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REFER TO:

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05 NOV 1991

Mr. Eric Nuzie  
Federal Facilities Coordinator  
Florida Department of Environmental Regulations (FDER)  
Twin Towers Office Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

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NAS PENSACOLA  
5090.3a

Dear Mr. Nuzie:

Enclosed for your review are our responses to your comments on the Draft Workplans Phase I and II Report for Operable Unit 10: Group O; PSC Site 32, 33, and 35 at the Naval Air Station Pensacola, Pensacola, Florida.

We have incorporated your appropriate comments into the development of the Draft/Final Report due for submittal on December 5, 1991. We have also enclosed for your review our responses to comments made by FDER, FDNR, and NOAA.

We appreciate your effort and corporation in providing review comments. Please contact Ms. Suzanne O. Sanborn at (803) 743-0574, if you should have any questions pertaining to our responses or any other matter concerning the Naval Air Station Pensacola, Pensacola, Florida Installation Restoration Program.

Sincerely,

James B. Malone, Jr., P.E.  
Manager, Installation  
Restoration, East Section

Encl:  
Attachments A through D: Navy responses to comments

Copy to: w/out encl:  
NAS Pensacola (Mr. Ron Joyner, Code 18250)  
PWC Pensacola (Mr. Greg Campbell, Code 480)  
EPA (Ms. Allison Drew)

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Attachment A

**RESPONSES TO COMMENTS FROM THE  
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION IV**

**GENERAL COMMENTS**

**Comment 1:**

It **should** be clear that the **screening** level data is not *acceptable* for risk **assessment** purposes. The generation of a separate report containing the **screening data** is **unnecessary**. The **screening data would most** appropriately be **included** in the Remedial Investigation Report as **background** information for selecting CLP (DQO level IV) **sampling** locations. The generation of three separate reports for these sites is **unnecessary**. It is **unclear why** these sites have not **been** consolidated into one site.

**Response:**

The Navy was not proposing to use **screening** level data for risk assessment purposes. The risk assessment will primarily utilize the results of the Phase II investigation **which** includes all analyses at full CLP protocol. **As will be discussed in subsequent responses, Phases I and II have** been combined and the screening analyses dropped. Per Section 21 of the work plan, a separate report for Phase I is not proposed. The Navy agrees that one report **should** be written for these three sites, plus the results of the adjacent Site 13 investigation. **The** work plan has been modified to reflect this.

**Comment 2:**

All **currently available**, relevant information *should* be **included** in the work plans so that the most complete conceptual model possible *can* be **developed**. This work plan generally includes only references to previous investigations performed at these sites. All historical information on waste **management** practices at the site **and** data **from** previous investigations **should** be used to **map** out the present extent of contamination, and potential **migration/exposure** pathways, to the **maximum** extent practicable.

**Once** the most complete conceptual model possible has been formulated, the work plan *should* go on to identify the **remaining data** gaps which need to be addressed in order to adequately characterize the site for the purposes of performing a **Baseline Risk Assessment (BRA)** and selecting a **Remedial Action (RA)**. Clearly, the adequacy of these recommendations is directly dependent on the **quality** and completeness of the conceptual model, re-emphasizing the importance of the latter.

Given the amount of information **which** currently exists for these sites, every effort should be made to make the next phase of field work the final phase. Whether or not this goal is accomplished will depend largely on the quality and **completeness** of the present **RI/FS** Work Plan.

**Response:**

All **currently available** and relevant information was included, summarized or referenced in the work plan. It would be completely impractical to include the data from all previous investigations in the work plan. A **map showing** the **current** extent of affected groundwater has **been** added to the work plan. **The sampling locations proposed** in the work plan were designed to fill **remaining** data gaps. **More detail regarding sample location rationale** was provided in the work plan.

Every effort will be made to make the next **phase** of field work the final phase.

**Comment 3:**

Reorganization of the section 2.0 to include the information retained in Sections 3-7 would facilitate formulation of a more **complete** site description. The material retained in these sections might be more effectively "**re-sectioned**" as follows:

- (i) **general, regional** information
- (ii) site-specific information (including all data obtained during previous investigations) (i.e. the **conceptual site model**)
- (iii) data **gaps** which must be filled in order to perform a BRA and select an RA.

The field, lab and interpretive methods presented Sections 16-18 could then be focused so as to provide direct **answers** to the "questions" presented in Section "(iii)".

**Response:**

The work **plan** has been restructured to follow EPA's suggested format.

**Comment 4:**

Sections 15.2.3 and 15.2.4 state that PVC **well casing** will be used for this investigation; stainless steel well **casing should** be used. Use of PVC must be justified as noted in the comments on the Interim **Data Reports**.

**Response:**

A justification for the use of PVC materials for monitoring well construction has been appended to the work **plan** for **review** and approval by EPA and FDER.

**SPECIFIC COMMENTS**

**Comment 1, Section 1, Introduction:**

An **Executive Summary** should precede this section.

Section 1 should identify the general types of contamination found at the **Group 0** sites and discuss the possibility of **other** potential **source** areas. It **also should** contain **more detail** on the steps of the **RI/FS process**, including the specific goals and scope of work to be conducted at the **Group 0** sites. **The appropriate** guidance documentation associated with implementation of this work plan (e.g., **EPA's Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA [1988]**, **ESD's SOP/OAM [1991]**, etc.) should **also** be referenced in this section.

**Response:**

An executive summary has been added to the work **plan**. The requested information and references will be added to the introduction section.

**Comment 2, Page 1-5, Section 1:**

The **second sentence** in the next to last **paragraph** and the final sentence in the last **paragraph** seem to indicate that a full-scale RI/FS is optional. This text must be **reworded** to reflect the fact that the purpose of this document is to direct the activities of a **Remedial Investigation/Feasibility Study** of the NAS Pensacola sites 32, 33 and 35.

**Response:**

The referenced text does not indicate that an RI/FS is optional, only that work beyond Phase II may not be required. The text was modified to include the statement requested by EPA. As will be discussed below, the work proposed for Phases I and II has been **combined** into one phase.

