



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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N00236.000266
ALAMEDA POINT
SSIC NO.5090.3

October 10, 2001

Glenna Clark
BRAC Operations, Code 06CA.GC/0718
Department of the Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

RE: Draft Remedial Investigation Work Plan, IR Site 26, Western Hangar Zone, Alameda Point, Alameda

Dear Ms. Clark:

EPA has reviewed the above referenced document, prepared by Bechtel Environmental, Inc., and submitted by the Navy on August 2, 2001. In general, the work plan appears well thought out and thorough. EPA has a few comments, suggestions and corrections that need to be considered and addressed prior to the document becoming draft final.

Please call me at (415) 744-2367 if you would like to discuss the enclosed comments further.

Sincerely,

A handwritten signature in cursive script that reads "Anna-Marie Cook".

Anna-Marie Cook
Remedial Project Manager

enclosure

cc: Michael McClelland, SWDiv
Andrew Dick, SWDiv
Daniel Murphy, DTSC
Dennis Mishek, RWQCB
Karla Brasaemle, Tech Law Inc
Elizabeth Johnson, City of Alameda
Michael John Torrey, RAB Co-Chair

**Review of the Draft Remedial Investigation Work Plan, IR Site 26,
Western Hangar Zone, Alameda Point, California**

GENERAL COMMENTS

1. For many groundwater volatile organic compound (VOC) and polynuclear aromatic hydrocarbon (PAH) analyses, detection limits were elevated. For example, on Field Sampling Plan (FSP) Figure 2-9, detection limits for at least two of three analytes (Trichloroethylene (TCE), Vinyl Chloride, and 1,2-Dichloroethane) were elevated above the Maximum Contaminant Levels (MCLs) in 14 samples. The text notes that there were similar problems for the analysis of PAHs in soil samples. Detection limits must be low enough to meet Risk Assessment requirements. Please discuss how the detection limit problem will be addressed during the proposed investigation so that the extent of contamination can be delineated to MCLs or Preliminary Remediation Goals (PRGs).
2. There are large areas of the site where no groundwater sampling is proposed and where no groundwater sampling has been done. The groundwater flow direction is not known. It is possible that there are more areas of groundwater contamination at IR Site 26 than the two known plumes in Area 1 and Area 2. Please explain why a more comprehensive investigation for groundwater contamination has not been proposed and consider adding additional sampling locations to address areas of the site where sampling has not been done in the past.
3. Under federal guidelines an aquifer is classified based on only two criteria: 1) TDS and 2) yield. The aquifer underlying Site 26 meets the definition of a Class II aquifer which means it can be used either as a current or future drinking water source, and in the case of Site 26 it would be considered a future drinking water source. Numerous places throughout the workplan refer to the FWBZ as being non-potable, which, although probably correct, is a statement that is irrelevant to setting and supporting CERCLA cleanup decisions. The potability of the aquifer is irrelevant in terms of cleanup requirements because it is assumed that future drinking water sources will often need to be treated prior to being fit for ingestion. The reason for the TDS threshold is that Congress determined in the 1980's that it in parts of the USA it is, or would be, economically feasible and beneficial to treat groundwater with TDS levels as high as 10,000 ppm. However, under CERCLA, even if an aquifer meets the Class II classification, occasionally there are compelling site specific reasons why the aquifer does not need to be cleaned to meet MCLs. Please refer to pages 6 and 7 of the document "Determination of the Beneficial Uses of Groundwater, Alameda Point", dated July 2000, for the site specific reasons why the Class II aquifer beneath Site 26 should not be considered a potential drinking water source for CERCLA cleanup decisions. The term non-potable should be removed from the text of the workplan.

