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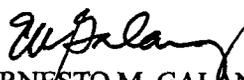
From: Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command

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

Encl: (1) Restoration Advisory Board (RAB) Final Meeting Minutes – 16 February 1999
(2) Restoration Advisory Board (RAB) Final Meeting Minutes – 16 March 1999
(3) Restoration Advisory Board (RAB) Final Meeting Minutes – 20 April 1999

1. Enclosure (1) through (3) are 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	
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**NAVAL STATION TREASURE ISLAND
RESTORATION ADVISORY BOARD MEETING MINUTES**

**February 16, 1999
Meeting No. 53**

The Naval Station Treasure Island (NAVSTA TI) Restoration Advisory Board (RAB) met on 16 February 1999 at 7:18 p.m. at Casa de la Vista, NAVSTA TI. The goals of the meeting were to: 1) have discussion/approval of the 17 November 1998 and 19 January 1999 minutes, 2) provide time for the City of San Francisco, 3) discuss the removal actions at Site 12, 4) discuss status of documents regarding vertical extent, total petroleum hydrocarbons (TPH) screening and human health risk scenarios, 5) discuss groundwater data status for IR and UST sites, 6) discuss the Defense Environmental Restoration Task Force (DERTF) and RAB Caucus meetings, 7) receive general updates, 8) review organizational business, 9) discuss upcoming environmental report review schedule, 10) provide open questions and discussion, and 11) 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 7:18 p.m.

Discussion/Approval of Agenda

Mr. Sullivan called for comments on the agenda. There were no comments.

II. Public Comment

Mr. Sullivan introduced Lieutenant Mike Gough, the new Officer in Charge (OIC) at the Caretaker Site Office Treasure Island. Lt. Gough briefly explained that during the transition phase between Navy and City ownership, he will maintain the operational condition of the TI and Hunters Point

(HP) bases, with the possibility of being assigned additional bases in the future. He is based in Building 1 at TI; he encouraged members to contact him with any questions during the transition from the Navy to the City. (415) 743-4720.

III. Discussion/Approval of the 17 November 1998 and 19 January 1999 Minutes

17 November 1998 Minutes

Christine Shirley, Arc Ecology, stated that on page 11, the term "thaliates" should be corrected to "phthalates." David Rist, Department of Toxic Substances Control (DTSC) stated that on page 5, second paragraph, the sentence "There are some very low concentrations of dioxins at the West..." should end with "debris disposal area and the North side suspected burn pit." Mr. Rist also noted that, on page 6, second sentence of the sixth paragraph should read "For example one area on Site 6", not "Area 1".

19 January 1999 Minutes

Mr. Sullivan stated that on pages 2 and 13, the comment period for the TSCA Lead 403 Rule was extended to March 1, not March 30. Mr. Rist stated that on pages 1 and 13, Stan Phillippe's title should be "Chief, Office of Military Facilities, CA DTSC."

Nathan Brennan moved to accept the 17 November 1998 and 19 January 1999 minutes with the corrections. All were in favor with the stipulation that Mr. Sullivan would further review the November and January transcripts to ensure that all the meeting information was captured in the minutes. (There was no December 1998 meeting.)

IV. City of San Francisco

Martha Walters, San Francisco Department of Public Health, announced the new Director of Development, Stephen Proud, who replaced Christine Tajada. He is currently working on the Economic Development Conveyance (EDC) and other development issues for TI. She added that the TI Development Authority (TIDA) will issue a master developer RFQ this summer. At the last TIDA meeting, the board confirmed TI Enterprises as the marina developer. The developer will enter into negotiations with the City of San Francisco to reach an agreement regarding the future development plans for the marina and Clipper Cove area.

Ms. Walters also stated that she will be more than happy to provide copies of the TIDA minutes. She announced that the next TIDA meeting will be on March 10 at City Hall, fourth floor.

Richard Hansen inquired what the relationship is between the master developer and the marina development. Ms. Walters indicated that it has yet to be determined. She added that they must work closely together, however there is some contention about having chosen the marina development in front of the master developer. The push is to keep generating revenue for the City, first through the housing and second from the marina.

Paul Hehn inquired about the time frame on the marina development. Ms. Walters replied that it depends on the cleanup, and they are working with the BCT to ensure that the offshore remedial investigation (RI) is conducted at an accelerated pace. The time frame will be part of the negotiations, but it should be within the next year or two, as there are a lot of different issues to be addressed. Seismic issues regarding the dike area is going to be the primary issue in terms of construction, as well as dealing with the environmental contamination.

BRAC CLEAN-UP PROCESS:

V. Removal Actions at IR Site 12

Mr. Sullivan explained that removal has begun at the 1300 housing area where the TPH and groundwater contamination exceeds 1.4 mg/L; and the site from Building 1207 and 1209, where there is some lead concentration. A decision was made by the Navy, the City and the regulatory managers to begin removal, rather than to continue to characterize such a small site. Sampling would be conducted as part of the removal. He introduced Ed Ho, Tetra Tech EM Inc. (TtEMI), who gave a briefing on the removal actions.

Technical Background

Lead Site - Building 1209

Suspected 1940s Burn Pit
High Concentration: 1420 mg/kg.
Cleanup Goal: 400 mg/kg

TPH Site - Building 1311

High Concentration: 12,550 mg/kg.
Cleanup Goal: 447 mg/kg
High Concentration: 3.4 mg/L
Cleanup Goal: 1.4 mg/l

Administrative Framework

Leasing Deadline - August 1, 1999

Lead: Time Critical Removal Action

Removal Site Evaluation/Action Memo

Construction Oversight Work Plan (COWP) - TtEMI will oversee the Remedial Action Contract (RAC) work by IT Corp.

Both documents are completed drafts that will be submitted for review as early as the following week, with a 30-day public comment period.

TPH - not a CERCLA contaminant.

Working Screening Levels (1.4 mg/L; 447 mg/kg)- these screening levels were reached through agreement with the regulatory agencies for Site 12

Corrective Action Plan (CAP), COWP - (Both CAP and COWP will be available for review by next week, as it is on the same schedule as the lead documents.)

Groundwater Treatment System Design - TtEMI will be recommending the technology which IT Corp. will execute

Close-Out Reports - submitted by August 1 for both areas

Lead Removal Action - Sampling will continue until the concentration is below 400 mg/kg

- Excavation Delineation - RAC sampling at least 9 more locations prior to excavation
- Soil Excavation, Disposal Off-Site to a Class 2 landfill
- Confirmation Sampling - TtEMI
- Backfill, Restoration

Jack Savage inquired where the backfill will originate from. Mr. Ho replied that it will probably come from a site off TI. Mr. Sullivan confirmed that it will be clean construction backfill imported from off the island.

TPH Removal Action

Excavation Delineation - RAC sampling at least 9 more locations prior to excavation

Soil Excavation, Disposal Off-Site

Confirmation Sampling - TtEMI

Install Groundwater Treatment System

Backfill, Restoration

Groundwater Treatment System Operation & Monitoring - operation will continue until concentrations fall below screening levels

Schedules

Submit Lead and TPH Removal Action Close-Out Reports for Review by August 1, 1999

Mr. Ho explained that they are slightly ahead of schedule, which will allow extra time during the actual field work.

Ms. Shirley inquired how the Lead Removal Site Evaluation/Action Memo and COWP, and the TPH CAP and COWP, relate to the Draft Technical Memorandum for Sampling Analysis and Delineation of Lead Contaminated Soil at Site 12 (February 1999) and Additional Characterization of Lead in Soil in the Vicinity of Buildings 1207 and 1209 (November 1998). Mr. Sullivan explained that prior to the removal action, TtEMI was going to do some additional characterization. However, it was decided to go ahead with the removal, and instead, IT Corp. is now doing the work that TtEMI would have done in preparation for the removal.

Mr. Ho explained that this February 1999 draft is IT Corp.'s Work Plan. Mr. Sullivan stated that the IT Corp. draft relates to the actual removal, whereas the TtEMI documents relate to the oversight of that removal as well as the close-out reports. Mr. Sullivan added that the IT Corp. and TtEMI documents should mesh together.

Ms. Shirley pointed out that the November 1998 document calls for 36 soil samples to be collected from 12 borings; the most current document states that 18 soil samples are to be collected from 9 borings. Mr. Sullivan explained that the November 1998 document is superseded by the February 1999 document and the following TtEMI documents. Ms. Shirley remarked that the February 1999 document should have indicated this. Mr. Sullivan agreed, stating that the pending TtEMI document will include a cover letter that clarifies the progression from one document to the next.

Ms. Shirley asked how deep the excavations will be. Mr. Ho replied that for TPH, excavation will be as deep as necessary to groundwater, and for lead, they will continue to excavate until the sampling results are less than 400 mg/kg. For TPH, they are removing the soil as a source removal and then treating the groundwater. Ms. Shirley asked if the excavation will be scheduled in consideration of the tidal influence. Mr. Brennan commented that they would likely conduct sampling through all tide levels.