**Comment 3, Pages 2-1 to 2-5, Section 2, site Description:**

Sections 4, 5, 6 and 7 should be included as part of the site description section and include separate physical features, demographics, land/water use, and soil sections to develop a better understanding of the site background and physical setting prior to evaluation of existing data and identification of data gaps.

**Response:**

The material discussed in Sections 4, 5, 6, and 7 was included in the site description in Section 2 in order to comply with EPA's formatting requirement. The additional requested information (i.e., demographics, land use, etc.) was also added.

**Comment 4, Pages 2-4 to 2-5, Table 2-1:**

This table belongs in the site history section along with the discussion of previous groundwater sampling investigation data. This table should also include the installation dates, dimensions and construction materials used for each well.

**Response:**

Table 2-1 was moved to the site history section in order to comply with EPA's formatting requirement. The installation dates, dimensions and construction materials for each well was added to the table.

**Comment 5, Pages 3-4 to 3-9, Section 3:**

The site history section is incomplete, it only summarizes some of the existing data prior to 1989 and does not evaluate past 1989 quarterly groundwater monitoring data as well as other site data documented for Group 0 sites identified in Table 1-1.

Additional figures identifying the location of the existing wells discussed in this section should be included for referencing purposes.

Data tables summarizing the previous groundwater sampling investigation data exceeding MCLs should be included in this section.

**Response:**

The summary of the pre-1989 data was expanded and a summary of the available post-1989 data was added to the site history section of the work plan.

A figure showing the locations of the other wells discussed (E-1 through DG-6, and GM-74 and -75) was added to the work plan. These wells have all been either abandoned or destroyed.

A data table summarizing previous groundwater sampling data which exceeds MCLs was added to the work plan.

**Comment 6, Page 3-1, Section 3., Paragraph 2:**

Is there nothing in the FDER files with details on the 80,000 gallons of unknown material that resulted in a fish kill? What did the waste spill consist of?

**Response:**

FDER could find nothing in the files regarding the spill. Additional details regarding the incident were obtained from Greg Campbell at NAS Pensacola and were added to the work plan. However, the exact composition of the waste spilled is still unknown.

**Comment 7, Page 3-1, Section 3., Paragraph 3:**

How was the estimate of 5,800 gallons/day of seepage from the surge pond determined?

**Response:**

The seepage through the soil-cement bottom of the surge pond was estimated using the methodologies specified in Landfill and Surface Impoundment Performance Evaluation, SW-869, EPA 1980 and Lining of Waste Impoundment and Disposal Facilities, N-870, EPA 1980. The calculations used an estimated permeability for soil-cement and a pond stage of 5 feet.

**Comment 8, Page 3-2, Section 3., Paragraph 5:**

Was any sampling performed to determine if the sulfuric acid spill *clean-up* was successful?

The last sentence in this paragraph states "No other information regarding the IWP sludge drying beds was available during the time this work plan was being prepared". Is this true? Taking into account the regulated history of these sites, it would appear a large body of information has already been collected. All past site information should be used in preparing the RI/FS work plan.

**Response:**

It is unknown whether any sampling was performed specifically to monitor the acid cleanup.

The Navy's RCRA section has located additional information regarding the sludge *drying* beds. This information has been incorporated into the site history section of the work plan.

**Comment 9, Page 3-3, Section 3., Paragraph 6:**

Why was only one well (DG-6) analyzed for pesticides/PCBs?

**Response:**

Well DG-6 was selected for analysis for Appendix VIII constituents which included pesticide/PCBs. This was per an agreement between the Navy and the Northwest District FDER. The text was modified to reflect this.

**Comment 10, Page 3-3, Section 3., Paragraph 7:**

"Low concentrations of cyanide were present in the five RCRA detection monitoring wells, although the results could not be confirmed due to the interference of high sulfide concentrations." Was the source of the sulfides naturally occurring (salt water intrusion) or man-made (sulfuric acid spill)?

**Response:**

The source of the high sulfides is unknown.

**Comment 11, Page 3-3, Section 3., Paragraph 8:**

In the Interim Data Reports for Sites 1, 2, 11, 12, 13, 14, 15, 24, 26 and 30, many of the compounds listed here were written off as laboratory-derived contamination, particularly the methylene chloride. Why wasn't the same reason used for this data?

This paragraph indicates the background well contained low concentration volatile organic compounds. Has the source of the contamination been identified? Is this a true background well? These questions should be addressed.

**Response:**

The Geraghty and Miller reports from which this data was derived did not include method blank results. Thus, the possibility of laboratory contamination could not be evaluated.

The source of VOCs detected in well UG-1 has not been determined. This well is not a true background well given that it is located hydraulically down-gradient from the site. However, the well was agreed upon as a background well in correspondence between the Navy and the EPA and FDER

during the preparation of the closure permit. Recent analytical results indicate that the groundwater in this area is not impacted by the IWT. This was clarified in the work plan text.

**Comment 12, Page 3-4, Section 3., Paragraph 11:**

The last sentence indicates that information regarding the surge pond temporary RCRA operation permit #H.#, 17-68087 was not available for the preparation of this work plan, however, this information is currently available in the 1988 Geraghty and Miller Semi Annual Report, Corrective Action Compliance - Monitoring Programs, Surge Pond Operation Permit WWTF NAS Pensacola and should be summarized in the data evaluation section of the work plan. All existing information must be utilized to eliminate redundancies and to design a complete, efficient, cost-effective RI/FS work plan.

**Response:**

The referenced report only mentions that the temporary permit was used to prepare the permanent permit.

**Comment 13, Page 3-7, Section 3., Paragraph 19:**

What was the permitted hazardous waste facility mentioned here?

**Response:**

The hazardous waste facility mentioned here is located near Emelle, Alabama, and is operated by Chemical Waste Management, Inc. This information was added to the text.

**Comment 14, Page 3-79 Section 3., Paragraph 20:**

If low or detectable levels of phenols, cyanide, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and toluene were detected in soils beneath the sludge drying beds and/or the surge pond, then how could these units have been given clean-closure status?

**Response:**

Only the polishing and stabilization ponds were clean-closed. The sludge-drying beds and surge pond were closed but with a follow-up monitoring plan according to the post-closure permit.

