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April 16, 1993

U.S. Environmental Protection Agency
Attn: Ms. Allison Drew
345 Courtland Street, N.E.
Atlanta, Georgia 30365

RE: Final Sampling and Analysis Plans, Category 11: Sites 1, 25, 27, and 39, NAS-Pensacola, Contract # N62467-89-D-0318/059

Dear Ms. Drew:

Enclosed please find five copies of each Final Sampling and Analysis Plan, Remedial Investigation/Feasibility Study, for Category 11: Sites 1, 25, 27, and 39 for the Naval Air Station Pensacola in Pensacola, Florida.

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

Sincerely,
EnSafe\Allen & Hoshall

Henry H. Beiro
Task Order Manager

Enclosure
Final Sampling and Analysis Plans

EPA REGION IV
TECHNICAL REVIEW AND COMMENT
DRAFT SAMPLING AND ANALYSIS PLANS
FOR CATEGORY 2 (SITE 1 — SANITARY LANDFILL)
NAVAL AIR STATION (NAS) PENSACOLA
PENSACOLA, FLORIDA

GENERAL COMMENTS

Comment 1:

The following statement appears in Section 1.0 of each *SAP:* "This investigation will delineate the nature, magnitude and extent of any contamination identified in **work** previously conducted by E&E as Phase I of the Work Plan." These SAPs must also include a brief statement **of** the provisions/investigative approach which will be followed in characterizing and delineating any additional contamination identified in the upcoming field event.

Response:

Any additional sources or contamination previously not detected will be investigated by the collection of additional samples from any given media, sampling of additional media not included in the site-specific ***SAP,*** installation of additional monitoring wells to delineate extent and depth of contaminants, and performance of aquifer response tests to characterize subsurface hydrologic conditions. Prior to the initiation of additional field activities, a field change request will be submitted to the Navy for approval, and the FDER and EPA will be notified.

Comment 2:

Section 1.0 of each ***SAP*** must include a statement indicating that the RI will provide the basis(/supporting data) for completion of an **FS** and a BRA. Currently, only some **of** the SAPs contain such a statement.

Response:

Agreed. Change made.

Comment **3:**

As recommended by EPA in previous correspondence and agreed by the Navy, an inventory of all existing wells is planned for the entire base. In order to assure the accessibility and validity of the groundwater sampling locations proposed in these SAPs, this inventory must be completed prior to initiating any additional field work. This will allow the Navy to reserve adequate time and resources for the installation of any additional temporary or permanent wells needed to complete the planned investigations.

Response:

Agreed. A well inventory has been completed to assess the accessibility and validity of the groundwater sampling locations. Any monitoring wells that are found to be in disrepair will be repaired or abandoned in accordance with Florida regulations. The abandoned monitoring wells will be replaced with additional monitoring wells as necessary.

Comment **4:**

Section 4.0 of the SAPs includes the following statement: "Sample locations are presented on Figures.. .and are not expected to vary as they have been based on **data** collected during Phase I activities." Please amend this statement to include a reference to the paragraph which **was** inserted in Section **14.2** of each RI/FS Work Plan describing plans to adjust (e.g. redirect or expand) Phase II sampling activities as needed.

Response:

Any additional sources or contamination previously not detected will be investigated after SOUTHDIV has been notified. ***See*** Comment **1** of General Comments for a discussion of the provisions/investigative approach to be followed during the upcoming field investigation.

Comment *5:*

The table entitled RI Sampling Analytical Requirements, which appears in Section 4.0 **of** each ***SAP,*** must be expanded to include a column entitled "DQO Level" which provides the DQO analytical level (I through V) to be used in analyzing of each sample or group or samples.

Response:

All sediment, surface water, groundwater and soil samples will be collected at Data Quality Objective Level IV protocol. A column has been added to the table entitled RI Sampling Analytical Requirements listing the DQO levels for the sample groups.

Comment 6:

According to Section 4.0 of each ***SAP,*** the Navy proposes to modify the surface soil sampling interval from 0-1' to 0-2'. As previously discussed and agreed to by the Parties, surface soil samples must be collected from 0-1' for risk assessment purposes.

Response:

Surface soil samples will be collected from **0-1'** using a decontaminated hand auger or Xitech sampler prior to advancement of the soil boring. The remaining soil samples to be collected from the soil boring will be collected from **1-3', 3-5',** etc. to reduce the risk of cross contamination by allocating one sample interval per 2-foot long split-barrel sampler.

