

**CLEAN**

**Contract No. N62474-88-D-5086**

**Contract Task Order 0208**

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**NAVAL AIR STATION MOFFETT FIELD  
MOUNTAIN VIEW, CALIFORNIA**

**HORIZONTAL CONDUIT STUDY  
DRAFT PHASE II FIELD WORK PLAN AMENDMENT  
RESPONSES TO AGENCY COMMENTS**

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**RESPONSE TO COMMENTS ON  
HORIZONTAL CONDUIT STUDY  
DRAFT PHASE II FIELD WORK PLAN AMENDMENT**

**January 21, 1994**

This report presents point by point responses to regulatory comments on the "Draft Phase II Field Work Plan Amendment" for the Horizontal Conduit Study prepared in October 1993 by PRC Environmental Management, Inc. (PRC) and Montgomery Watson for Naval Air Station (NAS) Moffett Field, California. Ms. Elizabeth Adams of the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), submitted comments in a letter dated December 13, 1993.

**GENERAL COMMENT**

Sampling and analysis of water and sediments in the storm drain system is necessary to determine if the storm drain system acts as a conduit for migration of contaminants found at the site. The Navy continues to disregard the comments made by Regional Water Quality Control Board (RWQCB) staff on the document preparations and field work for this horizontal conduit study. RWQCB staff has communicated to the Navy on several occasions that our agency is requiring all closing bases to evaluate their storm sewers for any potential contamination, in both water and sediments, which may be leaving the site via these systems. Our comments on both the draft and final versions of the work plan for Phase I field work stated that the horizontal conduit field work would be the appropriate opportunity to gather the necessary sediment and water samples to evaluate the potential pathways within the site. As stated in our comments on the Horizontal Conduit Study Final Field Work Plan:

It is imperative that this study address all the possible contaminants which would be potentially transported through the storm sewer lines, and not just the VOC- and TPH-contaminated groundwater located on the west side. The response-to-comments letter repeatedly states that there is no metals contamination at Moffett NAS. Heavy metals often occur with organic contaminants, and may be transported in both the dissolved state and via sediments. Water and sediment samples from storm sewer lines should be analyzed to verify that no metals contamination is present. In the past, sediment sampling at the storm sewer outfall locations, both at Building 191 and in the storm water retention ponds at the end of

Zook Road and Lindburg Avenue, have shown the presence of pesticides and PCBs. The sources for these contaminants are presently unknown (although the Site 2 landfill may be responsible for the Building 191 detections), it is likely that the storm sewer system acts as the pathway for these contaminants due to groundwater infiltration. Sampling for PCBs and pesticides in the sediments and backfill materials in areas "upstream" of these outfall areas will help determine if the storm sewer is acting as a conduit and help to further define the possible sources for this contamination.

No sediment sampling was conducted in Phase I of the field work, and the current work plan for Phase II does not propose any sediment sampling. This is not acceptable. Sediment sampling must be conducted within the storm sewers upstream of the two outfall areas. Though the Lindburg ditch is no longer transporting storm water, the presence of contaminants at the historic outfall of this system implies that sediment materials have been historically transported through the storm sewer system. The storm sewer system which now discharges into the settling basin on NASA property needs to be sampled for potential sediment contamination. Sediment sampling upstream of Building 191 is necessary to confirm that no contaminated sediments are being discharged from that system. If contamination is found upstream of either of these outfall areas, further sampling will be required to identify the source of the contaminants.

Sediment samples should be analyzed for all potential contaminants, such as PCBs, pesticides, metals, and VOCs. These analyses are required in order to verify that the storm sewers are not a pathway for potentially hazardous levels of contaminants from within the site. Though metals have been eliminated in other operable units as a contaminant of concern utilizing human health risk assessments, there may be levels within the storm sewer sediments that may have a potential impact to surface water quality and wetland receptors.

Similar investigations and evaluations of horizontal conduits are being required at other closing bases to assess potential impacts to water quality. RWQCB staff expects that the Navy will address these issues and incorporate these comments into the final version of the field work plan. Elevation of this issue for resolution may be necessary if the Navy does not intend to incorporate these comments into the Phase II field work.

*Response:*

*The Navy understands RWQCB's concern regarding contaminants that may be leaving the base by way of water and sediment carried in both the storm and sanitary sewer systems. In fact, several studies have included data recorded in both the sanitary sewer and the storm drain systems. The 1986 ERM-West study (ERM 1986) reported water quality measurements, including pesticides and polychlorinated biphenyls (PCBs), at four different points within the sanitary sewer system. The Storm Water Study prepared by PRC and James M. Montgomery, Inc. (JMM) in May 1991 (PRC and JMM 1991) reported dry weather water and sediment quality data, including analysis of pesticides and PCBs in sediments, for both the storm water diverter box and Building 191. The storm water diverter box was the point of discharge for the west side storm drain system before the National Aeronautics and Space Administration (NASA) built its settling basin in 1993. Finally PRC and Montgomery Watson (PRC and Montgomery 1993) recently completed a storm water system sampling round of a storm event with samples taken at the NASA settling basin and Building 191. The list of analytes for this round also included pesticides and PCBs. Pesticides and PCBs were never detected in any of these sampling events.*

