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**From:** Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command

**Subj:** REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) FOR  
NAVAL STATION TREASURE ISLAND (NAVSTA TI)

**Encl:** (1) Restoration Advisory Board (RAB) Final Meeting Minutes – 18 May 1999

1. Enclosure (1) is the approved and final Restoration Advisory Board (RAB) meeting minutes for your file and information.
2. Thank you for your guidance and involvement in this project. For further information, please call me at (650) 244-2560.

  
ERNESTO M. GALANG  
REMEDIAL PROJECT MANAGER  
By direction

**Distribution:**

California Department of Toxic Substances Control (Attn: Mr. David Rist)  
California Regional Water Quality Control Board (Attn: Mr. David Leland)  
U.S. Environmental Protection Agency, Region IX (Attn: Mr. James Ricks, Jr.)  
San Francisco Redevelopment Agency ( Attn: Ms. Martha Walters)  
Tetra Tech EM Inc. (Attn: Mr. Jerry Wickham)

**Community RAB Members:**

Mr. James Aldrich	Ms. Alice LaPierre	Mr. Jack Savage
Mr. John Allman	Mr. Clinton Loftman	Ms. Dale Smith
ARC Ecology (Mr. Saul Bloom)	Mr. Brandon McMillan	Ms. Usha Vedagiri
(Ms. Chris Shirley)	Ms. Karen Mendelow	Mr. Harlan Van Wye
Mr. Nathan Brennan (Alt Co-Chair)	Mr. Ernest Michelsen	Mr. John Gregson
Mr. Richard Hansen	Ms. Patricia Nelson	
Mr. Paul Hehn (Co-Chair)	Mr. Henry Ongerth	

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**NAVAL STATION TREASURE ISLAND  
RESTORATION ADVISORY BOARD MEETING MINUTES**

**May 18, 1999  
Meeting No. 56**

The Naval Station Treasure Island (NAVSTA TI) Restoration Advisory Board (RAB) met on 18 May 1999 at 7:10 p.m. at Casa de la Vista, NAVSTA TI. The goals of the meeting were : 1) to have discussion/approval of the 20 April 1999 minutes, 2) to provide time for the City of San Francisco, 3) to discuss the Draft Final Site 12 Operable Unit (OU) Remedial Investigation (RI) Report Preview, 4) to discuss the Draft Annual Groundwater Monitoring Report, 5) to discuss the Oxygen Release Compound (ORC) Demo at Site 25, 6) to receive general updates, 7) to discuss the status of environmental documents, 8) to review organizational business, 9) to provide open questions and discussion, and 10) to review the proposed agenda items for upcoming RAB meetings and new action items.

These minutes summarize topics discussed during the RAB meeting. A copy of the meeting agenda is provided as Attachment A, the attendance list is provided as Attachment B, and the meeting handouts are provided as Attachment C.

**I. Welcome Remarks and Agenda**

James B. Sullivan, BRAC Environmental Coordinator (BEC) and Navy Co-chair called the meeting to order at 7:10 p.m. Due to a CalTrans road closure for the next five months, he advised attendees coming from San Francisco to take the Yerba Buena exit to get to Treasure Island.

**Discussion/Approval of Agenda**

Mr. Sullivan called for comments on the agenda; none were voiced.

**II. Public Comment**

Mr. Sullivan called for public comments and general announcements; none were voiced.

**III. Discussion/Approval of the 20 April 1999 Minutes**

Mr. Sullivan stated that he e-mailed the transcript; he offered to make copies available to interested members. In recent months, the draft minutes have been made available at the interim meetings. Copies of the transcript and the final minutes are available at the information repositories at the San

Francisco Main Library and at the Navy Office at Building 1 at TI.

Nathan Brennan moved to accept the 20 April 1999 minutes with no changes; all were in favor.

#### **IV. City of San Francisco**

Martha Walters, San Francisco Department of Public Health, distributed the final version of the lease addendum entitled "Environmental Conditions Disclosure," which will be updated as needed. Mr. Hehn expressed his appreciation to the John Stewart Company and the Department of Toxic Substance Control (DTSC) for their efforts in issuing the lease addendum. Mr. Brennan commented that this was promised last month by John Stewart Company.

John Stewart Company will install fence barricades around areas being investigated or involved in cleanup. A map of the locations will be distributed.

