

5090
Ser 009/18138D
12 JAN 1989

From: Commander, Western Division, Naval Facilities Engineering Command
To: Distribution
Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT NAVAL AIR STATION, ALAMEDA
Encl: (1) Final Sampling Plan
(2) Navy Responses to Department of Health Services Comments on NAS Alameda Sampling Plan
(3) Navy Responses to National Oceanic and Atmospheric Administration Comments on NAS Alameda Sampling Plan

1. Enclosure (1) is our Final Sampling Plan for the Remedial Investigation/ Feasibility Study at the Naval Air Station (NAS), Alameda. Enclosure (2) is a Summary of the Navy Responses to the Department of Health Services (DOHS) comments on the Sampling Plan. Enclosure (3) is a summary of the Navy responses to the National Oceanic and Atmospheric Administration (NOAA) comments on the Sampling Plan.

2. We believe that the Final Sampling Plan is consistent with the comments provided by DOHS and NOAA as well as applicable federal, state and local guidance. Also, the Final Sampling Plan is intended to satisfy the substantive state requirements referenced in Section 5.1.2.2 of the Remedial Action Order (Docket No. HSA 86/89-051).

3. If you feel that the Final Sampling Plan does not adequately reflect the regulatory agencies review comments or is not consistent with applicable guidelines, rules and regulations, please advise us within fifteen days of the date of this letter.

4. Thank you for your guidance and involvement in this matter. Please direct any questions or comments to Commander, Western Division, Naval Facilities Engineering Command (Attn: Ms. Bella G. Dizon, Code 18138D, Autovon 859-7512 or Commercial (415) 377-7512).

BELLA G. DIZON
By direction

(w/encl)

Blind copy to: 13, 13A, 181, 1813, 1813BD, 0905
WRITER: B. Dizon/18138D/7512
TYPIST: B. Palmer/11 Jan 89/Ser 3117S
FILE: ALAMEDA/NAS

- 00
- 09
- 09L
- 09C
- 09G
- 09J
- 09K
- 09W
- 01
- 012
- 013
- 016
- 00A
- 00A1
- 00A2
- 02
- 04
- 05
- 09B
- 08
- 10
- 11
- 20
- 24
- 00P

D18138D
DEP
1/11/89

292

12 JAN 1989

Distribution:

Environmental Protection Agency, Region IX (Attn: Nick Morgan)
California Department of Health Services (Attn: Don Cox)
California Regional Water Quality Control Board (Attn: Lester Feldman)
Bay Area Air Quality Management District (Attn: Scott Lutz)
U.S. Fish & Wildlife Services (Attn: Don Palawski)
California Department of Fish & Game (Attn: Mike Rugg)
National Oceanic & Atmospheric Administration (Attn: Sharon Christopherson)
U.S. Army Corps of Engineers (Attn: Sharon Morlund)
Bay Conservation & Development Commission (Attn: Chris Perry)

00

01

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

N00236.000292
ALAMEDA POINT
SSIC NO. 5090.3

ENCLOSURE 1

FINAL SAMPLING PLAN

DATED 01 JANUARY 1989

IS ENTERED IN THE DATABASE AND FILED AT
ADMINISTRATIVE RECORD NO. N00236.000291

NAVY RESPONSES TO DEPARTMENT OF HEALTH SERVICES COMMENTS ON THE
THE SAMPLING PLAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA

1. 1.2 Work Plan Objectives

Comment:

"For the first paragraph, third line after the semicolon, insert ATTACHMENT A, and number appropriately. This is necessary, because the NAS Alameda stated objective, would read to limit the scope required in the Remedial Action Order (RAO). Limiting modifications may only be made after Departmental approval."

Response:

The RI/FS Work Plan objectives shown on Attachment A listed in the RAO have been incorporated into the Sampling Plan. However, the first paragraph of Attachment A refers to "including off-site areas affected by the site". It is our understanding that the initial phase of the RI/FS will focus on those on-site areas identified as having potential waste releases, as discussed in our sampling plan.

Comment:

"Please be advised, the Department's Decision Tree document is of primary guidance, for review of investigations conducted under the Order. It therefore is advised that NAS Alameda cite this document, as well as incorporate its use in the various plans submitted."

Response:

The DHS document entitled The California Site Mitigation Decision Tree Manual has been referenced on page 2 of the Sampling Plan as a document of primary guidance for implementing the Sampling Plan during the RI/FS.