Ms. Shirley further inquired how the groundwater level can be determined, as it is expected to vary with the tide cycle. Mr. Savage inquired as to the extent of variance of groundwater depth, and Richard Knapp, TtEMI, replied that it is between ten feet at the center of the island, to two feet at the shoreline. The area in question is somewhat back from the shoreline where tidal fluctuations will

not cause a large difference in water level. In response to Ms. Shirley's question, Mr. Ho stated that the goal in a TPH area is to treat the groundwater. The intent is to continue to treat the groundwater to keep it below screening levels. Residual contamination in the soil should be addressed through bioremediation, the preferred alternative.

Nathan Brennan asked if TtEMI will dig inside the burn pit. Mr. Ho replied that the burn pit will be excavated. Mr. Hehn inquired if the lead excavation will occur at selected areas, or will include the whole area. Mr. Ho replied that soil from the whole area will be removed, with the exception of the soil underneath the building, as it is inaccessible to humans. Ms. Shirley asserted that this area may not be inaccessible to humans in the future.

Mr. Sullivan stated that in conjunction with the removal, lateral samples will also be taken. Mr. Hehn remarked that it cannot be assumed that the whole site is clean when there are unknown factors. He inquired if the final report will take this into consideration. Mr. Sullivan replied that the objective is to have no restrictions placed on the property. Thus, the intent is to remove as much contamination as possible and then to provide enough data to determine whether or not the site can be designated as unrestricted.

Mr. Hehn asked where the samples will be taken and at what depth. Mr. Ho replied that samples will be taken at select intervals, and their depth will vary as they are still in the delineation process. He added that several hundred cubic yards would be excavated and then taken to a landfill that is still to be selected. Mr. Sullivan added that most of the contaminated soil is expected to be above the water table.

Mr. Hehn inquired what the TPH constituents are. Mr. Ho replied that they tend to be diesel and motor oils. Mr. Hehn remarked that the current groundwater interface may not indicate the extent of the concentration based on the variability of the groundwater level. He inquired how TtEMI will determine when the removal action is complete. Mr. Ho replied that samples will be taken on the floor of the excavation. Mr. Shirley objected to this strategy, noting there is the potential to leave too much of the source. Mr. Ho reminded Ms. Shirley that, with TPH, the goal is to address the groundwater. He added that the TPH level in the groundwater is not elevated. He added that there is one area where the soil has 12,000 mg/kg, and they intend to investigate further. That area is not below the groundwater, but may possibly be at the smear zone. Ms. Shirley stated that this smear zone presents a concern.

Mr. Ho conceded that the variation of the groundwater level is a valid concern, and that excavations under the water table in sandy soil is a balancing act that is technically challenging. He stated that

the Navy wants to remove as much of the source as possible.

Mr. Hehn inquired about the groundwater remediation options. Mr. Ho stated that the following options will be discussed in the Work Plan: oxygen-releasing compounds (ORC), biosparging, and pump-and-treat. The Work Plan will contain a preferred alternative.

Ms. Shirley requested that the Work Plan specify what type of trucks will be used to transport the dirt. She noted that, during a soil removal process at Hunters Point, bottom-opening trucks were used that caused inadvertent dispersal of the dirt into the neighborhood. Mr. Ho replied that roll-off bins will be utilized. Mr. Hehn inquired where the soil will be transported, and Mr. Ho stated that it will likely be transported to a Class 2 landfill in the East Bay. He added that the transportation plans will take the existing commute traffic into account.

Mr. Hehn inquired which Work Plan takes precedence. With respect to the technical aspects, Mr. Ho replied that the RAC would take precedence. Mr. Hehn suggested that the Work Plans be submitted to Technical Subcommittee members prior to their meeting, so that ideas can be prepared ahead of time for discussion at the meeting.

VI. Document Status

Mr. Sullivan distributed the current document status schedule. He added that it is organized by type of document, and an additional chronological schedule will follow.

Ms. Shirley inquired if the fuel line removal action was completed. Mr. Sullivan replied that the majority of the fuel lines were removed at TI, whereas the majority were closed-in-place at Yerba Buena Island (YBI), as the YBI fuel lines were in good condition due to their being high above the water table. There are possible tail ends of piping that may not have been addressed in the removal, which will be discussed in the fuel line RI Work Plan. The field work was completed, and a fuel line removal report was subsequently issued that reflected the sampling conducted by TtEMI during the removal.

Mr. Sullivan clarified that the fuel line removal report recommended areas to be further investigated, and the following fuel line RI Work Plan will investigate those areas. He added that they are now at the beginning of the investigation process.

VII. Groundwater Data Status for IR and UST Sites

Mr. Knapp distributed handouts and gave an update on the status of the groundwater monitoring program.

What is Groundwater Monitoring?

Measuring groundwater levels and regular sampling and analysis to track concentrations of contamination over time. *The elevation of the groundwater can be calculated by knowing the depth to groundwater, and essentially provides a map of the groundwater surface. Chemical sampling tracks concentrations and contamination over time.*

Groundwater is regularly sampled at locations throughout TI

"Active" wells are sampled at least once per year. Some UST sites have associated wells that are also sampled.

-83 active monitoring wells across 13 IR sites on TI and 6 at the YBI landfill (Site 11)

-Sampling data: delineates extent of contamination, shows rate of migration and attenuation, supports cleanup approaches

How is Groundwater Monitored?

Install 2- or 4-inch diameter PVC pipes ("well-casing") into the groundwater. Each casing has a slotted area ("well screen") which allows groundwater to flow into the well.

-Procedure defined in Groundwater Sampling Plan.

-Wells sampled quarterly, semiannually, or annually.

-Samples analyzed at an off-site laboratory.

How is Groundwater Monitored at TI?

- Groundwater monitoring wells installed beginning in 1992. Data presented in RI Reports, CAP, and UST reports.
- Most recent Quarterly Groundwater Sampling Report, January 1999 (sampling occurred in August 1998).
- Fourth quarter of sampling completed November 16. The 1998 annual sampling report (4 quarters) will be completed in 1999 (possibly the first week of March). *This will be a more comprehensive report, looking at the trends and data from all four quarters.*
- 1999 groundwater sampling will include 4 sampling events, two of which will provide natural attenuation data.
- Four quarterly groundwater sampling events planned in 1999.

Mr. Savage asked about the depth of the groundwater. Mr. Knapp replied that some wells have gone 50 feet and still have groundwater. The water can be seen when the well is drilled and groundwater is reached. He added that sampling is continuous; every 4 feet, soil samples are brought up and examined for saturated soil. A well can be installed to below groundwater depth and the water will rise to the level that represents the groundwater level in that area.

What is Natural Attenuation?

Natural attenuation includes physical, chemical, and biological processes that reduce the mass, toxicity, mobility, volume, and concentration of contaminants in soil and groundwater.

- May reduce chemical concentrations below action levels.
- Monitored natural attenuation may be considered a cleanup alternative.

How is Natural Attenuation in Groundwater Being Monitored?

Natural attenuation is occurring at petroleum and solvent sites.

- In May and November 1998, groundwater samples were collected at 71 and 78 wells, respectively.
- Samples analyzed for "indicator parameters," that is, chemical compounds indicating the occurrence of degradation by microorganisms.
- Degradation of petroleum hydrocarbons is consistent with changes in indicator parameters (e.g., oxygen decreased, ferrous iron increased, etc.)
- Degradation of chlorinated solvents is also occurring.
- Preliminary estimates of biodegradation rates based on two sampling events suggest that microorganisms are effectively degrading petroleum hydrocarbons and chlorinated solvents.

Results from the May and November 1998 Samples - Two TPH Sites:

Site 6 (Fire Training School); and Site 12 (Old Bunker Area)

- Biodegradation of TPH is occurring
- Indicator parameters include: decreased nitrates and sulfates; increased iron; sulfide and methane; and elevated alkalinity.
- TPH levels have decreased at the source area wells and in downgradient wells.

Examples of Decreasing Trends in Dissolved TPH Concentrations

Site 6 - Fire Training School

- TPH gasoline and diesel constantly decreased over time.

Site 12 - Old Bunker Area

- TPH extractables consistently decreased over time.

In regard to the three graphs that reflect decreasing trends in dissolved TPH concentrations, Ms. Shirley suggested that indicating the expected variations would be helpful.

Results from the May and November 1998 Samples - Solvent Site:

Site 24 - Dry Cleaning Facility

- Biodegradation of chlorinated solvents is occurring at the site.
- Concentrations of tetrachloroethene (PCE) and trichlorethene (TCE) have decreased near the source area, while concentrations of by-products (cis-1,2-Dichloroethene) have increased in downgradient wells.
- Indicator parameters include: low dissolved oxygen; presence of iron; manganese, and methane/ethane/ethene.
- Natural attenuation processes seem to effectively reduce concentrations of chlorinated solvents downgradient from the source area.