#### **BRAC CLEAN-UP PROCESS:**

#### **V. Draft Final Site 12 OU RI Report**

Mr. Sullivan announced that the projected completion date is 1 June 1999, with comments due on 16 July. Gene Barry, Levine Fricke Recon, and Gwen Caviness, Tetra Tech EM Inc. (TtEMI), gave a brief overview of the OU RI report and the Human Health Risk Assessment.

##### *Objective of Site 12 Phase I and IIB RI (1992 to 1996)*

- To investigate potential contamination in suspected source areas:
  - Former debris disposal area
  - Ammunition bunker areas
  - Waste incineration
  - Underground Storage Tanks (USTs)
- 63 total soil samples (including 21 surface soil samples)
- Soil samples analyzed for metals, volatile organic compounds (VOCs), SVOCs, TPH, explosives, dioxins, pesticides
- 108 hydraulic punches and 16 monitoring wells installed
- Water samples analyzed for metals, VOCs, SVOCs, TPH, PCBs/pesticides, explosives
- 8 Geoprobe borings advanced in 1996 and soil and groundwater samples collected near MW-16 to evaluate TPH contamination.

##### *Objective of Additional Site 12 Characterization—October and November 1997*

- To obtain information about areas outside of suspected source areas and therefore not investigated during the RI
- Sampling locations based on a grid

- 112 soil samples (including 56 surface soil samples) collected from 58 locations
- 49 grab groundwater samples collected
- Soil and groundwater samples analyzed for metals, VOCs, SVOCs, and TPH

*Objective of Additional Dioxin Characterization—February and August 1998*

- City of San Francisco (February): To characterize dioxin contamination in surface soil
  - 15 surface soil samples from 15 locations
  - Sampling locations based on a grid
- Navy (August): To further characterize dioxins in areas where they were previously detected
  - 27 soil samples from 15 locations

Mr. Barry distributed a summary of soil and groundwater samples from 1992 through November 1998, as well as an outline of the Draft Final Site 12 OU RI report. He stated that all of the boring logs will be included in the report. There is no habitat for ecological receptors; offshore sediments will be addressed in the offshore RI report.

Mr. Sullivan added that the comments from the regulatory agencies and the RAB will be included in the appendices. Mr. Hehn inquired if the verbal comments have also been included, and Mr. Sullivan replied that they were not. He suggested that TtEMI derive the comments from the meeting minutes to ensure that the verbal comments are also included.

Mr. Hehn inquired if the analytical results section will include the figures for all of the various constituents. Mr. Barry replied in the affirmative, adding that the information will be provided on three maps that can be overlaid in order to make the correlations between soil and groundwater more apparent. Information for Sites 6 and 20 is provided on a separate map, given the large number of borings.

*Human Health Risk Assessment—Site 12—Treasure Island*

*Objective:*

- To evaluate if current site conditions at Site 12 are protective of human health

*Human Health Risk Assessment*

- Draft RI Report, Naval Station TI, October 1996 (Phase I and II)
- Draft Final Onshore RI Report, Naval Station TI, September 1997 (Phase I and II, November 1997 data)
- Site-specific Environmental Baseline Survey (EBS), Reuse Zone 4, Revision 1, July 1998
- Draft Final Site 12 OU RI Report, 1 June 1999 (Phase I and II, November 1997 data, dioxin data collected by the City of San Francisco and the Navy)

The methodology follows DTSC and EPA guidelines.

*Selection of COPCs*

- Combine analytical data from the RI, additional Site 12 characterization, and additional dioxin characterization

- Comparison with ambient levels (background numbers were developed since much of the soil consists of artificial fill)
- Metals, VOCs, SVOCs, pesticides, dioxins evaluated

*Exposure assessment*

Resident is the most likely exposed receptor (most conservative scenario)

- Complete exposure pathways for soil include:
  - Ingestion of soil
  - Dermal contact with soil
  - Inhalation of particulates from soil
  - Inhalation of VOCs released from soil to air
  - Ingestion of homegrown produce
- Complete exposure pathway for groundwater
  - Inhalation of VOCs released from groundwater to air
- Other receptors evaluated:
  - Recreational child and adult
  - Commercial/industrial worker
  - Construction worker (new scenario)
- Complete exposure pathways for soil include:
  - Ingestion of soil
  - Dermal contact with soil
  - Inhalation of particulates and VOCs released from soil
- Complete exposure pathway for groundwater:
  - Inhalation of VOCs released from groundwater to air
  - Dermal contact with groundwater (construction worker only)

*Exposure areas*

- Area 1 - Former debris disposal area and where the most recent round of dioxin sampling occurred
- Area 2 - Site 12 (does not include sample locations 774, 1410, 1420: the former debris disposal area, Area 1, or the former burn pit area, as they are not representative of site conditions)

*Risk characterization*

- Cancer risk: the probability or likelihood of an individual getting cancer under the defined exposure conditions. The risk can only be assigned if the person has actually been exposed for 24 hours a day, 350 days per year, for 30 years
- Hazard index: A ratio of site concentrations of noncarcinogens to the estimated "safe" dose for a human

The highest dioxin concentration found is well below the EPA action level of 1000 parts per trillion.

