



EnSafe / Allen 6

a joint venture for professional

5720 Summer Trees Dr. Suite 8 Memphis, TN 38134
(901) 383-9115 Fax (901) 383-1743

32501.000
09.01.00.0089

N00204.AR.000552
NAS PENSACOLA
5090.3a

May 7, 1993

Florida Department of Environmental Regulation
Federal Facilities Coordinator
Attn: Eric Nuzie
Twin Towers Office Building
2600 Stone Road
Tallahassee, Florida 32399-2400

RE: Response to the National Oceanic and Atmospheric Administration Comments for Draft Work Plans: Sites 40, 41, and 42, NAS-Pensacola, Contract # N62467-89-D-0318/036

Dear Mr. Nuzie:

Please find enclosed a copy of the response to the National Oceanic and Atmospheric Administration (NOAA) comments for the Work Plans on Site 40, 41, and 42: Naval Air Station Pensacola in Pensacola, Florida. We look forward to discussing them further at the meeting on May 12th and 13th in Atlanta. For the record, FDER did not have any comments on these Work Plans for Sites 40, 41, and 42.

If you should have any questions or need any additional information regarding the plans, please do not hesitate to call me.

Sincerely,
EnSafe\Allen & Hoshall

Henry H. Beiro
Task Order Manager

Enclosure
Response to Comments

cc: Linda Martin, SOUTHNAVFACENGCOM

National Oceanic and Atmospheric Administration (NOAA)
Technical Review and Comment
Draft RI/FS Work Plans for Site **40 (Bayou Grande)**,
Site **41 (NAS Pensacola Wetlands)** and Site **42 (Pensacola Bay)**
NAS Pensamla

Comment 1

Overall, the work plans for all three sites **am based on a** new scientific methodology developed for EPA's Environmental **Monitoring** and Assessment Program (**EMAP**) that **has the goal** of determining what the ecological **status** of an ecosystem may be in comparison to itself over time. **EMAP is based on** ongoing surveillance of indicators of ecological conditions. Although many of the methods and procedures in **EMAP** are useful in ecological **risk** assessment, the **program, as whole, is not a relevant or appropriate** means to address the issues **or concerns** in the **remedial** exposure pathway determination, and receptor identification. **Data-gathering steps taken within** the RI/FS should consider ecological **risk** assessment **needs so** that an ecological **risk** assessment may be made **a part of or ancillary to the RI/FS report**. **EMAP does not address** critical information **needs** of cause and effect relationships **between** the original sources of **contamination** and whatever condition that Sites **40, 41, and 42** may be in **as a** result of contamination by activities stemming **from the base**.

Contamination at NAS **Pensacola** occurred over extended time **periods**, and involved many different contaminants and a widespread area. The situation **at NAS Pensacola** presents a complex and difficult **task** to understand, much less to provide answers for **mediation**. A general approach to devising RI/FS work plans, however, **can** be effective if the whole **picture** as well as the individual sources of contamination **am** taken into account.

Response

The sampling **scheme has been revised** into a ~~three~~-phase approach, **as discussed** in the meeting of May **12 and 13, 1993**. A brief outline of the **phases is presented** below.

Phase I

For Pensacola **Bay** and **Bayou Grande** during **Phase I**, transects **will be extended 300** feet perpendicular to the **shore**. Bathymetry will be measured **along** the length of the transect and sediment samples will be **collected at 0** feet (shoreline), **150** feet and **300** feet along the transect. Sediment samples **will be submitted** for **analysis of grain size** and total organic carbon.

During Phase I at the NAS Pensamla **Wetlands**, all listed wetlands and/or potential wetlands **as impacted by a corresponding site at NAS Pensacola will be investigated** to

**Responses in bold denote changes
to first draft.**

identify basic biological characteristics of the wetland, to delineate the wetland boundary and to develop a sampling strategy for Phase II, as required. If impact is suspected, a grid will be established across the wetland. Bathymetry will be measured across the wetland, and sediment samples will be collected from selected locations for grain size and total organic carbon analysis.

A technical memorandum will be submitted upon completion of the Phase I activities. The memorandum will detail the results of Phase I sampling and will present the Phase II A sampling locations. The technical memorandum will also present the rationale for additional sampling or the rationale for no further investigation.

Phase II A

Phase II A consists of collecting sediment and surface water samples for Target Analyte List/Target Compound List (TAL/TCL) analysis using CLP protocol. Phase II sampling locations will be selected based on various criteria, including but not limited to:

- e storm water discharge points,
- areas hydraulically downgradient of other identified potential sources of contamination (PSCs),
- e areas of surface water discharge,
- e areas of high total organic carbon,
- e areas of small grain size (e.g., high clay and silt content),
- e background locations.

One sediment sample will be collected at each of these hot spot locations. The results of the analyses will initially be compared to background conditions. Locations where the detected concentrations of the sediments are greater than twice background will be further compared to the agreed trigger levels. At locations where the detected concentrations exceed the background or trigger levels, three additional sediment samples will be collected for analysis to delineate the extent. Surface water samples will be collected at locations where the detected concentrations of the sediments exceed the background or trigger levels in standing bodies of water (i.e., wetlands) and not in dynamic environments (i.e., Pensacola Bay and Bayou Grande). A technical memorandum will be written upon completion of Phase II A detailing the analytical results and the comparison to background and the trigger levels. The technical memorandum will also present the rationale and locations for the subsequent Phase II B sampling or the rationale for no further investigation.

Responses in bold denote changes to first draft.

Phase IIB

Phase IIB consists of diversity and toxicity tests of **potentially impacted organisms**. During this phase of the investigation, a known volume of sediment **will be** collected. The sample **will** be submitted to the selected laboratory and the **diversity** of the organisms **within** the sediment **will be** determined.