Conclusions

May and November 1998 sampling for indicator parameters:

- Confirmed the occurrence of biodegradation of petroleum hydrocarbons and chlorinated solvents.
- Allowed estimates of the biodegradation rates at NAVSTA TI sites (in progress).

Mr. Knapp stated that additional samples will be collected in 1999 to get a better handle on the rate of degradation that may be occurring. Mr. Savage inquired what becomes of the substance during degradation. Mr. Knapp replied that the microorganisms are metabolizing, or eating, the substances. Mr. Brennan remarked that the resultant substances may be worse than the initial chemicals. Mr. Knapp cited the danger of vinyl chloride being produced from the degradation of chlorinated solvents. He added that, currently, sampling shows low, if any, concentrations of vinyl chloride; however, there will probably be some increase, the extent of which remains to be seen.

Mr. Hehn inquired about the variations on Sites 21 and 24. Mr. Knapp replied that Site 21 is more subtle, in part because of lower concentrations. Mr. Hehn pointed out that Site 21 is closer to the bay margin, and noted that there will also be more marina development. Mr. Knapp acknowledged that the Site 24 source, although higher in concentration, is located more inland and in a less profile area. He stated that Site 21 will come to the forefront, along with Sites 25 and 15, with the potential marina development.

Mr. Sullivan added that the UST sites are not as far along in the analysis. The UST and non-IR UST sites are not as impacted, with the exception of Site 270 on YBI and Site 227 (behind the Fogwatch)

where the monitoring well shows increased concentrations. He noted that there has not been a UST Program Manager since September 1998, but this position is expected to be filled in the next several months.

VIII. DERTF and RAB Caucus

Ms. Shirley briefly reviewed that about 60 RAB members from across the U.S. attended the RAB Caucus. Five or six consensus statements were made to the DERTF, involving the issues of environmental justice, the meaning of community acceptance, the role of RABs and what resources RABs need. Other topics discussed were technical issues and institutional controls. The DERTF made a resolution to have a RAB representative sit at BCT meetings, which is the case at TI, but not at other sites. RAB Caucus meetings occur twice a year, but may become annual. The next meeting will be held in Washington, D.C. in May.

Mr. Sullivan provided copies of the Mare Island RAB newsletter.

PROGRAM UPDATES:

IX. General Updates

Announcements

Ms. Shirley announced that the public comment period on the TSCA 403 Draft Lead Rule has been extended until March 1. She noted that this is the first time that a public comment period was opened on the basis of environmental justice. She added that the public comment period on the rule on lead debris disposal has been extended to April 2. Mr. Sullivan mentioned that the previous week's issue of *The Guardian* published an article regarding this.

1 February 1999 RPM/BCT Meeting

Mr. Sullivan noted that no RAB member was present at this meeting. Ms. Shirley stated that she was unable to attend. The City and their consultant Geomatrix were present. The draft minutes will be received within three weeks. The topics discussed were human health risk assessment as it relates to the construction/utility worker; vertical extent of constituents; the working paper which was e-mailed to the RAB Technical Subcommittee; the cleanup schedule; and UST 270, and UST 180 adjacent to IR Site 25.

Ms. Shirley asked Mr. Sullivan to use her new e-mail address, rather than the general Arc Ecology e-mail address.

OTHER BUSINESS:

X. Organizational Business

Ms. Shirley expressed a desire to view the removal action at IR Site 12. Mr. Sullivan agreed that a site visit for RAB members would be a good idea. He noted that in some instances health and safety training is required to enter a site, depending on proximity to the site. He agreed to plan a site visit based on IT Corp.'s field work schedule, likely in April or May.

XI. Community Co-Chair

Updated Member Roster/Membership

Mr. Hehn encouraged members to update their information on the sign-up sheet, which will be used to update the member roster.

TAPP Proposals

Mr. Hehn stated that the TAPP proposal on institutional controls is still outstanding. He suggested that Mr. Sullivan give feedback on concerns regarding the proposal. Mr. Sullivan replied that prior to the interim meeting, he will e-mail the issues put forth regarding institutional controls so that a work session on this topic could be incorporated during the meeting.

Newsletters and Fact Sheets

Mr. Hehn mentioned the possibility of putting together a newsletter as part of the public relations process. This project may potentially be supported by a TAPP grant.

XII. Upcoming Environmental Report Review Schedule

Mr. Sullivan referred RAB members to the current document schedule.

XIII. Open Questions/Discussion

Mr. Sullivan called for questions or topics for discussion. Regarding vertical extent of contamination at various IR sites, Mr. Hehn stated that as a conclusion is reached as to the extent of contamination and decision factors regarding additional sampling, the topic can be added to the

agenda to keep RAB members abreast of the developments. Mr. Sullivan stated that it may be a potential topic on the March agenda.

XIV. Proposed Agenda Items for Next Meetings and Review of New Action Items

Mr. Sullivan reviewed the following agenda topics for upcoming meetings:

March

Draft Final Site 12 RI Report
Draft Final Offshore RI Report
CAP Pilot Test and Focused Investigation Plans
Draft Fuel Line RI Work Plan

April

Final Onshore RI Report (tentative)

Unscheduled

Draft EIS
Final CAP for Petroleum Sites (affected by screening levels)
Introduction to the Geographic Study Site for the Cleanup Process
Information Repository/Administrative Record
BTAG Update

XV. Closing Remarks/End of Meeting

Mr. Sullivan reviewed the following meeting schedule:

Next Regular Meetings: 7:00 p.m. Tuesday, 16 March 1999
Casa de la Vista, Treasure Island

7:00 p.m. Tuesday, 20 April 1999
Casa de la Vista, Treasure Island

Interim Meeting: 6:30 p.m. Wednesday, 3 March 1999
Location at PG&E office

BCT/RPM Meeting

9:30 a.m. Monday, 1 March 1999
Geomatrix Consultants
100 Pine St., 10th Floor, SF

TI Development Authority Meeting: 1:00 p.m. Wednesday, 10 March 1999
City Hall, 4th Floor, San Francisco

Mr. Sullivan adjourned the meeting at 9:30 p.m.

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

**March 16, 1999
Meeting No. 54**

The Naval Station Treasure Island (NAVSTA TI) Restoration Advisory Board (RAB) met on 16 March 1999 at 7:04 p.m. at Casa de la Vista, NAVSTA TI. The goals of the meeting were to: 1) have discussion/approval of the 16 February 1999 minutes, 2) provide time for the City of San Francisco to update the RAB on city programs, 3) discuss the Draft Final Offshore OU RI report, 4) discuss the Draft Fuel Line CAP Work Plan, 5) discuss the Draft Field Sampling Analysis Plan (FSAP) for CAP Sites, 6) receive general updates, 7) discuss the status of environmental documents, 8) review organizational business, 9) provide open questions and discussion, and 10) 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 7:04 p.m.

Discussion/Approval of Agenda

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

II. Public Comment

Paul Hehn, Community Co-Chair, referred attendees to his comments on the Site 12 lead and petroleum hydrocarbon removal action, his statement to the Treasure Island Redevelopment Authority regarding the RAB's interest in securing a seat at the Citizen's Advisory Committee, and a draft TI RAB member contact list. He encouraged attendees to update their information on the contact list.

Mr. Sullivan expressed the need to encourage community participation in RAB meetings by increasing community outreach, such as through the use of newsletters.

III. Discussion/Approval of the 16 February 1999 Minutes

19 January 1999 Minutes

David Rist, Department of Toxic Substances Control (DTSC) stated that on page 2, 19 January 1999 minutes, the last part of the first sentence should read: "Cal-EPA DTSC, instead of California."

16 February 1999 Minutes

He also pointed out an incomplete sentence on page 6, fourth paragraph, third line: "...He added that cubic hundred yards would be excavated..." That statement, made by Ed Ho of Tetra Tech EM Inc. (TtEMI), was "*several hundred cubic yards* would be excavated." In addition, on page 7, third paragraph, "roll-out beds" should be "roll-off bins."

Mr. Hehn cited page 10, third paragraph, "bay marshes" should be changed to "bay margin," and "less profile" should be changed to "lower profile area."

Richard Hansen moved to accept the 16 February 1999 minutes with the corrections; all were in favor.

IV. City of San Francisco

Martha Walters, San Francisco Department of Public Health, announced that Treasure Island Enterprises will be the new marina developer. A week and a half prior, the City met with the new developer and reviewed the environmental conditions pertinent to the site, as well as the City's concern about the timing of the investigation and subsequent cleanup of the area. On the previous day, a meeting was held with Mr. Sullivan, Ms. Waters, Assistant Secretary Cassidy, of the Navy, and others. During that meeting, it was announced that a lease agreement for the housing area was signed by John Stewart Company and the Navy. Copies of the TI Development Authority (TIDA) minutes were provided.

