

**ecology and environment, inc.**

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International Specialists in the Environment

February 21, 1990

Commanding Officer
Attn: (Code 11446)
Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
Charleston, SC 29411-0068

Re: Responses to the Technical Review Committee (TRC) Comments,
Naval Installation Restoration Program Contamination Investigations
at Naval Air Station Pensacola, Florida, Contract No.
N62467-88-C-0200

Dear Sir:

Ecology and Environment, Inc. (E & E), is pleased to submit two copies of final responses to TRC comments on the Project Management Plan, Site Management Plan, General Health and Safety Plan, Quality Assurance Project Plan, and Work Plan Groups A through G, and J, K, M and N for the above-referenced project. These final responses contain the remarks received from Mr. David Criswell on February 15, 1990 on the draft responses. The responses consist of eight attachments (A through H). Each attachment references the comments from a particular TRC respondent. In addition, two copies of the responses have been sent to Mr. Dewayne Ray, NAS Pensacola Environmental Coordinator. This work was performed under Contract No. N62467-88-C-0200.

If there are any questions concerning the comment responses or other matters pertaining to the project, please feel free to contact me or Rick Rudy at (904) 877-1978.

Sincerely,

ECOLOGY & ENVIRONMENT, INC.

John D. Barksdale
Project Manager

JDB/jdb

Attachments

cc: R. Rudy; E & E - Tallahassee
G. Strobel; E & E - Buffalo
D. Heiderstadt; E & E - Buffalo
Buffalo Central File (UH1000)
Project File

Attachment A

RESPONSES TO COMMENTS FROM THE
COMMANDING OFFICER, NAVAL AVIATION DEPOT
NAS PENSACOLA

Comments:

1. a When installing temporary or permanent monitoring wells or soil borings, the work must be done so as not to prevent access to essential NADEP building and structures. This will be particularly apparent during work on work groups E, F, G, M, and N. Close coordination with this command will be essential, and some work may have to be accomplished on weekends or holidays.

1. b Temporary or permanent covers for monitoring wells installed on aircraft ramps and tow-ways must withstand the weight of aircraft and tow vehicles. This is essential to prevent damage either to the aircraft or to the monitoring wells. These covers must conform to reference (b), must be constructed of ductile iron or structural steel, and must withstand a minimum proof loading of 100,000 pounds, which should be identified on the cover.

Response:

The Navy agrees with both these comments and will make the necessary arrangements to comply with these requirements prior to initiating fieldwork.

Attachment B

RESPONSES TO COMMENTS FROM THE
ESCAMBIA COUNTY EMERGENCY MANAGEMENT OFFICE

General Health and Safety Plan (GHSP)

Section 3.3 -- Site Entry Procedures

Comments:

This speaks to boundaries being established for the affected area. Will signs be used to separate the different zones? Will the operation be 24 hours? If not, will there be security on site during non-working hours?

Response:

For those sites and/or areas requiring the establishment of formal work zones, the boundaries separating these zones (e.g., between the exclusion zone and the contamination reduction zone) will be clearly marked. Fieldwork will occur during daylight hours only; however, the area will be secured prior to departing the site.

Section 3.5 -- Emergency Equipment and Procedures

Comments:

Describe what role NAS Fire Department will have in the entire project.

Will the Navy Ambulance or Escambia County Ambulance be transporting any victims? Pre-hospital notification of the contamination must be given.

NOTE: It is suggested that a telephone or cellular phone be on site so any emergency can be reported quickly.

Response:

The NAS Pensacola Fire Department could provide an initial emergency response; however, this would be coordinated through DeWayne Ray, NAS Pensacola Environmental Coordinator. The NAS Pensacola Fire Department will be added to Table 3-1 in the GHSP. The Escambia County Ambulance would be used to transport any victims. Notification of contamination will be given to the ambulance and/or hospital prior to receiving a patient, and a statement to that effect will be added to the GHSP.

A cellular telephone will be kept in the field so that any emergency can be reported quickly and continuous communication/coordination with NAS Pensacola can be maintained.

Section 3.7 -- Communications

Comment:

It might be advisable for NAS Fire Department to have a radio on the frequency being used for on site work. They could then communicate directly in the event of an emergency.

Response:

As stated above, a cellular telephone will be used in order to maintain direct communication during all fieldwork activities.

Site-Specific Safety Plans (SSPs)

Comment:

Any situation or emergency that occurs which may affect the waterways or other areas in Escambia County should be reported to the Emergency Management Office. The dispatcher for this office can be reached by dialing 9-1-1.

Response:

Situations or emergencies which may affect the waterways or other areas in Escambia County will also be reported to the Emergency Management Office (EHO). A statement to that effect will be added to the GHSP, and the EHO will be added to Table 3-1 of the GHSP.

Comment:

Before work actually starts at each site, it would be beneficial for emergency response agencies to have a detailed map showing routes to the site as well as safe and hot zones. This includes any response agencies in Escambia County as well - such as ambulance, fire and emergency management. The response of off base agencies should be at the request of NAS personnel.

Response:

A map of the route to each site is included in the SSP. The locations of work zones (i.e., safe vs. hot) will not be established until the fieldwork at a given site commences; however, as stated above, any restricted areas (i.e., exclusion zone) will be clearly marked.

Attachment C

RESPONSES TO COMMENTS FROM TEE
FLORIDA DEPART — OF ENVIRONMENTAL REGULATION
BUREAU OF **WASTE CLEANUP**

(5) Site Management Plan

~~Comment:~~

We assume that Appendix A (Chemical-Specific, Location-Specific and Action Specific ARARs) is just for illustrative purposes. It contains virtually no State rules, regulations or criteria.

Response:

All ARARs, including city, county, water management district, state and federal, will be considered when conducting fieldwork, interpreting data, planning further action, etc.