SPECIFIC COMMENTS

1. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 2, first paragraph:** See general comment # 3 and please revise.
2. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 2, Table 1, FSP Section 2.1 Base and Site Operations History, Page A2-1, and FSP Table 2-1:** There are no figures that show where the contaminated areas discussed in the text and listed in the tables are located so that the relationship between these areas and the proposed investigation can be assessed. These parcels are referenced throughout the text, so it is important to understand where they are located. Please provide a figure that shows where all of the IR-26 parcels that are listed in Table 1 and FSP Table 2-1 are located. Please include the buildings and building numbers on this figure. Also, please depict Areas 1 and 2 on this figure. If available, please also include a figure that shows the location of the former buildings that are listed in these tables; this information will be useful to understand the proposed investigation and potentially to help interpret source areas if contamination is found during the investigation.
3. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 5:** See general comment # 3 and please revise.
4. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 5:** The text states that groundwater sampling points are “shown on Figure 4-1 of the FSP,” however, Figure 4-1 includes proposed soil and soil gas sampling points. Please cite the correct figure.
5. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 5 and FSP Section 1.3, Purpose and Scope of the Remedial Investigation, Page A1-6:** The text states that “three discrete grab samples of groundwater will initially be collected at a minimum of two depths” and later states that there will be “three sampling points.” It is unclear if three groundwater samples will be collected, one from each sampling point, or if six groundwater samples, two discrete samples from each boring, will be collected. Part of the confusion may be the phrase “three discrete grab samples” if six samples will be collected. Please clearly state the total number of samples to be collected.
6. **Section 1.3, Purpose and Scope of the Remedial Investigation, Page 7, third paragraph:** Should the industrial/construction worker scenario include dermal contact with and inhalation of volatiles from groundwater. High levels of VOCs have posed a problem for workers involved with dewatering operations (such as laying sewer and storm pipe) at other sites.

7. **Section 2.3, Page 8, second paragraph:** See General Comment #3 and please revise.
8. **Table 2, Page 11, Step 1:** See General Comment #3 and please revise.
9. **Table 2, Page 11, Step 2:** Please consider industrial/construction worker exposure to groundwater through dermal contact and inhalation of volatiles during dewatering operations.
10. **FSP Section 1.3, Page A1-5, first paragraph:** See General Comment # 3 and please revise.
11. **FSP Section 1.3, Page A1-8:** Please consider industrial/construction worker exposure to groundwater through dermal contact and inhalation of volatiles during dewatering operations.
12. **Table 2, FSP Table 4-1 and Quality Assurance Project Plan (QAPP) Table 3-1:** One of the decision questions asks whether there are “COPCs in groundwater present adjacent to the storm drain system at IR Site 26,” but the proposed groundwater sampling approach does not address this question. There are large areas of the site that have storm drains and groundwater is not being investigated. Please discuss how this question will be addressed in the sampling program and add additional locations as necessary to evaluate groundwater contamination in the vicinity of the storm drains.
13. **Table 2, FSP Table 4-1 and QAPP Table 3-1:** The expansion of the horizontal boundaries of the study area is discussed in Step 4 with respect to groundwater contamination, but there is no provision for expansion of the study area boundaries for soil contamination. Given the numerous previous sample results with elevated PAH detection limits north of the eastern part of Area 2, it appears that the study area boundaries should be expanded to evaluate whether there is PAH contamination in this area. Please discuss expansion of the study area to address the extent of soil contamination.
14. **FSP Section 2.2.2, Geology, Page A2-4, Table 2-2, and Figures 2-3 and 2-4:** The text states that a “paleo-channel...runs from northeast to west through Alameda Point.” Table 2-2 states that the Merritt Sand and Upper San Antonio Formation are absent within the paleo-channel. Based on the continuity of the Merritt Sand and the Upper San Antonio Formation, Figures 2-3 and 2-4 do not show the paleo-channel. The text in Section 2.2.4 states that “the paleochannel crosses from east to west through IR Site 26.” Please resolve this discrepancy.
15. **FSP Section 2.2.2, Geology, Page A2-4:** The last sentence is incomplete. Please provide the missing text.