Ms. Walters announced that she will be replaced in June by John Chester, Department of Public Works. She hopes that he will be able to attend the April RAB meeting. Ms. Walters will remain with the City, but she will be working on a different project.

Mr. Sullivan announced that the agenda will be amended; the discussion on the FSAP will follow, as presenter Marcie Rash, TtEMI, will be leaving early.

BRAC CLEAN-UP PROCESS:

V. Draft Field Sampling Analysis (FSAP) for CAP Sites

Mr. Sullivan explained that the IR sites were moved from the CERCLA program to the petroleum program.

Ms. Rash presented the following information on Additional Sampling at Corrective Action Plan Sites 04/19, 06, 14/22, 15, 16, 20 and 25 (on the perimeter of TI):

Overview

- Corrective Action Plan (CAP) sites are sites with petroleum contamination only.
- The draft CAP report was issued on September 12, 1997.
- The draft CAP identified areas of concern (AOC) at each site.
- Site characterization must be completed before the CAP report can be finalized.
- The draft FSAP for additional sampling at the nine CAP sites was issued on March 2, 1999.

Sampling Objective

- In general, the source and type of contaminants and AOCs present at each CAP site have been identified in previous investigations and defined in the CAP.
- **Objective:** For each site, address additional sampling required to fill any data gaps regarding vertical extent of total petroleum hydrocarbons (TPH) and TPH-related contamination in soil and groundwater, where TPH concentrations exceed the proposed screening criteria (447 milligrams/kilogram, or 1.4 milligrams/liter).

Data Gap Analysis Based on Screening Criteria

- Background information on historical operations
- Hydrogeologic and geologic information
- Data from previous investigations
- Analytical data from additional sampling as identified in the Draft FSAP
- Comparison of all analytical data to proposed screening criteria for soil and groundwater
- Comparison and correlation of TPH-related contaminants (MTBE or BTEX) that do not have proposed screening criteria with TPH-extractable results

Further Characterization Required If:

- TPH > proposed screening criteria.
- TPH is not vertically or laterally delineated at any one location.

Site-Specific Example: Site 20

- Auto Hobby and Transportation Center
- Waste fluids generated from steam cleaning and degreasing of vehicles. Storage of drums containing hydraulic fluid, recycled oil, and other vehicle fluids. Operated as a gas station; four USTs.
- Four USTs removed in 1988
- Soil excavation in former UST area in 1990
- Subsurface soil is artificial fill, composed predominantly of fine- to coarse-grained silty sand
- Groundwater encountered between 0.76 and 3.21 feet below ground surface (bgs).
- Groundwater flow is to the shoreline and is not tidally influenced.

Site 20: Groundwater AOC

- TPH-gas and diesel concentrations > proposed screening criteria.
- High concentrations are localized near the northern portion of the site, in the UST excavation area.
- Most sampling locations are downgradient of the UST excavation area.
- Contaminated soil in excavation area is believed to be the source.
- TPH concentrations as high as 30 mg/L and 100 mg/L near northern site boundary
- TPH delineated by lesser concentrations to west, east, and south, but not to the north
- Proposed Additional Sampling
 - Installation of two monitoring wells outside northern boundary
 - Groundwater samples will be analyzed for TPH-purgeable and TPH-extractable
 - Monitoring wells will allow for continued monitoring of TPH in groundwater

Site 20: Soil AOCs

- Four soil AOCs identified in CAP
- One potential AOC located at former USTs 225A through 225D

Site 20: Soil AOC 2

- Shallow soil samples contain TPH up to 25,000 mg/kg.
- Nearby subsurface sample locations contain TPH below screening criteria; suggests that area is delineated vertically.
- Lateral extent is delineated to the east and west but not to the north and south.
- Proposed Additional Sampling
 - Two borings to determine lateral extent to north and south
 - Sample intervals include 0.5 to 1 and 2.5 to 3 feet bgs to determine vertical extent
 - TPH-extractable analysis

Sampling Procedures

- Draft FSAP is structured to address and follow the data quality objectives.
- All sample collection, handling, and analysis will follow documented guidance and standard procedures.
- Decontamination procedures will follow the standards.
- QA/QC procedures will follow documented standards in the FSAP and QAPP.

Conclusions

- Field work is estimated to begin mid-May.
- A technical memorandum will document results.
- All additional sampling data will be incorporated into the draft final CAP.
- Task scheduled for completion by mid-October.

Ms. Rash added that after the first round of sampling, the results will be evaluated to determine if additional sampling is necessary. She confirmed that additional borings may be taken to determine the north and south lateral extent, depending on the initial results. In response to Patricia Nelson's

inquiry, Ms. Rash confirmed that TtEMI will be sampling for BTEX, but not for lead.

Ms. Nelson inquired if the draft FSAP addressed RAB comments that were put forth some 18 months ago. Ed Ho, TtEMI, replied that the comments will be addressed in the draft final CAP. Ms. Nelson stated that their comments on the CAP report have not been addressed, and it would be helpful to know how that input is reflected in the FSAP. Mr. Sullivan suggested that the RAB comments be synopsisized and incorporated into the CAP and RI.

Ms. Nelson asked if there will be sampling for other constituents, and Ms. Rash replied that the sampling mainly concerns petroleum. Ms. Nelson commented that some of the previous RAB comments concerned the lack of analysis for other constituents. Mr. Sullivan asked Ernie Galang if there needed to be a formal response to comments if this is not part of the CERCLA program. Mr. Galang agreed that formal response wasn't necessary, but he added that they would try to respond in the draft final CAP due in October. Ms. Nelson stated that pulling out the previous comments might be helpful, given that some refer to the issue that some CAP sites should not have been pulled from the CERCLA program and that additional analytes should probably be evaluated at some of these sites.

Mr. Hehn inquired about sampling for BTEX and MTBE. Ms. Rash replied that it is part of the sampling program for some of the sites, but that no sampling is done where there has been no history. Mr. Hehn asked if TtEMI does spot checks on such sites and how the sampling will be done in rounds. Ms. Rash stated that they have an estimated 48-hour turnaround, but she said that in the schedule discussed at the end of her presentation, there was a five-day turnaround for the results. Mr. Hehn inquired if mobile labs were considered, and she replied that they were not. She said that originally they did not think there would be much sampling at the sites, and they are still unsure if there will be second and third rounds of sampling. Mr. Hehn asked how many samples are anticipated, and Ms. Rash replied that about 200 are anticipated; she will obtain the specific quantity.

VI. Draft Final Offshore OU RI Report

Mr. Sullivan introduced Cindi Rose, project manager, TtEMI, who gave a presentation on the draft final Offshore RI report and the status of the draft Offshore FS.

Draft Final Remedial Investigation Report for the Offshore Sediments Operable Unit

What's New in the Draft Final Report?

- Food chain modeling to assess risk to avian (bird) receptors
- Additional statistical evaluations to determine relationship between amphipod (shrimp-like organisms that live in the sediment) toxicity and chemical and physical factors

Ms. Rose explained that additional correlations were done, using the Spearman rank. There were comparisons of individual metals to toxicity, and of individual metals and brain size. A discriminate function analysis was performed to determine: 1) if toxicity could be grouped into a toxic group and

a nontoxic group, using 68% survival to try to group them; and 2) what contributed most to toxicity. Overall, the results supported their conclusion presented in the draft RI that there is a strong relationship between grain size and toxicity, and between metals and toxicity. The metals that contributed the most to the toxicity were copper, nickel, chromium, and arsenic. Of those, the nickel concentrations exceeded ambient sediment concentrations at two locations. The metals below San Francisco Bay ambient concentrations appear to be contributing somewhat to the toxicity.

How Did We Do the Food Chain Modeling?

- Compared toxicity reference value (TRV) to site-specific doses to come up with hazard quotients (HQ).
 $HQ = \text{Dose}/\text{TRV}$
- HQs allow us to estimate risk to the specific receptors at NAVSTA TI

Food chain modeling was done at Areas C, D, and E as there appeared to be a complete pathway due to the shallow water habitat. Areas A, B, and G are deeper water, and there is not a complete pathway for the sediment to the avian receptors. TtEMI modeled all chemicals for which toxicity reference values are available, particularly for metals, pesticides, PCBs, and TPH. Representative species were selected, such as the black cormorant that feeds on fish, the willet that feeds close to sediment on the beach area, and the peregrine falcon that feeds on shorebirds.