(6) Contamination Assessment/Remedial Activities Work Plans

~~Comment:~~

The work plans provide a thorough, extensive and comprehensive sampling and assessment process which is to be carried out for the contamination sources and the shallow groundwater aquifer. If any sites are known to have disposal of predominantly "sinker" solvents, some deeper wells should also be considered.

Response:

At any sites where the disposal of "sinker" solvents such as TCE is known or suspected to have occurred, deeper wells will be installed.

Group A

Comment:

Previous data show relatively high concentrations of vinyl chloride, chloroethane and chlorobenzene, 250 ppb, 165 ppb and 20 ppb, respectively. Also, some toluene at low levels was reported in two of the deep wells, but not in the shallow wells. I recommend that the deep wells also be sampled in the Phase I effort. In addition, the screening parameters for Phase I should include vinyl chloride, chloroethane and possibly chlorobenzene.

Response :

The Navy agrees with the comment. The description of the Phase I fieldwork in all the work plans will be amended to include sampling and full analysis of groundwater samples from all existing monitoring wells. Vinyl chloride and chloroethane are not suitable for screening analysis because these compounds are gases and the detection limits would not meet the data quality objectives specified in the GOAPP., **In addition,** the analytical screening for volatiles does not include second column confirmation. Vinyl chloride often gives false positives which would

not be subject to confirmation. Chlorobenzene could be substituted for tetrachloroethene which was not detected at this site. The analysis for vinyl chloride and chloroethane will be accomplished during the sampling of existing wells during Phase I, and during Phase II.

Group B

Comment:

Based on previous data from the site, vinyl chloride and mercury should be added to the Phase I screening parameters.

Response:

As stated above, vinyl chloride is not suitable for the Phase I screening analysis; however, this compound will be analyzed during the sampling of existing wells during Phase I, and during Phase II. Mercury is not suitable for the Phase I screening analyses. However, the analysis for mercury will be performed while sampling the existing wells during Phase I, and during all Phase II fieldwork.

Group C

Comment :

Based on previous data from the site, mercury should be added to the Phase I screening parameters.

Response:

The analysis for mercury will be performed during the Phase II fieldwork only.

Group E

Comment :

Since this was a site where tin and cyanide were disposed of in significant amounts, tin and cyanide should be added to the Phase I screening parameters.

Response:

The analysis for tin and cyanide will occur during the Phase II (and subsequent phases) fieldwork only. These parameters are not suitable for cost effective addition to the Phase I screening parameters because both require a separate additional analysis. It is unlikely that these contaminants would be present without the corresponding presence of other metals or compounds which are already included in the Phase I analyses.

Group F

Comment:

Deep well GM-61 should be sampled in Phase I, if the well can be accessed.

Response:

The deep monitoring well GM-61 will be sampled during Phase I, if the well is accessible.

Group G

Comment:

Based on previous site data, vinyl chloride should be added to the Phase I parameters. Also the outfall(s) for the sewer system should be located and sampled.

Response:

Vinyl chloride is not suitable for the Phase I screening analyses. The outfall or outfalls for the sewer system will be located, if possible, and sediment samples will be collected and analyzed during Phase 11.

4581 20

Attachment D

RESPONSES TO COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND FEDERAL FACILITIES UNIT

Many of these comments were general in nature and appear to represent either a statement only or EPA's suggestions for the performance of the investigations at NAS Pensacola. Consequently, some comments of this nature were not addressed.

General Comments

Comment 1:

NAS Pensacola has separated the RI/FS Work Plans into groups of sources (RCRA SWMUs). The Navy intends to do individual RIs and RODs for each source. This means that the Navy plans to have 37 operable units at Pensacola. EPA suggests that RIs and RODs only be done for sites that have contamination. Other solid waste sites should be investigated in a preliminary manner, such as the Phase I investigations in the Work Plans, and eliminated with EPA's concurrence from further study. If such an investigation has already been done, the Navy may propose to eliminate a waste site from consideration now. Instead of just concentrating on sources, EPA strongly urges the Navy to separate out certain contaminated media and investigate them as separate operable units. The proposed operable units are surface water bodies containing contaminated sediments from the receipt of hazardous substances over an extended period of time and which individually may provide exposure pathways that pose risks to human health and the environment. We suggest the three following operable units: 1) contamination from Naval Operations in Pensacola Bay, 2) contamination from Naval Operations in Bayou Grande, and 3) contamination from Naval Operations in freshwater wetlands at NAS Pensacola. EPA recommends breaking these 3 operable units out as separate investigations due to: 1) the complex risk assessments that are needed, 2) the fact that many sources including nonpoint sources and even base contaminated groundwater contribute to these three operable units, 3) the need to make a decision on what if any actions need to be taken in order to prevent risk from the contamination to public health and the environment and, 4) if these investigations are combined with an individual source, it may delay a decision on that source.

Response:

As stated in the investigation work plans, one goal of the proposed approach in conducting the contamination assessment/remedial activities investigations is to allow efficient identification of those sites where environmental contamination has actually occurred. Consequently, non-contaminated sites will be eliminated from the program in the most environmentally sound, cost-effective and timely manner possible. It is not the Navy's intention to perform remedial investigations (RIs) for sites where contamination is not detected during Phases I and II.

Although, several sites or site groups have a low probability of being contaminated, insufficient data currently exist to eliminate these sites from investigation.

The Navy agrees that, ultimately, Pensacola Bay, Bayou Grande and the fresh water wetlands at NAS Pensacola may need to be considered separate operable units in order to provide maximum efficiency and timeliness in proceeding with sites where remediation is required. However, the designation of these areas as operable units is premature until the extent and/or presence of contamination is determined for the sites which are adjacent to these areas.

Comment 2:

Associated with the above comment is the need to perform an Ecologic Assessment as part of a Risk Assessment for these three surface water bodies. Some of your Work Plans suggest limited sediment sampling in these areas, however, a more detailed assessment will be necessary.