**Comment 15, Page 3-8, Section 3., Paragraph 21:**

How were wells DG-1, DG-2, DG-6, GM-74 abandoned?

**Response:**

These wells were reported to have been plugged and abandoned properly following the Northwest Florida Water Management District abandonment procedures. The text was modified to reflect this.

**Comment 16, Page 3-9, Section 3., Paragraph 26:**

"Since July 1990, the recovery system has been inoperative..." What other remedial activities have been conducted in the interim period to substitute for the inoperable well recovery system? The most recent literature on well recovery systems indicates that pulse pumping, not continuous pumping, is the best method to use for contaminated groundwater (Randall Ross, KERL, Ada, Oklahoma).

**Response:**

No other remedial activities were conducted during the interim period. The recovery system is currently scheduled to be repaired and brought to operational status by November 15, 1991. The comment regarding pulse pumping is noted.

**Comment 17, Page 3-9, Section 3., Paragraph 27:**

The next to last sentence in this paragraph states "No overall interpretive or summary reports have been developed from these sampling efforts other than formal data transmission." Why not? It

would appear that this large body of information would be critical to providing adequate Monmtian for risk assessment and remedy selection without "reinventing the wheel". It seems somewhat irresponsible to ignore this data when it has the potential to save time and money in the study.

**Response:**

Only formal data transmission is required to meet the quarterly permit requirements. Section 12 of the work plan did propose evaluating and preparing a complete summary of this data for use in the investigation. It seems somewhat non-constructive and useless to ask questions which are thoroughly answered elsewhere in the work plan.

**Comment 18, Pages 4-1 to 4-2, Section 4:**

This section should include a NOAA average monthly climatic data table summarizing the current temperature and rainfall data for the Pensacola area.

**Response:**

A NOAA climatic data table was added to the section.

**Comment 19, Pages 5-1 to 5-9, Section 5:**

It appears that an endangered species/ecological survey was conducted in March 1986; however, many of the subsections are written as being site-specific but reference Wolfe et al. (1988).

The FDER samples collected along the WTP outfall are significant but are only briefly mentioned. More detail describing these samples and results should be provided. How will the drastic drop in species abundance and diversity close to the sewage outfall/turning basin be addressed and remediated?

More detail regarding the site-specific estuarine system and wetlands classification in the vicinity of the site is necessary.

**Response:**

The Navy did perform an ecological survey in 1986 at NAS Pensacola as part of a home porting study. The study by Wolfe et. al. (1988) was regional but includes the NAS Pensacola area. The Navy study Monmtian is presented in a site-specific context whereas, Wolfe et. al. is more general. The text seems very clear in this regard.

More details regarding FDER sample results near the outfall were added to the work plan. The impact of the outfall on biota in the bay will be assessed during the investigation of the Pensacola Bay Area Site (Operable Unit [OU] 17).

More detail regarding the estuarine system and wetlands near the site was added to the work plan.

**Comment 20, Pages 6-1 to 6-2, Section 6:**

Figures that identify surface water location/run-off pathways, and the 100 year flood plain, if applicable, should be utilized in the description of the site-specific surface water hydrology to identify potential migration pathway.

**Response:**

The only potential surface water run-off pathway identified on the site is the drainage ditch south of the polishing and stabilization ponds. Surface water and sediment samples will be collected from the ditch. A figure showing the location of the 100 year flood plain was added to the work plan.

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**Comment 21, Page 6-2, Section 6.2:**

"The portion of the creek adjacent to the three sites, Bayou Grande, and Pensacola Bay are all subject to tidal fluctuation in water levels." What studies have been or will be performed to determine how these tidal fluctuations effect groundwater flow direction and gradient?

**Response:**

This comment is inconsistent with comment 25 below which suggests that tidal fluctuations should not have a significant influence on surficial zone water levels. Nonetheless, the hydrologic assessment section was modified to include collecting water levels at opposing tidal phases to observe the influence of tides on water levels.

**Comment 22, Pages 7-1 to 7-7, Section 7:**

This section should include both regional and site-specific descriptions and figures for soil type distribution, geologic structures and geologic cross sections.

**Response:**

Soil type distribution was added to the text. A discussion of geologic structures and a geologic cross section was added to the work plan.

**Comment 23, Page 7-2, Section 7.1.2.1, Paragraph 2:**

The water from the surficial zone is currently not used for drinking water in the vicinity of the disposal sites at NAS. However, water from this zone is discharged to wetlands on NAS Pensacola and to the Pensacola Bay and Bayou Grande. These areas are habitats for rare, threatened, and endangered species, areas defined as ecologically vital. As outlined by The Guidelines for Ground-Water Classification under the EPA Ground-Water Protection Strategy, the surficial zone of the Sand-and-Gravel Aquifer is classified as Class I-Special Ground water. Class I aquifers are subject to the most stringent cleanup standards.

The value provided in this section for hydraulic conductivity of the surficial zone of the Sand-and-Gravel aquifer is 16 to 56 ft/day. However, on page 3-4, the stated hydraulic conductivity value for this zone is 170 to 230 ft/yr (0.47 to 0.63 ft/day). Hydraulic conductivity clarification for the surficial zone should be made.

**Response:**

Comment noted.

\* The EPA reviewer has confused hydraulic conductivity with groundwater flow velocity, both of which are given in units of feet per day. The text in Section 7.1.2.1 referred to hydraulic conductivity whereas, page 3-4 referred to flow velocity.

**Comment 24, Page 7-3, Section 7.1.2.1, Paragraph 5:**

Classification of the groundwater in the Main Producing Zone should be discussed in this section. Total dissolved Solids (TDS) analytical results should be provided to confirm this classification. Assuming the low permeability zone is continuous in the NAS Pensacola area and that this zone prevents communication between the surficial and the major producing zone, the major producing zone could be classified Class II-B, Potential Source of Drinking Water. A Class II assignment to the major producing zone is contingent on a TDS concentration of less than 10,000 ppm.

**Response:**

A discussion of the aquifer classification was added to the text.