How the Dose Was Calculated (Example: lead in willet)

$$\text{Dose} = \frac{\left(\begin{array}{l} \text{(amount of} \\ \text{(lead in prey} \\ \text{(} \end{array} \right) \times \left(\begin{array}{l} \text{amount} \\ \text{of prey} \\ \text{willet} \\ \text{eats/day} \end{array} \right) + \left(\begin{array}{l} \text{(amount} \\ \text{(of lead} \\ \text{(in the} \\ \text{(sediment} \end{array} \right) \times \left(\begin{array}{l} \text{amount of} \\ \text{sediment} \\ \text{)} \\ \text{ingests/day)} \end{array} \right) \times \left(\begin{array}{l} \text{amount of} \\ \text{time willet} \\ \text{spends eating} \\ \text{at the site} \end{array} \right)}{\text{willet body weight}}$$

Two Types of Doses

- High Dose - Maximum dose avian receptor is ingesting. Based on conservative assumptions of exposure (high ingestion rates, lowest body weight). Example: a small willet that eats at only one sample location with the highest concentration
- Low Dose - Average dose receptor is ingesting. Based on less conservative assumptions (lower ingestion rates, higher body weight). Example: an average-size willet that does not necessarily eat at a high concentration site

Two Types of HQs Identify High-risk and Low-risk Sites
“Worst Case Scenario”

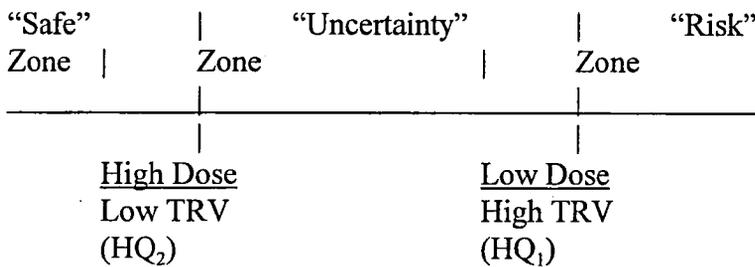
$$HQ_1 = \frac{\text{low dose}}{\text{high TRV}}$$

If the low dose to the willet is higher than the TRV that causes adverse effects, risk is likely.

$$HQ_2 = \frac{\text{high dose}}{\text{low TRV}}$$

If the high dose to the willet is lower than the TRV that does not cause adverse effects, risk is minimal.

Identifying High-risk and Low-risk Sites



Ms. Rose stated that TI was concluded to be in the Safe and Uncertainty zones.

Refining the Uncertainty Zone

Calculate $HQ_3 = \frac{\text{high dose}}{\text{high TRV}}$

- $HQ_3 > 1$ = indicates probable risk
- $HQ_3 < 1$ = indicates potential but not probable risk

Results of Food Chain Analysis

- Based on conservative assumptions (high dose/low TRV), there is potential but not probable risk to the cormorant and the willet from copper, lead, and nickel
 - copper, lead, and nickel all below ambient sediment; therefore no incremental risk
 - copper naturally bioaccumulates in crab tissue as an essential nutrient
- Incremental risk to the peregrine falcon resulting from exposure to lead and mercury in area E sediments may exist if conservative assumptions are true (high dose/low TRV)

Ms. Rose explained that no $HQ_3 > 1$ was found for lead and mercury at two locations for the peregrine. This is an even more conservative estimate of risk, since TtEMI is not modeling directly to the peregrine. Rather, they used the food chain model for the willet preying on the invertebrates to come up with the daily dose. The dose was calculated from a sample location with the highest

sediment concentration and multiplied by an exposure time of 180 days to come up with the daily dose.

Overall Conclusions

- Based on the information and data evaluated as part of the offshore investigation, chemical concentrations do not pose enough risk to aquatic and avian receptors to require action.
- Therefore, no further investigation or action is recommended for any of the offshore area of NAVSTA TI.

Nathan Brennan inquired how the ambient values were selected. Ms. Rose replied that the Regional Water Quality Control Board (RWQCB) established the ambient values in April 1990. Mr. Hehn commented that one of the issues discussed in the original report was the mortality rate of the sea urchins. Ms. Rose stated that that type of bioassay caused recurring laboratory problems with ammonia. Mr. Hehn inquired if the survival rate obtained for the amphipods was acceptable. Ms. Rose replied that they did not analyze the amphipods; they did more statistical evaluations to determine the link between toxicity and either sediment or physical factors. Mr. Hehn inquired if the survival rate was the same as in the original report. Ms. Rose confirmed that it was.

Ms. Nelson stated that she found some comprehensive problems in the Offshore report. She said that she would contact Chris Shirley, Arc Ecology, regarding those issues. Ms. Rose replied that they addressed the written comments in the draft. Ms. Nelson inquired if the comments put forth in RAB meetings were also addressed. Ms. Rose replied that only the written, submitted comments were addressed. Ms. Nelson stated that the comments in the RAB minutes should also be constituted as written comments.

Alice LaPierre asked how the hazard quotient in Ms. Rose's equation was calculated over time. Ms. Rose replied that it was kilograms per kilogram per day. The estimate was not based on an actual willet, but on its prey, such as clams, crabs, and fish, and on a feeding time of 180 days.

Mr. Sullivan commented that the feasibility study (FS) has begun, which dovetails with the draft Final Offshore report. Mr. Ho confirmed that the preliminary draft FS is currently being prepared; it is too early to enumerate the recommendations at this point, but that they would harmonize with the RI. Mr. Sullivan stated that the Final Offshore report should be ready by Friday, and that the Technical Review Subcommittee should receive it by early next week. He asked Ms. Rose to include Mr. Brennan in the mailing list. Mr. Sullivan welcomed other attendees to inform him should they desire to receive copies of any available documents.

VII. Draft Fuel Line CAP Work Plan

Mr. Ho stated that the Fuel Line program is moving parallel with the CAP program. There are a number of TPH-related activities currently occurring at TI. Mr. Sullivan mentioned that the Fuel Line program was not originally part of the RI program. Where the fuel lines cross IR sites, they are

incorporated as part of the IR sites. Mr. Ho's presentation relates to fuel lines which lie outside of those sites.

Fuel Line Remedial Investigation Work Plan

Project Scope

- Background, Previous Actions
 - 12/94, Subsurface Consultants Investigation
 - 4/98, Cal-Inc Removal Action
- Purpose - To complete characterization of Fuel Line contamination
- Future Actions
 - Provide information for Fuel Line CAP
 - Leads to Fuel Line Remedial Actions

Methodology

- Identify data gaps
 - Staining of trench walls
 - Sample Concentrations above 447 mg/kg TPH
 - Previously removed Fuel Line locations
 - SCAPS
- Initial Round: 70-90 locations, smear zone (between high and low tide)
- Sample Step-Outs until criteria are met
- Sample groundwater, wells installed as needed
- Standard Sampling Procedures
 - Geoprobe
 - Analyze for natural attenuation parameters (passive bioremediation, such as dissolved oxygen and oxidation states of metals)
- Standard QA/QC Procedures
- Standard Health and Safety Procedures

Next Steps

- Provide Information for Fuel Line CAP
- Leads to Fuel Line Remedial Actions
- Harmonize with CAP program

Ms. Nelson commented that the field work of the concurrent CAP and Fuel Line program should be coordinated. Further, where the fuel lines meet with some of the CAP sites, this information should be shared with the CAP program. Also, the analytes in addition to the TPH suite, including BTEX, lead and MTBE, should be addressed. She noted that the analytes being evaluated in the fuel lines were not identified, but that there is a direct relationship between fuel lines and some of the sites, and they may connect with other CERCLA and CAP sites. She suggested that where those connections occur, the CAP fuel lines and CERCLA sites should be looked at systemically, rather than individually and in three separate programs.

She inquired about the schedule for the Fuel Line RI Work Plan, and specifically asked if it will be concurrent to the other CAP work. Mr. Ho replied that where the fuel line does cross the CAP sites, the fuel line segment is incorporated into the CAP itself, such as Site 15. Where the fuel line crosses the CERCLA sites, the investigation will remain part of the Fuel Line program. However, the characterization will include CERCLA contaminants, including chlorinated solvents and metals, in addition to TPH. Ms. Nelson inquired if that is clearly specified in the Work Plan and if those constituents have been identified in both the Fuel Line CAP and the other CAP Work Plan. Mr. Ho replied that the latter does not pertain to CERCLA sites or contaminants.

Ms. Nelson stated that previous RAB comments regarding a systemic view of the CERCLA and CAP sites have not been addressed. Mr. Ho replied that TtEMI is viewing the sites systemically. He pointed out that the CAP program data will not be part of the CERCLA site, but that the CAP fuel lines that cross CERCLA sites will include CERCLA contaminant analysis. Ms. Nelson asked whether the CAP sites will be returned to the CERCLA program if the results are positive. Mr. Ho replied that, by definition, it would already be in the CERCLA program. She stated that perhaps there is an exception of the CAP sites wherein there might be migration along the fuel lines. She recalled that some of the CERCLA constituents were not fully investigated at those CERCLA sites that are now part of the CAP program, as she previously commented on Sites 4, 19, and 24. Mr. Knapp of TtEMI said that regarding the groundwater monitoring program throughout the installation, the contractor is not excluding CERCLA contaminants; they are looking at CERCLA contaminants within the CAP sites, even though the nine sites are transferred into the CAP program.

