Reports/Announcements
- RAB Announcements, Reports or other business (Community Co-chair)
 - Remedial Project Managers' (RPM) Update (Navy/EPA/DTSC/RWQCB)
 - City of Concord Update
- 7:30 – 7:40 Break
- 7:40 – 8:00 Presentation: Concord "State of the Inland Area Program" Calendar Years 2007-2008
Navy BEC: Darren Newton
- 8:00 – 8:25 Presentation: Human Health Risk Assessment Presentation
EPA and Navy
- 8:25 – 8:30 Meeting Evaluation and Topic Suggestions of Future Meetings
Next RAB Meeting: March 5, 2008 (Tidal Area)
April 2008 Agenda Approval
- 8:30 Adjourn

Next RAB Meetings

- Tidal Area: March 5, 2008
- Inland Area: April 2, 2008

NWSSB DETACHMENT CONCORD RAB Meetings are held the first Wednesday of every month, unless changed.

Information regarding the Environmental Restoration program at NWSSB Detachment Concord can be found at:

<http://www.bracpmo.navy.mil/brac2005/bracbases/ca/concord/default.aspx>

In addition, a public voicemail is available for questions at (925) 246-4020

BRAC Environmental Coordinator: Mr. Darren Newton (619) 532-0963, Darren.newton@navy.mil

Community RAB Co-Chair: Ms. Mary Lou Williams, Mlou1015@aol.com

Community RAB Co-Chair: Ms. Mary Lou Williams, Mlou1015@aol.com

ATTACHMENT C

**NAVY REMEDIAL PROJECT MANAGER'S UPDATE
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA**

FEBRUARY 6, 2008

(2 Pages)



Navy Remedial Project Manager (RPM) Update for 6 February 2008 Meeting of Naval Weapons Station Detachment Concord Restoration Advisory Board (RAB)

Summary of Navy Base Realignment and Closure (BRAC)
Inland Area RPM activities since the last RAB meeting held on
Wednesday, 7 November 2007

Installation Restoration/Munitions Response Programs Sites

- November 9, 2007 - Submitted the final meeting minutes on the Site 22A (Munitions Magazines Group 1 through 5) sampling approach and DQOs to Regulatory Agencies and RAB.
- November 19, 2007 – Submitted the Final Community Involvement Plan Update to the regulatory agencies and RAB.
- November 28, 2007 - Held a site walk with regulatory agencies to select final Site 22A Tier 2 soil sampling locations.
- December 3, 2007 - Submitted a letter requesting the schedule extension for Site 22 FS Report and Site 22A RI Report. The revised milestone deliverable dates are May 25, 2008 and September 20, 2008, respectively.
- December 4, 2007 – Obtained concurrence on the responses to regulatory agencies comments on scoping material and DQOs for the MMRP Site 24A (Former Pistol Firing Range) Site Inspection (SI) Work Plan/SAP. The Draft SI WP is due to regulatory agencies on February 14, 2008.
- December 6, 2007 – Held a site walk at Site 23A (Inland EOD Area) to look for evidence of past munitions disposal activities.
- December 11, 2008 – Held a meeting with the regulatory agencies to discuss removing the Burn Area near HE-5 (5AT) from the Military Munitions Response Program (MMRP). The regulatory agencies agreed to a reduced sampling plan to confirm no burning activity took place at the site.
- December 19, 2007 - Held a Site 22A Triad conference call with the regulatory agencies to discuss the Tier 2 proposed sampling locations.
- January 4, 2008 - Submitted to regulatory agencies the revised figures for the Site 22A Tier 2 proposed surface soil sampling locations.
- January 8-9, 2008 – Based on the Site 27 (Buildings IA-20 and IA-36) Phase 1 soil sampling results, step-out soil samples were collected for chlordane and metals. Soil sample results are pending.

