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LETTER REGARDING U S EPA REGION IV REVIEW AND COMMENTS ON FINAL DRAFT REMEDIAL INVESTIGATION FEASIBILITY STUDY FOR OPERABLE UNIT 3 (OU 3) NAS JACKSONVILLE FL
7/8/1994
U S EPA REGION IV

OU3
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CERCLA-10349

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IV
345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

opened 07/12

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CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Joel G. Murphy
Department of the Navy
Southern Division
Naval Facilities Engineering Command
2155 Eagle Dr., P. O. Box 10068
Charleston, South Carolina 29411-0068

SUBJ: Draft Remedial Investigation/Feasibility Study Work Plan
NAS Jacksonville - NPL Site
Jacksonville, Florida

Dear Mr. Murphy:

The U.S Environmental Protection Agency (EPA) has received and reviewed the Draft Remedial Investigation/Feasibility Study (RI/FS) Work Plan for Operable Unit 3 at Naval Air Station (NAS) Jacksonville, Florida and EPA's comments are enclosed.

If you have any questions or comments about, please contact me at the above address or call me at (404) 347-3555, ext. 6448.

Sincerely,

James W. Hudson
Remedial Project Manager

Enclosure

cc: Jorge Caspary, FDEP
Eric Nuzie, FDEP
Bill Rasphet, NAS Jacksonville
James Malone, SOUTHNAVFACENGCOM

GENERAL COMMENTS

1) Figure 2-6 is the only figure in the RI/FS Work Plan which shows the various potential sources of contaminations (PSCs). It would be helpful if the PSCs were identified on other figures as well, particularly figures showing sample or well locations.

2) Information regarding the type of contamination at several of the PSCs is vague. The text refers to "hazardous materials" at PSC 11, "numerous spills of toxic and reactive chemicals" plus "solvents and other waste" at PSC 12 and "spent solvent" at PSC 15. If the specific types of contaminants are not known at these and other PSCs, then additional samples will need to be collected during the remedial investigation and analyzed for full scan Target Compound List/Target Analyte List constituents.

3) For clarification and to allow for a more thorough evaluation, larger-scale figures should be provided for each PSC.

4) The Field Sampling Plan in Appendix M2 states that polyvinyl chloride (PVC) pipe will be used to construct the groundwater monitoring wells. However, EPA discourages the use of PVC as a well construction material. Instead, EPA recommends that stainless steel be used for the following two reasons. First, organic contaminants can leach from PVC into groundwater, resulting in nonrepresentative samples. Second, it is possible for organic contaminants in the groundwater to adsorb to the PVC material, again resulting in nonrepresentative samples. Therefore, if PVC is to be used, specific analytical data should be provided indicating that neither the leaching nor the sorption of organic compounds from the PVC well materials will interfere with the data quality of the groundwater samples.

Specific Comments

1) Page 1-8: The term "contaminants of concern" should be "chemicals of potential concern".

2) Page 2-9, Hydrology: Table K-2 indicates that surface water samples are compared to Florida Surface Water Quality Criteria for Class III Marine Waters. Is this the appropriate classification of the St. John's River? Please provide a description of the river and of this classification.

3) Page 2-9, Paragraph 2: The quality of the St. John's River was referred to in the text as "good" in general, and "poor" in the urban areas of Jacksonville. The meaning of "good" water quality and "poor" water quality should be stated.

4) Table 2-9, Preliminary Chemicals of Potential Concern: Although listed in a later Appendix, it would be helpful to list the ARAR values in this table. The flag for solubility was a good addition.

5) Page 2-11, Paragraph 6: Additional information should be provided regarding the type of contamination at PSC 11, instead of "[illegible]" Figures 2-1a, 1b and 1c should be shown on a larger scale in separate figures to allow for a more thorough evaluation. At such a small scale, it is difficult to read the building numbers, adjacent street names or any other details shown on the figure.

7) Page 2-13, Paragraph 3: The text describes the type of contamination at PSC 12 as "numerous spills of toxic waste and reactive chemicals" or "solvents and other wastes." More specific information should be provided. See General Comment No. 2.

8) Page 2-13, PSC 13, Radium Paint Waste Disposal Site: What provisions will be made in this workplan to incorporate the potential for co-mingled contamination from this and other PSCs? Does potential contamination from this site pose any special considerations in the health and safety plan for sampling of co-mingled contamination? At what point in the remediation process will the two investigations be considered together?

Do radioactive wastes typically bind to clays?

The investigation of PSC 13 is proposed to be omitted from this RI/FS and addressed later in a facility-wide Radiological Survey. Given the proximity of PSC 13 to the rest of the PSC areas in OU 3, the lack of information on this site, especially for radiological parameters could add a great deal of uncertainty to the risk assessment conclusions. This point should be given serious consideration.

9) Page 2-14, Paragraph 1: Specify the type of contamination at PSC 15, instead of referring to the waste as "spent solvent and paint sludge." See General Comment No. 2.

