



DEPARTMENT OF THE NAVY

NAVAL STATION  
TREASURE ISLAND  
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Community Members  
Naval Station Treasure Island  
Restoration Advisory Board

Subj: COMMUNITY MEMBER CONCERNS REGARDING THE VALIDITY OF THE  
METHODOLOGY PROPOSED FOR THE PHASE IIB REMEDIAL  
INVESTIGATION AT NAVAL STATION TREASURE ISLAND

Dear Community Members:

This letter is in response to the May 15, 1995 letter from the Restoration Advisory Board (RAB) Ad Hoc Technical Subcommittee, regarding the methodology of the Phase IIB Remedial Investigation (RI) at Naval Station Treasure Island. The Navy appreciates the time and effort that the RAB Technical Subcommittee members have dedicated to this effort, and their concerns regarding the field methodology.

It is the Navy's understanding that the RAB Technical Subcommittee concerns are focused on two of the techniques to be used for the Phase IIB field investigation: the Geoprobe® hydraulic punch soil and groundwater sampling system, and enzyme-linked immunosorbent assay (ELISA). The RAB Technical Subcommittee members have expressed concern that the sampling and analytical techniques are unproven. The Subcommittee's concerns are that the methodology:

- (1) May have greater propensity for cross contamination of samples.
- (2) May not provide the quality of soil and groundwater samples necessary for developing successful remediation strategies.
- (3) May not provide adequate definition of the nature and extent of contaminants due to the high detection limits of the ELISA kits.

The first two concerns relate to the proposed sampling methodology (Geoprobe® hydraulic punch), and the third to the field analytical methodology (ELISA kits).

The RAB Technical Subcommittee has proposed that the Navy perform a comparative study to demonstrate that the proposed sampling and analytical methodology is as effective as other accepted methodologies.

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The Subcommittee recommended that the Navy test the methodology against a hollow stem auger/split spoon sampling system and laboratory analysis of samples at a complex Naval Station Treasure Island site.

Because the Navy does not concur with the Subcommittee's concerns regarding the Geoprobe® sampling system, the Navy intends only to perform a comparative study of the ELISA test kits against laboratory analytical results, by submitting 50 percent of samples at Site 14/22 for confirmation analysis at an off-site laboratory. This letter presents the Navy's rationale for this approach.

The Navy has also provided a response to the RAB Technical Subcommittee's concerns during a presentation given by the BRAC Cleanup Team (BCT) at the March 28, 1995 RAB meeting. The responses were also included as Appendix G to the Final Phase IIB RI Work Plan Addendum dated April 4, 1995.

This letter is divided into two sections. The first section addresses the Subcommittee's concerns regarding the Geoprobe® soil and groundwater sampling methodology; specifically, cross contamination and potential for inadequate sample quality. The second section addresses the subcommittee's concerns regarding the field analytical method; that the detection limits for the ELISA test kits are too high to allow for adequate definition of contamination.

### **Sampling Methodology**

With respect to the Subcommittee's concerns about the Geoprobe®, the Navy has used the Geoprobe® hydraulic punch at many installations (such as Mare Island Naval Shipyard, Naval Air Station (NAS) Alameda, NAS Lemoore, and Naval Weapons Station Concord) and has found it to be a very useful tool for delineating the extent of contamination. The Geoprobe® is a field investigative tool which is considered a proven technology by the U.S. Environmental Protection Agency (EPA), the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board (RWQCB) for the collection of both soil and groundwater samples.

Because the Geoprobe® has been used successfully by Navy contractors at a number of installations, including Naval Station Treasure Island, and is an investigative tool widely used by the industry, the Navy believes that the method is proven and does not warrant any verification of methodology.

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Additional verification of the Geoprobe® would entail added time and expense that the Navy feels is not required. A field demonstration of the Geoprobe® will be conducted for the RAB Community Members on a contaminated investigation site during July 1995. It is hoped that this will provide an opportunity to address Community Member concerns.

The Navy used the Geoprobe® at Naval Station Treasure Island to investigate contamination at former underground storage tank (UST) locations. Approximately 96 borings were punched at eight former UST sites to determine the extent of contamination and to evaluate the locations of 22 monitoring wells. Both soil and groundwater samples were collected during this investigation. The Navy will present the data collected at these USTs in the upcoming report due in August 1995. A presentation is tentatively scheduled for the July 1995 RAB meeting.