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**Comment 25, Page 7-5, Section 7.2:**

This section mentions that the later levels of the surficial zone of the Sand-and-Gravel Aquifer vary with the fluctuating tides. Section 3.6.2.1 (page 3-7) of the Interim Data Report for Site 14 also discusses the influence of tidal fluctuations on the groundwater flow direction in the surficial zone. If this zone is truly unconfined, relative water levels should not be significantly affected by tidal fluctuations. Unconfined aquifers have high storage values (0.01 to 0.3) allowing the aquifer to efficiently dissipate loading from tidal fluctuations. Therefore, relative water levels and groundwater flow directions of unconfined aquifers should not fluctuate significantly with the tides.

**Response:**

This comment is inconsistent with EPA's comment 21 above. See response to comment 21.

**Comment 26, Pages 7-5 to 7-6, section 7.2, Paragraph 1:**

"Water levels observed in these wells indicate that the later table occurs approximately 1 to 4 feet ELS, depending on tidal influence and land elevation..."; "...the direction of groundwater flow within the surficial zone in the vicinity of sites 32, 33 and 35 is toward either Bayou Grande or Pensacola Bay, depending on proximity to either water body."; "Additionally, the direction of groundwater flow... can be locally influenced by operation of a seven-well recovery system installed in the surficial zone..." This information is also applicable to the ten sites covered in the recently reviewed Interim Data Reports, and should have been discussed in those documents.

**Response:**

The IWTP recovery well system is too far from any of the 10 sites mentioned, except possibly Site 13, to have any appreciable effect on water levels or groundwater flow directions at these sites.

**Comment 27, Page 7-6, Section 7.2, Paragraph 1:**

"Pumpage from the recovery system ceased in July 1990." What other remedial activities have been conducted in the interim period to substitute for the inoperable well recovery system?

**Response:**

This comment repeats the question asked in comment 16. See response to comment 16.

**Comment 28, Page 9-1, Section 9:**

The Generic Site Management Plan discusses in [3.3.2] Work Plan Development that the existing site data would be evaluated and used to develop a conceptual site model which should have been presented in this work plan. In addition, the potential location, action, and chemical specific ARARs should have been presented as a part of this work plan.

**Response:**

A conceptual site model was added to the work plan. Text regarding ARARs was also added.

**Comment 29, Page 11-1, Section 11:**

Region IV EPA specific guidelines and requirements should also be considered in preparation of the SOAP.

**Response:**

The Navy was not aware that Region IV EPA has guidelines and requirements for the preparation of SOAPS. The Navy requests that EPA provide a copy of this guidance.

**Comment 30, Page 12-1, Section 12:**

The quarterly reports, and other previously produced reports should have been "evaluated from a comprehensive perspective" during development of this work plan. In addition, the data should have been included for review in this report. The references to a "phased" approach must be eliminated. This work plan should be revised to reflect the large quantity of historic data currently available

and to include all sampling deemed necessary to produce the baseline risk assessment and, ultimately, support remedy selection.

**Response:**

A summary of the results of the quarterly groundwater data was added to the work plan site history section. The EPA RCRA branch has previously been provided with copies of the data. The work proposed for Phases I and II was divided into one phase. However, the possibility exists that another phase of work may be required to fill any remaining data gaps. Thus, some discussion of phases was necessary. The work plan site history section was revised to include a more detailed discussion of available site data.

**Comment 31, Pages 15-1 to 15-17, Section 15:**

A complete evaluation of existing data should be completed prior to identification of data gaps and subsequent selection of Phase I Field Screening and Phase II Characterization and Extent Delineation sampling methodologies and analytical parameters.

Phase I analytical screening detection limits for water, found in Tables 9-1, 2, 3 and 4 of the GOAPP, were much greater than the EPA CLP Contract Required Quantitation Limits (CRL) (i.e., phase I screening detection limit for Heptachlor = 5 ug/L vs Heptachlor CRL = 0.05 ug/L). EPA concurs with FDER's general comment #1.

Several subsections of the field methodology section reference the GOAPP objectives/advantages and methods and are not site-specific. The site-specific QAPP (SQAP) has not been provided and is essential for a complete review of field methodologies proposed in this section.

**Response:**

The evaluation of existing groundwater data, as proposed in Section 12 of the draft work plan, has been completed and the results summarized in the revised work plan. This information has been incorporated into the work plan to provide a more thorough discussion of data gap and sampling and analytical requirements.

The originally proposed laboratory analytical screening for some of the phase I samples has been deleted. All samples will be analyzed according to CLP protocol with the lowest detection limits achievable.

The SQAP was included with the draft work plan as Appendix B.

**Comment 32, Page 15-1, Section 15.1, Paragraph 1:**

The first sentence states "The primary objective of the Phase I field screening investigation is to effectively and efficiently focus the Site Characterization/Extent Delineation (Phase II) study." Putting aside EPA's overall objection to this approach, is this a defensible expenditure at these sites? The information to be gained from the "Phase I field screening" appears to be available from past sampling activities at this site.

In addition, much of what is anticipated as "screening" can be conducted during the RI/FS without the added expenditure of mobilizing and demobilizing for these "phase." Information gained through the "Phase I field screening investigation" has been demonstrated in the "Batch 1" interim data reports to be of limited usefulness, even for the "primary objective" as stated in this paragraph.

**Response:**

The proposed Phase I surface water, sediment and soil sampling has never been conducted at these sites. The existing monitoring wells proposed to be sampled during Phase I have not been sampled for a full suite of analytes in at least five years.

As discussed above, the work originally proposed for Phases I and II has been combined into one phase and the laboratory analytical screening has been replaced with full CLP protocol analyses. In contrast to EPA's opinion, the Navy feels that the Phase I data for batches 1 and 2 has been very useful, especially in accomplishing the stated objectives at those sites.

**Comment 33, Page 15-1, Section 15., Paragraph 1:**

The Generic Quality Assurance and Project Plan (1988) was reviewed in July 1989 by EPA. There were many inadequacies and deficiencies noted in this document. There was a 1990 version of the GOAPP prepared for Sites 25 and 27 that had corrected some of these deficiencies. Why is the 1989 version being referenced over the 1990 version?

**Response:**

The reference should have specified the 1990 GOAP. The text was corrected accordingly.

