



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 13, 1993

Mr. Stephen Chao
Naval Facilities Engineering Command
Western Division
900 Commodore Way, Bldg. 101
San Bruno, CA. 94066

Re: Draft Year-Two Quarterly Groundwater Sampling And Analysis Plan,
dated October 14, 1993

Dear Mr. Chao,

The U.S. Environmental Protection Agency (EPA) has reviewed the subject document and provides the following comments. It was reviewed by the Richard Freitas, Regional Hydrogeologist, and Hedy Ficklin, Environmental Scientist of the Quality Assurance Management Section. Call me at 415-744-2383 if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Michael D. Gill".

Michael D. Gill
Remedial Project Manager
Federal Facilities Cleanup Office

cc: Elizabeth Adams (RWQCB)
C. Joseph Chou (DTSC)
Ken Eichstaedt (URS)
Josh Marvil (PRC) (Fax)

Year-Two Quarterly Groundwater Sampling and Analysis Plan, dated October 14, 1993

General Comments

1. From the information provided in the report, it is not possible to evaluate the proposed ground water monitoring well network. The inclusion of each well in the monitoring program should be supported by the inclusion of or reference to various maps. The most recent contaminant concentration maps for each contaminant of concern in each affected aquifer, contour maps of static water level elevations for each aquifer zone of concern and groundwater flow direction should be presented so a proper evaluation can be made on the proposed sampling system and schedule.
2. It is important to realize that the use of fewer monitoring wells may drastically alter the interpretation of the lateral and vertical extent of contamination. It may also alter the ability to properly track the contaminant migration in the A1 and A2 aquifers. This difference in interpretation may become apparent once data is reported from the reduced sampling plan.
3. Electronic reporting of groundwater chemistry and water level data should be considered. In this manner, the data can be analyzed and viewed with standard graphics packages such as Surfer. Such presentation will allow ease of interpretation and save much time.
4. A groundwater monitoring decision tree has been included as a potential tool to use in determining the frequency of sampling necessary at Moffett. It was included in some recent draft guidance developed for the California Base Closure Environmental Committee. It is fairly simplistic and has been included for use at the Navy's discretion.

Specific Comments

5. Section 2.0, page 7, para.1, "...this SAP recommends sampling at only those wells necessary to evaluate plume location and migration." The plume location should be illustrated by isoconcentration maps for each contaminant of concern for each aquifer zone.
6. Section 2.0, page 7, para. 2: "Figures 2, 3, 4, and 5 show locations of the wells to be sampled each quarter". These figures are useless without contours of ground water level elevations and isoconcentrations lines of specific contaminants of concern.
7. Section 2.0, page 7, para. 2, "Data collected during the past year and presented in quarterly sampling reports...were used to select the wells for sampling". The contaminants which were detected, the well identification and aquifer zone monitored should be tabulated or referenced. Ground water isoconcentration maps are necessary

to illustrate the contaminant plume(s).

8. Section 2.0: This section of the report is difficult to review without additional supporting data, as could be provided by the maps requested in the general comments.
9. Table 2, page 20: The sample numbering system specified in Table 2 indicates that the designation "EB" will be used as the activity code for equipment blanks, while item 4 of the table gives an example of numbering for the equipment rinsate using a "W" activity code as for a groundwater sample. Section 3.2.2 indicates that the equipment blank will be sent blind to the laboratory, with the designation W as the prefix. This discrepancy should be addressed. The equipment blank should be sent blind to the laboratory, which necessitates the use of the W prefix. In addition, Section 3.3.4 and item 1 of Table 2 indicate that field blanks will be identified as "FB". It is recommended that field blanks be sent blind to the laboratory.
10. Section 3.2.1, page 21:
 - a. In addition to ensuring that there is no headspace in the vials for VOC analyses, the pH should be checked after the collection of a sample from each aquifer to ensure that sufficient acid is present in the vial to bring the sample to a pH < 2. If the pH > 2, additional acid should be added to a vial and the test repeated until the pH is less than 2. The vials used for the pH check should be discarded.
 - b. This section does not include reference to anion analyses, which are included in Table 1. The plan does not identify the anions or the analytical requirements for anion analyses. The plan should identify the anions to be analyzed, and establish the analytical methods, detection limits, holding times, and sample collection container requirements in the appropriate sections and tables of the SAP.
 - c. Step Three: If immiscible, non-aqueous phase liquids are detected, well purging should be temporarily halted, and a sample of the non-aqueous phase should be collected for analysis. Appropriate notation should be recorded in the field notebook. Purged waters should be containerized and properly disposed.
11. Section 3.2.1, page 22, 1st para. "Samples collected for metals analyses will be filtered in the field using a disposable 0.45 micron micropore membrane filter apparatus". Both filtered and unfiltered samples should be collected. For the filtered samples, a 5.0 micron filter size should be used (Note: This filtration procedure represents a change from previous EPA procedure). For filtered samples, the filtration should occur immediately after the sample is collected using an in-line filtration system, e.g., the ground water sample to be filtered does not contact the atmosphere until leaving the filtration device and entering the sample container.

