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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

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MCAS EL TORO
SSIC # 5090.3

May 5, 1995

Mr. Joseph Joyce
BRAC Environmental Coordinator
Environment and Safety (Code 1AU)
MCAS El Toro
P.O. Box 95001
Santa Ana, CA 92709-5001

Dear Mr. Joyce:

EPA has reviewed the "Draft Quality Assurance Project Plan, Phase II RI/FS," prepared for Marine Corps Air Station, El Toro, California, received on 3/6/95. Please address the enclosed comments (Enclosures A and B) in the draft final report.

If you have any questions, I can be reached at (415) 744-2389.

Sincerely,

Bonnie Arthur
Remedial Project Manager
Federal Facilities Cleanup Office

Enclosures

cc: Mr. Juan Jimenez, DTSC
Mr. Larry Vitale, RWQCB
Mr. Wayne Lee, MCAS El Toro
Mr. Jason Ashman, SW DIV
Mr. Dante Tedaldi, Bechtel

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ENCLOSURE A

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

May 5, 1995

MEMORANDUM

SUBJECT: Draft Quality Assurance Project Plan (QAPjP), Phase II Remedial Investigation/Feasibility Study (RI/FS), Marine Corps Air Station (MCAS) El Toro, El Toro, California (QAMS Document Control Number H6CA002Q95VSF1)

FROM: Lisa Hanusiak, Chemist
Quality Assurance Management Section (P-3-2)

THROUGH: Vance S. Fong, P.E., Chief
Quality Assurance Management Section (P-3-2)

TO: Bonnie Arthur, Remedial Project Manager
Navy Section (H-9-2)

The subject document, prepared by Bechtel National, Inc. and dated February 1995, was reviewed. The review was based on the guidance provided in "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final," (EPA/540/G-89/004, 1988) and "U.S. EPA Region 9 Guidance for Preparing Quality Assurance Project Plans for Superfund Remedial Projects," (QAMS DCN 9QA-03-89, September 1989). The Phase II RI/FS Work Plan, prepared by Bechtel National, Inc. and dated March 1995, was also used for reference. This memorandum is intended to supersede the April 3, 1995 review memorandum addressing the subject document.

Overall, the QAPjP contains the elements required by Regional guidance. However, a considerable amount of information regarding the Phase II RI/FS is contained by reference to other documents for the site, including the Phase II RI/FS Work Plan and Field Sampling Plan. Based on the limited information provided in the QAPjP, it is not possible to determine the scope of the data collection requirements. The comments provided below should be addressed before the QAPjP can be approved by the Quality Assurance Management Section (QAMS).

Major Concerns

1A. [Section 3.2.1.2, Field Screening] Detection limits should be specified for the various field screening instrumentation/techniques (e.g., portable gas chromatograph, portable scintillometer, x-ray fluorescence,

immunoassay test kits) discussed in Section 3.2.1.2 of the QAPjP. It is further recommended that these detection limits be discussed in relation to the limits for on-site mobile laboratory and fixed-based laboratory analyses and the applicable regulatory limits.

1B. It is unclear whether the analytical scheme described in Section 3.2.1.2 will be applied to all or to only a fraction of the planned analyses for the proposed investigation. The discussion in Section 3.2.1.2 should be expanded to specify the field screening techniques that will be used for each analytical parameter. If field screening will not be performed for certain analytical parameters and samples will be submitted directly to an on-site mobile laboratory or a fixed-based laboratory, these parameters should be specified in the QAPjP.

1C. The text in Section 3.2.1.2 states that 5% of samples determined to be free of contamination by preliminary field screening will be submitted to an on-site mobile laboratory for analysis, and that 10% of the samples with positive results and 5% of samples determined to be free of contamination by mobile laboratory analyses will be submitted to a fixed-based laboratory. The QAPjP should state how the samples submitted for mobile laboratory and fixed-based laboratory analyses will be selected.