**Comment 34, page 115-2, Section 15.1.1.1, Paragraph 3:**

Ubat instruments will be used for the air monitoring - OVA, OVM, HNu, etc.?

**Response:**

As specified in Section 6.1.1 of the GOAPP, either an OVA or an HNu will be used for air monitoring.

**Comment 35, Page 15-2, Section 15.1.1.2:**

Section 15.1.2 is referenced for establishment of the soil gas survey grid network when Section 15.1.1.5 should have been referenced.

**Response:**

The text was corrected accordingly.

**Comment 36, page 115-2, Section 15.1.1.3:**

Ubat is the rationale for using both the Micro-R-Meter and the gamma scintillation detector? Will these instruments detect alpha, beta and gamma emitters?

**Response:**

Both meters are used to detect gamma radiation. The Micro-R-Meter reads in units of Micro-Roentgens per hour and is useful for determining human exposure rates. The gamma scintillation detector reads in counts per minute. Both instruments are used for comparison purposes. Any hot-spots detected will be further investigated using a survey ratemeter with: 1) a pancake Geiger-Mueller probe which detects alpha, beta and gamma radiation; and 2) a zinc sulfide probe which detects alpha radiation only. This information was added to the work plan text.

↓ potential hazard.

**Comment 37, Page 15-2, Section 15.1.1.4:**

This section should include the identification of ecological receptors and identification of dominant plant communities. A second ecological survey should also be proposed in the event that the initial effort indicates additional data are needed to assess the known pathways and receptors or that additional pathways and receptors need to be investigated for additional risk characterization.

**Response:**

The habitat/biota survey will identify ecological receptors and dominant plant communities. If necessary, an additional survey will be performed to identify other pathways and receptors. Text was added to the work plan to reflect this.

**Comment 38, Page 15-3, Section 15.1.1.5:**

The soil gas survey grid **omits** paved areas. What Phase I field screening methods are proposed for these paved areas.

**Response:**

The intended **purpose** of **excluding** paved areas during the soil gas survey was to avoid disturbing the asphalt-capped **former sludge drying beds** area as is specified in the **post-closure permit**. This area has **already** been investigated and **closed**, and is not proposed for further investigation. The **only other paved areas** are **roadways** which will be investigated during the soil gas survey. The text was modified to clarify this.

**Comment 39, Page 15-5, Figure 15-2:**

According to this figure, the drainage ditch appears to be about 1000 feet in length; however, only two surface water samples are proposed. Two samples would probably be an inadequate **number** to **fully** characterize **any** contamination in the ditch. This comment **also** applies to the proposed sediment samples.

**Response:**

Two additional surface water and sediment samples **were** added to the middle portion of the drainage ditch. **All the samples** will be analyzed for TAL/TCL parameters instead of screening parameters.

**Comment 40, Pages 15-5 to 15-8, Section 15.1.2.1:**

A simple statement of the proposed **sampling** locations for **each media** is not adequate. A rationale or justification, describing **how** these proposed samples will fill existing **data gaps**, must also be provided for **each sample**.

The decontamination **procedure** given in **Section 6.10** of the 1989 GOAPP was not acceptable. If this is the procedure to **be** used instead of the 1990 version, then the equipment cannot be considered adequately decontaminated as per the EPA Region IV ECB SOPQAM.

**Response:**

Rationale for the proposed **sampling** locations was added to the work plan.

See response to comment 33.

**Comment 41, Page 15-5, Section 15.1.2.1, Paragraph 4:**

Will soil **samples** only be collected where **anomalous** organic vapor concentrations are measured? This technique can be subject to false negatives and **should** only be **used** for site screening and not for confirmation.

**Response:**

There is **currently** no information which **might** indicate where or if significant soil contamination **might be found** at the IWTP. The wastes processed by the IWTP would be expected to contain volatile organic compounds (VOCs) by virtue of the fact that much of the material is derived from solvent **cleaning** and paint stripping operations. Previous analyses of soil and **groundwater** samples **also** indicated the **presence** of VOCs. As a result, the soil gas survey should be an effective indicator of any areas potentially having contaminated soil and/or groundwater. Additionally **any other** indications of contamination (e.g., **stained soil**) **observed** during the site **reconnaissance** or other field tasks will be considered and soil **samples** will be added as appropriate. The work plan text was modified to reflect this. **Any false negative** soil gas readings would be subject to confirmation by the proposed laboratory analyses.

**Comment 42, Page 15-6, Table 15-1:**

Why will the temporary and permanent monitoring wells be **analyzed** for different parameters?

The Phase I analytical screening parameters identified in this table should include full TCL/TAL and radionuclides for all media without a complete evaluation of all existing data. QA samples (i.e. duplicates, rinsate blanks, etc.) should be included for the sediment, surface water, soil and groundwater (d) portion of the table and not just the permanent groundwater well sampling event.

Measurements for Total Recoverable Petroleum Hydrocarbons (TRPHs) are not helpful for determining compliance with groundwater protection criteria since there are no MCLs or MCLGs for this contaminant. Specific constituents which are suspected at the sites should be included in the analysis.

**Response:**

The work plan was revised to include TAL/TCL analyses plus radionuclides for groundwater samples, whether collected from temporary or permanent wells.

As previously mentioned, the laboratory analytical screening has been replaced with TAL/TCL analyses. The field QA samples have been increased accordingly.

Analysis of groundwater samples for TRPHs has been dropped.

**Comment 43, Page 15-8, Section 15.1.2.1, Groundwater:**

Based on a review of the Interim Data Reports, the hydraulic gradients at NAS Pensacola are low in the lateral and vertical direction. Contamination may therefore not always migrate in the direction of regional groundwater flow, but may disperse radially. This should be considered in devising a groundwater sampling plan for these sites.

**Response:**

Comment noted.

**Comment 44, Page 15-8, Section 15.1.2.1, Paragraph 4:**

Phase I soil sample analytical screening parameters include VOCs, therefore these samples should not be composited from the 0-5 foot interval, as compositing requires mixing of the sample prior to collection which may cause the organics to volatilize resulting in much lower concentration levels for these contaminants.