16. **FSP Section 2.2.5, Ecological Habitats, Page A2-21 and Figure 2-7:** The list of habitats in the text includes “beach” but the figure does not include this habitat type. The figure includes “California Least Tern Sanctuary” and “Brackish Pools” habitats, which are not discussed in the text. Further, the text states there are 9 habitats, including “open water” and the figure includes 10 habitats if “open water” is included. Please resolve these discrepancies.
17. **FSP Table 2-5:** This table is missing the “California Least Tern Sanctuary” and “Brackish Pools” habitats that are depicted on Figure 2-7. Please include all habitat types in this table.
18. **FSP Section 2.2.6, Current Land Use and Figure 2-8:** The text implies that Figure 2-8 depicts all eight current land uses, but only three of these are shown on Figure 2-8. Please resolve this discrepancy.
19. **FSP Section 2.3.1, RCRA Facility Assessment, Page A2-22:** The six RCRA sites listed and/or discussed in the text are not shown on any of the figures, so it is difficult to evaluate the relationship of these sites to the proposed investigation. Please provide a figure that shows the location of the six RCRA sites.
20. **FSP Section 2.3.3, Environmental Baseline Survey, Page A2-27:** See General Comment #3 and please revise this section.
21. **FSP Section 2.3.4, Page A2-27:** Please explain why only Parcel 190 was included in the storm drain investigation and whether a data gap exists on the condition of storm drains within IR Site 26.
22. **FSP Section 2.4, Preliminary Extent of Contamination, Page A2-27 and Table 2-6:** It is unclear if all 269 soil samples and 74 groundwater samples were collected from IR Site 26. Please specify the number of samples collected from IR Site 26.
23. **FSP Section 2.4.1, Organic Contaminants, Page A2-29:** There are 14 samples on Figure 2-9 where the detection limits for TCE and vinyl chloride significantly exceed the MCL (5 and 0.5 $\mu\text{g}/\text{L}$, respectively). The detection limits were as high as 200 $\mu\text{g}/\text{L}$ and nearly all of the samples collected west and southwest of building 23 in Area 1 had elevated detection limits. This suggests that the extent of TCE and vinyl chloride contamination in this area is not detected. Please discuss why the detection limits were elevated and the implications of the elevated detection limits in the text.
24. **FSP Section 4.3, Soil Sampling, Page A4-2:** The text states that if refusal is reached before targeted soil sampling depths are reached, the boring will be “relocated up to two times per location within a 5 foot radius of the original sampling location. The sampler will be advanced, without sampling to the depth at which refusal was met previously.

Sampling will then continue to the target depth.” While this approach may be useful to evaluate the horizontal extent of contamination, it does not adequately address the need to evaluate the vertical extent of contamination because contaminants generally migrate vertically in preferential pathways under the influence of gravity; vertical migration is not likely to have the same impact 5 or 10 feet away. In order to evaluate the vertical extent of contamination, samples must be collected from the same borehole. If this is not done, and samples are collected from two boreholes, it will be difficult to draw meaningful conclusions. For example, if contamination was detected in the 0 to 6 inch, and 6 to 24 inch samples, and then because of refusal, samples were collected at deeper intervals in a borehole 5 feet away from the first and no contamination was detected, it would not be possible to tell if the contamination was limited to the upper 2 feet because there were no samples from the upper 2 feet analyzed in the second borehole. It is possible that had samples been analyzed from the upper two feet of the second borehole, that no contamination would have been detected. However, if refusal is due to fill materials, samples from the original borehole may provide information about the extent of contamination. Please propose an approach that will facilitate evaluation of both the horizontal and vertical extent of contamination by requiring that all samples selected for analysis from the targeted depths all be from the same borehole.

25. **FSP Section 4.3, Soil Sampling and Figure 4-1:** Most of the locations where the detection limit for benzo(a)pyrene was significantly elevated (maximum detection limit was 120,000 $\mu\text{g}/\text{kg}$) were located just beyond the boundary of IR Site 26 and Area 2. The area of concern is located north of the eastern part of Area 2. Please explain why resampling is not planned for this area and consider adding locations to evaluate PAH contamination in this area. Please also discuss whether the boundaries of the area of investigation will be expanded if soil contamination is detected at the site boundary.
26. **Table 4-1, Page A4-3, Step 1:** See general Comment #3 and please revise. **Table 4-1, Page A4-3, Step 4:** Risk management decisions may include the decision to take action. It is implied in the following paragraph that only risks above 10^{-4} require further action and this implication is incorrect.
27. **FSP Section 4.4.1, Discrete Groundwater Sampling, Page A4-7:** Groundwater samples have not been collected from the northwestern part of Area 1, east of buildings 23 and 24, or west of buildings 20 and 22. The proposed “iterative method” will probably not cover these areas, and the groundwater flow direction is not known. Please add at least five sample locations (one east of building 24, one northwest of building 23, one east of building 23, one west of building 22 and one west of building 23) so that groundwater quality can be addressed. If groundwater is found to flow to the east or south, additional locations to the east and south may be needed; please discuss contingencies for additional groundwater sampling based on groundwater flow directions.
28. **FSP Table 4-2:** It is not clear how concrete coring will provide any useful information;

please explain why concrete coring is considered to be an investigation method. Also, it is unclear why are there 47 locations for concrete coring, geophysical surveying and land surveying when the total number of unique exploration points (excluding the duplicated six temporary wells that will be installed in some hydropunch borings) is only 37. Please review the information in the table and correct the quantities as necessary.