Installation Restoration/Munitions Response Programs Sites Continued

- January 15, 2008 – Received preliminary data from additional step-out surface soil sampling at location 7SHSB134 at Site 22 (Main Magazine Area) to determine the lateral extent of the pesticides detected during the previous investigation. Validated soil data results pending. The results will be used to further assess the extent of the pesticides at one location, evaluate remedial alternatives due to ecological risk, and to revise the Draft Site 22 FS Report. The Draft FS Report is scheduled for delivery to the regulatory agencies and RAB on May 25, 2008.
- January 16, 2008 - Collected Tier 2 surface soil samples for chemical analysis at Site 22A. Soil sample results are pending. The results will be incorporated in the RI Report, which is scheduled for delivery to the regulatory agencies and RAB on September 20, 2008.
- January 18, 2008 - Submitted to regulatory agencies for review a working draft Remedial Alternative Ranking Table for the Revised Draft Final Feasibility Study (FS) Report at the SWMUs Sites 2, 5, 7 and 18. Held a conference call with regulatory agencies to discuss on January 28, 2008. The Revised Draft Final FS Report is scheduled for delivery to the regulatory agencies and RAB on February 19, 2008.
- January 23, 2008 – Responded to comments on the Draft Munitions Site Inspection Work Plan/Sample and Analysis Plan (SAP) for 4 MMRP sites; Black Pit at Red Rock, Eagle's Nest Explosive Ordnance Disposal (EOD), Area, Burn Area near HE-5, and Former Inland Burn / Railroad Sidings Excavations Area. Comments were received by the agencies on November 19, 2007 and December 20, 2007.
- February 6, 2008 – Submitted the October 2007 groundwater monitoring results for Site 29 (Building IA-25) to the regulatory agencies.

ATTACHMENT D

**CONCORD STATE OF THE INLAND AREA PROGRAM CALENDAR YEARS 2007 -2008
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA**

FEBRUARY 6, 2008
(10 Pages)



Welcome

BRAC
PMO WEST

NAWPNSTA Seal Beach Detachment Concord State of the Inland Area Environmental Program

67th Restoration Advisory Board Meeting

Darren Newton
Base Realignment and Closure
(BRAC) Environmental Coordinator

6 February 2008



Program Activities

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- **Global Projects (Inland-Area)**
 - Groundwater Monitoring
 - Historical Radiological Assessment
 - Areas of Potential Interest
 - Compliance (e.g. USTs, ASTs, SWMUs)

- **Installation Restoration Program Sites**

- **Military Munitions Response Program Sites**



Global Projects

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Groundwater Monitoring

- **Initiate Basewide Groundwater Monitoring Work Plan**
 - Navy will develop a program to supplement site-specific monitoring requirements
 - Annual Groundwater Monitoring at:
 - Site 13
 - Site 22
 - Site 29
 - Solid Waste Management Units (SWMU) 2, 5, 7, and 18



Global Projects

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Radiological Program

- **Initiate Historical Radiological Assessment (HRA)**
 - Navy will develop a program in close coordination with the Radiological Affairs Support Organization (RASO) and the regulatory agencies
 - A RAB presentation on the HRA process is anticipated for 4 June 2008



Global Projects

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Areas of Potential Interest (AOPI)

- **AOPI identified:**
 - Building IA-25 – Outfeatures (Suspected burn pit)
 - 5 Unfinished Railroad Revetments
 - Magazine HE-5 (2AT5) - Suspected disposal area
 - Building IA-27 - Suspected disposal area
 - Buildings 81, 87, 93, 97 – Residual munitions constituents (Bldg 93 - also disposal area, USTs)
 - Unocal Spill Area – Discarded munitions
- **Next Steps –**
 - Initiate Work Plan for AOPIs needing further evaluation



Global Projects

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Compliance Program – Work in progress

- **Underground Storage Tank (USTs) – 4**
 - IA-17 (A,B,C,D)
- **Aboveground Storage Tank (ASTs) – 7**
 - Building 97; IA-4; Building 522 (5 ASTs)
- **Oil Water Separator (OWS) – 0**
- **Solid Waste Management Units (SWMU) – 1**