10) Page 2-19, Paragraphs 3 and 5: The text in paragraph 3 states that a shallow well is less than 25 feet below land surface (bls). The text in paragraph 5 states that a deep well is greater than 50 feet (presumably bls). Explain the gap between 25 and 50 feet bls.

11) Page 2-20, Figure 2-7: The PSCs should be identified on this figure and any other figure which has sampling or well information.

12) Page 2-25, Figure 2-9: This figure shows the locations of "deep" soil borings. A definition should be given for "deep" soil borings.

13) Page 2-52, Table 2-9: This table should distinguish between soil and groundwater "preliminary chemicals of potential concern."

14) Page 2-54, Preliminary Nature of Contamination: Is there any correlation between the metals in the ground water and acidic sources which might have served as a catalyst for metals leaching?

15) Page 2-56, Paragraph 3: To be consistent and to allow for a thorough review of sampling locations, identify the building number of the Bachelor's Enlisted Quarters on a figure.

16) Pages 3-3, 3-4 and 3-5, Figures 3-1, 3-2 and 3-3, respectively: For the square-shaped icon in the legend, the text states, "VOC Contamination is TPH, BTEX Only (No Solvents)." This statement is vague and misleading since the text does not clearly state what is meant by "solvents." Many liquids can be considered "solvents," even water at times. In this case, benzene (one of the BTEX constituents) could be considered a solvent as it is sometimes used to clean (dissolve) oils or grease on machinery.

17) Page 3-6, Paragraph 3: The text states that "draft soil cleanup goals" were presented to the partnering team by the State of Florida. State in the text what the draft soil cleanup goals are.

18) Page 3-6, Preliminary Remediation Goals: The last statement, regarding soil clean up goals, does not specifically acknowledge what will be used for these goals. EPA will consider numerous numerical methods for generating soil clean up standards which are protective of the ground water. Further portions of the text suggest that comparisons will be made to background values. Both comparisons would be useful, but additions discussion is needed: these values will be used to calculate volumes of contaminated soil, project costs, and ultimately will affect the choice of source remediation.

19) Page 3-10, Section 3.1.5.2: The water in the decontamination pit should be drained as often as needed to ensure proper operation.

20) Page 3-10, Section 3.1.5.3: Analyte-free water must meet the definition of organic free water found in the EPA, Region IV, Environmental Services Division (ESD), Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual, (ECBSOPQAM), February 1, 1991. It is recommended that this water be generated in the field. This water must also be kept in glass, teflon, or stainless steel containers only.

21) Page 3-11, Section 3.1.5.4 thru 3.1.5.7, inclusive: Field equipment used for sampling should follow the procedure found in Section B.8 of the ECBSOPQAM. This procedure is much easier to implement under field conditions. Water level indicators and

submersible pumps should be cleaned as specified in Section B.7 of the ECBSOPQAM.

22) Page 3-12, Section 3.1.5.8: The drill rig and all downhole drilling equipment should be inspected and cleaned as specified in Section E.9 of the ECBSOPQAM. If desired, the solvent rinse may be omitted for the downhole drilling equipment and associated equipment and tools, and a program of equipment rinse blanks begun. This must be separate from the blanks collected for the sampling equipment.

23) Page 3-18, Section 3.3.3: To avoid having the backhoe bucket being classified as a sampling tool, it is recommended that samples be collected from the side walls of the trenches, after dressing. EPA is available for consultation on this technique. If the backhoe is classified as a sampling tool, it must undergo the full field cleaning procedure specified in Section E.9 of the ECBSOPQAM. If used merely to excavate the trench, it may be cleaned using a steam jenny and soap.

24) Page 3-21, Section 3.4.3.1: The use of bailers for sampling is not recommended. It is recommended that samples be collected using the peristaltic pump/vacuum jug apparatus described in the ECBSOPQAM. This should greatly reduce turbidity in a properly constructed monitoring well. Purging should be accomplished with either a submersible pump such as the Grundfos RediFlo 2, or the peristaltic pump.

25) Page 3-22, Section 3.4.3.2: Turbidity should also be monitored during purging. Ten (10) hours is much too long to wait after purging to begin sampling. Sampling should begin as soon as possible after purging.

26) Table 4-4, Data Requirements for the Evaluation of Remedial Technologies: If soil contaminant concentrations are compared to background, additional data parameters may not be required. It is advised, however, that data parameters are sufficient to perform any leaching, fate and transport, or extraction models which may be considered in evaluation of remediation technologies.

Note that the TCLP test is used to determine whether the waste, soil and debris are characteristic hazardous wastes due to toxicity. For numerical modeling, EPA generally prefers the ASTM test for leaching.

27) Page 5-2, Identification of Sources: Will the source volume be generated based on comparison to background? How will contamination below the water table be identified and evaluated?