Response:

The Navy feels that it is premature to plan to perform Ecological Risk Assessments or more detailed contamination assessments for the three surface water bodies until: 1) the extent and/or presence of contamination is determined for these areas and the adjacent sites; and 2) there is reasonable evidence to suggest that any contamination detected was derived from a source or sources on NAS Pensacola.

Site Management Plan Comments

Comment 1:

Table 4-1 shows the prioritization of individual sites for investigation and the schedule by which the various Site Group Work Plans (containing 1 or more individual sites) will be implemented. There appears to be a problem in this area of scheduling. For example, a low priority C site in Work Plan E is scheduled for an early start, whereas a high priority A site in Work Plan N is scheduled for a late start. EPA urges the Navy to start all priority A sites early. This may mean either breaking out priority A sites from Group Work Plans and doing an individual Work Plan for that site or alternatively reordering start dates for the Work Plan Groups.

Response:

The only priority A sites not scheduled for the earliest start-up of investigations are Site 29 (Soil South of Building 3460) and Site 36 (IWTP Sewer Area). These two sites are, however, scheduled for Phase I start-up only two months later. This delay is not considered significant in the context of the overall investigation timeframe at NAS Pensacola.

Project Management Plan (PMP) Comments

Comment 1:

Once a schedule is approved as part of a Work Plan, it will be incorporated into the Interagency Agreements (IAG) and be subject to:

conditions of the IAG. Therefore, schedules cannot be easily changed or revised. Extensions must be requested and will only be approved for good cause.

Response:

The investigation schedules will be proposed and approved on a year-to-year basis as described in the Federal Facilities Agreement (FFA) Site Management Plan. These schedules will take into account the time period required by Navy contracting procedures as well as TRC and agency review times. The schedule shown in the PMP will show time periods for each specific work segment but will not include the time periods between each work task.

Work Plans General Comments

Comment 1:

EPA recommends that the Navy limit the number of phases in its investigation. Most RIs utilize a two phase approach, but justification of four phases as you have suggested should be provided. If a four-phase approach is used, EPA will require an amended or revised Work Plan for each phase. These amendments are necessary since not all data requirements are specified in the initial Work Plan. EPA will have to review and comment on each amendment. This should be included in your schedule.

Response:

The Navy feels that the four-phased approach as proposed is valid. All the sites will be investigated through at least Phase II and, in effect, Phases I and II can be considered a single phase. Separate formal reports will not be generated for Phase I. In addition, it is anticipated that a number of the sites will not be investigated beyond Phase II. The results of Phase I will be coordinated with the TRC and regulatory agencies, and appropriate revisions to the Phase II work plans will be made. A 30-day review time for these minor changes is requested of reviewing agencies.

Comment 2

Many of your sites already have confirmed contamination. Why are you not proceeding to characterize and delineate per phases II and III in the Work Plan instead of starting with phase I? The sites include Group A, Site 1; Group B, Site 11; Group D, site 15; Group G, site 27; and Group J, Site 3.

Response:

Although some background information does exist for the sites mentioned which suggests that contamination is present, this data is not sufficient in terms of quality and/or quantity to allow the investigations to proceed directly to Phases II or III.

Comment 3:

A better schedule is needed in each Work Plan (see attached Attachment 4 as an example). Each RI/FS must be conducted in a reasonable length of time. Guidance references 18 to 24 months. Please submit in each Work

Plan a definite timetable with an exact schedule and no dashes leading off into the distant future. This schedule will become part of the IAG once the Work Plan is approved.

Response:

Given that the scope of continued investigations at each site will be based on Phase I results, the schedules shown in the work plans are tentative. As mentioned above, the schedules will be updated yearly in the FFA Site Management Plan.

Comment 4:

The Risk Assessment Sections were somewhat limited. The Agency for Toxic Substances and Disease Registry has requested that since there was no explanation of the methods or assumptions for which the potential impact of the sites on public health will be evaluated that the following data for each site be obtained during the investigation:

- 1) Distance to the closest residence (on or off base);
- 2) Type of barrier, if any, to prevent access;
- 3) Approximate population within one-fourth mile of the site (including the base);
- 4) Sensitive land uses in the vicinity of the site (schools, hospitals, retirement homes, etc.);
- 5) Activities (recreational or occupational) which take place near the sites and the estimated number of people involved;
- 6) Records of any environmental and/or health complaints by persons regarding the sites; and
- 7) Log of actions taken by health unit regarding health issues, complaints and concerns.

Response:

The information listed will be obtained during the investigation and a statement to that effect will be added to each work plan.

Comment 6:

Risk Assessments should use IRIS for determining acceptable levels of risk if contaminants are included in the data base.

Response:

Risk assessments will use IRIS, if it is available.

Comment 7:

All samples to characterize contamination should be sampled for the TCL, except for those wells specified by RCRA, which will be analyzed for Appendix IX.

Response:

At sites covered by RCRA requirements, at least one sample per media will be analyzed for Appendix IX parameters during the Phase II investigation. These samples will be collected from the area of highest contamination for each media based on Phase I results.

Comment 8:

Region IV protocol is not to install PVC wells at sites where there are solvents in the groundwater. This protocol is part of the Standard Operating Procedures that will be a requirement of the IAG.

Response:

The additional costs associated with the use of stainless steel well casings (instead of PVC) does not appear to be justified for the majority of the sites. However, the use of stainless steel may be considered where highly elevated concentrations of solvent compounds are present and corrective actions are likely to occur.

Comment 9:

Are supply wells (including back-ups) at NAS Pensacola sampled and analyzed on a regular basis? If so, what are they analyzed for?

Response:

The supply wells at NAS Pensacola are sampled and analyzed on a regular basis according to the requirements of Florida Administrative Code Chapter 17-22 (Public Drinking Water Systems). However, the exact frequency and parameters analyzed are unknown.