Installation Restoration Projects

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Site 22 Main Magazine Area

•Status

- Final Remedial Investigation – February 2007
 - No further action for subsurface soils
 - Acceptable risk for groundwater (at or below MCLs)
 - Prepare a Feasibility Study for arsenic impacted surface soils

•Next Steps

- Draft Feasibility Study – May 2008
 - No action, institutional controls, excavation and off-site disposal, and excavation and onsite containment
- Proposed Plan – Summer 2009
- Record of Decision – Spring 2010



Installation Restoration Projects

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Site 22A Magazine Areas - Group 1 through 5

•Status

- Final Sampling and Analysis Plan for Remedial Investigation (investigation of arsenic in surface and subsurface soils) – July 2007
- Phase 1 soil sampling completed 06 August 2007
- Phase 2 soil sampling began 18 January 2008

•Next Steps

- Complete Remedial Investigation field work – February 2008
- Draft Remedial Investigation – September 2008



Installation Restoration Projects

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Site 27 Buildings IA-20 and IA-36

•Status

- Final Sampling and Analysis Plan for Remedial Investigation Addendum (investigation of chlordane and metals in soils) – August 2007
- Phase 1 soil sampling completed 4 October 2007
- Phase 2 soil sampling completed 10 January 2008

•Next Steps

- Based on Phase 2, Complete Remedial Investigation field work – March 2008
- Draft Remedial Investigation Addendum – Fall 2008
 - Revised Human Health Risk Assessment
 - Screening Level Ecological Risk Assessment



Installation Restoration Projects

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Site 29 Building IA-25

•Status

- Final Sampling and Analysis Plan for Remedial Investigation (investigation of soils and groundwater) – May 2007
- Initiate Remedial Investigation field work – Summer 2007
 - Soil and soil gas investigations
 - Site characterization and analysis penetrometer system (SCAPS) investigation
 - Groundwater monitoring for chlorinated solvent impacted groundwater: December 2007

•Next Steps

- Groundwater monitoring for chlorinated solvent impacted groundwater: February, May, and August 2008
- Draft Remedial Investigation Report – Spring 2009



Installation Restoration Projects

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SWMUs 2, 5, 7, and 18

SWMU 2 – Building IA-7 Fire Station

SWMU 5 – Building IA-12 Locomotive Repair Shop

SWMU 7 – Building IA-16 Paint Shop

SWMU 18 – Building IA-51 Steam Cleaning Facility

•Status

–Draft Final Feasibility Study – 22 April 2005

–Performed Groundwater Pilot Test – Spring 2007

- Air sparging and soil vapor extraction for chlorinated solvent impacted groundwater

– Final Groundwater Pilot Test Technical Memorandum – October 2007

•Next Steps

– Revised Draft Final Feasibility Study – February 2008

– RAB topic April 2008

– Proposed Plan – Winter 2008

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6 Feb 08



Munitions Response Program Projects

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Final Preliminary Assessment (PA) – August 2007

•Status

–4 sites Recommended NFA

- Seal Creak Disposal Area (IR Site 19)

- Bore Sighting Range (IR Site 24B)

- Dredge Fill and Borrow Area

- Red Rock Disposal Area

–4 sites Recommended for a Site Inspection

- Inland Burn Area (Site 13)

- Black Pit at Red Rock (Site 16)

- Eagle's Nest EOD (Site 23B)

- HE-5

–1 Site Recommended for a Supplemental PA

- Site 23A Inland Area EOD

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6 Feb 08



Munitions Response Program Projects

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4 sites Recommended for a Site Inspection

Inland Burn Area (Site 13), Black Pit at Red Rock (Site 16),
Eagle's Nest EOD (Site 23B), HE-5

- **Status**

- Draft Site Inspection Work Plan – September 2007

- **Next Steps**

- Draft Final Site Inspection Work Plan – March 2008
 - Perform Site Inspection Field Work – April through July 2008
 - Draft Site Inspection Report – Spring 2009

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6 Feb 08



Munitions Response Program Projects

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1 Site Recommended for a Supplemental PA

