



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
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N00217.000197
HUNTERS POINT
SSIC NO. 5090.3

September 28, 2000

Mr. Richard Mach
Department of the Navy
Naval Facilities Engineering Command
Southwest Division
BRAC Office
1220 Pacific Highway
San Diego, CA 92132-5190

Re: EPA review and comment on the responses to comments on the Draft Bay Mud Aquitard and Storm Drain Infiltration Study Technical Memorandum, Parcel B, Hunters Point Shipyard

Dear Mr. Mach:

EPA has completed its review of the above referenced documents. Our comments are presented in attachments to this letter.

If you have any questions, please contact me at 415-744-2409.

Sincerely,

A handwritten signature in black ink, appearing to read "Claire", with a long horizontal flourish extending to the right.

Claire Trombadore
Remedial Project Manager

cc: Dave Demars, Navy
Rich Pribyl, Navy
Mike Wanta, TtEMI
Tom Shoff, TtEMI
Brad Job, RWQCB
Chein Kao, DTSC
Amy Brownell, City of SF
John Chester, City of SF
Adam Klein, Tech Law, Inc.

ATTACHMENT 1
REVIEW OF RESPONSES TO COMMENTS (RTCs)
BAY MUD AQUITARD TECHNICAL MEMORANDUM

The Navy's responses to EPA's comments appear to be appropriate with the exception of the responses to EPA general comment 6 and specific comment 11. The response to comment 6 is not responsive and EPA would ask again that the Navy specifically respond to the comment. EPA is simply trying to better understand how such a limited sampling effort fills the B-aquifer data gaps on Parcel B. With respect to specific comment 11, EPA understands that the Navy stands by their original interpretation, however, EPA's would like the Navy to discuss the response to EPA specific comment 11 with the RWQCB, to ensure they concur with the Navy's interpretation.

The Navy included several cross-sections and other figures with the RTCs, in order to address EPA's comments. Review of these figures indicated they contained a few mistakes, and these errors are identified below.

Figure 5, B-Aquifer Distribution Map, Parcel B:

1. Several of the borings that are shown on the cross-sections (Figures 6, 7 and 8) are not shown on this figure. Because this figure shows the locations of the cross-sections at Parcel B, it should be revised to include all of the borings that are shown on the cross-sections.
2. There are two small areas (one in IR-18 and one in IR-24) that are shaded white, indicating that these are areas where the B-aquifer exists beneath the Bay Mud Aquitard. However, there are no borings located in these areas, so it is not clear how this determination was made. Please revise the figure to either show the borings that were used to determine that the B-aquifer exists in these locations, or eliminate these white shaded areas.

Figure 6, Interpretive Geologic Cross Section A-A':

3. Please include the well screen intervals on the well borings.

Figure 7, Interpretive Geologic Cross Section D-D':

4. The boring log for IR18MW100B presented in the B-aquifer TM does not match the boring log for this well presented on cross section D-D'. In particular, the intervals for the fill and the undifferentiated upper sand deposits appear to be quite different between these two logs. Please resolve this discrepancy.
5. Please include the well screen intervals on the well borings.
6. The projection directions and distances for several of the wells/borings in the cross

section appear to conflict with the locations of these wells/borings on Figure 5. Please resolve this discrepancy.

ATTACHMENT 2
REVIEW OF RESPONSES TO COMMENTS
STROM DRAIN INFILTRATION STUDY TECHNICAL MEMORANDUM

I. Responses to Navy's RTCs

1. **General Comment #4:** *The Report does not contain any geologic or hydrologic cross-sections, which are necessary to evaluate the subsurface relationships between the storm drains, groundwater level, tidal influences, known contaminant plumes, etc. Please revise the Report to include vertical cross-sections depicting the investigated storm drains, depths of inverts, points of potential infiltration, groundwater elevations, low- and high-tide levels, nearby monitoring wells and screen intervals, lithology of the test pits excavated adjacent to the storm drain lines and sampling points at each storm drain.*

The Navy's response to comment (RTC) has not addressed EPA's concerns. In general, the Navy has indicated that all of the requested information is either presented in the Draft Technical Memorandum, Parcel B Storm Drain Infiltration Study, dated March 15, 2000 (the Memorandum), or will be presented in the revised Memorandum. However, the Navy has indicated that because of changed site conditions, it is not necessary to prepare detailed geologic and hydrologic cross-sections of the storm drain areas. This RTC is not appropriate. According to the Memorandum, the purpose of conducting the study was to evaluate two different reaches of the storm drain (Basin 2 and Basin 4) that were below the groundwater table and intersected contaminant plumes, in order to determine if remedial action is necessary for these storm drain reaches. Detailed cross-sections which include storm drain invert elevations, groundwater elevations, tidal fluctuations of the groundwater elevations and nearby monitoring well screen intervals are essential to visualize the potential for the storm drain system to serve as a conduit for contaminant migration in these two storm drain reaches. Because the contaminant plumes and groundwater elevations at Parcel B appear to fluctuate over time, the currently available data are not sufficient to demonstrate that 1) contaminant plume(s) do not overlie these sections of the storm drain, and 2) the storm drains are shallower than the groundwater. Based upon these concerns, please provide all of the information requested in EPA's original comment.