Comment 10:

Your Work Plans provide a thorough and extensive sampling plan of the sources and for shallow groundwater. However, the Work Plans indicate that all shallow wells are to be installed at the water table and that installation of deeper wells is dependent on finding contamination in the shallow wells. Due to the fact that "sinkers" such as TCE may not be found in your shallow wells, the Navy should install cluster wells at different depths rather than shallow wells only.

Response:

At sites where the disposal of "sinker" solvents such as TCE is known or suspected to have occurred, deeper wells will be installed into the surficial zone.

te Specific Comments

i A

Comment: Section 14.3.5

Please note that already existing deep and shallow wells show a difference in types of contaminants. This is site specific evidence that deeper well definition of contamination should not be based on shallower well contamination.

Response:

The delineation of contamination in the deeper zones based on the results of the shallow wells is not proposed.

Group B

Comment: Table 3-1

Many of the compounds on this table have Drinking Water Standards <10 ppb. Using trace as <10 ppb disguises contamination. Make sure that all further data is reported appropriately. Minimum Detection Limits (MDLs) and/or Minimum Quantification Limits (MQLs) should be indicated for each set of analyses.

Response:

All the analytical method detection limits are specified in the Generic Quality Assurance Project Plan (GQAPP). The appropriate analytical methods will be chosen in order to ensure that the detection limits for compounds are below the maximum contaminant levels (MCLs).

Group C

Comment: Section 14.2.1

A determination will need to be made on whether the PDER methods for metals in marine sediments is in accordance with EPA guidelines. How was the sampling depth for sediment samples in Pensacola Bay determined?

Response:

It is assumed that EPA will provide guidance for any alternative methods for evaluating metals in marine sediments. The sampling depths for sediments in Pensacola Bay was chosen based on previous work performed in that area and is in accordance with Florida Department of Environmental Regulation approved sediment sampling protocols.

Group D

Comment: Section 3.1

EP toxicity tests are only used to determine if a waste is a RCRA regulated characteristic hazardous waste. It is not an indication of risk, and Superfund does not use these numbers as a cutoff on whether an investigation or cleanup should be done. Superfund uses Risk Assessment to make these determinations.

Response :

EP Toxicity results will not be used to determine the need for an investigation or remedial action.

Comment: Section 14.1.3

How does your current soil sampling fit in with past sampling? EPA suggests not starting over again but building on what you already know as appropriate.

1886

Response:

The soil sample location maps will be revised to show the previous sample locations. An effort will be made not to duplicate sampling locations.

Group E

Comment: Section 14.1.3.1

How was the sampling depth for sediment samples in Bayou Grande determined?

Response:

The sediment sampling depth (**0-0.5** feet) for Bayou Grande was chosen based on an assumed low rate of sedimentation associated with an estuary of that type having relatively low surface water inflow rates and low overall adjacent surface erosion. Please advise the Navy if other criteria or guidance exists which would recommend different sampling depths or intervals.

Group G

Comment: Section 14.1.3.1

The Navy needs to define the extent of contamination from the sewer. The sampling plan appears inadequate. For example, why is only one sediment sample being taken from the sewer? Where is the outfall for the sewer? Will the sewage plant be looked at in conjunction with this assessment? Will the outfall be looked at in conjunction with this assessment?

Response:

The sewer outfall will be located and a sediment sample collected. In addition, a sediment sample will be collected from one manhole located between the site and the outfall (e.g., at manhole N4 or N3). The sewage treatment plant will be investigated separately; however, the impact of sites **25** and **27** on the plant will be considered by including a radiation survey and radiometric analyses of any samples. In addition, a radiation survey and radiometric analyses will be performed as part of the investigation of the Industrial Waste Sewer (Site 36).

Group J

Comment: Section 6.2

Is the marshy area near this site classified as a wetland?

Response:

It is currently not known whether the nearby marshy area is classified as a wetland. This information will be obtained and taken into account when implementing the investigation of this and any other sites having adjacent areas which are potential wetlands.

08000

Group K

Comment: Section 14.1.1.1

The delay in investigation of site 20 is not shown on the overall Management Plan. The schedule indicates investigation for Group K will start with groups J and M. Please revise the Site Management Plan as appropriate.

Response:

The delay in the investigation of site 20 was due to Navy construction activities occurring in the area at the time the work plan was generated. These activities are completed, thus the delay is no longer required. The work plan for Site 20 will be modified to reflect this.

Group N

Comment: Section 14.1.2.1

How deep is the sewer line buried and will soil samples reach below that depth? Also, did the Radium shop sewer connect with this sewer?

Response:

The exact depth of the industrial waste sewer varies from place to place and will be determined from Navy "as-builts" prior to fieldwork. Soil samples will be collected below the depth of the sewer at each location. The radium shop sewer does connect with the industrial waste sewer (see Group G comment).

Attachment E

RESPONSES TO COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
HAZARDOUS WASTE SECTION, ENVIRONMENTAL COMPLIANCE BRANCH
ENVIRONMENTAL SERVICES DIVISION

Generic Quality Assurance Plan (GOAP) Comments

Some of the comments on the GOAP are very general in nature and appear to be only a statement representing EPA's suggestion on how to perform a particular procedure. Consequently, some of the comments of this nature were not addressed. In addition many of the comments request additional information or detail regarding a particular procedure. Although the GOAP contains descriptions of procedures and protocols to be followed during the investigation, these descriptions are not exhaustive and were not intended to function as detailed standard operating procedures (SOPs). More complete and detailed information and procedures are contained in E & E's Corporate SOPs, EPA guidance manuals, and in the instruction manuals for the various instruments and equipment to be used.

6.1 Air Investigation

Comment: Page 6-3

The EPA criteria for meteorological stations must be met.

Response:

If practical, the EPA criteria for meteorological stations will be met.