2A. [Table 3-2, Quality Assurance Objectives; Appendix B, Table B-1, Project Required Detection Limits] Precision and accuracy goals should be added to Table 3-2 of the QAPjP for the following analytical parameters:

- total petroleum hydrocarbons [TPH] (SW8015M; aqueous/solid samples)
- polychlorinated biphenyls [PCBs] (SW4020; aqueous samples)
- gross alpha and beta radioactivity (SW9310; aqueous/solid samples)
- total Kjeldahl nitrogen [TKN] (E353.3; aqueous samples)
- total phosphate (E365.2; aqueous/solid samples)
- total cyanide (E335.1/E335.2; aqueous/solid samples)
- total organic carbon [TOC] (E415.1/SW9060; aqueous/solid samples)
- biological oxygen demand [BOD] (E405.1; aqueous samples)
- chemical oxygen demand [COD] (E410.4; aqueous samples)
- hexavalent chromium (SM17 3500-Cr D; aqueous/solid samples)
- dioxins/dibenzofurans (SW8280; aqueous samples)

- polynuclear aromatic hydrocarbons (SW8310; aqueous samples)

2B. Detection/reporting limits should be added to Table B-1 for the following parameters:

- TKN (E353.3; aqueous samples)
- total dissolved solids [TDS] (E160.1; aqueous samples)
- TOC (E415.1/SW9060; aqueous/solid samples)
- BOD (E405.1; aqueous samples)
- COD (E410.4; aqueous samples)
- total phenolics (SW9065; solid samples)
- sulfate (E375.4; solid samples)

2C. Detection limits should be specified for all target analytes listed in Table B-1. "NL" (Not Listed) or "--" is entered instead of detection limits in the table for many analytes.

3. [Appendix B, Table B-1, Project Required Detection Limits] The analytical methods specified for several of the chemicals of potential concern (COPC) do not provide sufficient sensitivity to detect these chemicals at concentrations below the risk-based concentrations (RBCs) specified in Table B-1 of the QAPjP. This issue is a concern for the following analytes: carbon tetrachloride, chloroform, dibromochloromethane, 1,2-dichloroethane, 1,2-dichloropropane, and 1,2,2-tetrachloroethane (SW8010); vinyl chloride (SW8240); heptachlor epoxide (SW8080); n-nitrosodipropylamine (SW8270); and arsenic and beryllium (SW6010).

   In order to reliably quantitate these analytes at concentrations less than RBCs, it may be necessary to use alternative methods or to modify the specified methods. For example, for SW-846 Method 8010 analyses, it may be sufficient to analyze a low level standard daily to demonstrate the ability of the laboratory to detect these analytes at the RBCs. For the analysis of arsenic and beryllium, the use of an atomic absorption spectroscopic method, rather than the specified inductively coupled plasma (ICP) emission spectroscopic method, may be necessary. All method modifications and alternative methods should be specified in the QAPjP.

4. [Section 6.3, Laboratory Quality Control Checks] The discussion of laboratory quality control (QC) checks in Section 6.3 of the QAPjP should be expanded considerably. This is particularly important for procedures not covered under any of the Contract Laboratory Program (CLP) Statement of Work (SOW) documents. The information presented in

Section 6.3 is generic in form and method-specific information for both organic and inorganic analyses should be provided. It is recommended that laboratory standard operating procedures (SOPs) (for both field screening/mobile laboratory analyses and fixed laboratory analyses), or a summary of the various instrument calibration procedures (specifying, at a minimum, calibration frequency, acceptance criteria, and standard concentrations), QC checks and corrective action measures that will be performed when system failures occur be provided. Although certain analytical requirements are specified in SW-846 and other EPA methods, many of these requirements are discretionary and may not be comprehensive. For organic methods, the surrogate spike and matrix spike compounds should be specified. For all methods, the documentation requirements for data collection and reporting should be specified.

Other Concerns

1. [Table 4-1, Sample Containers, Preservatives, and Holding Times for Organics] The following modifications should be incorporated into Table 4-1:

   - Aqueous samples for total petroleum hydrocarbon as diesel (TPH-d), semivolatile organic compound (SVOC), explosive, herbicide, polychlorinated dibenzo-*p*-dioxin/dibenzofuran (PCDD/PCDF) and pesticide/polychlorinated biphenyl (PCB) analyses should be extracted within 7 days of collection.

   - It is recommended that 2 liters of aqueous sample be collected at each location for herbicide and PCDD/PCDF analyses. The extra sample volume will allow for reextraction/reanalysis of samples if necessary.

   - It is not necessary to collect 4 liters of aqueous sample for both SVOC and pesticide/PCB analyses (8 liters total) or for explosive analyses. It is sufficient to collect a total of 4 liters of aqueous sample for both SVOC and pesticide/PCB analyses. For explosive analyses following SW-846 8330, a 5 milliliter sample is required; a volume significantly smaller than 4 liters is necessary.

   - Samples for total recoverable petroleum hydrocarbon (TRPH) analyses should be analyzed within 28 days.

