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March 21, 1997

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
ATTN: Denise Klimas
c/o **U.S.** EPA Waste Division
100 Alabama Street, **SW**
Atlanta, GA 30303-3104

RE: **OU-2** Remedial Investigation Report, NAS Pensacola
Contract #N62467-89-D-318/0059

Dear Ms. Klimas:

On behalf of the Navy, EnSafe/Allen & Hoshall is pleased to submit one copy of the response to comments for the **OU-2** Remedial Investigation Report at the Naval Air Station Pensacola. **If** you should have any questions or need any additional information regarding this document, please do not hesitate to call me.

Sincerely,

EnSafe/Allen & Hoshall

Henry H. Beiro, P.G.
Task Order Manager

Enclosure

cc: Bill Hill, SOUTHNAVFACENGCOM - 2 copies
Ron Joyner, NAS Pensacola - 2 copies
Gena Townsend, USEPA - 1 copy
John Mitchell, FDEP - 1 copy
Judeth Walker, NAS Pensacola - 1 copy
EnSafe/Allen & Hoshall File - 1 copy
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Draft Remedial Investigation Report OU-2
NAS Pensacola, Florida
Response to U.S. Department of Commerce
National Oceanic and Atmospheric Administration

(Denise Klimas Comments 11/1/96)

I would like to propose for discussion during the November 6 and 7 subcommittee meeting some endpoints that are slightly different, but that are related to those proposed in the 10/15 memo for Site 40, Bayou Grande. Given the results of the media analysis, I agree that the receptors most likely to be impacted by contaminants are those associated either directly or indirectly (via feeding) with the sediments.

Some alternate assessment endpoints to consider would be:

- Protection of the benthic community. This is an important endpoint for protection because the benthic community makes up the basis of the food chain in any estuarine environment. In addition to a prey base for larger animals, the sediments provide habitat for the benthic dwellers.

- Protection of nursery habitat for aquatic resources. This is an important endpoint for Bayou Grande because many marine species of recreational and commercial importance use relatively shallow, sheltered estuarine waterbodies for refuge and feeding during important growth stages,

- Protection of wading and fish-eating birds. Contaminants that have been detected in the sediments in Bayou Grande can have effects on birds that take their prey from the water.

The measurement endpoints that I would recommend for the suggested assessment endpoints are the following:

Protection of the benthic community:

- Acute toxicity test using either a 10-day ***Ampelisca abdita*** solid phase sediment test with survival as the endpoint, or the 10-day ***Leptocheirus plumulosus*** solid phase test with survival as the endpoint. The *L.plumulosus* test has a greater tolerance for gain size differences and a wider salinity range (2-32 ppt) which may be better for the areas in Bayou Grande that may be tested. The ***A. Abdita*** test has a salinity range of 20-35 ppt and is more sensitive to grain size changes in test sediments.

- Chronic toxicity test using the polychaete ***Neanthes arenceodentata.*** This is a 20-day solid phase sediment test with growth (biomass) and fecundity as the endpoints. This test is

sensitive to sediments contaminated with metals, DDT and hydrocarbons at fairly low concentrations, and has a tolerance for grain size differences.

Protection of nursery habitat for aquatic resources:

- Chronic toxicity test results from the *N. Arenceodentata* assay can be used to assess this endpoint.

- Bioaccumulation of residues of metals and organics should be measured. This can be accomplished by either capturing resident fish, or sessile organisms and determining the body burdens of the contaminants, or by deploying bivalves *in-situ* for 30-day bioaccumulation test. The advantage of caged bivalve studies is that you start with organisms that are clean, non-mobile, and the contaminants that are present at the end of the study are attributable to the site related conditions.

Protection of wading and fisheating birds:

- Bioaccumulation study data from the nursery habitat assessment can be used in a food web model or to evaluate the potential for direct toxicity for this assessment endpoint.

Other Comments

With regard to the assessment and measurement endpoints proposed in the 10/15 memo, I have several comments.

The assessment of the reduction of benthic population diversity as suggested in the memo could become a part of the benthic community assessment endpoint analysis that I have proposed. There are several cautions that I would like iterate if population diversity is chosen as part of this ecological assessment. Unless there is a well designed, statistically rigorous sampling strategy, and an unimpacted reference site available, population diversity studies *can* be very confounding. The best use of a diversity study is to get a qualitative indication of whether a site is impacted or not. It does not provide insight as to whether the impact is from contaminants or other causes. In phased approach risk assessments, population diversity studies have been beneficial in helping to focus additional rounds of sampling. I would suggest that if the population diversity assessment endpoint is retained for this risk assessment that the subcommittee decide how the data will be used to interpret the risk associated with the sediment contamination in Bayou Grande.

The assessment endpoints, "reduced reproductive viability of invertebrate species" and "reduced reproductive viability of fish populations", cannot be determined by doing a mysid shrimp bioassay or a sheepshead minnow test. Both the sheepshead minnow test and the mysid shrimp test were designed to evaluate the toxicity of effluents and/or receiving waters. The potential effects on receptors at this site are from exposure to sediments and not the water column. Both of these tests can be conducted using a pore water exposure but this would not present a very

realistic exposure for the minnow or the shrimp. In addition, it is not possible to determine the potential for reduced reproductive viability using reduced growth as an indicator. There are tests that address reproductive viability which involve embryo toxicity assessment of fish eggs exposed to sediments. If fish reproductive viability is an endpoint that the subcommittee would like to address as part of the ecological risk assessment, a test that will directly assess this endpoint can be chosen.

I have no problem with collecting tissue from the blue crab for assessment of human exposure during the field work for the ecological risk assessment. Crabs are an important recreational species and there is probably public concern about the levels of contaminants in the edible portions. Since crabs are migratory, the usefulness of collecting adult (human eating size) blue crabs for site-specific ecological risk assessment is unclear unless the endpoint is protection of blue crabs. However, whole body analysis of crabs may be able to provide some insight into the bioavailable contaminant load in Bayou Grande if small juvenile crabs, for example, those that have only used the Bayou Grande habitat as a nursery ground, can be collected. Any contaminants that may be present in the crabs could then be tied to the presence of contaminants in Bayou Grande.

RESPONSE:

The eco-subcomittee is discussing these comments on a technical level for submittal to the Tier I Team. The Navy as a member of that eco-subcommittee references those meeting minutes as a response.