6.2 Surface Geophysical Survey

Comment: Page 6-12

Here the report states that "Assuming that the natural characteristics of the solid matrix remain constant, EM readings can be considered indicative of varying concentrations of adsorbed soil matrix contaminant species or dissolved contaminate species in groundwater". Subsurface hydrogeologic work that has already been performed at this facility indicates that much of the natural stratigraphy has been disturbed by man, and in some cases is now man-made fill. How will this affect the EM survey?

Response:

Areas where the natural stratigraphy has been disturbed by man often show up an anomalies on an EM survey and can serve as useful indicators of previous landfill areas. All pertinent factors will be considered when interpreting the surface EM data.

6.3 Radiation Surveys and Monitoring

Comment: Page 6-18

Will E & E's ASC perform the radiation analyses?

Response:

The radiometric analyses will be performed by a subcontract laboratory and not E & E's ASC.

Comment: Page 6-19

There is no indication what type of radiation training will be given to those personnel who actually perform work in the field. Will full body counts be performed on field personnel for medical baseline information? What is the radiation level limit for work in the field? What type of protective clothing will be worn in the field? How will equipment, clothing, etc. contaminated with radiation be disposed of?

Response:

In order to work on potentially radioactive sites the site safety officer and personnel operating radiation monitoring equipment must have attended E & E's 40-hour radiation protection procedures and investigative training course. All other personnel who will be working on the site must have attended E & E's 12-hour general radiation safety course. Full body count baseline measurements will not be performed. Instead, urinalysis baseline measurements will be conducted, with follow-up measurements, if necessary. The radiation level limits are given in paragraph 6.3.2 of the GQAPP.

The protective clothing will consist of: **1)** one-piece coveralls such as Tyvek (may be layered for extra protection); **2)** neoprene gloves (two pair, layered); **3)** neoprene safety boots; **4)** disposable booties; **5)** hood (if necessary); and **6)** full-face APR (if necessary). Potentially radioactive waste will be minimized and segregated from other wastes. Cost-management decisions must be made to determine whether it is cheaper to dispose of an item than to dispose of decontamination wastes. Short half-life wastes can be held for decay to unregulated levels. Actual disposal of radioactive materials or waste will be the responsibility of the Navy and must comply with 10 CFR **61.56**.

Comment: Page 6-21

If alpha radiation is detected, what procedures will be used to guard against inhalation?

Response:

If alpha radiation is detected, or the concentration of airborne particulates on-site reach or exceed the action levels established by the health physicist, full-face APRs will be worn. The selection of APR cartridges and required protection factors will be as described in 10 CFR 20, Appendix B, Table 1.

6.4 Soil Headspace Surveys

Comment: Page 6-22

The method given on this page is useless. A 16-ounce jar will not provide adequate head space for the OVA. Five minutes will not be long enough for the sample to reach equilibrium.

Response:

Soil OVA headspace surveys as described are a proven and reliable screening method for the delineation of soils contaminated with volatile organic compounds. Furthermore, Florida regulations (Florida Administrative Code, Chapter 17-71) require the use of the above method to delineate the extent of contaminated soils at petroleum contamination sites.

6.6 Soil Sampling

Comment: Page 6-25

The decon procedure noted here will not be sufficient. Drilling equipment may need to be sandblasted to remove all rust, soil, etc. (which may have come from other hazardous waste sites).

Response:

Drilling equipment which becomes contaminated with material which is not easily removed by the decontamination procedures specified in the GQAPP may be sandblasted.

6.7 Drilling and Monitoring Well Installation

Comment: Page 6-27

The Guidelines for Groundwater Monitoring Well Installation (March 1989) was not included in this submittal for review.

Response:

The Guidelines for Groundwater Monitoring Well Installation (March 1989) will be added to the GQAPP as an appendix.

Comment: Page 6-28

Will O-rings be used with the flush-threaded joints? The threads should also be Teflon taped.

Response:

O-rings will not be used with the flush-threaded joints; however, the threads will be sealed with Teflon tape.

Comment: Page 6-30

What is the purpose of installing casing "...just above a confining/semi-confining zone..."? Well development should continue until specific conductance, pH stabilize and until the well is no longer turbid. The well survey should be tied into a USGS datum - not on-site benchmarks.

Response :

The text will be changed to "... and in or to the top of a confining/semi-confining zone...". It is not always possible or practical to develop a well until the water is clear. The monitoring wells will be developed until the specific conductance, pH, and clarity of the groundwater have stabilized. The text will be changed accordingly. Where possible, the well surveys will be tied into a USGS datum.

6.8 Groundwater Sampling

Comment: Page 6-30

Vells should be purged until temperature, pH and conductivity stabilize for three consecutive readings.

Response:

Monitoring wells will be purged until specific conductance, pH and temperature stabilize for three consecutive readings.

Comment: Page 6-31

How will immiscibles (sinkers/floaters) be detected in the wells?

Response:

Immiscibles (sinkers/floaters) will be detected in the wells using an oil/water interface probe.

Comment: Page 6-32

Ground water samples collected from residential and public supply wells should be taken prior to aeration and/or chlorination if possible.

Response:

Groundwater samples from residential and public supply wells will be collected from existing plumbing as close as possible to the pump and prior to any water treatment system, if possible.

Comment: Page 6-33

What are the stainless steel wells referenced in the first bullet?

If samples are to be filtered for dissolved metals, a total metals sample should also be collected.

"As a means of preventing downward migration..." Why is this information included in the section on sample filtering?

How often will sample temperature, pH, and conductance be measured?

Response :

The stainless steel wells in the first bulleted paragraph refer to wells where stainless steel casings and screens may be selected in place of PVC.

Corresponding total metals samples will be collected where dissolved (filtered) metals samples are collected.

The sentence "As a means of preventing ... on a well to well basis." will be deleted.

Sample temperature, pH and specific conductance will be measured and recorded for each groundwater sample collected.