2. "1.5.2 Hydrology", Pg. 5.

Comment:

"NAS Alameda cites "E & E, 1983", as a reference for the conclusion that groundwater beneath the site is not likely to be used as "...a water supply...". Specifically, where is this found in the cited document, and if Alameda can make this conclusion, would this also apply for industrial supply or irrigation use?"

Response:

The statement that "groundwater beneath the site is not likely to be used as a water supply" was referenced from page 5-10 of E & E's report Initial Assessment Study of Naval Air Station, Alameda, California, NEESA 13-014, dated April 1983. Upon reviewing this statement, it is our understanding that the groundwater underlying NAS Alameda is not of potable quality and, therefore, is not considered a public drinking water supply. However, NAS Alameda personnel indicate that one of the on-site wells referred to as the Army Well is currently being used for irrigational purposes.

3. Table 2.5.1

Comment:

"Correct spelling of "diehtyl phthalate" to diethyl phthalate."

Response:

The spelling correction for "diethyl phthalate" is reflected on Table 2.5.1.

Comments:

"Bis (2-ethylhexyl) phthalate, which is cited in the Order (page 23, line 2) is not found among those chemicals listed in table 2.5.1 (parameters to be analyzed for). Since this chemical is a hazardous substance, and has been reported in groundwater (60 ppb) beneath, and in soil (625pp) on the site, it too should be included."

Response:

The compound, Bis (2-ethylhexyl) phthalate, has been incorporated into Table 2.5.1.

3. Comment:

"2-methylnaphthalene also cited in the order, is not found in Table 2.5.1. It too should be included.

"2-methylnaphthalene, is not found listed in the table of chemical planned for analysis, during the sampling events. 2-methylnaphthalene is identified in the RAO (Page 24) and should be included."

Response:

2-methylnaphthalene has been included into Table 2.5.1. Although it is not an EPA Method 625 analyte, our certified analytical laboratory indicates that it is analyzed for using EPA Method 8270 (semivolatile organics). In addition, our laboratory indicates that there is very little difference between these two method series analytically, and that the differences are found in the analyte list.

4. "2.7 Chain of Custody and Document Control"

Comment:

"To the extent that above referenced control system exactly follows an approved QAPP, it is approved for development. However when developed, it must be reviewed in light of the approved QAPP and thereafter approved as part of the Sampling Plan."

Response:

As now reflected on Page 15 of the Sampling Plan, we have indicated that all sample custody and document control procedures and requirements outlined in the QAPP (Volume 3 of this RI/FS Work Plan) will be followed during the RI/FS implementation. These procedures should meet DHS approval for the Sampling Plan.

5. "3.20.4 Sediment and Water Sampling"

Comment:

"The proposal to determine toxicity of sediments to Marine Macrobenthos is accepted. However, the specific proposal must be submitted to the Department for approval."

Response:

A more complete description of the bioassay sediment sample analysis will be submitted to the Department for approval before this sampling is implemented. It should be noted that Table 3.20.1 was in error, and sampling and analysis of biota is not being proposed at this stage of the investigation. Table 3.20.1 has been revised to delete sampling of biota.

6. "Table 2.5.2 Analytical Methods"

Comment:

For EPA Method 624, where it is reasonably expected that samples may contain benzene, toluene, and, or ethyl benzene, refrigeration of the sample may not be adequate, for preserving greater than seven days. A separate sample must instead be collected, acidified, and analyzed. See Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater (EPA-600/4-82-057, July 1982).

Response:

Our review of the Code of Federal Regulations, 40 CFR Part 136, paragraph 9.3 on Page 438 regarding the sample collection, preservation and handling under EPA Method 624 indicates these compounds are subject to rapid biological degradation under certain environmental conditions.

However, for purposes of maintaining sample integrity, we believe that collecting and acidifying an additional water sample would not be a satisfactory approach. Through numerous discussions with our laboratory and field sampling department, we understand that acidifying water sample at the job site is not a standard practice and can lead to several potential problems. First, the introduction of hydrochloric acid (HCL) into the sample, which includes additional chlorine, can significantly distort the analytical results. Secondly, it may be very dangerous to acidify samples at the job site, especially when dealing with unknown chemical constituents. Thirdly, once the samples are acidified, they can only be analyzed using the mass spectrometer, instead of the conventional combined gas chromatograph/mass spectrometry systems. For obtaining representative analytical results, we recommend that the samples be analyzed prior to the termination of the seven-day holding period.

