



UNITED STATES ENVIRONMENTAL PROTECTION E

REGION IV

345 COURTLAND STREET. N.E.  
ATLANTA. GEORGIA 30365

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CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Suzanne Sanborn  
Remedial Activities Branch  
Department of the Navy - Southern Division  
Naval Facilities Engineering Command  
2155 Eagle Drive  
P.O. Box 10068  
Charleston, South Carolina 29411-0068

Re: Draft RI/FS Work Plan for Group 0 (Sites 32, 33 and 35)  
NAS, Pensacola

Dear Ms. Sanborn:

The Environmental Protection Agency (EPA) has completed its review of the Draft Group 0 Work Plan for NAS, Pensacola received in this office June 24, 1991. Our general and specific comments are presented on the following pages. We appreciate your efforts to incorporate each of these.

As discussed previously, EPA remains opposed to the intentionally phased approach presented in this document. As is stated in more detail in the comments, the RI/FS Work Plan should (i) present the most complete conceptual model possible, (ii) identify the existing data gaps and (iii) develop a comprehensive, single-phased plan which will adequately characterize contamination for the purposes of performing a Baseline Risk Assessment (BRA) and selecting a Remedial Action (RA).

EPA apologizes for its failure to meet the expedited review deadline, and wishes to reaffirm its commitment to meeting these deadlines for future document reviews. Under the Expedited Schedule, the Draft/Final Group 0 Work Plan is due in this office within 90 days of receipt of this letter.

Please feel free to contact me at 404/347-3016 should you have any further questions regarding this matter.

Sincerely yours,

Allison W. Drew, RPM  
Department of Defense Remedial Unit  
RCRA & Federal Facilities Branch

Enclosure

cc: Ron Joyner, NAS, Pensacola  
Eric Nuzie, FDER

TECHNICAL REVIEW *AND COMMENTS*  
GROUP O WORK PLAN  
FOR RI/FS SITES 32, 33 AND SCREENING SITE 35  
NAVAL AIR STATION (NAS), PENSACOLA

GENERAL COMMENTS:

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.

2. All currently available, relevant information should be included in the the work plans so that the most complete conceptual model possible can be developed. This work plan generally includes only passing 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.

3. Reorganization of the Section 2.0 to include the information contained in Sections 3-7 would facilitate formulation of a more complete site description. The material contained 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)".

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.

SPECIFIC COMMENTS:

1. Section 1, Introduction:

An Executive Summary should precede this section.

Section 1 should identify the general types of contamination found at the Group O 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 O 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/QAM (1991), etc.) should also be referenced in this section.

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.

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.

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.

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 post 1989 quarterly groundwater monitoring data as well as other site data documented for the Group O 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.

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?

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

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

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 IWIP 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

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

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

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)?

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.

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 and 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.

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

What was the permitted hazardous waste facility mentioned here?

14. Page 3-7, 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?

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

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

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).

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 information 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.

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.

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 WWTP 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.

20. Pages 6-1 to 6-2, Section 6:

Figures that identify surface water location/runoff pathways, and the 100 year floodplain, if applicable, should be utilized in the description of the site specific surface water hydrology to identify potential migration pathways.

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 affect ground water flow direction and gradient?

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.

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 clean-up 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.

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.

25. Page 7-5, Section 7.2:

This section mentions that the water 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 ground-water 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 ground-water flow directions of unconfined aquifers should not fluctuate significantly with the tides.

**26. Pages 7-5 to 7-6, Section 7.2, Paragraph 1:**

"Water levels observed in these wells indicate that the water table occurs approximately 1 to 4 feet BLS, depending on tidal influence and land elevation..."; "...the direction of ground water 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.

**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?

**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.

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

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

**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.

**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 GQAPP, were much greater than the EPA CLP Contract Required Quantitation Limits (CRQL) (i.e. Phase I screening detection limit for Heptachlor = 5 ug/L vs Heptachlor CRQL = 0.05 ug/L). EPA concurs with FDER's general comment #1.

Several subsections of the field methodology section reference the GQAPP 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.

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 "phases". 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.

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

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

34. Page 15-2, Section 15.1.1.1, Paragraph 3:

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

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.

36. Page 15-2, Section 15.1.1.3:

What is the rationale for using both the micro-R-meter and the gamma scintillation detector? Will these instruments detect alpha, beta and gamma emitters?

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.

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.

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.

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 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 SOPQAM.

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.

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 ground-water 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.

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 ground-water flow, but may disperse radially. This should be considered in devising a groundwater sampling plan for these sites.

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.

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?

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.

47. Page 15-9, Section 15.1.3, Paragraph 1:

What benchmark will the elevations be surveyed relative to?

40. 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?

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.

50. Page 15-11, Table 15-2:

Why will the soil and ground water 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.

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?

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?

53. Page 15-14, Section 15.2.4:

Same comment as above for the intermediate monitoring wells.

54. Page 15-14, Section 15.2.6:

What benchmark will the elevations be surveyed relative to?

55. Page 15-16, Section 15.2.6:

See comment 48.

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.

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 SOPQAM.

58. Page 15-17, Section 15.5.2:

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

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.

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.

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.

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.

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.

64. Appendix A:

This safety plan was last dated 1/23/91: Have any changes been made since that time? How is the minirad comparable to the micro-R meter and the gamma scintillation detector listed on page 15-27

The HNu listed here was not noted in the text on 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.

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 the 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.