*In addition, one of the three objectives of this study, as stated on page 3 of the Final Field Work Plan dated July 2, 1993, is "evaluating whether the subsurface infrastructure provides conduits for relatively accelerated migration of contaminated groundwater from known on-base and off-base sources..." There are no known sources or areas of interest listed in Section 2.6 of this amendment that have pesticides or PCBs as contaminants. Therefore, the Navy will not expand the sampling effort associated with the horizontal conduit study to include sediment samples for pesticides, PCBs, and metals.*

*However, Navy will continue to monitor the quality of storm water flows as requested by RWQCB in accordance with the National Pollution Discharge Elimination System (NPDES) program. A round of sediment sampling for pesticides, PCBs, and metals will also be conducted, under different funding, during the first quarter of 1994. Sampling locations will be just upstream of the NASA settling basin and Building 191.*

## **SPECIFIC COMMENTS**

**Comment No. 1:** **Page 9, Section 2.2.3.** Please include the final outfall area for the storm sewer system that receives the effluent from the sump near Hangar #1.

**Response:** *The sump at the eastern end of the tunnel underneath Hangar 1 discharges into storm drain line 4 in the vicinity of manhole 4.8. The eventual outfall reached by this discharge is the NASA Settling Basin (See both Figures 2.2 and 2.7 for the location of line 4. Line 4 is the line connecting manhole 4.1 and manhole 4.V.2). Sampling of both the inlet and outlet of the NASA settling basin is included. Water samples will also be taken from the sump; manhole 4.9, which is just upstream of the sump discharge; and manhole 4.6, which is downstream of the sump discharge.*

**Comment No. 2:** **Page 10, Section 2.2.4.** Please include a more detailed description of the condition of the concrete backfill materials. Were concrete chunks used as fill or is it poured concrete fill? What is the estimated permeability of the material found in the excavations VHHC-8 and VHHC-9?

**Response:** *The fill is a poured concrete fill. The text has been clarified in the final amendment. Potential permeability has not been estimated at this time.*

**Comment No. 3:** **Page 16, Section 2.5.** The dates of the first paragraph do not correspond. Please revise to include the actual dates that flow measurements were made.

**Response:** *The correct dates are July 27 and 28, 1993. This correction has been made in the final amendment.*

**Comment No. 4:** **Page 23, Section 2.5.2.** The paragraph which describes the analytical results from the sanitary sewer water samples should state that VOC concentrations do not seem to decrease substantially unlike the storm drain samples, even though flow rates are very high. Sample location 10 shows TCE at 220 parts per billion with a flow rate of 170 gallons per minute. This data seems to indicate that high concentrations of VOCs are infiltrating into the sanitary

sewer, and therefore similar concentrations may be infiltrating into the storm sewer lines in the same vicinity. Phase II sampling should include storm sewer sampling within the drainage area represented by sample 10.

*Response:*

*The portion of the storm drain system that drains the area upgradient of sanitary sewer manhole 10 includes the west side system, storm drain line 9, and possibly line 10. Figure 3.2 shows that a measurement is being taken on line 9 at manhole 9.4. Figure 2.7 shows that line 10 is subject to continuous excitation.*

**Comment No. 5:**

**Figure 3.2.** Does sample location 6.1 adequately represent all storm sewer lines, including those to the east of the runways, which discharge into Building 191? The storm water lines which merge to form the inlet to Building 191 should be represented by the proposed storm water sampling location "upstream" of Building 191.

*Response:*

*One of the three objectives of this study, as stated on page 3 of the Final Field Work Plan dated July 2, 1993, is "evaluating whether the subsurface infrastructure provides conduits for relatively accelerated migration of contaminated ground water from known on-base and off-base sources..." Section 2.6 of this amendment lists known sources and areas of interest. Areas of interest are features that may at one time have affected the sanitary sewer and storm drain systems. Figure 2.11 shows these features. None of the features are located on the eastern side of NAS Moffett Field. Therefore, sampling all of the storm water lines that merge at the inlet near Building 191 serves no useful purpose in completing the study. Other than the sampling point located at manhole 6.1, these points will not be measured in association with this study. For further clarification of work to be performed with other funding, please refer to the response to the general comment.*

## **REFERENCES**

ERM-West. 1986. "Final Report Industrial Waste Engineering Study, Naval Air Station, Moffett Field, California." ERM-West, Inc. and Aqua Resources, Inc. April.

PRC Environmental Management, Inc. (PRC) and James M. Montgomery, Inc. 1991. "Storm Water Study - Tasks 4 to 6, Storm Water Characterization, Control Strategies and Special Studies, Naval Air Station, Moffett Field, California, Draft Report." May.

PRC and Montgomery Watson. 1993. Facsimile transmitting storm water sampling results. To Skip Dinges, PRC Environmental Management, Inc. November 29.