29. **FSP Section 5.4.1, Direct push sampling, page A5-2, Table 5-2, and QAPP Tables 3-4, 3-5, and 4-2:** The text and tables indicate that PAHs will be analyzed using “U.S. EPA Method selective ion mass spectrometry (SIMS) 8270C.” Please confirm if the correct citation is modified Method 8270C “Semivolatile Organic Compounds by GC/MS with Selected Ion Monitoring (SIM).” EPA recommends that Method 8270C with SIM be used to minimize the impact of interference from non-target compounds on the detection limits for PAHs. Please clearly indicate the analytical method to be used for this investigation in the text and tables.
30. **FSP Section 5.4.2, Hollow Stem Auger, Page A5-3:** The text states that “soil samples will be collected from 1 to 2.5 feet bgs and 4 to 5.5 feet bgs for geologic logging or for laboratory analyses at depths specified in Table 4-1.” Table 4-1 does not specify any sampling depths. Please revise this statement to cite where the sampling depths are specified. Also, in order to select the screened interval for the wells and to understand the units across which a well is screened, it is necessary to collect soil samples across the screened interval. Please revise the text to specify that soil samples will also be collected across the screened interval of each well.
31. **FSP Section 5.5, Monitoring Well Installation and Development, Page A5-7:** The text specifies how well development water will be handled but does not specify how soil cuttings will be handled and disposed. Please specify how soil cuttings will be managed.
32. **FSP Section 5.6.1, Discrete Groundwater Sampling, Page A5-8:** According to text on page A1-6, temporary wells will be installed to estimate groundwater flow directions. The text in section 5.6.1 states that temporary wells will be installed if sufficient water is not produced for sampling or if there is evidence “that free-phase petroleum product” may be present. The use of temporary wells for water level measurements is not discussed. Please revise the text to include temporary wells for water level measurements. Please specify how free-phase product will be identified. Also, please discuss the length of time that temporary wells will be left in place and specify procedures for abandoning the temporary wells.
33. **FSP Section 5.7.2, Slug Tests, Page A5-10:** The text does not specify how the slug test data will be interpreted. Please discuss how slug test data will be interpreted, including the name of the software package, if any, to be used.
34. **FSP Section 5.9, Sample Containers, Page A5-11:** Visual inspection of the stainless

steel or acetate sleeves is not sufficient to ensure that they are uncontaminated. Sample sleeves should either be decontaminated or have certification to document that they are uncontaminated. The text in section 5.13 states that “rinse blanks will be prepared...through decontaminated or factory sealed soil or water sampling equipment,” implying that sample sleeves will be decontaminated. Please revise the text to require decontamination of sample sleeves.

35. **FSP Table 5-1:** Preservation with nitric acid is required for all Target Analyte List (TAL) metals, not just for mercury as implied in the entry in the “Preservation” column. Please delete the phrase “for mercury” from the TAL metals entry in the “Preservation” column.
36. **FSP Section 5.13, Quality Control Samples, Page A5-17 and Table 5-3 and QAPP Section 6.3.1, Duplicates, Page B6-2:** There is no provision for collection of field duplicate (or replicate) samples during soil and soil gas sampling. Duplicate samples are a measure of sampling technique, laboratory performance, and possible inhomogeneities in the sample and should be collected for all media. Please add field duplicate samples for soil and soil gas sampling or explain why duplicate samples will not be collected.
37. **QAPP Table 3-5:** The analysis for TAL metals is cited as “EPA Method SIMS 6010B/7000 Series (EPA SW-846).” EPA method 6010B is “Inorganics by Inductively Coupled Plasma - Atomic Emission Spectrometry” and the 7000 series methods mostly require atomic absorption (AA). Please explain the reference to “SIMS” for metals analyses or delete this acronym.
38. **QAPP Section 3.3, Standard Operating Procedures:** There is no SOP for soil gas sampling. Field personnel should not be expected to consult a reference library during sampling, all necessary information and procedures should be available to them. Please specify a SOP for soil gas sampling or provide procedures in the text.
39. **QAPP Section 4.3, Sample Containers:** The containers, analytical method(s), preservation and holding times for soil gas samples are not specified. Please specify the container(s), analytical method(s), preservation and holding times for soil gas samples.
40. **QAPP Section 6.3.2, Blanks, Page B6-2:** There is no discussion of the blanks necessary to assess the potential for sample contamination during soil gas sampling. Please specify and discuss the necessary soil gas sampling blanks.