Comment 7:

According to Section 4.0 of each ***SAP,*** soil samples collected from beneath the water table using Shelby tubes will not be analyzed for Full Scan Analysis **(FSA).** This is generally acceptable. However, FSA analyses should be run in cases where visual **or** other field evidence indicates that the sample collected could potentially serve as a contaminant source for the site. In such cases, the FSA analysis may prove useful in characterizing or delineating the source material.

Response:

If physical evidence of contamination is observed below the water table, a sample will be collected for FSA analyses for characterization and delineation of the source material.

Comment 8:

According to Section 4.5 of the SAPs for Category **3** sites, "**A** Portland cement grout will be used to construct all monitoring wells...". Available historical records for numerous hazardous waste sites indicate that use of a cement-based grout is highly likely to fully or partially compromise the integrity of PVC wells over time. In addition, a bentonite grout will better seal the annular space around the well casing, thereby reducing the potential for channelized downward contaminant migration. **For** these reasons, **EPA** strongly recommends the use **of** a bentonite grout during monitor well installation.

Response:

In accordance with Florida Administrative Code Chapter 40A-3, neat cement grout is required in all monitoring well installations. Although bentonite grout might provide a better seal in most areas, bentonite grout should be avoided in coastal areas such **as NAS** Pensacola where concentrations of total dissolved solids in groundwater are high. In addition, the neat cement grout provides additional protection from storm surge (hurricanes).

Comment 9:

A full scale aquifer test (minimum 48 hours) which is designed to evaluate the hydraulic properties of the aquifer and underlying aquitard, the leakage between the two more permeable zones of the Sand and Gravel Aquifer, and the radial influence of pumping and any boundary effects, must be performed for those sites where groundwater extraction and treatment is needed. A minimum of 48 hours of pumping will allow time to collect data which represents the instantaneous release of groundwater from the zone being tested and the effects of gravity drainage within the aquifer. The aquifer test must be preceded by the test needed to design and appropriate pumping test (i.e. (i) slug tests, to provide a rough estimate of aquifer characteristics, and (ii) specific capacity, or step-drawdown, tests to estimate the pumping rates which the aquifer can sustain for given levels of drawdown). The plans for all pumping tests must be provided to EPA for review and approval prior to commencement of these tests.

Pumping tests will be required for the site as soon as it is determined that groundwater remediation is needed at that site. Based on Phase I screening results, it appears highly likely that groundwater remediation will be required for several sites in Categories 2 and 3. However, positive confirmation of this need will be obtained only through the collection of high quality data as scoped for Phase II. The Navy may therefore choose to submit pumping test plans now, as part of the present SAP, or defer preparation of these plans until receipt of the Phase II data. If the latter option is selected, the current SAP must be revised to state that a Technical Memorandum detailing full-scale pumping test plans will be submitted as soon as the need for groundwater remediation is determined based on analytical results. In either case, the necessary data must be collected in a timely manner which will not delay submittal of the Feasibility Study.

Response:

In accordance with the site-specific SAPs and work plans, slug tests will be performed at selected monitoring wells. If groundwater remediation will be required, the results of the slug tests will be used to design the appropriate pumping tests. Pumping tests (up to 48 hours) will be performed at each site with the objective of evaluating the hydraulic properties of the aquifer and underlying aquitard, the leakage between the two more permeable zones of the Sand and Gravel Aquifer, the radial influence of pumping, and any boundary effects. Pumping tests will continue until the above listed objectives are achieved. The EPA and FDER will be kept apprised of the investigation as it progresses, and will be notified prior to conducting full-scale pumping tests. The Navy will take technical responsibility for the design and implementation of these tests. Pumping tests will be performed in accordance with the procedures provided in Section 9.6.2 of the Comprehensive Sampling and Analysis Plan (CSAP).

SPECIFIC COMMENTS

CATEGORY 2:

SITE 1 (SANITARY LANDFILL)

Comment 1: Page 6, Figure **4-2**

A. It is assumed that all existing permanent monitoring wells, with the exception of GM03 and GM44, are structurally competent and may be used to obtain groundwater samples of acceptable quality. The planned well inventory must be completed prior to initiating Phase 11 monitoring well installation activities in order to verify this assumption.