6.10 Decontamination

Comment: Page 6-35

The decon procedures listed here are not adequate. The recommended methods for decontamination are as follows:

1. Steam clean and wire brush drilling equipment.
2. Clean with tap water and laboratory detergent using a brush if necessary to remove particulate matter and surface films.
3. Rinse thoroughly with tap water.
4. Rinse twice with solvent - preferably pesticide-grade isopropanol.
5. Rinse thoroughly with organic free water and allow to air dry as long as possible.
6. **If** organic free water is not available, allow equipment to air dry as long as possible. Do not rinse with deionized or distilled water.
7. Wrap with aluminum foil, if appropriate, to prevent contamination if equipment is to be stored or transported.

The decon procedure for Teflon or glass equipment used for the collection of trace organic compounds and/or metals should be:

1. Clean with hot tap water and laboratory detergent using a brush if necessary.
2. Rinse with hot tap water.
3. Rinse with at least a 10% nitric acid solution.
4. Rinse thoroughly with tap water.
5. Rinse thoroughly with deionized water.
6. Rinse twice with solvent - preferably pesticide-grade isopropanol and let air dry.
7. Wrap with aluminum foil.

Response:

With the exception of using hot tap water, E & E agrees with the recommended decon procedures and will modify the GQAPP accordingly. All tap water used in the decon procedure will be at ambient temperature.

6.12 Field QA/QC Samples

Comment: Page 6-40

If the field blank refers to a preservative blank, then two must be taken - one prior to sampling and one at the conclusion of sampling.

Response:

Navy protocol requires only one field blank per sampling event per site; however, the requirement for the collection of a preservative blank will be added. Preservative blanks will also be collected one per sampling event per site.

7.0 Sample Custody

Comment: Page 7-1

The E & E Laboratory and Field Personnel Chain-of-Custody Documentation and Quality Assurance/Quality Control Procedures Manual (July 1987), was not included for review.

Response :

A copy of the E & E Laboratory and Field Personnel Chain-of-Custody Documentation and Quality Assurance/Quality Control Procedures Manual (July 1987) will be provided to EPA.

7.1 Chain-of-Custody

Comment:

What methods will be used for shipment if samples are radioactive?

Response:

All shipments of radioactive samples will conform to U.S. Department of Transportation and any other applicable regulations.

7.4 Sample Preservation and Holding Times

Comment: Page 7-11

It is recommended that blanks be run on the pre-cleaned bottles for QA/QC purposes.

Response:

All sample containers will be pre-cleaned and subject to quality control analysis (e.g., I-Chem series 3000).

Comment: Page 7-12, Table 7-1

What method will be used if the pesticide/PCB sample contains residual chlorine? Is the chromium listed in this table hexavalent chromium?

Response:

Residual chlorine is not usually present in untreated groundwater. However, any water samples suspected to contain residual chlorine (e.g.,

chlorine-treated water) will be preserved with a 10 percent solution of sodium thiosulfate before analysis for pesticides/PCBs. The chromium listed in Table 7-1 is hexavalent chromium.

Attachment F

RESPONSES TO THE COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
RCRA WASTE ENGINEERING SECTION

Many of the comments were general in nature and appear to represent either a statement only or EPA's suggestion for the performance of the investigations at NAS Pensacola. Consequently, some comments of this nature were not addressed.

I General RFI Comments

Comment 2:

Appendix IX sampling for all potentially affected media will be required for many of these SWMUs. More limited sampling can be allowed only where the Navy can clearly demonstrate that the compounds/wastes associated with the activities taking place at a particular unit would be identified by a more restricted scope of sampling. The best sampling approach for most sites will be to first do an initial analytical screening like that outlined in the Phase I Sampling and Analytical Requirements of the work plans. The specific location where contamination is highest for each media will be the location from which the Appendix IX sample should be taken. In most cases only one sample per media per site will be required. Units such as the Sanitary Landfill or Industrial Waste Sewer Line should require more Appendix IX samples due to their size and the wide variety of contaminants that may be found within them.

Response:

At sites covered by RCRA requirements, at least one sample per media will be analyzed for Appendix IX parameters during the Phase II investigation. These samples will be collected from the area of highest contamination for each media. Some sites may require more Appendix IX samples due to their size.

II Project Management Plan Comments

Comment 1: Section 5.3.4

For the RCRA program, recommended analytical methods are provided in EPA Document SW-846 "Test Methods For Evaluating Solid Waste".

Response:

All analytical methods are fully described in the Generic Quality Assurance Project Plan.

IV Work Plan Comments

A. General

Comment 1:

There appears to be an error in the climatology section of all work plans concerning minimum monthly rainfall averages. The lowest monthly average given is 10 inches, which seems to be rather high.

Response:

The climatology section of the work plans will be corrected to reflect more accurate rainfall amounts for the NAS Pensacola area.

Comment 2: Section 7

All shallow wells in the surficial zone of the Sand and Gravel Aquifer are designed to sample only the water close to the water table interface, thereby leaving the rest of the 40 to 70 foot thickness of this zone unmonitored. Given the variable densities and solubilities of some of the contaminants of concern, such as chlorinated solvents, it is essential to consider monitoring the entire aquifer zone for contamination at each site.

Response:

At sites when the disposal of "sinker" solvents is known or suspected to have occurred deeper wells will be installed into the surficial zone.

Comment 3:

The RPI should better resolve whether or not the Low Permeability Zone truly is a continuous semi-confining or confining unit. To accomplish this, the workplans need to include the task of gathering available information on the Low Permeability Zone and fill in any data gaps that exist through additional borings, monitor wells, pump tests, etc.

Response:

During the course of the investigation an effort will be made to fully characterize the nature and extent of the low permeability zone at NAS Pensacola.

Comment 4:

In a number of the work plans reference is made to contamination found at specific soil boring locations during previous investigations. It would be helpful to include a diagram to show the locations of these soil borings in their respective work plans.

Response:

Soil sample locations from previous investigations will be added to the proposed sampling location maps in the work plans.