Site 23A Inland Area EOD

- **Status**

- Navy Conducting a Supplemental PA
 - In-depth site surveys
 - Historical Aerial Photograph Review
 - Interviews with former EOD Technicians, Ranchers, and Base Personnel

- **Next Steps**

- Draft Supplemental PA – Summer 2008

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6 Feb 08



Munitions Response Program Projects

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Site 24A Former Pistol Range

•Status

- Kick off and scoping preparation of Site Inspection Work Plan – August 2007
- Navy preparing a Site Inspection Work Plan

•Next Steps

- Draft Site Inspection Work Plan – February 2008
- Perform Site Inspection Field Work – August 2008
- Draft Site Inspection Report – Spring 2009



Environmental Program Summary

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| | USTs | ASTs | OWSs | AOPIs | SWMU | IRP SITES | MMRP SITES |
|-----------------------------------|------|------|------|-------|------|-----------|------------|
| TOTAL | 40 | 24 | 6 | 9 | 33 | 14 | 10 |
| NFA / NFI | 36 | 17 | 6 | 0 | 32* | 6 | 4 |
| Complete | 90% | 71% | 100% | 0% | 97% | 43% | 40% |
| Closeouts in Agency Review | 0 | 0 | 0 | 0 | 1* | 0 | 0 |
| In Progress | 4 | 7 | 0 | 9 | 1 | 8 | 6 |
| Anticipated NFA Date | 2012 | 2010 | Done | 2010 | TBD | 2019 | TBD |

Note: 13 SWMUs were septic tanks that have been decommissioned. 16 SWMUs were closed by DTSC. 3 SWMUs were USTs closed under the UST Program. One SWMU is pending closure by the Water Board.



Acronyms

BRAC
PMO WEST

| | |
|-------|----------------------------------|
| •AOPI | Area of Potential Interest |
| •AST | Aboveground Storage Tank |
| •BRAC | Base Realignment and Closure |
| •EOD | Explosive Ordnance Disposal |
| •FS | Feasibility Study |
| •IRP | Installation Restoration Program |
| •IC | Institutional Controls |
| •MCL | Maximum Contamination Limit |
| •NFA | No Further Action |
| •NFI | No Further Investigation |
| •OWS | Oil Water Separator |
| •PA | Preliminary Assessment |



Acronyms (continued)

BRAC
PMO WEST

| | |
|--------|--|
| •PP | Proposed Plan |
| •RI | Remedial Investigation |
| •ROD | Record of Decision |
| •SI | Site Inspection |
| •SCAPS | Site Characterization and Analysis Penetrometer System (SCAPS) |
| •SAP | Sampling and Analysis Plan |
| •SWMU | Solid Waste Management Unit |
| •TBD | To be determined |
| •UST | Underground Storage Tank |



QUESTIONS?

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ATTACHMENT E

**INLAND AREA HUMAN HEALTH RISK ASSESSMENT PRESENTATION
RESTORATION ADVISORY BOARD MEETING
NAVAL WEAPONS STATION SEAL BEACH DETACHMENT CONCORD, CALIFORNIA**

FEBRUARY 6, 2008

(14 Pages)



**BRAC
PMO**

The Basics of Human Health Risk Assessment

Naval Weapons Station Seal Beach Detachment Concord
Inland Area Restoration Advisory Board Meeting
6 February 2008

1



**BRAC
PMO**

Cancer Risk Calculations

- U.S. EPA risk assessment process is designed to estimate "excess cancer risk"
- This is the risk (or probability) of developing cancer that is above the background risk

2



Background Cancer Rates

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PMO

- American Cancer Society estimates that the probability of developing some form of cancer over a lifetime is at least 0.3, or 30 percent *
- This probability can be understood a couple different ways:
 - Group Statement: 3 in 10 people will develop some form of cancer over a lifetime
 - Individual Statement: Lifetime Cancer Risk = 3×10^{-1}