Since both the Geoprobe® hydraulic punch and conventional drill rigs (such as the hollow stem auger) drive a sample spoon into undisturbed soils, the potential for cross contamination of samples is the same for both techniques. Therefore, the Navy believes that the quality of soil samples collected with the Geoprobe® is the same as the samples collected with the hollow stem auger. The Navy's review of data obtained from Geoprobe® and nearby monitoring wells at Naval Station Treasure Island and many other installations does not show evidence that Geoprobe® water samples show false positive results (relative to monitoring well data) due to cross contamination or any other reason.

Although the Navy has not observed that Geoprobe® groundwater samples to be susceptible to false positives, please note that detected contamination in groundwater samples collected using the Geoprobe® will be investigated whether its origins are from actual contamination or resulted from cross contamination. As a result, errors due to cross contamination would result in conservative evaluations or interpretation of analytical results.

Because the groundwater samples collected from the Geoprobe® method screen the top 1-1/2 feet of the water table, the Geoprobe® method provides a more conservative, discrete, and representative sample of petroleum-contaminated groundwater than would be obtained with a monitoring well, which screens the top 7 to 10 feet of the water table. Further, to ensure that Geoprobe® groundwater samples are relatively free of suspended sediments and representative of groundwater conditions, groundwater is purged with a peristaltic pump until visibly clear prior to sample collection.

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The Navy will use the analytical results of these groundwater samples as a screening tool to determine the boundaries of the potential contaminant plumes and to place upgradient and downgradient monitoring wells. The Navy views this technique as a cost-saving measure, as opposed to installing soil borings and converting them to monitoring wells only to find that the boundaries of the contaminant plume still have not been identified.

#### **Field Analytical Method (ELISA Field Test Kits)**

As requested by the RAB Technical Subcommittee, and as stated at the March 28, 1995 RAB meeting, the comparative study for the immunoassay test kits is currently underway at Site 14/22. This study involves the off-site laboratory confirmation of 50 percent of samples analyzed with the ELISA kits. Results from this study will be presented by the BCT to the RAB at the June 27th meeting.

Regarding the high detection limits of the immunoassay test kits, the Navy is using the immunoassay test kits only as a screening tool to identify the extent of contamination. After soil cleanup levels are negotiated and a remedy has been selected, confirmation sampling will be required (during any remedial action or removal action) to ensure that all soils above the cleanup level are remediated or removed. At that time, the Navy will collect samples for laboratory analysis to confirm that all soils are remediated.

For groundwater, in addition to the comparative study being undertaken at Site 14/22, the Navy will do the following:

- 1) After the sample results for the immunoassay test kits indicate nondetect levels, additional groundwater samples will be collected by Geoprobe® at the nondetect locations and analyzed by an off-site analytical laboratory to confirm that the plume boundary has been reached.
- 2) If the off-site laboratory confirms the nondetect results, then the monitoring wells locations will be selected and approved by the BCT, and the wells will be installed. Otherwise, the investigation will continue until the extent of the contaminant plume has been defined and wells are installed beyond the limits of the plume.

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We value the continued input of the Restoration Advisory Board Community Members into the Naval Station Treasure Island cleanup program. Although the Navy and the BRAC Cleanup Team did not concur with all of the Ad Hoc Technical Subcommittee's concerns on the Phase IIB methodologies, we hope that the actions we are taking; presentations, demonstrations and the ELISA comparative study, will go a long way towards reaching a mutual understanding.

The Restoration Advisory Board is intended to be a body representing the diverse interests of the community. The Navy will continue to work to incorporate the interests and opinions of the community into the cleanup program. There may be other times when there are diverse opinions between the Navy and the RAB Community Members, but we all share the common goal of achieving the most effective and timely environmental cleanup of Naval Station Treasure Island.

Sincerely,



James B. Sullivan  
Base Closure Environmental Coordinator  
Naval Station Treasure Island  
By direction of  
the Commanding Officer

Copy to:  
Administrative Record  
Mary Rose Cassa, California EPA Department of Toxic Substances  
Control  
Michael Bessette, Regional Water Quality Control Board San  
Francisco Bay  
Rachel Simons, U.S. Environmental Protection Agency