NAVY RESPONSES TO NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION COMMENTS
ON THE SAMPLING PLAN
REMEDIAL INVESTIGATION/FEASIBILITY STUDY
NAVAL AIR STATION, ALAMEDA
ALAMEDA, CALIFORNIA

1. Comment:

The contaminants being analyzed in this study appear to cover the majority of chemicals that would likely be found in association with the various facilities on base. It is unclear to us, however, exactly what detection limits are going to be used for the different contaminants and the different sample media. A number of tables of detection limits are included in Appendix B of Volume 3, the Quality Assurance Project Plan. These tables list different detection limits, some of which are high compared to the levels needed for the interpretation of risks to the environment (ie., organo-chlorine pesticides, PCBs and metals in water), and it is not clear which limits will be used with which samples. It would be helpful if these tables could be more closely cross referenced with the sample collection tables, or a single table produced which shows the proposed detection limits for each sample type. All surface water detection limits should be at or below the relevant Ambient Water Quality Criteria Standards, while detection limits for all sediment and soil samples should be at, or below, background levels."

Response:

The reviewer's comments have been noted and are under study. However, our response to comments on Volume 3, the Quality Assurance Project Plan (QAPP) will be presented when the comments from DHS on Volume 3, QAPP, have been provided to us. At that time this comment from NOAA will be addressed.

2. Comment:

"In reviewing the proposed sampling for Area 97, we found Figure 3.3.1 confusing. By comparing the overlapping sampling proposed for Building 14 (Figure 3.14.2) and Building 360 (Figure 3.4.2), we were able to deduce the locations of the four new monitoring well/soil borings for Area 97. However, there are still two soil boring locations indicated on Figure 3.3.1 which do not appear to be accounted for. It would be very helpful if the new wells/soil boring proposed in the sampling plan could be labeled in the figures with the identifiers used in the tables (ie., 97-1, 97-2, etc)."

Response:

Table 3.3.2 in the draft report indicated that four new borings/monitoring wells were planned for Area 97. This was an error, and only three new borings/monitoring wells are proposed for Area 97. These three have been labeled in Table 3.3.2 and on revised Figure 3.3.1 as B97-1, B97-2, and

B97-3. The other borings/monitoring wells shown on Figure 3.3.1 are part of the investigations for Buildings 14, 162 and 360, and are described in greater detail on Figures 3.4.2, 3.9.2 and 3.14.2, and in Tables 3.4.2, 3.9.2 and 3.14.2. In addition to the boring/monitoring well identification labels which have been added to Figure 3.3.1, the text of the second paragraph of Section 3.3.2 has been revised to clarify this proposed sampling in Area 97.

3. Comment:

"The sampling plan for Building 41 (Figure 3.6.2) indicates sampling will be done on the north and south perimeters of the building along the pathway of the primary utility lines. Given the porous nature of the fill, we recommend that one or two monitoring wells be placed on the west side of the building to help determine whether there is any contaminant migration from Building 41 toward the Seaplane Lagoon."

Response:

The Seaplane Lagoon lies directly south of Building 41, and not to the west. The monitoring wells which are proposed along the southern perimeter of the Building 41 area should therefore be in the best position to determine whether there is any contaminant migration from Building 41 toward the Seaplane Lagoon. The characteristics of the fill in the vicinity of Building 41 will be determined during the soil boring investigation.

4. Comment:

"The work plan proposes 20 sediment samples, four sediment bioassays and four surface water samples be taken in the Seaplane Lagoon. This appears adequate to determine whether contamination from the site is impacting the lagoon. However, there is no reason to suppose the contamination in the lagoon is either uniformly or randomly distributed. Given the limited number of bioassay and water samples to be collected, randomization of sampling is not as appropriate as selecting test points that will most likely indicate maximum contamination. One strategy for selecting sediment collection points for bioassays is to look at areas where historical or current activities would suggest a high probability of contamination occurring. This might include the northeastern and northwestern corners of the lagoon where historically raw industrial wastewater outflows occurred, or the area adjacent to Pier 1 south of the lagoon where maintenance activities might have been the source of significant contamination. A second strategy for selecting where bioassays should be run is to perform some rapid screening technique on all the sediment samples within 24 hours of collection to determine which appear to be the most contaminated. NOAA has done this in the past in estuarine environments using total extractable organics to screen for significant contamination prior to running bioassays. Regardless of how the sediments used in bioassays are selected, they should be analyzed for the full suite of contaminants present at the site."