* American Cancer Society 2006

3



Risk Assessment Nomenclature

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- $1 \times 10^{-6} = 1$ in one million
- $1 \times 10^{-5} = 1$ in one hundred thousand
- $1 \times 10^{-4} = 1$ in ten thousand
- $1 \times 10^{-3} = 1$ in one thousand
- $1 \times 10^{-2} = 1$ in one hundred
- $1 \times 10^{-1} = 1$ in ten

4



Excess Cancer Risk

BRAC
PMO

- Excess cancer risk is risk that is in addition to background cancer risk
- An excess cancer risk of 1×10^{-6} (0.000001) means an individual's risk would increase from 0.3 to 0.300001
- Similarly, an excess cancer risk of 1×10^{-4} (0.0001) means an individual's risk would increase from 0.3 to 0.3001

5



Excess Cancer Risk Management Range

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PMO

$1 \times 10^{-6} = 1$ in one million - "Acceptable"

$1 \times 10^{-5} = 1$ in one hundred thousand

$1 \times 10^{-4} = 1$ in ten thousand

} generally acceptable
"Risk management
range"

$1 \times 10^{-3} = 1$ in one thousand

$1 \times 10^{-2} = 1$ in one hundred

$1 \times 10^{-1} = 1$ in ten

} Warrants action

Reference: US EPA OSWER 9355.0-30

6



Calculating Risk

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- Risk calculations are designed to be conservative (protective of health)
- Calculation involves an estimate of chemical toxicity, an estimate of chemical concentration, and several assumptions about human exposure to the chemical
 - Toxicity: How dangerous is the chemical?
"The dose makes the poison" (Paracelsus, 1567) which means as dose rises, the risk of harm rises
 - Concentration: How much chemical is present?
 - Exposure: How much chemical could get into a body?

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Exposure

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"People must come in contact with chemicals from the site to be at risk" (USEPA) *

How much can get into the body by:

- ingestion (incidental, eating and drinking),
- dermal contact (soil and water), and
- inhalation (vapors and particles)

*USEPA - A Community Guide To Superfund Risk Assessment

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Exposure Scenarios

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- **Industrial/Commercial Worker Scenario** (Historic and current land use)
 - 25 years of exposure
 - 250 days per year
 - Ingest 100 mg soil per day
 - Uniform layer of soil over lower legs, forearms, hands, and head
 - 8 hours per day inhalation of vapors and particulates

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Exposure Scenarios

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- **Residential Scenario**
 - 30 years of exposure (6 as child, 24 as adult)
 - 350 days per year
 - Ingest 200 mg soil per day as child and 100 mg soil per day as adult
 - Uniform layer of soil over lower legs, forearms, hands, and head
 - 24 hours per day inhalation of vapors and particulates
 - Ingest 1 liter groundwater per day as child and 2 liters per day as adult
 - Daily contact with groundwater over entire body during shower/bath (1 hour for child and 35 minutes for adult)

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Case Study: Site 22

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- 531 acre area with ammunition bunkers and buildings
- Arsenic concentration is elevated in top 0.5 foot of soil
- Historic and current land use is agricultural and industrial
 - DON Policy NBIG 9.1 – cleanup decisions should be made according to the current use of the property
- Future residential use was modeled as an exposure scenario for comparison

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Case Study: Arsenic – Background

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- Naturally occurring in soil
 - 3-4 mg/kg average (ATSDR)
 - Ranges from <0.1 to 97 mg/kg (USGS)
 - Ranges from 1.8 to 31 mg/kg in Oakland (City of Oakland Survey)
- Measured background concentrations at Concord IRP Sites 13 and 22 range from 2.4 to 26.6 mg/kg
- Site 22 background is 10 mg/kg

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Is Arsenic Bioavailable?