Mr. Sullivan suggested that this situation be viewed in terms of multiple scenarios: 1) where there are fuel lines with no other sites (such as in Yerba Buena Island (YBI)); 2) where a fuel line crosses a CAP site, such as in IR 15, that fuel line segment is absorbed in that CAP site; and 3) where a fuel line crosses a CERCLA IR site, the fuel line is viewed separately from the rest of the CERCLA site, but the CERCLA contaminants of concern are included in the evaluation.

Mr. Hehn inquired how the data from the three separate programs will be presented in a holistic fashion. Mr. Ho reiterated Mr. Sullivan's prior remark that the fuel line that crosses the CAP site will essentially be absorbed in the CAP. He added that in the case where it crosses a CERCLA site, it will be incorporated into the FS, the IR program for the CERCLA site. Ms. Nelson asked if that would hold even though there might be a conduit between the CERCLA and CAP sites, such as the perimeter pipeline that actually crosses into other CERCLA sites. Mr. Ho replied that there are a multitude of utility lines crisscrossing TI; it's not really considered a conduit between the CERCLA site and the CAP site.

Mr. Hehn inquired if the RAB will be presented with a map that reflects the combined data, a request that was put forth a few years ago. He expressed his concern that during the last BCT meeting, it was discussed that the boundaries of Sites 24 and 17 were to be changed. Mr. Hehn remarked that putting those two sites into two separate programs may remove the correlation between the two sites. He noted that some sites that have CERCLA contaminants are in the Fuel Line program. Mr. Hehn stated that it is a continual challenge to fuse together inconsistent data.

Mr. Sullivan expressed his concern with respect to understanding the extent of one site's proximity to another. He said that it's important to be careful at the interface of adjacent or proximate sites as opposed to sites that are on opposite ends of the base. He pointed out that the groundwater program has a comprehensive picture of the whole base. Ms. Nelson remarked that at one point, Site 6 had very high benzene and it was decided not to sample for benzene. She pointed out that Site 6 is adjacent to Site 12, noting a lack of diligence in keeping the sites separate. Although Sites 6 and 12 may have different industrial uses, they are nonetheless adjacent to each other. The groundwater as a carrier may explain a migration pathway that may not be seen in soil.

Similarly, Sites 4, 19 and 24 are bisected by a fuel line. Additional data through groundwater and vertical extent sampling may provide a bigger picture. However, without all the data, it is difficult to give a status of the base, because no one has looked at the whole picture. Further, she added that the data itself has been limited in scope. To separate the serious sites from the less serious sites, prior to receiving the results, demonstrates a lack of diligence.

She suggested obtaining a TAPP grant to hire a consultant to put together the whole picture for the RAB. Mr. Knapp commented that the Site 12 OU RI report is due at the end of April, and it presents information at Sites 6 and 20 with regard to Site 12. Ms. Nelson replied that this is merely three sites out of about 30, adding that this progress has taken almost five years to attain.

Mr. Sullivan stated that he is trying to get a better handle on what sites are considered to be proximate to each other. He conceded that when sites border each other, there is a potential for interaction. There is a question as to the issue of proximity and at what point sites should be evaluated with each other, without pulling all of the sites into one entity. Ms. Nelson suggested dividing TI and YBI into cross-sections of north, south, east and west. The east shore area that has the heaviest usage can be considered one operable unit. She added that this could have been done years ago.

Mr. Hehn remarked that synthesizing the three separate programs into a whole remains a challenge. Ms. Nelson stated that the community should benefit from the comments put forth. Although more data is available with additional sampling pending, the process still seems to be in the initial stages in that there is no holistic view of the situation. Mr. Sullivan noted that three or four years ago, Sharon Tobias attempted to look at Areas CC and DD in regard to viewing them as separate, or correlated, areas.

Ms. Nelson suggested that an interim meeting be dedicated to brainstorming on how to synthesize the amount of information resulting from the Draft Final RI, CAPs and comments made some time ago. She emphasized the need to develop a concept for the next step for the FS, rather than continuing to work on individual pieces. She stated that excavation or groundwater remediation may result in digging up the entire eastern seaboard of the island in pursuit of a cleanup level, because the connections between sites have not been made.

Mr. Brennan mentioned that Mare Island utilized a TAPP grant to install a GIS system to consolidate

data. Mr. Sullivan stated that TtEMI is putting together a draft Work Plan to incorporate all of the data from the CERCLA and CAP programs. Mr. Hehn stated that a GIS system would facilitate in revealing the interaction of that data. Ms. Nelson mentioned the importance of identifying data that is not currently available, such as that pertaining to MTBE and lead.

Mr. Sullivan suggested that the brainstorming session be scheduled for the Wednesday, 7 April meeting, with the results to be submitted as an informational item to the RAB and regulators.

Mr. Hehn asked the depth of the sampling at the smear zone. Mr. Ho replied that the depth varies, as samples will be taken at the bottom of the smear zone. Mr. Hehn inquired if sampling will be taken above the smear zone. Mr. Ho said that in locations where the fuel line is very shallow and groundwater is relatively deep, there will be two samples in the boring: one near the surface at the approximate level of the pipeline and one at the smear zone. Mr. Hehn asked if it was a predetermined sample depth or if they are doing Geoprobe tests with the bore. He also asked if the field tech has an option. Mr. Ho confirmed that there is variability in program sampling.

PROGRAM UPDATES:

VIII. General Updates

Announcements

There were no additional announcements.

1 March 1999 RPM/BCT Meeting

Mr. Sullivan stated that the draft minutes are currently being reviewed and will be sent in the next two to three weeks. Among the topics discussed were: the ongoing lead removal in Site 12, Buildings 1207 and 1209; TPH removal in the 1300 area; status of Onshore RI Report on Corrective Action Plans; TPH screening levels; vertical extent; potential institutional controls for groundwater; review of the current schedule and document status; update on transfer issues; Zone 5 Finding of Suitability for Lease (FOSL); and a potential mini-FOSL for Building 62 located northeast of the base designated for light usage, such as a warehouse.

Other items discussed were: a list of sites where there is free product in groundwater, and the proposed boundary revision for Site 24. The next BCT meeting will be held on Monday, 5 April at the TtEMI office in San Francisco.

Progress Report on TPH Screening and Cleanup Levels

Mr. Sullivan stated that progress is not as far along as desired. The issue of TPH screening levels began when the Navy conducted ecotoxicological testing and presented the results in a draft report. The State suggested testing on an additional species, to which the Navy disagreed. Consequently, the State developed a mathematical factor incorporating the Navy's proposed screening level. A factor of eight accounted for not testing one of the species; an additional factor of two accounted for acute or chronic effects. The end result was that the toxicological testing was reduced by 16, from

where the 1.4 number originates. That discussion has been ongoing for about a year and a half. He noted that TI is the first base that has been affected by this issue, and therefore TI sites have been used as samples of the models. The Navy and the agencies formed a TPH working group that has been meeting approximately every quarter.

The Navy also brought in Patel Labs which developed a methodology to use in place of site-specific ecotesting. The methodology utilizes the mass of literature to equate toxicity values to fractions of TPH. This data was provided in a draft to the TPH working group. In last November's Issues Resolution Meeting, the Navy and the regulatory managers asked the BCT to use the methodology to evaluate TI. However, the methodology is still in draft form, and the petroleum fractions do not equate directly to the available historical site data. The Navy, Patel Labs, and TtEMI are currently working on applying the method to the site.

The next Issues Resolution Meeting is scheduled for April. Mr. Sullivan stated that the issue boils down to deciding on which method to use: TPH fractions vis a vis toxicity literature, or going back to site-specific ecosampling, which the Navy feels may be influenced by environmental factors outside of petroleum. If the Navy and the regulators can agree on a methodology, it will be applied to the site.

Mr. Sullivan observed that screening levels vary widely, and he noted that petroleum screening and cleanup levels are not as far along as expected. Mr. Hehn commented that the variance is partly due to site-specific requirements.

IX. Environmental Document Status

Mr. Sullivan announced two new editions of the Document Status Summary, one that is in chronological order and another that separates documents by categories. During the previous meeting, Ms. Nelson asked that the documents that will be issued in the next calendar month be identified, along with due dates for comments. As an action item, she requested that this information be provided by next month's meeting.

Ms. Nelson commended Mr. Hehn for preparing comments on the Draft Site 12 TPH and lead removal documents. She expressed her hope that comments on these documents will be included in a specific section of the transcripts and eventually addressed in the final editions. As an action item, Ms. Nelson proposed that either TtEMI or the Navy derive comments from previous transcripts so that the comments are addressed accordingly. Mr. Sullivan suggested a style change in the minutes transcript that would flag comments.