Response:

We are in agreement with the comment that there may be advantages to using a different method for selecting the locations for bioassay and water samples rather than random choice. The second strategy recommended in the comment appears to be an improved approach, and Figure 3.20.1 and the text of Section 3.20.4 have been revised to reflect a different method of selecting sample locations. Two of the surface water samples will be collected at the northeast and southeast corners of the lagoon, since these areas can be expected to experience the least flushing action by tidal flows. Locations for the four bioassay sediment samples and the two remaining surface water samples will be chosen after the laboratory analyses performed on the sediment samples collected for chemical analyses are available. Locations for bioassay and water samples will be selected in sediment areas of high chemical concentrations.

5. Comment:

"The sampling proposed for the Inner Oakland Harbor estuary needs some clarification. Table 3.23.1 does not appear to relate to the discussion in the text. Only sediment chemistry and limited bioassays are proposed in the work plan. Table 3.32.1 includes water samples and biota samples neither of which is mentioned in the text. It appears the correct table to use is 3.23.2, which follows the text description of the study plan. A study plan based only on sediment chemistry and bioassays (Table 3.23.2) is probably appropriate at this stage of the investigation to determine basic conditions in the estuary. However, if significant contamination or toxicity is found, biota sampling should be considered as part of second tier or phase of sampling. As in the Seaplane Lagoon, the bioassays should be located in areas determined (through chemical screening) or suspected (eg., near storm water discharges) of being contaminated. The number of bioassays proposed in the draft sampling plan is also very limited; we recommend that four or more be done to better define contamination in the estuary."

Response:

The reviewer is correct in noting that Table 3.23.1 is not consistent with the text of Section 3.23.4. The text is the correct statement of the sampling which is proposed, and Table 3.23.1 has been revised to eliminate the surface water and biota sampling and to add bioassay sediment sampling.

In response to the reviewer's suggestion that four or more bioassays should be performed, we have increased the number of bioassay samples shown in Table 3.23.2 from two to four. We have also revised the text of Section 3.23.4 to indicate that four bioassay samples will be collected. Previously the draft text indicated that the locations for bioassay samples would be chosen randomly. The text of Section 3.23.4 and Figure 3.23.1 have been revised to indicate that one bioassay sample will be collected near the site of the sanitary sewer outfall, and the remaining three bioassay samples will be collected from locations with high chemical

concentrations as shown by chemical screening, i.e., by the results of chemical analyses performed on the sediment samples collected for chemical analysis.

6. Comment:

We recommend soil and groundwater samples be collected from locations along the southern shore of the base away from the Seaplane Lagoon. Two areas in particular are of concern to NOAA. The first area includes the shore area between the Seaplane Lagoon and the #2 landfill area on the west side of the base. The second area of concern to NOAA is the shore area on the southeastern edge. Stations established along this area would aid in determining whether contamination from the facilities to the north is migrating toward the bay. Samples from along the shoreline should be analyzed for all major chemical compounds.

Response:

It is our judgement that soil and groundwater samples from these two locations along the southern shore would not be appropriate at this stage of the investigation. The Sampling Plan has focused on those sites where past activities have indicated a possibility of contamination, and there is no evidence at present which would suggest soil or groundwater contamination is likely at the two shore locations in question.

7. Comment:

It is our understanding that the Army Corps of Engineers (COE) is currently doing extensive sampling for sediment chemistry, bioaccumulation and bioassays in Oakland Harbor. This data, when available, should be useful in interpreting the data being collected in the Remedial Investigation Study at NAS Alameda. Additional data on Oakland Harbor in the vicinity of the base is available in two recent NOAA Technical Memorandums. Chapman et al., in a paper field testing the sediment quality triad in San Francisco Bay, presented chemical, benthic infauna and bioassay data for a series of stations along the west shore of the base approximately 150 meters off the West Beach Landfill and 1943-1966 disposal site. These data indicated the presence of marginally contaminated sediments and biological impacts. Long et al., also included Oakland Harbor stations in a study of temporal and geographical trends in contamination and biological stress in San Francisco Bay.

Response:

We appreciate the receipt of the NOAA Technical Memoranda and the reviewer's comments have been noted. The COE sampling activity in Oakland Inner Harbor area is known to us and the COE sampling data was obtained and taken into consideration during the development of our sampling plan (Section 3.23). We will continue to monitor sampling activity by the COE during the performance of this investigation.