**Response:**

Soil samples for VOC analysis will not be composited. See Section 6.6.2 (paragraph 8) of the GOAPP.

**Comment 45, Page 15-8, Section 15.1.2.1, Paragraph 6:**

What assurances are there that the salt water intrusion will not affect the stainless steel well casings/screens?

**Response:**

The temporary stainless steel wells will be installed to a depth a few feet below the water table. There is no known salt water at this depth beneath the site.

**Comment 46, Page 15-8, Section 15.1.2.1, Paragraph 7:**

More than two temporary wells should be proposed in the Phase I screening activities. It is suggested that upgradient temporary monitor well points be included just southwest and southeast of the existing wells. These wells would characterize the groundwater conditions and any contaminants which may be contributed from off-site which seems to occur at Pensacola NAS. Also, what methods are proposed to evaluate the potential for contamination in deeper zones of the Sand-and-Gravel

Aquifer at these sites. Justify the decision to postpone installation of all intermediate and deep wells to the second Phase of field work.

**Response:**

Existing shallow monitoring wells GM-12R and GM-13 are located on the upgradient side of the sites and are relatively free of contamination. These two wells will serve as the background/upgradient wells for the shallow zone.

**Comment 47, Page 15-9, Section 15.1.3, Paragraph 1:**

what benchmark will the elevations be surveyed relative to?

**Response:**

The elevations will probably be surveyed relative to either a spot elevation benchmark held in the northern portion of the site or a USGS benchmark located on Chevalier Field to the south of the site. This information was added to the work plan.

**Comment 48, Page 15-9, Section 15.1.3, Paragraph 3**

Details of the aquifer tests to be performed for these sites need to be provided. What analytical method will be used to evaluate the aquifer characteristics (hydraulic conductivity and storage values)? what assumptions were used to select this analytical method? What wells will serve as the pumping and monitor wells? What is the location of, and depth penetrated by, each of these wells? What will the duration of the drawdown and recovery test be?

**Response:**

More details regarding the proposed aquifer test, analytical methods, assumptions, well locations and depths, and test durations have been added to the work plan.

**Comment 49, Page 15-10, Section 15.2.1,**

Biota sampling should be conducted regardless of the results of the biota survey. The ecological sampling at a minimum, should include benthic invertebrate sampling as well as possible fish whole body tissue analysis for contaminants of concern.

**Response:**

Complete ecological risk assessments, including biota sampling, of the wetlands, Bayou Grande and Pensacola Bay area will be performed as part of the investigations of OUs 15, 16 and 17. For efficiency, the Navy would like to perform the investigation of the wetland/aquatic habitats adjacent to the IWTP at the same time as OUs 15, 16 and 17.

**Comment 50, Page 15-11, Table 15-2:**

Why will the soil and groundwater samples be analyzed for different parameters?

Analytical Suite A should include the following gross parameters; TSS, pH redox potential, dissolved iron, cations and anions for purposes of evaluating the soil and groundwater characteristics for partitioning of contaminants.

**Response:**

Given that these proposed samples are being collected in previously unsampled areas and the potential contaminants are unknown, the soil and groundwater samples should be analyzed for the same parameters. The table has been revised to include the full TAL/TCL for all the samples.

EPA's comment appears to refer to Suite B for soils. Suite A is for water samples only and the majority of the suggested additional analytes are appropriate for soil only. An additional analytical suite has been added for soils to include these and other remediation parameters for selected soil samples.

**Comment 51, Page 15-12, Section 15.2.2:**

Soil samples to be analyzed for VOCs are not to be composited but must be transferred directly into the sample container.

Only 6 soil samples from a total of two boreholes are proposed. More soil sampling locations are needed for source characterization and to determine the horizontal and vertical extent of soil contamination. Also, see comment 41.

Where will the proposed Phase II soil samples be collected?

**Response:**

see response to comment 44.

The total number of proposed soil sample locations for TAL/TCL analysis has been increased to 12. There are no known source areas based on existing information and it would be impractical to collect samples randomly across the entire site. The sample locations will be based on the results of the soil gas survey or any other observed signs of potential contamination. See response to comment 41.

As specified above, the soil sample locations will be based on soil gas results and/or any visual observations, thus the proposed locations are currently unknown.

**Comment 52, Page 15-12, Section 15.2.3:**

What is the rationale for using 0.015-inch slotted screen for the shallow monitoring wells? Why was 4-inch PVC chosen over 2-inch?

**Response:**

The specified 0.015-inch slotted screen is recommended based on its compatibility with a coarse grained filter pack material which is commonly used for wells installed into the Sand-and-Gravel Aquifer in this area.

Four-inch diameter PVC is recommended over two-inch for the following reasons: 1) the larger diameter allows more flexibility in the use of larger pumps, if necessary, for developing, purging and performing aquifer tests; and 2) the larger diameter wells can be used as supplemental recovery wells, if required.

**Comment 53, Page 15-14, Section 15.2.4:**

Same comment as above for the intermediate monitoring wells.

**Response:**

The response to comment 52 also applies to this comment.

**Comment 54, Page 33-14, Section 15.2.6:**

What benchmark will the elevations be surveyed relative to?

**Response:**

See response to comment 47.

**Comment 55, Page 15-16, Section 15.2.6:**

See comment 48.

**Response:**

See response to comment 48.

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**Comment 56, Page 15-16, Section 15.2.7:**

Several surface soil samples should be collected for grain size analysis to determine the extent to which, if any, dust/airborne particles act as a potential contaminant migration pathway.

**Response:**

The collection of surface soil samples for grain size analysis was added to the work plan.

**Comment 57, Page 15-17, Section 15.5.1:**

The decontamination procedure given in Section 6.10 of the 1989 GQAPP was not acceptable. If this is the procedure to be used instead of the 1990 version, then the equipment cannot be considered adequately decontaminated as per the EPA Region IV ECB SOPOAM.

**Response:**

See response to comment 33.

**Comment 58, Page 15-17, Section 15.5.2:**

How will the investigation-derived waste (water, cutting, protective clothing, etc.) be ultimately disposed of and by whom?

**Response:**

The Navy is in the process of establishing procedures for the ultimate disposal of the investigation derived wastes.