*Risk assessment results*

- Cancer risks are within EPA's target risk range:  
1 in 10,000 ( $1 \times 10^{-4}$ ) to 1 in 1 million ( $1 \times 10^{-6}$ )
- Hazard indices are equal to or less than the threshold value of 1

*Risk results for a resident:*

*Area 1, former debris disposal area*

<u>Surface soil</u>	<u>EPA Approach</u>	<u>DTSC Approach</u>
Cancer risk:	$4 \times 10^{-5}$	$6 \times 10^{-5}$
Hazard index:	1	1
<u>All soils</u>		
Cancer risk:	$5 \times 10^{-5}$	$7 \times 10^{-5}$
Hazard index:	0.8	0.8

*Risk results for a resident:*

*Area 2*

<u>Surface soil</u>		
Cancer risk:	$9 \times 10^{-6}$	$2 \times 10^{-5}$
Hazard index:	0.1	0.1
<u>All soils</u>		
Cancer risk:	$9 \times 10^{-6}$	$2 \times 10^{-5}$
Hazard index:	0.09	0.09

*Lead Evaluation*

Screening lead concentrations in soil (mg/kg) that correspond to a blood-lead level of concern

- DTSC Lead Model: Assumes lead uptake from both site-related sources and background sources. Lead uptake from ingestion of soil, inhalation of dust, dermal contact with soil, ingestion of drinking water, ingestion of food from sources other than homegrown produce, and ingestion of homegrown produce (resident only)
- (Modified): Reflects the observed decline in dietary lead due to efforts by the U.S. Food and Drug Administration (FDA)

*Conclusion: Current conditions at Site 12 are protective of human health*

*Objective of future sampling efforts at Site 12*

- To characterize the vertical extent of contamination in the former debris disposal area
- To characterize dioxins in the vicinity of the former burn pit area—location of removal action for lead

Ms. Caviness confirmed that there will be another draft final report that will include the last dioxin

sampling data. This will also be made available for review and comment. Ms. Walters inquired when the risk assessment for Site 12 will be available. Mr. Sullivan replied that this will be included in the final RI report which will be issued around 15 August 1999. Ms. Walters commented that this would cause financial problems, given the 1 August 1999 leasing deadline with John Stewart Company.

Ms. Caviness suggested issuing an interim report. Ms. Walters replied that she is comfortable with this, but that the DTSC's input must also be considered. She suggested a brainstorming session for the following week to resolve this date conflict.

Mr. Sullivan stated that two removal actions are being planned. The Remedial Action Work Plan for Buildings 1207 and 1209 for Lead Removal was sent to the Technical Review Committee, the agencies, and the City. Mr. Sullivan offered copies of any documents to interested members. Ernie Galang added that the comment period ends on 21 May 1999; excavation will begin on 7 June.

Mr. Galang added that an additional six samples will be taken from the driveway and the carports to determine the extent of the excavation. Mr. Hehn inquired if the size of the excavation may expand if necessary, and Mr. Galang replied in the affirmative.

An addendum was issued to the sampling plan for the TPH removal action in the Building 1311 area, with the comment period ending 24 May 1999. Additional delineation sampling is taking place.

Mr. Hehn distributed a press release from the EPA regarding dioxin discharges on Bay water; this does not impact the current Site 12 investigation.

## **VI. Draft Annual Groundwater Monitoring Report**

Craig Freeman, TtEMI, gave the following presentation.

