

32501.002  
03.01.02.0026  
N00204.AR.000976  
NAS PENSACOLA  
5090.3a

FROM: Site 2 Technical Committee  
TO: NASP Tier 1 Team  
DATE: 8-21-95  
Subject: Bioassay Study

## SITE 2 BIOASSESSMENT STRATEGY

### I. Objectives:

- a.) To determine which toxicological tests would be most applicable to the site and would provide the most information for the cost.
- b.) To develop a sampling strategy for the site to assess the overall contaminant concentrations observed during the RI.
- c.) To propose overall contaminant levels that are risk related and which can be used by the management team to make remedial decisions for Site 2 and other locations at NASP.

### II. Conclusions:

a.) Conduct bioassay tests on two separate species for each sediment sampling location selected. One tests would be directed at an invertebrate species (Mysidopsis bahia). This test would be a 7-day chronic screening test which would be used on whole bulk sediment samples. Endpoints would include survival, growth, and reproduction. The second test would be conducted on a juvenile vertebrate species which spends much of its early life stages associated with sediments. A 7-day chronic screening test on Cyprinidon variegatus was selected as the most applicable species to meet the objectives of the study. This test would measure the endpoints survival and growth.

b.) It is recommended that 10 contaminated, 1 clean and an established reference location (possibly in Perdido Bay) be sampled. Ten locations within the Site 2 perimeter would sampled. These 10 locations would include a gradient of contaminant concentrations found during the RI, from highest to least contaminated, and would be weighted toward locations which had the most obvious contamination, especially metals and PAHs. Proposed sampling locations are presented on Figure 1. As mentioned locations selected were based on analytical data taken during the RI process. There is no guarantee that contamination levels found at present are representative of levels observed during the 1993 sampling event. To assess present concentrations, at each location bulk sediment samples will be collected and analyzed for full TAL/TCL analytes.

c.) A proposed application of the data that will be produced from the bioassay tests include: 1) determining a quantifiable weighting approach for each of the endpoints identified; 2) summation of these weighted components identified from each of the individual tests; and 3) use linear regression or other correlation techniques to compare tests values to either total contaminant concentrations or hazard quotients (HQ) or indices (HI) that can be determined for each locations. The objective of this exercise will be to have a management tool derived from risk based evaluations that are applicable to actual effects (bioassays) and true observable contaminant concentrations. One draw-back to the approach is that some constituents presently do not have SSVs with which to derive HQ values. Use of SSVs for the most similar compound available may be the answer to this situation.

D. Truman