**Comment 59, Page 17-1, Section 17.**

It appears that the groundwater conditions and the existing analytical data on the site already provides sufficient information for making the assessments of the two scenarios. However, if groundwater modeling is performed, some explanation of the model selection process should be included. MODFLOW may be more suitable than RANDOMWALK.

**Response:**

Given that the extents of potential contamination in the shallow and intermediate zones are not yet fully defined, it would be impossible to simulate contaminant plume movement and/or cleanup times. An explanation of the model selection rationale was added.

**Comment 60, Page 18-1, Section 18.1:**

The concept and selection of indicator (surrogate) chemicals is not appropriate for site characterization and risk assessment purposes. Section 5.8 of "Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation Manual (Part A)" details the selection of chemicals of concern.

**Response:**

\* The risk assessment will be performed in full accordance with the referenced risk assessment guidance document. The selection of chemicals of concern will be as specified in this document. The risk assessment section of the work plan has been modified accordingly.

**Comment 61, Page 18-3, Section 18.2:**

The final step in the exposure assessment is to develop a quantitative estimate of exposure. A qualitative estimate is not acceptable in the vast majority of contaminant pathway scenarios.

**Response:**

\* The Navy agrees with this comment. The risk assessment section of the work plan text has been modified accordingly.

**Comment 62, Page 18-4, Section 18.4:**

It should be noted that institutional barriers to access, fences and guards for example, are not

considered in a **baseline risk assessment**. The **NCP** states that institutional controls should not be considered when conducting the baseline risk assessment.

**Response:**

Comment noted. However, all the bulleted items listed in Section 18.4 were added per EPA comments received in 1990 on other work plans.

**Comment 63, Page 21-1, section 21:**

What is the purpose of having a "90%" draft? Most reports are submitted as a first draft, a final draft, then a final report.

**Response:**

The 90% draft is the first version of the report submitted to the Navy by the contractor. Following Navy review and any revisions to the 90% draft, the 100% draft report is submitted to the EPA, FDER and TRC members.

**Comment 64, Appendix A:**

This safety plan was last dated 1/23/91: Have any \_\_\_\_\_ been made since that time? How is the minirad comparable to the Micro-R-Meter and the gamma scintillation detector listed on page 15-2?

The HNu listed here was not noted in the text as air monitoring.

The decontamination procedure listed on page 3 of 6 is not acceptable; the decontamination procedures given in Appendix B of the EPA Region IV ECB SOPQAM should be used.

**Response:**

The Site-Specific Safety Plan (SSP) has been revised to reflect the proposed date of field activities and several other minor changes. No significant changes have been made.

See response to comment 34. Section 6.1.1 of the GOAPP states that either an OVA or an HNu will be used for air monitoring.

Decontamination will be performed according to Section 6.10 of the GOAPP. The procedures listed in the SSP will be modified accordingly.

**Comment 65, Appendix B:**

The number of trip and field blanks given here is not adequate; see Section 4 of the EPA Region IV ECB SOPQAM for the correct number and type of blanks to collect.

Regarding the "Gross Parameters" listed on Page 7:

a. The pH determinations should be conducted at the time and samples are taken (within 15 minutes).

b. Why are some samples to be collected for BOD and COD? The results for these in groundwater and surface water will likely be so low they will be meaningless.

c. EPA fails to see the need for any of these parameters in an RI/FS. They will require a special analytical service (SAS) and will be quite expensive.

**Response:**

The Navy would like to point out that EPA's comment 31 indicated that the SOAP had not been provided; however, these comments refer to the SOAP.

Given that the SOAP has two sections which list field QA samples, analytical screening (phase I) and regular analyses (Phase II), the Navy is unsure about which section the EPA is referring to. As noted in previous responses, the analytical screening program, which had a reduced level of QA samples, has been dropped for these sites. Thus the number of field QA samples will be similar to those proposed for Phase II. The EPA SOPQAM is not very clear regarding the number of trip and field blank samples required, however, the relative numbers proposed for the investigation appear to generally conform with these requirements.

**Regarding gross parameters comments:**

- a) pH measurements on water samples will be collected in the field at the time of sample collection;
- b) BOD and COD are determined for selected samples in order to evaluate potential remedial alternatives; and
- c) Some of these parameters were also recommended by EPA in comments 56 (grain size analysis) and 50 (total suspended solids, cation exchange capacity, etc.). These parameters are generally required in order to evaluate potential remedial alternatives. Many laboratories commonly analyze for these parameters.

Attachment B

**RESPONSES TO COMMENTS FROM THE  
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION**

**Comment 1:**

In general, the document outlines adequate assessment methodologies and procedures destined to advance the CA/RA towards Phase II (Characterization/Extent Delineation). However, while "screening" detection limits are not provided with this document and if said limits are implied to be the same ones used in the CA/RA Investigation for Sites 1, 2, 11, 12, 13, 14, 15, 24, 26, and 30, a problem may arise with the PAHs and chlorinated phenols detection limits for groundwater as well as volatile organic aromatics for soils if the detection limits for those constituents are higher than FDER standards or guidance concentrations. Thus, even though constituents may not be detected at the stated detection limits in the "screening phase", they could still be present above FDER standards or guidance concentrations for clean soil and groundwater. Therefore, we recommend that lower detection limits for the constituents stated above be used.

**Response:**

The work plan has been revised to combine the Phase I and Phase II objectives. Consequently, all samples will be analyzed for the full Target Compound List/Target Analyte List parameters and will utilize the lowest detection limits attainable under CLP protocol.

**Comment 2**

Corrective Actions for this group indicated that continuous pumping and treatment of groundwater at this site was to be carried out, however, it seems that such work has stopped due to mechanical reasons. Is there an estimated date on which such activities will resume?

**Response:**

The groundwater recovery system at this site is scheduled to be repaired and returned to operation by November 15, 1991.