### *Presentation outline*

- Objectives and background
- Sampling methods and quality control
- Monitored natural attenuation
- Data evaluation and analytes of concern
- Site example
- Conclusions

### *Groundwater monitoring objectives*

- Support primary cleanup efforts
  - RI (CERCLA substances)
    - Final Onshore RI Report
  - Corrective action plan (petroleum)
    - Draft Final Corrective Action Plan

- Identify analytes of concern
- Delineate extent of contamination
- Assess analyte migration and attenuation

#### *Background*

- Extensive network of monitoring wells
  - 84 wells on TI (9 sites or combined sites)
  - 6 wells at the Yerba Buena Island (YBI) landfill site
  - More wells, if needed, will be installed in 1999
- Large body of groundwater data
  - Groundwater status report in 1996 and 1997
- Samples collected in January, May, August, and November 1998
  - Results from first 3 events briefly presented in May, October, and December data summaries
- Current report presents all groundwater data
- Four sampling events proposed for 1999/2000

Mr. Sullivan added that there are also a number of smaller wells that are not in the Installation Restoration (IR) Program. These are at various isolated, small USTs, most of which are at TI, and one at YBI. Mr. Freeman added that as these are UST site wells, they are not sampled. However, UST sites adjoining these sites were examined in the report.

#### *Sampling Methods*

- Sampling conducted according to approved Field Sampling Plan
- Standard collection procedures
- Full spectrum analysis
- High quality data using EPA-approved laboratory methods

#### *Comprehensive analysis of samples*

- Off-site laboratory analyses
  - (23) Filtered (water soluble) and unfiltered (water and particulates) metals, with focus on the former. Unfiltered sampling over time reflected an apparent decrease of contamination that is actually caused by the decrease of dirt entering the samples. With filtered sampling conducted this year, some concentrations have increased.
  - VOCs (33)
  - SVOCs (64)
  - TPH (gas, diesel, and motor oil)
  - Other analyte suites
- Onsite lab data
  - Field test kit analyses (time-sensitive parameters)
- Data collected at well head
  - High-precision field equipment (time- and oxygen-sensitive parameters)

#### *Quality control measures and results*

- Collected and analyzed in accordance with approved Quality Assurance Plan (QAP)
- Complete sets of QC samples: duplicates, matrix spikes, lab control spikes, and equipment and trip blanks)
  - For example, 1 out of 10 samples were collected as blind duplicates
- Exceeded data quality completeness goal

#### *Monitoring natural attenuation processes*

- Monitored natural attenuation is the assessment of physical, chemical, and biological processes that reduce the mass, toxicity, mobility, volume, and concentration of contaminants
- Studied at petroleum and solvent sites
- Samples from selected wells analyzed for conditions and compounds that indicate the status of contaminant degradation

#### *Evaluation of data*

- 1998 sampling results
- Comparison to Ambient Water Quality Criteria (AWQC) for the protection of saltwater life
  - Analyte-specific criterion
- Comparison to Regional Water Quality Control Board (RWQCB) proposed TPH screening criterion
  - 1.4 milligrams per liter (mg/L)

Mr. Freeman referred to a table reflecting analytes of concern.

#### *Site 25–Seaplane maintenance area*

- Three wells sampled semiannually
- Measured and determined groundwater flow direction
- Analyzed samples for TPH, VOCs, SVOCs, and metals
- Also examined data from 2 adjoining underground storage tank (UST) studies
- Results
  - Elevated TPH (gasoline) in well 25-MW02
  - Consistent with other investigations
  - Elevated benzene, lead, and arsenic
- Focused investigation under CAP
- Magnesium peroxide remedial technology demonstration

#### *Conclusions*

- Large, basewide sampling program
- Detailed information and recommendations in report
- Supporting primary cleanup efforts
  - Final Onshore RI Report
  - Draft Final CAP
- Remediation demonstrations in progress

There is also a proposed biosparging/bioventing demonstration for Site 6 at a later date.

## **VII. Oxygen Release Compound (ORC) Demo at Site 25**

*Enhanced bioremediation at Site 25 on 19 May 1999.*

- Participating vendors: Regenesis Bioremediation Products and Precision Sampling, Inc.
- Use of oxygen release compound (ORC) to increase aerobic bioremediation
- $\text{MgO}_2 + \text{H}_2\text{O} \rightarrow \frac{1}{2} \text{O}_2 + \text{Mg}(\text{OH})_2$   
(magnesium peroxide to magnesium hydroxide)
- Trial soil boring adjacent to well 25-MW02
- Follow-up groundwater monitoring

Mr. Freeman and Mr. Sullivan encouraged RAB members to attend the demonstration at Building 570. Mr. Hehn suggested that the process be done monthly on one well in order to detect a pattern. There is not much information on the effect of brackish conditions on the product.