2. **Specific Comment #4, Section 3.1.2, page 7:** *The top paragraph on this page states that video recording did not indicate infiltration flow into the Basin 4 reaches. However, Table A-3 (Storm Drain Water Depth Measurements) appears to contradict the video recording results. The water depth measured in the MH B8 to MH B9 reach increased 3.75 inches over five hours between low tide and high tide and the water depth in the MH B7 to B8 reach increased 1.5 inches, indicating either San Francisco Bay water flowing into the storm drain from the Bay, or groundwater infiltration into the storm drain. However, the depth to water measurements collected from the Basin 4 storm drains are not discussed in the Report. If the depth to water measurements collected from the manholes are too qualitative to be used for evaluating potential infiltration into the storm drains, then it appears that one of the objectives of the Study, assessing whether contaminated groundwater is infiltrating into the section of line being tested, has not been achieved. Please revise the Report to discuss the water depth measurements in the manholes, and any conclusions that can be drawn from these data.*

The Navy's RTC has not addressed EPA's comment. In general, the Navy's RTC states that limited conclusions can be drawn from the water level data collected in the Basin 4 storm drain reach, and that because of changed site conditions, additional data collection activities for this storm drain reach are not necessary. The "changed site conditions" appear to refer to the migration of contaminant plumes away from the Basin 4 storm drains and a lowering of the water table such that it is below the level of the storm drains. However, because the contaminant plumes and groundwater elevations at Parcel B appear to fluctuate over time, the currently available data are not sufficient to demonstrate that 1) contaminant plumes do not overlie these sections of the storm drain, and 2) the storm drains are shallower than the groundwater. For the Basin 4 storm drains, there is an extensive volatile organic compound (VOC) plume in the A-aquifer at Site IR-25 that appears to overlie portions of the Basin 4 storm drains and is currently the subject of a data gaps investigation. Additionally, there is still a total petroleum hydrocarbons (TPH) plume in the vicinity of the Basin 4 storm drains. Therefore, the Navy needs to conclusively demonstrate that contaminated groundwater is not infiltrating the Basin 4 storm drains before remedial actions for the Basin 4 storm drains can be ruled out.

3. **Comment #8, Section 4.1, page 11:** *The first complete paragraph on this page states that "The analytical results from the Basin 4 storm drain samples provide further evidence that the water within the Basin 4 storm drain is not representative of infiltrating groundwater". However, the data do not appear to support this conclusion. Water samples collected from manholes MH B6, MH B7 and MH B9 at low and high tide all showed higher concentrations of total petroleum hydrocarbons as diesel (TPHD) and total petroleum hydrocarbons as motor oil (TPHD in the high tide samples as compared with the low tide samples. One possible explanation for this increase in TPH concentrations is the infiltration of groundwater contaminated with TPH into the storm drains during high tide. However, no explanation is provided in the Report for the increased TPH concentrations at high tide. The text in this paragraph further states that the TPH concentrations detected in the manhole water samples are not consistent with the TPH concentrations detected in groundwater samples collected from nearby*

monitoring wells (presented in Figure 5 of the Report). However, the nearest monitoring well to MH B7 and MH B9 (IR46MW40A) is approximately 200 feet away and the TPH analytical results from this well are consistent with the concentrations detected in the manhole water samples. Additionally, although the well closest to MH B6 (IR06MW45A) had non-detectable concentrations of TPH there is a plume of TPHD and TPHM within approximately 100 feet of MH B6. Therefore, the TPH data from the manhole water samples appear to be consistent with the TPH data from nearby monitoring wells, and these data suggest that contaminated groundwater may be infiltrating into the Basin 4 storm drains. Please revise the Report to provide more compelling evidence regarding why the data presented in the Report indicate that groundwater is not infiltrating into the Basin 4 storm drains. Alternatively, please remove the statements from the Report that conclude that groundwater is not infiltrating into the Basin 4 storm drains.

The Navy's RTC has not addressed EPA's comment. In general, the Navy's RTC indicates that since minimal groundwater infiltration was observed (from the video recording) along the Basin 4 reaches, storm drain water samples should not have been collected. Additionally, according to the Memorandum, because groundwater infiltration was not observed on the video recording, the Navy did not dewater the MH B5-1 to B6 reach of the Basin 4 storm drain, and did not collect water level measurements in this storm drain reach to demonstrate that infiltration was not occurring. Visual observation from the video recording is not sufficient to support the conclusion that infiltration is not occurring within this storm drain reach. Based upon the data presented to date, it is not possible to rule out remedial actions for this section of the storm drain. Please provide a summary of additional data that will be collected to complete the evaluation of whether or not remedial actions are required for this section of the storm drain.

II. Additional comments on the Storm Drain Infiltration Study, Parcel B

1. EPA has the following recommendations:
 - The Navy should submit detailed cross-sections for both the Basin 2 and Basin 4 storm drains. These cross-sections should include the elevations of the storm drains, the lithology in these areas, groundwater elevations, tidal fluctuations of the groundwater elevations and nearby monitoring well screen intervals.
 - The Navy should perform the infiltration study for the Basin 4 storm drain reach between MH B5-1 to MH B6, in accordance with the EPA-approved work plan. In particular, the Navy should seal off this reach of the storm drain, dewater it, video record the inside of the storm drain to identify potential locations for groundwater infiltration, and collect water level measurements at the downstream manhole to evaluate infiltration rates.
2. EPA would like to discuss the next steps with the Navy. EPA has definite concerns about the storm water Basin 2 reach, where significant infiltration was noted during the study. The Navy concluded that since the sampling and analysis of this infiltrating groundwater

did not indicate the presence of contaminants, there should be no requirement to eliminate the infiltration. EPA disagrees. No active groundwater remediation is occurring on Parcel B. Therefore, EPA does not agree that just because the Navy is not confirming a problem in the current study, there could not be problem in the future. We need to discuss the Parcel B remedy and this reach in greater detail.