12. Section 3.2.2, page 22
 - a. "Bailer": The use of dedicated bailers for each monitoring well could eliminate these tedious procedures. Such procedures would only be necessary upon the initial installation of the bailers. This could save time and money.
 - b. It is recommended that, when cross-contamination of metals is of concern, a dilute nitric acid rinse be performed as a step of the decon process. Since the analytical protocol includes the annual analysis of metals, specification of a nitric acid rinse should be included in this section.
13. Section 3.3.1, page 26: This section indicates that a trip blank will be included with each cooler containing VOC water samples. Collection of a trip blank is necessary only when there is no other blank for volatiles. Since an equipment blank will be collected each day, a trip blank is not necessary.
14. Section 3.3.4, page 27: This section indicates that domestic water from taps or fire hydrants on base will be used for field blanks, since this is the water used for decontamination purposes. Although a tap water rinse is used during the decon procedure, this should always be followed by a deionized water and HPLC grade water rinse. Analytically certified organic-free (HPLC) water for organic parameters and metal-free (deionized-distilled) water for inorganic parameters should be used for field and equipment blanks.
15. Table 3, page 29:
 - a. One 2 liter bottle is specified in Table 3 for each sample collected for base/neutral/acid-extractable (SVOC), total petroleum hydrocarbons (diesel), and pesticides/PCBs. It is recommended that two 1 liter bottles be used for each sample.
 - b. The anion analyses, listed in Table 1, are not addressed in Table 3. Sample containers, holding times and preservation criteria need to be established and specified for all analytes to be determined during the groundwater sampling effort.
 - c. Dissolved metals are addressed in Table 3, but total metals are not. A one liter sample should be collected for each dissolved and total metal analysis. In addition, it should be noted that the 6 month holding time does not apply to the analysis of mercury, which should be performed within a 28 day holding time.
16. Section 3.4.1.6, page 33: It is recommended that the sampler indicate on the chain of custody form that the filtered samples for dissolved metals must be digested. This will ensure that the laboratory digests the samples for dissolved metals analyses, and prepares appropriate quality control samples, including preparation blanks, laboratory control

samples and matrix spikes. Also, it is recommended that the lab QC sample be specified on the chain of custody form to ensure that an equipment rinsate or a field blank is not used for duplicate or matrix spike analyses.

17. Section 4.2.1, page 45: This section states that two methods will be used for the analysis of VOCs, either Contract Laboratory Services (CLP) Routine Analysis Services (RAS) or CLP Special Analytical Services (SAS), depending on the turnaround time needed or the detection limits needed. The project needs regarding the necessary turnaround times and detection limits should be established in the SAP and the required analytical procedures should be specified.
18. Table 7, page 51. The CDRL for lead is incorrect. The current CLP CDRL for lead is 3 micrograms/Liter. This item should be changed.

Editorial comment

19. Section 1.1.2, page 4: NASA is scheduled to assume control of NASMF in July, 1994, not October.