OTHER BUSINESS:

X. Organizational Business

Mr. Hehn stated that he received the revised minutes from the 1 February 1999 BCT meeting without the attachments. Mr. Galang and Mr. Sullivan explained that attachments are mailed with the final minutes, and not with the revised minutes.

RAB Newsletter

Ms. Nelson encouraged attendees to submit newsletter contributions by the next Interim meeting. A draft newsletter should be ready by the next RAB meeting. A TAPP grant may potentially be used to fund a contractor to assist with the production and mailing of the newsletter. Mr. Sullivan referred attendees to copies of the Alameda Naval Air Station (NAS) newsletter, a Navy publication produced by Gutierrez-Palmenberg, Inc. (GPI). Mr. Hehn suggested a one-page, two-sided flyer format that would be relatively easy to produce and distribute. Ms. Nelson stated that possibly two editions of newsletters could be distributed prior to the issuance of the Environmental Impact Report (EIR) to inform the community of the issue, as well as other relevant topics such as the Citizen's Advisory Committee.

Site 12 Removals Field Trip in May

Mr. Galang confirmed that the field trip is planned for May.

XI. Open Questions/Discussion

Mr. Sullivan stated that the evaluation of the outstanding TAPP proposal on institutional controls focused on: 1) its efficacy at other locations; 2) its applicability to the laws and regulations particular to TI; and 3) its efficacy in relation to potential seismic issues, not only during a seismic event but also in regard to potential seismic improvements that could change the site conditions.

The response from Washington related to the specificity of institutional controls and seismic issues to TI. Mr. Sullivan stated that no institutional controls have been proposed with the exception of groundwater, whereas the TAPP proposal considered a range of potential institutional controls that the Navy has not necessarily proposed to use at TI. The concern was that the TAPP proposal was not site-specific. Also, the Navy has not yet received a proposal from the City in regard to seismic improvements; therefore, the seismic issues in the TAPP proposal are too general as opposed to being specific to TI. Of the two issues pertaining to institutional controls and seismic issues, Mr. Hehn inquired which was the larger issue of concern for the Washington office. Mr. Sullivan replied that for both issues, the unknown factors were of concern.

Mr. Hehn stated that since institutional controls are regularly discussed, there is a need to know if that is a viable option. Mr. Brennan agreed that institutional controls should be evaluated. Mr. Sullivan remarked that there are other agencies that are evaluating the general issues regarding

institutional controls. The scope of the TAPP proposal seemed to extend beyond TI, and TAPP may not be the appropriate vehicle to evaluate institutional controls. Mr. Hehn suggested that the TAPP proposal be made more site-specific.

Mr. Brennan requested that a copy of an approved TAPP proposal be provided in order to have a better idea of what proposals the Navy will approve. Mr. Sullivan suggested a more narrow focus on institutional controls on groundwater. He added that the Navy has not yet deemed institutional controls to be necessary at a specific site. Rather than instituting such controls at Buildings 1207 and 1209, for example, the Navy has decided to conduct lead removal instead. Mr. Hehn asked Mr. Sullivan to e-mail to him a synopsis of Navy concerns, which would be forwarded to the Subcommittee in order to revise the TAPP proposal.

Mr. Galang suggested that other topics be considered for the TAPP proposal. There is a \$25,000 annual limit, with that limit being up for discussion. Mr. Sullivan stated that Mr. Galang has set aside \$25,000 for this fiscal year, which will end in September. In order to execute it, the contract would have to be completed during the summer months.

Mr. Hehn suggested that a second TAPP proposal be put together for a newsletter.

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

April

As an agreement on TPH screening has not been reached, the Final Onshore RI will not be discussed at the next meeting.

Draft Final Site 12 RI

Work Plan for Site 12 Removals

XIII. Closing Remarks/End of Meeting

Mr. Sullivan reviewed the following meeting schedule:

Next Regular Meeting:	7:00 p.m. Tuesday, 20 April 1999 Casa de la Vista, Treasure Island
Interim Meeting:	6:30 p.m. Wednesday, 7 April 1999 PG&E office
BCT/RPM Meeting:	9:30 a.m. Monday, 5 April 1999 Tetra Tech office
TI Development Authority Meeting:	1:00 p.m. Wednesday, 14 April 1999 City Hall, San Francisco

Mr. Sullivan adjourned the meeting at 9:52 p.m.

ACTION ITEMS

1. A brainstorming session on how to synthesize the information resulting from Draft Final RIs, CAPS, and comments will be scheduled as part of the April 7 Interim meeting, with the results to be submitted as an informational item to the RAB and regulators.
2. Either TtEMI or the Navy will derive comments from previous RAB meeting transcripts so that the comments are addressed accordingly. The Navy will flag current documents and insert them into the agenda.
3. Mr. Sullivan will send Mr. Hehn an approved TAPP proposal and a synopsis of Navy concerns regarding a more narrow proposal focus on institutional controls on groundwater in order to revise the TI TAPP proposal.

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

**April 20, 1999
Meeting No. 55**

The Naval Station Treasure Island (NAVSTA TI) Restoration Advisory Board (RAB) met on 20 April 1999 at 7:43 p.m. at Casa de la Vista, NAVSTA TI. The goals of the meeting were: 1) to discuss/approve the 16 March 1999 minutes, 2) to provide time for the City of San Francisco, 3) to discuss the Site 12 Operable Unit Removal Actions and Draft Final OU 12 Remedial Investigation (RI), 4) to discuss the Draft Final Offshore OU RI report, 5) to discuss the Draft Fuel Line Investigation Work Plan, 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 7:43 p.m. (The meeting start was delayed due to traffic problems on the Bay Bridge.)

Discussion/Approval of Agenda

Mr. Sullivan called for comments on the agenda; none were voiced. Mr. Sullivan noted that the meeting agenda is attached to the minutes, and was not sent out separately. The agenda will normally be sent out with the minutes, and e-mailed to those who have provided their e-mail addresses.

II. Public Comment

Mr. Sullivan called for public comments; none were voiced.

PAGE 2

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FOR ADDITIONAL INFORMATION, CONTACT:

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Phase I will be completed in approximately twelve phases, one per month. The first phase starts on 1 June, when the initial construction will be completed and 24 units will become available for occupancy. By 1 July, another 45 units will be ready. Every month thereafter, about 55 units per month will become available. The last units scheduled for completion are adjacent to the soil-impacted areas, which marks Phase II and begins in April 2000.

John Stewart Company has engaged ATC Associates of Pleasanton to prepare an Operation and Maintenance Plan for asbestos and lead-based paint. The plan is currently being revised and copies will be made available once it is finalized. John Stewart Company is doing most of the construction.

Mr. Hehn inquired what notification provisions will be included in the lease agreement regarding contaminant concerns. Mr. Levine replied that the method of disclosure is not yet resolved, nor is the lease finalized to date. He added that there is a planting/landscaping provision in the Finding of Suitability for Lease (FOSL) that precludes major soil disturbances within each unit.

Mr. Hehn emphasized the necessity to inform residents of the environmental hazards prior to moving in, in order to avoid potential negative repercussions in the public arena. Mr. Levine replied that he will forward Mr. Hehn's suggestion to the proper manager. He assured Mr. Hehn that the RAB will receive feedback.

Mr. Levine explained that during move-in, major construction activity will be taking place on unoccupied units; therefore, residents will be advised that there will be trucks on the streets for some time thereafter. Mr. Hehn inquired about the volume of soil that will be excavated, as well as the amount of time and trucks this will entail. Mr. Sullivan replied that with the two soil removal projects, the quantity removed will not be significant. Further, the work will be completed by 1 August, before the majority of tenants move in.

Mr. Hehn asked if the size and depth of the excavation were discussed at the previous interim meeting, and Patricia Nelson replied that they were not. Mr. Sullivan stated that Ed Ho of Tetra Tech EM Inc. (TtEMI) will address this issue in his presentation scheduled later in the meeting.

Dale Smith inquired about excessive moisture in the units at the Northwest area. Mr. Levine replied that they are doing moisture testing and that they are already replacing some of the carpeting. He explained that moisture damage is being disclosed as it is uncovered, adding that there may not be a perfect record of all of the damage by the time people move in.

About one dozen units showed moisture damage. In addition, about 40 or 50 units showed evidence that the carpet may have gotten moist, but there was no evidence of active bacterial growth. The units have been vacant for several years without heat, so there is uncertainty as to

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highest concentration found.

Mr. Hehn inquired how the sampling locations were selected. Mr. Brorby replied that there are three modes of selection: The first seven samples were identified based on historical features, and a grid was used to select locations. In 1998, Geomatrix collected 15 samples: four are from locations that were chosen based on the previous sampling's detection of dioxin or pesticides; and 11 were selected using every fifth gridpoint.