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## Attachment C

### RESPONSES TO COMMENTS FROM THE FLORIDA DEPARTMENT OF NATURAL RESOURCES

#### **Comment:**

We have very serious concerns with the areas of Bayou Grande and Pensacola Bay, as they contain our jurisdictional trust resources. The work plan appears to study the needed areas of concern. However, we do have concerns with the surface water and sediment samplings. On Page 15-5, surface water and sediment sampling from Sites 13 and 30 will be used for "possible correlation" to the Group 0 sites during Phase I. However, in Phase II, there is no mention of further surface water and sediment sampling study should a correlation be found. Only groundwater and soil sampling will be expanded upon.

The surface water and sediment samplings at Sites 13 and 30 will be addressed during their studies. However, if contaminants related to the Group 0 sites are shown to be of issue in these samplings, then Phase II needs to incorporate further analysis related to the Group 0 sites.

#### **Response:**

According to the revised (September 1991) Group C work plan, the Phase II investigation of site 13 will be performed concurrently with the Group 0 work. The proposed work includes the collection of surface water and sediment samples adjacent to the Industrial Wastewater Treatment Plan (IWTP) in Pensacola Bay. The investigation of Site 30 will be later according to a different schedule but includes the collection of surface and sediment water samples in Bayou Grande adjacent to the IWTP. Any surface water and/or sediment contamination detected as part of either Site 13 or 30 will be incorporated into the Group 0 results. If additional sampling is required to further delineate the extent of any contamination detected it will be performed as part of either Group 0 or Site 30. A statement to that effect was added to the Group 0 work plan.

11/10/91

Attachment D

RESPONSES TO COMMENTS FROM THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

**Comment 1:**

The soil gas survey will not locate contamination by toxic elements, semi-volatile organic compounds, PCBs or pesticides, which may be found separately in soil and groundwater from organic compounds. Phase I soil and groundwater sampling should be performed in a systematic manner throughout the site unless current and reliable soil and groundwater data are available to determine locations of contamination.

**Response:**

There is currently no information which would indicate where or if significant soil contamination might be found at the Industrial Wastewater Treatment Plant (IWTP). The wastes processed by the IWTP would be expected to contain volatile organic compounds (VOCs) by virtue of the fact that much of the material is derived from solvent cleaning and paint stripping operations. Previous analyses of soil and groundwater samples also indicated the presence of VOCs. As a result, the soil gas survey should be an effective indicator of any areas potentially having contaminated soil and/or groundwater. Additionally, any other indications of contamination (e.g., stained soil) observed during the site reconnaissance or other field tasks will be considered and soil samples will be added as appropriate. The work plan text was modified to reflect this.

**Comment 2:**

The use of temporary wells did not provide reliable results in Phase I sampling of other sites. Unless changes are made in sampling and analysis procedures to address these problems, permanent wells should be installed for Phase I.

**Response:**

Unless confirmatory samples collected from permanent wells prove otherwise, all Phase I sampling results should be regarded as reliable. The Group 0 work plan has been revised to combine Phase I and Phase II objectives, and will include the installation of permanent monitoring wells as opposed to temporary wells. However, the Navy fails to see the connection between sampling and analysis procedures and the type of monitoring well installed.

**Comment 3:**

The assumption that additional data for Group 0 sites will be provided by sampling of Sites 13 and 30 is not supported by information provided for those sites. The recommendations for Phase II sampling included with the Interim Data Reports for those sites did not provide for delineation of contamination from Group 0 sites. Planned Bayou Grande Phase II surface water and sediment sampling for Site 30 was too limited. According to the Phase II Site 13 sampling recommendations in the Interim data Reports, contamination from the Group 0 sites should be investigated as Group 0 sampling. Additional surface water and sediment samples should be collected at Bayou Grande and Pensacola Bay where surface water or groundwater from the sites discharge, as part of Group 0 sampling.

**Response:**

According to the revised (September 1991) Group C work plan, the Phase II investigation of site 13 will be performed concurrently with the Group 0 work. The proposed work includes the collection of surface water and sediment samples adjacent to the Industrial Wastewater Treatment Plan (IWTP) in Pensacola Bay. The investigation of Site 30 will be later according to a different schedule but

includes the **collection** of surface and sediment water samples in **Bayou Grande** adjacent to the IWT. **Any surface** water and/or sediment contamination detected as part of either Site 13 or 30 will be incorporated into the **Group 0 results**. If additional **sampling** is required to **further** delineate the extent of any **contamination** detected it **will** be performed as part of either Group **0** or Site 30. A statement to that effect **was** added to the Group **0** work plan.

**Comment 4:**

The Phase I analysis of samples should be more extensive than planned. At a minimum, analysis of all samples should be for all TAL substances, including mercury, and PCBs. Detection limits for metals, pesticides and PCBs should be at or below the ambient water quality criteria for the protection of aquatic organisms (AWQC) for surface water and groundwater samples and ER-L concentrations (Long and Morgan, 1990) for sediment samples, in order to provide meaningful results for evaluation the potential risk to aquatic organisms.

**Response:**

As a result of combining Phase I and Phase II objectives, all samples will be analyzed for the full TAL/TCL and will utilize the lowest detection limits achievable using CLP protocol.

**Comment 5:**

The effects of major storm events on surface water run-off should be considered when inspecting for surface drainage during the Phase I physical reconnaissance. All drainage pathways should be included in the sampling program for Group 0 as well as the portions of Bayou Grande and Pensacola Bay near the discharge points of those drainages.

The effects of major storm events on surface water run-off will be considered. Thus far, the only identified surface drainage feature on the sites is the drainage ditch south of the polishing and stabilization ponds. The number of proposed surface water and sediment samples in the ditch has been increased from two to four in order to better characterize the extent of any possible contamination. Any additional surface water pathways identified will also be sampled.

**Comment 6:**

A comprehensive surface water and sediment sampling program for Bayou Grande and Pensacola Bay should be considered as a separate effort from individual site sampling programs. A comprehensive program would provide data for evaluating individual sites and interrelationships between sites, and for locating contaminant sources not previously identified. This type of program is needed to conduct an ecological assessment for the NAS Pensacola site.

**Response:**

The Navy agrees with this comment. A comprehensive surface water and sediment sampling program will be conducted at NAS Pensacola during the investigation of the Bayou Grande Area (operable unit [OU] 15), the NASP Wetlands (OU 16), and Pensacola Bay (OU 17).

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