B. Much of the organic data obtained from permanent wells was disqualified (e.g. contaminant present in method blank). EPA therefore recommends that the existing permanent wells be resampled in order to confirm the presence of this groundwater contamination prior to installing additional permanent wells. Some of the intermediate wells proposed may not be necessary if the concentrations of constituents are found to be below MCLs.

C. The groundwater sample collected from Phase I temporary well TW020 contained 150 ppb of trichlorophenol. In order to verify and monitor this contamination, a permanent well must be installed at this location during the upcoming round of field work.

D. Proposed intermediate well locations **28** and 44 do not appear justified based **on** the contamination which was detected at these locations during Phase **I** sampling **(7** ppb of methylene chloride in well GM35, and 14 ppb of methylene chloride in well GM41, both of which were disqualified). A more appropriate location for an intermediate well is adjacent to GM33, since the groundwater sample collected from this well contained levels of benzene above the MCL.

E. Based on the fact that much of the temporary well data was invalid, and most **of** the organic data collected from permanent wells was listed with qualifiers (for samples collected from both the surficial and main producing zones) the installation of deep wells in the main producing zone is not warranted until additional quality groundwater sampling and analysis is conducted. Before additional deep wells are installed, the existing shallow and deep wells should be sampled, and the proposed intermediate wells should be installed and sampled.

F. Examination of this figure reveals that some of the proposed sampling locations are markedly similar to those selected by the **U.S.** EPA's Environmental Services Division (ESD) in June 1992. The proposed sampling scheme should be revised utilizing findings of that study.

Response:

A. A base-wide well inventory was completed during the RI Investigation of **OU** 10. For Site **1,** monitoring wells GM03 and **GM44** were located and appeared to be capable of providing representative groundwater samples. Most other existing wells at Site **1** appear to be structurally competent; however wells that do not appear structurally competent and/or will not provide representative groundwater samples (i.e. dry well) will be repaired or re-installed during the investigation.

B. Common VOC laboratory contaminants (methylene chloride, acetone, and bis(2-ethylhexyl)phthalate, etc.) were frequently detected in method blanks and likely represent a significant percentage of the method blank qualifiers. While in concept the idea of resampling existing wells to gain additional groundwater quality data prior to proceeding with the RI is sound, existing monitoring wells cannot be resampled given the time constraints placed on the investigation by the Site Management Plan. Well locations and rationales were presented in the approved Site **1** Work Plan and are based on all data that was available at the time. In light of the necessity for conducting the investigation within the appropriate time period, the Navy feels that it is in its best interest to implement the work plan without the initial resampling of permanent wells. All existing monitoring wells will be sampled as part of this investigation.

C. The referenced analytical result for duplicate sample P01GW020D (collected from temporary well TW020) was for detected phenols. **This** result was listed as trichlorophenol for reporting purposes only. Phenols were not detected in the associated sample P01GW020 collected from the same well.

D. Intermediate depth wells were proposed at locations 28 and **44** in order to determine the vertical extent of groundwater contamination detected in samples collected from shallow wells located within or upgradient of these locations. Several organic compounds including benzene (7 ug/l concentration) were detected in the shallow groundwater sample collected from well **GM35.** Significant levels of organic compounds were detected in temporary well TW 025 located upgradient of location **44.** Additionally, these locations were chosen to provide hydrologic data for select areas where wells (shallow, intermediate, and deep) are proposed in clusters. **An** additional intermediate monitoring well has been added adjacent to **GM33.**

E. Due to the sensitivity of the main producing zone (i.e., the primary groundwater source in the Pensacola area), the Navy agrees and mill postpone the installation of the deep wells until additional groundwater quality data is obtained from existing wells and newly installed shallow and intermediate zone wells.

F. The **1992** ESD investigation recommends that periodic sediment sampling be performed in these wetlands to determine whether the contaminant load on Bayou Grande is increasing, decreasing, or stable. The Navy feels that the proposed sampling approach can accomplish this as well as further assess the degree to which these wetland areas (and the bayou) may have been impacted. Since the Navy was not allowed to take split samples during the July **1992** ESD Field Investigation, the data is not acceptable for IR work. Additionally, the results of the RI will be used to perform a baseline risk assessment for human and ecological health purposes as recommended in the **1992** investigation.