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- Does the arsenic pass from the soil into the bloodstream?
 - Dissolve from soil during digestion (bioaccessible)
 - Taken up into blood (bioavailable)
- Studies indicate that less than 30% of arsenic may be bioavailable (Freeman et al 1995, Roberts et al 2002)
- Site 22 study indicates that bioaccessibility ranges from 18% to 29%

Built in Conservatism

- Navy risk assessment assumes that 100% of arsenic gets into blood

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Site 22 industrial/commercial

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- Maximum carcinogenic risk and hazard quotient for **future use (industrial/commercial)** in the magazine and double-fenced areas at Site 22:
 - Carcinogenic risk (all chemicals) 4×10^{-5}
 - Carcinogenic risk (arsenic) 4×10^{-5}
 - Non-carcinogenic hazard (all chemicals) 0.3
 - Non-carcinogenic hazard (arsenic) 0.3

BACKGROUND

| | |
|--|--------------------|
| Background carcinogenic risk (arsenic) | 7×10^{-6} |
| Background Non-carcinogenic hazard (arsenic) | 0.05 |

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Site 22 residential

BRAC
PMO

- Maximum carcinogenic risk and hazard quotient for **future use (residential)** in the magazine and double-fenced areas at Site 22:

| | |
|---|--------------------|
| – Carcinogenic risk (all chemicals) | 2×10^{-4} |
| – Carcinogenic risk (arsenic) | 2×10^{-4} |
| – Non-carcinogenic hazard (all chemicals) | 3 |
| – Non-carcinogenic hazard (arsenic) | 3 |

BACKGROUND

| | |
|--|--------------------|
| Background carcinogenic risk (arsenic) | 4×10^{-5} |
| Background Non-carcinogenic hazard (arsenic) | 0.5 |

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What does all this mean?

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Industrial Commercial

The historic and current land use of industrial/commercial has a carcinogenic risk of 4×10^{-5}

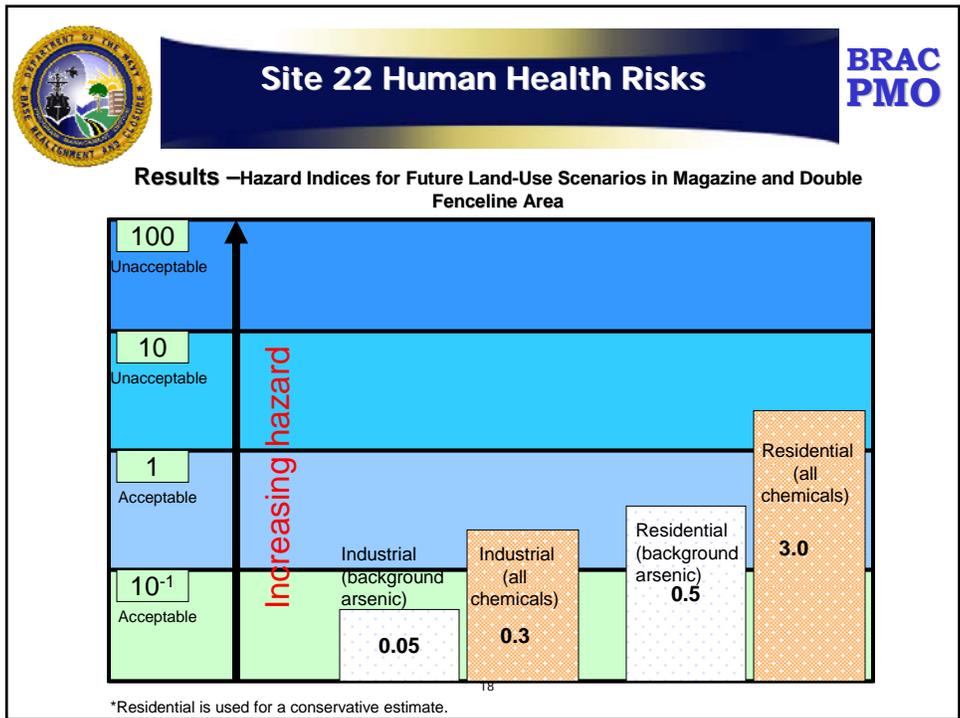
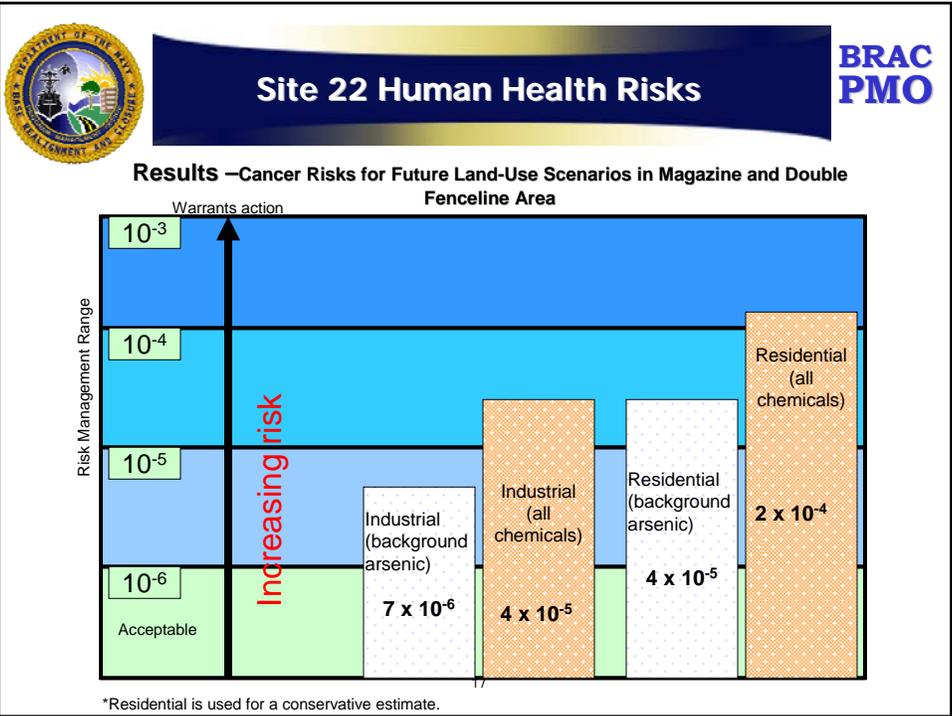
- An excess cancer risk of 4×10^{-5} (0.00004) means an individual's risk would increase from 0.3 to 0.30004