Comment 5:

We strongly agree with Superfund that four phases for investigation is too many, and believe that an RFI with two properly designed phases should be sufficient. For this facility, this should be more easily accomplished than would otherwise be the case, since there have been previous investigations at many of these sites. This data can be

incorporated into the RFI process to reduce the amount of additional data needed to evaluate these sites. Given the number of sites to be investigated, and the fact that there will be draft reports and revised reports, management and review of up to four phases of investigatory work for such a large number of sites will be very unwieldy and time-consuming.

Response:

The Navy feels that the four-phased approach as proposed is valid. All the sites will be investigated through at least Phase II, and, in effect, Phases I and II can be considered a single phase. A separate formal report will not be generated for Phase I. In addition, it is anticipated that a number of the sites will not be investigated beyond Phase II. Although background information exists for some sites which suggests that contamination is present, this data is not sufficient in quality and/or quantity to allow the investigations to proceed directly to Phases II or III. It should be noted that the sampling of all existing monitoring wells will be performed during Phase I instead of during Phase II as was described in the work plans.

Comment 6:

The Region IV Standard Operating Procedures and Quality Assurance Manual recommends that stainless steel materials be used for monitoring well construction where organic contaminants are of concern.

Response:

The additional costs associated with the use of stainless steel well casings (instead of PVC) does not appear to be justified for the majority of the sites. However, the use of stainless steel may be considered for sites where highly elevated concentrations of solvent compounds are present and corrective actions are likely to occur.

V Comments on Specific Work Plans

Comment 1: Group A, Section 14.1.13

Are the storm sewer outfalls above or below the bay water level? The surface emissions survey would be effective only if the outfalls are above the water line.

Response:

This comment appears to be in reference to the work plan for Group C, Section 14.1.1.3, rather than the work plan indicated. At the present time, the exact locations of the storm sewer outfalls are uncertain. During the Phase I investigation more information will be obtained regarding the outfalls. The surface emissions survey will be performed only if the outfalls are above the bay water level.

Comment 2: Group C, Page 3-2

In the second full paragraph, sediments are characterized as "fine grained" or "sandy". This description is very sketchy: are these clays, silts, sands, or what?

Response:

The sediments at the northeastern side of the turning basin are sandy silt, clayey silt with sand and silty clay, and are characterized as fine-grained. The sediments at the southwestern side of the turning basin are fine sands and fine sands with silts, and are characterized as coarse-grained.

Comment 3: Group E, Figure 14-1

There needs to be at least one monitoring well to the north of the two buildings comprising this site. At present, it is not appropriate to assume that migration of contaminants to north of these two buildings is not possible as groundwater flow direction has not been clearly established in this area. The recommended well will help establish flow direction, and if it is upgradient of the site will be useful in establishing background groundwater contaminant levels for the site.

Response:

A soil boring and shallow monitoring well will be placed in an accessible location north of Building 649 during the Phase II investigation in order to determine background groundwater quality. However, the data collected from this location will need to be evaluated carefully given the close proximity to Site 31 (Soil North of Building 648).

Comment 4: Group F, Section 14.1.1.2

It is not clear why sites 9, 10, and 23 were chosen for the radiation survey while the other sites were not. An explanation would be helpful.

Response:

Radiation surveys will be conducted at Sites 9, 10, and 29, and not at Site 23 as was incorrectly stated in the work plan. Sites 9 and 10 are areas where the disposal of unknown types of waste is believed to have occurred. Site 29 is in the location of a leak in the Industrial Sewer. In general, radiation surveys are planned as a precautionary measure at all suspected waste disposal sites. Given the unknown nature of the wastes associated with the Industrial Sewer a radiation survey was also planned for Site 29 as a precautionary measure. A radiation survey will occur as part of the investigation of the Industrial Sewer (Site 36); however, the segment of the sewer in the Site 29 area will not be resurveyed given that this area will be thoroughly surveyed as part of the investigation of Site 29.

Site 23 was the location of a fuel leak and Site 34 was the location of a solvent leak. Thus these sites do not warrant the performance of radiation surveys.

Comment 5: Group G, Section 14.1.2

The workplan should explain why a geophysical survey is not recommended for site number 27.

Response:

A geophysical survey was not recommended for Site 27 because of the road present along the northern boundary of the site which is likely to have utilities buried beneath it. In addition, the concrete slab (a former

building foundation) located immediately south of the site is likely to have structural steel and utility conduits within it. There is a high likelihood that any EM or magnetometry data collected in this area would be useless due to interference from the above items. It should be noted that, although the geophysical survey was recommended for Site 25, the interpretation of the data from this site will need to consider possible interferences from adjacent cultural features (e.g., the building, fences, etc.).

Comment 6: Group G, Table 14-1

Acids and caustics were used at these sites, but are not among the compounds to be sampled for. This deficiency needs to be corrected.

Response:

In order to determine if acids or caustics are present at this site, selected soil samples (e.g., from areas most likely to be contaminated) will be analyzed for pH during Phase II. All groundwater samples will be tested for pH.

Comment 7: Group K, Section 7.2.3

The reference in sentence number two is to site 20. Shouldn't the reference be to site 21?

Response:

The reference to Site 20 in this sentence is incorrect. The sentence will be corrected to say Site 21.

Comment 8: Group M, Figure 14-2

The monitor wells appear to be clustered into the center of site 31, which does not seem logical, since groundwater contamination has been documented (by well GM-1) to be outside of this area. The wells should be more widely spaced to get a better characterization of both the contaminant plume location and the hydrogeology. Similarly, soil borings may not encompass a large enough portion of the site; it is unclear if this is so as there are no indications as to how large an area within the site was used for waste materials disposal.

Response:

The proposed Phase II well locations are centered around an assumed area of contamination as identified during the proposed Phase I investigation. The actual locations will be adjusted according to the Phase I results, and may be more widely spaced than shown in Figure 14-2. The extents of possible soil and/or groundwater contamination will be determined during Phase III using additional soil borings and wells as required.

