MEMORANDUM

TO: **Treasure Island Restoration Advisory Board, and Jim Sullivan-NSTI**

FROM: **Paul V. Hehn, Treasure Island RAB - Technical Subcommittee Chair**

DATE: **May 19, 1997**

RE: **Comments on Document:**
"Draft Remedial Investigation Report - Addendum 3
Ecotoxicological Testing for the Development of Petroleum
Screening Levels"

The following are my comments on the above referenced document.

My comments that have been prepared are related to general issues and to specific sections of the report.

DOCUMENT:

ECOTOXICOLOGICAL TESTING FOR THE DEVELOPMENT OF PETROLEUM SCREENING LEVELS

Comments on Specific Sections

- Executive Summary - Explain how the soil leaching factor was determined.
- Section 1.0 - Introduction - Explain in text what is included in total petroleum hydrocarbon testing and what is included in the total petroleum hydrocarbons.
- Section 2.0 - Sampling and Analysis - Why were the additional soil samples collected as a backup control not tested for aquatic toxicity even when the initial control samples proved to be impacted?
- Section 2.2.1 - Collection Methods - Any other alternative soil sample collection methods evaluated and considered in order to get enough soil sample from the proper depth to complete the analysis?

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- Section 2.2.1 - Collection Methods - Mixing of the core and compositing in order to get sufficient sample for the analysis has probably deluded the sample so that an accurate representation of the concentration in the soil at the saturated/unsaturated boundary was not done. This could radically effect the overall results and outcome of the study.
- Section 2.2.1 - Collection Methods - What was the depth to groundwater during the sample collection drilling? It appears that some of the sample may have been collected from below the groundwater level which would radically effect the overall results and outcome of the study.
- Section 2.2.1 - Collection Methods - If the borings were logged during the sampling events, the boring logs should be included with the report.
- Section 2.2.1 - Collection Methods - Why were the samples composited in the field instead of having the laboratory composite under controlled conditions?
- Section 2.2.2 - Analytical Procedures - Where the species used for the toxicity tests the correct species for this particular area?
- Section 2.3 - Modifications to the Sampling and Analysis Plan - The location of the backup reference control samples should be located on the map.
- Section 3.1.1.1 - Soil Sample Results - The USEPA methods used for the sample analysis should be included here.
- Section 3.1.1.1 - Soil Sample Results - Include copies of the chromatograms used to evaluate the TPH results in the appendix of the report.
- Section 3.1.1.1 - Soil Sample Results - For those samples that had "discrete peaks not indicative of petroleum hydrocarbons" or for results "not qualified" what do these samples represent?
- Section 3.1.1.1 - Soil Sample Results - Were BTEX constituents detected even for Site 12? The Addendum Report No 2 on "Additional Characterization at Sites 12 and 17" reported that were no volatile constituents detected at the site. Which version is correct?
- Section 3.1.1.1 - Soil Sample Results - The appropriateness of the ambient concentrations of metals in the artificial fill as presented in the Phase IIB report is still open to discussion and may not be correct.
- Section 3.1.1.2 - Eluate Sample Results - When the TPH-purgeables are detected above the quantitation limit, what happens to the results and testing

of these samples? The same question applies for the metals that exceeded the quantitation limits.

- Section 3.1.1.2 - Eluate Sample Results - The concentrations reported for TPH-extractables were concluded to be due to aged diesel. How was this determination established?
- Section 3.1.1.2 - Eluate Sample Results - If the results for TPH-extractables as motor oil were primarily due to diesel, is the same also true for other problems such as the interference with the immunoassay results reported to be from motor oil also really related to interference from diesel?
- Section 3.1.2.1 - Soil Results - Was the TPH as motor oil detected in the reference soil samples really motor oil or from the diesel?
- Section 3.1.2.1 - Soil Results - What were the discrete peaks if not indicative of typical fuel patterns?
- Section 3.1.3 - Spiked Control Sea Water Samples Results - Why was the gasoline-spiked eluate samples not analyzed for TPH-purgeables?
- Section 3.2 - Analytical Modifications - Why were only the diesel-spiked eluate samples analyzed and not the gasoline-spiked?
- Section 3.2 - Analytical Modifications - Since both of the reference samples were impacted by petroleum hydrocarbons, there is no control samples for the procedures. Does this negate the results of the entire study? Does it make the results less reliable? Also, should the areas from which the reference samples were collected now be investigated since they may also be impacted by petroleum hydrocarbons? Especially the school area?
- Section 3.3.1.2 - Full Review of Analytical Data - The random full review on 10% of the chemical data should state the total number of samples in the sample set and how many (number) were done for the full review.
- Section 3.3.3 - Additional Qualifications - There seem to be a large number of problems listed under this section. Why are there so many problems and what does that do to the accuracy and applicability of the data and the testing?
- Section 3.3.4 - Overall Assessment - The supporting documentation and data should be included in the appendix of the report.
- Section 4.3 - Data Validation - More problems listed. How do they affect the data and the overall results of the study?

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1. Section 4.3.1 - Hold times exceeded and ammonia QC criteria not specified. Some data considered invalid due to high ammonia.
2. Section 4.3.2 - Hold times exceeded and salinity range not met. Presumed valid criteria? Based on what?

- Section 5.2.1.1 - Metals Toxicity - Discuss and determine the effects on the data of the exceedances by metals toxicity.
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