Residential

Future residential use has a carcinogenic risk of 2×10^{-4}

- An excess cancer risk of 2×10^{-4} (0.0002) means an individual's risk would increase from 0.3 to 0.3002

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Things to consider...

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- Very few people fit the exposure profile used in the risk assessment
- The risk assessment process is **conservative**
 - Risk assessment also calculated exposures from groundwater ingestion, dermal contact to soil and groundwater, and inhalation of soil and groundwater constituents
- Risk and hazard estimates rely on conservative estimates for:
 - Toxicity values
 - Chemical concentration values
 - Bioavailability of arsenic
- Actual risk and hazard may be less than the values presented in the risk assessment

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Reference materials

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USEPA Human Health Risks

http://www.epa.gov/superfund/health/human_health.htm

USEPA Risk Assessment Guidance for Superfund (RAGS)

<http://www.epa.gov/oswer/riskassessment/ragsa>

USEPA A Community Guide To Superfund Risk Assessment: What It's All About And How You Can Help

<http://www.epa.gov/oswer/riskassessment/commeng.htm>

USEPA Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites

<http://www.epa.gov/oswer/riskassessment/pdf/background.pdf>

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Reference materials

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"Rules of Thumb for Superfund Remedy Selection" (August 1997)

<http://www.epa.gov/superfund/policy/remedy/rules/rulesthm.pdf>

"Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions" (April 1991)

<http://www.epa.gov/oswer/riskassessment/pdf/baseline.pdf>

The Department of the Navy Base Realignment and Closure Implementation Guidance (NBIG)

http://www.bracpmo.navy.mil/whatsnew_docs/DON_BRAC_IMPLEMENTATION_GUDANCE.pdf