Mr. Brennan inquired if this will be a one-shot effort. Mr. Sullivan replied that this limited demonstration is a trial that precedes the more complex pilot test. Mr. Freeman added that the area chosen is ideal for this type of demonstration.

Jack Savage inquired if the process is expensive. Mr. Sullivan replied that the cost will eventually be evaluated, adding that the application is not proprietary; the chemical can be purchased and any contractor can do the installation.

Mr. Hehn inquired how many pounds will be injected. Mr. Freeman replied that he assumed that it will be a two-inch Geoprobe boring. He referred questions to Penny Wilson, environmental engineer.

Mr. Sullivan added that for future demonstrations and projects, the Navy will ensure that the agencies and the RAB are involved.

## **PROGRAM UPDATES**

### **VIII. General Updates**

#### **Announcements**

Mr. Sullivan announced that installation coordinator Richard Knapp, TtEMI, has been replaced by Jerry Wickham, who has been working on the project for the last several months. Mr. Wickham served as the installation coordinator at Sierra Army Depot since 1990.

### **3 May 1999 RPM/BCT Meeting**

Among the topics discussed were: both the Site 12 and the overall onshore RI reports, the priorities and schedules and milestones for Site 12, the community relations program, risk communication strategies, groundwater beneficial uses, final onshore RI, Draft Fuel Line CAP Work Plan and site reorganization, in addition to several action items.

Mr. Hehn commented that during the meeting before last, he made extensive comments on the dioxin issue that were too briefly mentioned in the minutes. He suggested that the substance of comments be more adequately covered.

The BCT draft minutes will be received within the next week.

### **Progress Report on TPH Screening and Cleanup Levels**

A draft technical report is still pending from Patel Labs; in the next month, a meeting will be scheduled with the agencies.

## **IX. Environmental Document Status**

Mr. Sullivan distributed the document schedule. He noted that the Draft Final Fuel Line RI/CAP Work Plan will not be available on 8 June, as reflected on the agenda. This comment period is extended until Monday, 24 May 1999.

## **OTHER BUSINESS:**

### **X. Organizational Business**

#### **Site 12 Lead Removal Field Trip**

Mr. Galang suggested the 8th of June for the field trip. An announcement will be issued with the final date, along with a request to call for any last-minute changes. Mr. Sullivan encouraged members to provide e-mail addresses for announcements. This field trip may be concurrent with the TPH sampling.

#### **RAB Operating Guidelines**

Mr. Sullivan encouraged members to give suggestions regarding updates. Suggestions will be discussed during the next interim meeting and possibly at the next RAB meeting.

#### **TAPP**

The Technical Review Subcommittee will receive the complete records on a successful TAPP proposal at Alameda.

Mr. Hehn suggested that a \$2,500 TAPP proposal be prepared for an outside technical consultant

to assist with review of documents. He suggested the possibility of utilizing small TAPP grants for periodic document review by a consultant, while one large TAPP grant for consultant services is in process.

Mr. Sullivan suggested that prior to the June RAB meeting, a short overview on the TAPP program be given.

#### **RAB Newsletter**

Ms. LaPierre offered to work on a masthead for the newsletter. Mr. Hehn encouraged members to provide assistance on production of the newsletter.

### **XI. Open Questions/Discussion**

Mr. Sullivan called for questions or discussion topics; none were voiced.

### **XII. Proposed Agenda Items for Next Meetings and Review of New Action Items**

#### **June**

Draft Final Site 12 OU RI Report

TAPP Program

Inclusion of the Draft Final Fuel Line Work Plan depends on the revised delivery date

### **XIII. Closing Remarks/End of Meeting**

Mr. Sullivan reviewed the following meeting schedule:

Next Regular Meeting:	7:00 p.m. Tuesday, 15 June 1999 Casa de la Vista, Treasure Island
Interim Meeting:	6:30 p.m. Wednesday, 2 June 1999 PG&E office
BCT/RPM Meeting:	9:30 a.m. Monday, 7 June 1999 Geomatrix Consultants, Oakland

Mr. Sullivan adjourned the meeting at 9:36 p.m.

## **ACTION ITEMS**

1. Mr. Sullivan suggested that TtEMI derive comments from the meeting minutes for inclusion in the Site 12 RI.
2. Ms. Walters suggested a brainstorming session to resolve the conflict between the issue date of the Site 12 RI and the leasing deadline.
3. Mr. Sullivan suggested that prior to the June RAB meeting, a short overview on the TAPP program be given.