   - Soil samples for PCDD/PCDF analyses should be collected in an 8 ounce wide mouth glass jar.

2. [Section 6.1.1, Field Analytical Quality Control Procedures, Duplicates] The text in Section 6.1.1 of the QAPjP states that the laboratory will prepare duplicate soil samples, rather than duplicates being collected in the field. It is recommended that duplicates be prepared in the field, from a single core, and submitted "blind" to the laboratory. The analysis of field duplicate soil samples will provide additional information regarding the variability of contaminant concentrations.

   It should be noted that field duplicate analyses *cannot* be used as a means for assessing laboratory accuracy. Accuracy can be determined only if the true concentration of a target analyte is known.

3. [Section 7.2, Data Validation and Verification] The text in Section 7.2 of the QAPjP states that 10% of the data generated will be validated. It is recommended that the QAPjP indicate how the 10% of the data slated for validation will be selected.

4. [General] A discussion of the following topics should be added to the QAPjP:

   - sample collection requirements (including analytical parameters for each matrix and a rationale for analytical parameters and matrices);
   - project data management scheme and standard record keeping procedures;
   - laboratory and field auditing protocols, criteria, frequency, reporting and follow-up/corrective action requirements.

Comments

1A. [Section 2.1, Clean Organization; Figure 2-1, Project Organization; Section 3.2.1, Requirements for Data Measurement Objectives, Detection Limits] The text in Section 3.2.1 of the QAPjP discusses the Laboratory Coordinator. However, the responsibilities of this individual are not described in Section 2.1, and this individual's position within the project organizational scheme is not depicted in Figure 2-1. This discrepancy should be clarified.

1B. The individuals that are responsible for overseeing corrective action and preparation of quality assurance (QA)

reports to management should be identified in Section 2.1 of the QAPjP.

2. [Section 7.3.2, Procedures to Assess Data Precision, Accuracy, and Completeness, Completeness] The "*t*" in the equation for determining percent data completeness in Section 7.3.2 of the QAPjP should be the total number of "planned" measurements.

If you have any questions concerning this memorandum, please feel free to call me at (415)744-1528.

ENCLOSURE B

Page 2-1. The CTO Leader for CTO-0059 is not responsible for the technical execution, oversight and project QC. These activities will be the responsibility of the individual CTO Leaders of the landfills and VOC source area activities.

Pages 2-1, 3-3. The CLEAN Organization text and flow chart (Figure 2-1) do not include the Laboratory Coordinator. The coordinator is responsible for the execution and oversight of all laboratory work and therefore should be included in this section.

Page 2-2. The acronym BEC represents Base Realignment and Closure (BRAC) Environmental Coordinator, not Base Environmental Coordinator. The acronym BCP represents Base Realignment and Closure (BRAC) Cleanup Plan, not Base Closure Plan.

Page 2-2. Section 2.3 should include a description of the role and authority of the Navy Remedial Technology Manager (RTM).

Page 3-3. 1st para. 2nd sentence. "...lowest possible detection limit of accurate precision will be implemented." Is the intent to state accurate precision (sic)? Please clarify.

Page 3-3. The descriptions and definitions under Field Measurements are not consistent with the descriptions elsewhere within this document and the Work Plan. For example, 2nd para. describes FID and PID instrument use as field measurements. However, on the following page these units are described as field screening devices.

Page 3-4. See previous comment. In addition, there are two definitions used interchangeably: 1) preliminary field screening and 2) on-site mobile laboratory or field-based laboratory. Later, the definitions change to qualitative and quantitative. Please use consistent terminology throughout and clarify what methods and analyses fall under each type.

Page 3-4. 3rd full para. The QAPP should include a detailed discussion of how confirmation would be measured. This information is only briefly discussed in the Work Plan.

Page 3-4. 3rd full para. The text states that QA/QC for field screening is similar to Level D requirements. It is not clear if this refers to Preliminary Field Screening or Mobile Laboratory Analyses.

Page 3-5. The text should include the definition of "..detection limits adequate for risk assessment purposes." It would seem that detection limits would be adequate to meet PGRs. If that is the case then include the note.

Page 3-5. The second sentence under 3.2.1.4 is redundant with the sentence which immediately follows.

Table 3-2 and Table 4-2 (notes) The acronym BOD represents Biochemical Oxygen Demand, not Biological Oxygen Demand.

Table 3-2. The table should include a note that all methods are USEPA except for Chromium hexavalent which is by Standard Methods for the Examination of Water and Wastewater-APHA/AWWA/WPCF.