David Rist, DTSC, added that the historical features were identified by photographs taken since 1940. He added that the photos were cross-referenced with other data to provide a thorough analysis of the suspected contaminated areas.

The third set of sampling locations were selected based on two considerations: to collect additional information around existing sampling locations where dioxins appeared to be higher than at other areas, and to use aerial photographs to ensure that the sampling covered all the potential historical features.

Mr. Hehn asked if any samples were collected in the vicinity of a series of bunkers that had disposal trenches. Mr. Brorby replied that he did not know. He confirmed that four of the samples collected by Geomatrix were based on data from previous sampling points. Richard Knapp, TtEMI, added that they looked for areas that had some surface disturbance. They did not see any well-defined trenches, per se, except for one trench by the debris disposal area in the northwest corner.

Ms. Smith asked if there was a disposal area located inland in the Northeast section that needed further analysis. Mr. Knapp replied that the Navy had tested for petroleum hydrocarbons during the RI in that region, but at that time had not tested for dioxin.

Mr. Brorby explained that, given the apparent correlation between lead and dioxin that is elevated above background, they can use the lead data available to predict the location of dioxin contamination. Mr. Hehn replied that from a scientific viewpoint, these apparent correlations would seem to suffice when forming such conclusions. However, from a nonscientific, emotional resident's perspective, this basis may not be acceptable.

Mr. Hehn stressed that tenants may be concerned by the lack of dioxin data at their place of residence. Mr. Brorby acknowledged his awareness of this point, citing his previous experience with similar situations. He added that there is certainly no harm in continuing to remind consultants of tenant concerns.

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concerns. The other area is about 100 feet by 250 feet and is mostly covered by a road and/or buildings.

The EPA and the City also considered other issues, such as the types of use and duration, along with other contaminants present to determine that remedial action does not appear to be warranted for either site. Given this conclusion, Harlan Van Wye commented that inserting warnings in the lease for situations that do not seem to require remedial action would scare prospective tenants unnecessarily. Ms. Nelson replied that it is better to disclose relevant information so that tenants can make their own judgments, and also to prevent any misconceptions regarding intentional concealment of a material fact.

Mr. Van Wye replied that it seems unreasonable to insert an addendum to the lease regarding dioxin contaminants, given that the low levels are mostly below the ambient and do not require any action. Further, most people do not know nor are concerned about dioxin. Mr. Brennan replied that although people may not be familiar with dioxin, they can recall and have been concerned with the Love Canal and Times Beach situations.

Ms. Nelson commented that some type of disclosure is necessary for two reasons: to correct the possible perception that the site is free of contaminants and to enhance tenants' awareness of the contaminants present so that they can make an informed decision.

Mr. Rist suggested that information be made available at the rental office, as residents sometimes do not read informational handouts nor read each lease provision. Ms. Nelson suggested an orientation for tenants. Mr. Sullivan stated that the community relations program is an ongoing effort. Mr. Van Wye opined that giving warnings for "inconsequential" issues may result in tenants potentially disregarding warnings of real import.

Mr. Levine stated that the rental office would be located in Building 1. He expressed his interest in some type of disclosure. He was concerned that when tenants move in as early as next month, there may not be drawn conclusions from the EPA or others.

Ms. Walters introduced John Chester, who will be replacing her effective 1 July. Mr. Chester works for the City's Department of Public Works and has been in the field for 11 years. Mr. Mahoney introduced Stephen Proud, the new Director of Development at Treasure Island.

VI. Site 12 Operable Unit

TI Site 12 Removal Actions Status Update

Mr. Ho presented the following overview. He stated that IT Corp. has just completed additional sampling at both the lead and TPH removal areas.

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He stated that the results will be used to determine if additional samples are needed as part of the excavation process.

Mr. Ho explained that the TPH area differs from the burn pit area, because the latest data does not delineate the excavation for TPH. There are very high concentrations of TPH in soil along the Northern boundary. Also, the concentrations tend to be somewhat deep, however the Southern perimeter delineation is much better.

The majority of the soil contamination is deeper than groundwater and is not delineated on the Northern boundary. Therefore, an additional investigation will take place with a focus on deeper soil that is located North of the originally defined area of concern.

There will be a revision of the Corrective Action Plan (CAP), the COWP and the design. IT Corp. will also prepare their Work Plan. The process will begin once the documents are finalized. Because of the additional investigation, the schedule is much tighter.

Mr. Sullivan stated that the TPH removal is being conducted for ecological risk, and not for human health risk. The ultimate goal is to reduce TPH in the groundwater at the shoreline. The field activity will begin around June or July.

Mr. Hehn asked if the sampling analysis that will be conducted in the additional investigation will differentiate between various petroleum hydrocarbons, as opposed to observing the total TPH. Mr. Ho replied that the focus will be on the total TPH. Mr. Hehn suggested that they identify the various types of TPH during sampling.

At this point, Mr. Van Wye reminded Mr. Sullivan that the meeting is an hour and 49 minutes behind schedule. Mr. Sullivan acknowledged this and added that he wanted to touch on the technical topics briefly. He stated that the Draft Final Site 12 RI report will be available on 15 May. There will be a 45-day comment period ending 30 June.

VII. Draft Final Offshore OU RI Report

Mr. Sullivan stated that the review period will be extended to allow additional time for comments. He suggested that the extended due date be discussed in the next BCT meeting and followed by a 45-minute discussion during the interim meeting. Ms. Smith stated that she will only be reiterating her comments, as she had already presented them in the past.

Mr. Brennan commended the agencies' comments on bioassays and sediment issues. He expressed interest for additional information on the State's listing of sediments and the issue of

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When TPH concentrations exceeded 100 ppm (the then-current screening level) or when free product/significant soil staining was observed, they excavated up to five feet from the center of the fuel line. It was determined that further characterization was necessary.

Figures 5 and 6 reflect the confirmation sampling locations on TI and YBI, respectively. Mr. Barry pointed out that although the same shade is used to show the location of concentrations both above and below 447 mg/kg, the actual Work Plan does differentiate between the two.

After the fuel line removal and limited excavation, the Navy used a Site Characterization and Analysis Penetrometer System (SCAPS) to identify residual contamination in four areas, which are reflected on a copy of the Draft Final's Figure 3.

SCAPS is a laser-induced fluorescent (LIF) penetration boring used to delineate TPH-affected soil. Due to time limitations, the Navy was unable to determine the extent of groundwater contamination. Also, 57 soil and two groundwater samples were taken to confirm the LIF results. Eleven temporary microwells (1-2 inches in diameter) were installed to confirm free product in groundwater. Small balers can be lowered for a visual inspection.

Mr. Rist asked whether the lab analysis showed that the data to confirm the penetrometer scan was supported previously. Mr. Barry replied that it is dependent on soil type. He added that the SCAPS was effective in delineating the soil.

The proposed RI Work Plan Sampling Design is as follows:

- The proposed Geoprobe borings are located in areas where the total TPH concentrations exceed the NAVSTA TI TPH screening levels of 447 ppm in soil or 1.4 ppm for groundwater.
- Each Geoprobe location will have one soil sample collected immediately above the water table and one grab groundwater sample will also be collected.
- If a former fuel line was located near the ground surface (less than 2 feet), an additional soil sample will be collected in the Geoprobe boring between 0-2 feet.
- Soil and groundwater samples will be sent to a state- and Navy-approved Berkeley laboratory and analyzed on two-day turnaround times to determine if additional borings are necessary.
- If the total TPH concentrations exceed screening levels, additional samples will be collected using step-out borings.

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PROGRAM UPDATES:

IX. Organizational Business

Site 12 Removals Field Trip in May 1999

Mr. Hehn stated that the field trip is dependent on schedules for removal action.

RAB Operating Guidelines

Mr. Sullivan will obtain a copy of the guidelines.

X. Closing Remarks/End of Meeting

Mr. Sullivan reviewed the following meeting schedule:

- | | |
|-----------------------|---|
| Next Regular Meeting: | 7:00 p.m. Tuesday, 18 May 1999
Casa de la Vista, Treasure Island |
| Interim Meeting: | 6:30 p.m. Wednesday, 5 May 1999
PG&E office |
| BCT/RPM Meeting: | 9:30 a.m. Monday, 3 May 1999
EFA West, San Bruno |

Mr. Sullivan reminded the RAB that applications to the CAC are due by the end of the month. He adjourned the meeting at 10:01 p.m.

ACTION ITEMS

1. According to Mr. Levine, John Stewart Company will provide feedback regarding the notification process and also supply a draft copy of the lease to Robert Mahoney, Facilities Manager.
2. Mr. Sullivan will obtain an approved TAPP proposal to use as a model in the revision of the TI TAPP proposal.
3. Mr. Sullivan will obtain a copy of the RAB operating guidelines.