Comment 9: Group N, Section 14

Given the nature of some of the contaminants, and the sandy nature of the soils, soil gas sampling might be a good methodology for assessing contamination along the sewer line.

Response:

The Navy agrees with this comment. Soil gas sampling along the industrial sewer will be considered as part of the Phase I investigation.

Attachment G

**RESPONSES TO COMMENTS FROM THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV ECOLOGICAL TECHNICAL ASSISTANCE GROUP**

Group A

Comment: Page 14-2

A biological sampling plan should be prepared and submitted to EPA for approval of station location and sampling methodology. Oversight of data collection and data interpretation will need to be performed by an EPA or U.S Fish and Wildlife biologist.

Response:

If required based on the results of Phases I and 11, a biological sampling plan will be prepared with the Phase III work plan modifications.

Comment: Page 14-5

Surface water samples need to be collected from one (1) foot above the bottom. Sediment samples need to be collected by corer instead of a dredge in order not to disturb surface sediments. The top 10 cm. of the core should not be composited with the rest of the core. It should be collected and analyzed separately.

Response:

The Navy agrees with this comment.

Comment: Page 14-7

The soil sampling plan needs to include areas determined to be in the surface water pathway to Bayou Grande. In addition to soil samples, nearshore and offshore sediment samples from Bayou Grande should be collected in duplicate. One set for chemical analysis and the other for biological toxicity of sediment elutriate.

Response:

Due to the very sandy nature of the soils and the gently sloping topography, very little surface water runoff appears to occur in the vicinity of this site. If surface water pathways to Bayou Grande are identified, soil samples will be collected in these areas. Five sediment sampling locations in Bayou Grande will be added to the Phase II sampling plan. The samples will be collected parallel to and approximately 100 feet north of the shoreline adjacent to the landfill area. The sediment samples will be analyzed for chemical contamination only. Biological toxicity tests will be performed only after it is determined that contamination is present.

Comment: Page 14-13

As stated previously a biota sampling plan should be proposed for Bayou Grande as well as the other ponds on the site. If sediment samples are

found to be toxic with biological toxicity tests, a biotic index of benthic organisms will need to be assessed as an indicator of ecological damage.

Response:

The suggested benthic organism biotic indexing will be performed, if required, based on the results of the Phases I and II investigation and the results of any biological toxicity tests which are performed.

Group B

Comment: Page 14-8

Locate stations for some of the sediment samples in areas carrying surface runoff to ponds or the bayou to determine potential pathways to surface water and sediment. Duplicate sediment samples should be collected nearshore to mid-channel of Bayou Grande for chemical analysis and elutriate bioassay. The U.S. Fish and Wildlife Service and National Marine Fishery Service should be contacted for a determination of ecologically sensitive areas which may be impacted in Bayou Grande.

Response:

If areas carrying surface runoff to Bayou Grande are identified, soil samples will be collected. The collection of sediment samples in this portion of Bayou Grande is addressed in the Group E (Site 30) work plan. One additional sediment sample in Bayou Grande will be added to the Site 30 sampling plan in a location north of the proposed sediment samples for both Phase I and Phase II.

Group C

Comment: Page 14-11

What is the rationale for sampling dredged areas in Pensacola Bay? Prevailing currents in the bay may require relocating some of the proposed stations.

Response:

Sample locations were spread across the bay, including the dredged turning basin, to provide an areal distribution of possible sediment contamination. Sample stations will be relocated if required based on the observed currents.

Comment: Page 14-16

Additional sediment samples can be collected for evaluating the benthic population of Pensacola Bay when samples are collected for chemical analysis.

Response:

The need for collecting additional sediment samples for benthic population evaluation will be determined based on the results of Phases I and II.

Attachment H

RESPONSES TO COMMENTS FROM TEE
U.S. ENVIRONMENTAL PROTECTION AGENCY
LABORATORY EVALUATION AND QUALITY ASSURANCE SECTION

Comment 1: Page 6-33, Section 6.8.3, Fourth bulleted item.
Region IV policy is not to filter samples for metals analyses.

Response:

Comparison of filtered and unfiltered samples can provide insight as to whether detected metals are associated with sediment in the well or are actually present in the aquifer as dissolved constituents.

2 Page 7-12, Table 7-1

Comment a:

Acceptable preservation is HCl only.

Response:

Volatile samples will be preserved with HCl only.

Comment b:

Chromium - The holding time is 6 months, the same as Metals; however, if Chromium VI is the intended parameter, preservation is by cooling to 4°C with 24 hours holding time.

Response:

The chromium shown is hexavalent. Table 7-1 will be changed to show preservation by cooling to 4°C with 24 hours holding time.

Comment 3: Pages 7-13 and 7-14, Table 7-2, Preservation and Holding Times

- a. Sulfide - Cool to 4°C, NaOH to pH >9
- b. Alkalinity - Cool to 4°C
- c. Dissolved Solids - Cool to 4°C
- d. Suspended Solids - Cool to 4°C
- e. Nitrate - Cool to 4°C only; 48 hours
- f. Nitrite - Cool to 4°C only
- g. Total Phenol - Cool to 4°C
- h. Dissolved Oxygen - No preservation; analyze immediately
- i. TOX - Cool to 4°C
- j. Ammonia-nitrogen - Cool to 4°C.
- k. COD - Cool to 4°C
- l. Total Kjeldahl Nitrogen - Cool to 4°C
- m. Total Recoverable Hydrocarbons - Cool to 4°C
- n. Oil and Grease - Cool to 4°C
- p. Sulfite - no preservation; analyze immediately

Response:

Many of the recommended preservation techniques conflict with 40 CFR, Part 136 (July 1, 1987) and/or the Navy's Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration. These differences need to be resolved between EPA, the Navy and E & E so that the GQAPP can be modified to show the appropriate methods.