Page 4-1. Section 4.3, 2nd to last sentence. All glass containers including VOA vials will be provided with Teflon«-lined caps or Teflon« septa.

Table 4-1 and Table 4-2. The footer of the tables is incorrect. See the comment above regarding Teflon« septa.

Page 6-1. Section 6.1. The text should identify which QC samples will be used for the field screening program. It does not appear feasible to have the same level of QC for field screening as for off-site analyses. For example, will matrix spikes and matrix spike duplicates be analyzed in the field?

Page 6-1. Section 6.1.1. 2nd para. Suggest revision of the 1st sentence to read, "Duplicates of aqueous samples will be..." and deletion of the sentence which immediately follows.

Page 6-1. Section 6.1.2. Last sentence. Trip blanks cannot be used "...to detect any problems caused by sample handling and shipment." Suggest revision as follows, "Trip blanks will be used to detect contamination introduced during sample handling and shipment."

Page 6-2. 1st, 2nd, and 3rd paragraphs. The discussion of preservatives used in the field should be clarified. Clarify that all preservatives used will be included in the blanks; however, a separate blank for each class of analyses will be used. Thus, an HCl blank would be supplied for the VOCs and an H2SO4 blank would be supplied for TRPH.

Page 6-6. SOP 15 is listed on page 6-4. The summary of SOP 15 is absent and should be provided.

Page 7-2. The discussion related to precision and accuracy should not include the 3rd and 4th bullet items. Blanks are not used in the assessment of precision and accuracy. They are however, an integral part of the QA/QC program.

Page 7-2. Section 7.3. The 2nd bullet item should include the words "...matrix spike..." between "...results from laboratory [insert] duplicates,"

Page 7-2. Replace the first sentence as follows, "Accuracy and precision of analytical techniques will be assess through MS and

MSD samples (respectively) prepared by the laboratory from field samples."

Page A1-2. 1st para. The current investigatory approach proposes to use residential risk values only. Therefore, it appears that XRF will not be suitable and would not be used at all. Is this correct?

Page A1-3. The text states that all immunoassay samples with detectable concentrations and a minimum of 5 percent of the nondetects will be further analyzed by the mobile laboratory or a fixed based laboratory. This statement is inconsistent with the discussions of other quantitative work presented on page 3-4.

Page A1-3. The text interchangeably uses ppm and the definitive unit mg/kg. Please use mg/kg.

Page A1-3. The 2nd to last sentence states that immunoassay kits would only be used when industrial RBCs (PRGs) are used for screening. Since the Work Plan does not identify industrial scenarios, it seems that the immunoassay kits would never actually be used as part of the Phase II work. Is that correct?

Page A1-4. Last sentence of 1st para. The text states that "A minimum of 10 percent of the samples collected in the field and analyzed will be submitted to a certified CLP laboratory for confirmation." Other statements in this document and the Work Plan indicate that a minimum of 10 percent of the positive detects for analyses conducted in the mobile laboratory would be sent to an off-site laboratory. The sentence should be corrected to be consistent with the rest of the plans and the term "certified CLP laboratory" should be removed and replaced with "...state- and NFESC-certified..."

Page A1-4. Table B-2 is referred to on this page. The Table serves no discernible purpose and should be removed.

Page A1-6. 3rd para. The discussion of Method 8280 deviates from analytical methods to health and safety procedures. This deviation is not consistent with the preceding and following method discussions. Delete the 3rd, 6th and 7th sentences.

Page A1-6. For the discussion of TTLC and STLC delete the 1st sentence. This sentence is incorrect in that it presupposes that hazardous constituents are leaching into groundwater and TTLC does not provide indications of leachability potential, only STLC can be used for that purpose. Suggestion for the combination of sentences 2 and 3 is, "The soluble threshold leachate concentration measurement determines those minerals/metals that are soluble under the Waste Extraction Test conditions and simulates the leaching process that can occur in a landfill."

Table B-1. Page B-10. Analysis of chromium hexavalent by SM17 3500 is a colorimetric procedure not by ICP. SM 3500 does not

specify a detection limit and it is unclear where the 500 mg/kg and 500 mg/L detection limits were obtained. These detection limits are above the CAL-modified PRG of 200 mg/kg and 160 mg/L. EPA 218.6 analysis of chromium hexavalent by ion chromatography can achieve a detection limit of 0.3 mg/L. EPA 218.5 analysis of chromium hexavalent by GFAA can achieve a detection limit of 2 mg/L.