Toxicity tests **will** also be performed during **this** phase. **Selected species** of organisms will be directly **exposed** in the laboratory to the site water and sediment. Acute (48 hour) toxicity will be **tested** on a portion of the selected **organisms**. Chronic (**28 days**) tests will be performed on **all** of the selected organisms.

A technical memorandum **will** be written upon completion of **Phase IIB** detailing the analytical results. The technical memorandum will also present the rationale and locations for the subsequent **Phase III** sampling or the rationale for no further **investigation**.

Phase III

Phase III consists of collection of **selected organisms** for studying the bioaccumulation of **contaminants**. Phase III tests may be performed **if needed** to further gauge the ecological impact of a site. **This** information must be weighed **against** time and **expense** to determine an agreement for **clean up** levels.

Comment 2

The first step that the RI/FS for the three sites should accomplish is **to determine** where sampling efforts **need to be concentrated** for maximum effectiveness in site characterizations.

Sampling locations should be chosen with **regard** to a **number** of different parameters:

- A. Both groundwater and surface water pathways **between potential sources of contamination** (PSC) and **all** waters of **interest** should be fully characterized. Contaminant plumes should be described to determine where they **are**, and whether they represent pathways that should be considered **as** a present or future source of contamination.
- B. **Both soils** and sediments that **are in contact** with groundwater and **surface** water pathways **between potential sources of contaminations** (PSC) and **all** waters of interest, should be fully characterized to determine if they should be considered **as** a present or future source of **contamination**.
- C. Complete characterizations of sites 40, **41**, and **42** should be performed. For sites 40 and **42**, **this** should **begin** with creating bathymetric charts of the **areas** of concern, and conducting sediment characterizations of **those areas**. Emphasis should be place **on** those areas **near potential** surface water and groundwater discharges zones. Sediment

Responses in bold denote changes to first draft.

characterization should include measurements of total organic carbon, grain size, and acid volatile sulfides; the latter is important for trace element analysis. Depth profiles can point to probable locations of contaminant deposition. After these steps have been accomplished, sampling locations can be established with a higher degree of accuracy and with a greater likelihood that the most probable areas of concern have been defined.

- D. Once sampling locations have been established, analysis of sample should use ecologically relevant limits of detection. Contract laboratory protocols (CLPs) should be modified to obtain quantitation limits at or below sediment ER-L concentrations (Long and Morgan, 1990). Analysis of ground and surface water should use Ambient Water Quality Criteria (AWQC) as quantitation limits for contaminants.

Response

- A. This comment will be addressed by execution of the Phase I of the ecological assessment as stated in the response to Comment 1.
- B. This comment will be addressed by Phase I of the ecological assessment as stated in the response to Comment 1.
- C. Total organic carbon and grain size analysis will be conducted on all samples collected during Phase I. Depth profile sampling is also currently planned for Phase I.
- D. The Navy will be submitting trigger level values for joint agreement and subsequent use. If needed, the detection limits of the chemical analysis will be lowered to be commensurate with the trigger levels. However, the added cost should be weighed against the usefulness of the analytical data in determining ecological risk.

Comment 3

Characterization of the yacht basin in Bayou Grande along the shoreline adjacent to Site 11 should be focused on because of high contamination concentrations measured previously in samples collected from adjacent sediments, and because landfilling of hazardous wastes may have occurred along the shoreline.

Response

Currently, there are 10 sampling transects (30 samples) proposed in the area of the yacht basin for Phase I analysis. The yacht basin area is considered a hot spot location and will

Responses in bold denote changes
to first draft.

be sampled **during Phase I and IIA**. **If contaminants are detected**, additional analytical samples will **be collected in this area**.

Comment 4

At the western end of Bayou **Grande**, a drainage channel **that drains** a **portion** of NAS **Pensacola** discharges about 1.5 km west of the point where the **NAS Pensacola** property line intersect the bayou, and may be contributing contamination from Forest Sherman Field. **There does not appear to be any sites within the drainage area** of the channel, but **because** of possible inputs from the drainage channel and **tidal** influences within the bayou, it is recommended **that** a few samples be collected in the vicinity of the channel discharge point.

Response

The **Navy** will sample **at** the **base** boundary which discharges to **this estuary**.

Comment 5

The planned Pensacola Bay and Bayou Grande investigations should provide additional information about the **transport of contaminants from site (PSCs) identified as sources**. It is important that adequate source investigations **are** conducted, including determination of groundwater flow and **direction** and surface water runoff patterns during high intensity storms. These studies **are** crucial to the sampling discussion above.

Response

Agreed. The **transport of contaminants from PSC sites is integral to** the overall **ecological** assessments, and will be considered during the investigations of Sites 40, 41, and 42.

Comment 6

The work plans place great emphasis **on** wetland vegetation **as an** exposure indicator. Vegetation is relatively unresponsive to contaminants, especially trace metals. **Examining** vegetation patterns will have little value for the ecological **risk** assessment.

**Responses in bold denote changes
to first draft.**

Response

Vegetation patterns **will** only be used as a **guide** for possible **contamination**. It is recognized a highly polluted site may not exhibit it through degree of **vegetation**. Please see the response to Comment 1.

Comment 7

Some wetland areas have **been** described as **unavailable** to **site contamination** due to the **distance** from **contaminant sources** and other reasons. These **areas** should be included within the characterization as described above so that this **determination can** be based on stronger evidence.

Response

All listed wetlands and/or potential wetlands as impacted by a corresponding site at NAS Pensacola **will** be investigated *using* the **qualitative** procedures described as Phase I of the ecological assessment in response to Comment 1.

**Responses in bold denote changes
to first draft.**