28) Page 5-3, Evaluation of Aquifer Characteristics: While in-situ treatment of ground water may ultimately be selected, a comparison of time and cost should be used to make that determination. To make that comparison, extraction and treatment should be considered.

29) Page 6-13 to 6-14: The 58 shallow hand-augered soil borings referred to in the text should be located on a figure. Soil boring samples are proposed for depths of 0-2', 2-4', and 4-6' at 58 locations. Surface soil samples must be collected no deeper than 0-1' for direct contact risk assessment purposes. These 58 locations should be sampled for 0-1' instead of 0-2'. Without these locations, the only surface soil data suitable for direct contact risk assessment will be the 8 locations at PSC 15 proposed on Page 6-16.

30) Page 6-14, Paragraph 4 and 5, respectively: The three soil borings referred to in the text at PSC-14 should be shown on a figure like the four borings at PSC-15. Justification should be provided for why there are two soil borings within 10 feet of each other.

31) Page 6-16, Special Parameters and Surface Soil Sampling: Special Parameters: Same comments as No. 26. Surface Soil Sampling: How will deeper soils be investigated?

32) Page 6-22: The DPT sampling is identified as Level E (comparable to Level V) Data Quality. The DPT sampling involves testing for TCL/TAL parameters (not non-conventional parameters) as shown in Table 2-5 of Appendix M2, samples will be sent for 24 hour turnaround, and no data validation will be performed. Based on this information, it is more likely that the DPT data will be Level II or Level C (comparable to Level III) at best. The DPT data is unlikely to be suitable for risk assessment purposes, as stated in the second paragraph, and should be used only to determine confirmatory sample locations for further analysis. The term "validated (~~corrected~~) data" should be changed to "validated ([redacted]) data".

33) Page 6-24: Include the preparation of a data summary table (to include the frequency of detection, range of detects, average concentration and background concentration) and the tabulation of Remedial Goal Options (RGOs) as tasks in the bullet listing. The RGOs task is discussed on Pages 6-38 to 6-39.

34) Page 6-25, Paragraph 4, Section 6.5.1.2: The rationale stated in the paragraph for not evaluating potential surface soil exposure under the occupational exposure scenario is unsubstantiated. If exposure to subsurface soils during construction activities were to be evaluated under both the current and future land-use conditions, evaluation of potential exposure to the contaminated surface soils must also be included in the risk assessment.

The definitions for surface soils ("0 to 12 inches deep") and subsurface soils ("0 inches to the water table"), as provided in the paragraph, are apparently contradictory. Please clarify.

35) Page 6-26, Reasonable Maximum Exposure Discussion: In the first sentence of the Exposure Concentrations paragraph, change

"average concentration" to "average concentration [illegible] the 95 percent upper confidence limit of the mean.". See the attached guidance on calculating the concentration term. The central tendency exposure, as well as the reasonable maximum exposure, should be considered and reported in a Baseline Risk Assessment Appendix of the RI/FS report. See the attached draft default factors for central tendency exposure.

36) Page 6-27, Table 6-2: A surface soil exposure assessment should be included under the occupational exposure scenario. See Specific Comment No. 34.

It is unjustified to include child resident receptors in only the surface water and sediment, but not in the groundwater and surface soil exposure assessment. Compared with adults, children are more sensitive to contaminant exposure. The potential for and implication of children's exposure to contaminated media should be fully evaluated in all exposure pathways.

37) Page 6-38: Add RGOs for an HI of 0.1 as well as HIs of 1 and 10.

38) Page 7-2, Task 8, Identification of ARARs: How will the "selected contaminants," for which background comparison is to be made, be determined?

39) Task 9, Development and Screening of Remedial Alternatives: This portion of text discussed the possibility of filtration of suspended solids in the ground water. Page 2-54 had discussed the possibility of suspended particulate matter causing high concentrations of metals. The workplan should have included methods for determining that the metals are in suspension and not in solution.

40) Table K-1, Chemical Table: This table is quite helpful. Specific gravity would be a useful addition.

41) Page O-3, Table O-1: The conversion factor (CF) in equations for both "Ingestion of Soil or Sediment" and "Dermal Contact with Soil or Sediment" contains errors. Instead of being "10^4 kg/mg," the CF should be "10^{-6} kg/mg."

42) Page O-5, Table O-1: For the equation of "Inhalation of Volatiles from Household Water Use," the legend for "IR" should state "inhalation rate (m^3/day)," not "ingestion rate (L/day)."

43) Pages O-6 through O-9, Tables O-2 through Table O-5: For the parameters, "Exposure Frequency," "Exposure Duration" and "Noncancer Averaging Time," the sources provided on these tables indicate "USEPA, 1991b/Assumption." This notation is misleading since the values for these parameters, as presented in these tables, were not derived from the EPA reference document cited as "USEPA, 1991b." Therefore, the wording "USEPA, 1991b" should be deleted from these source terms, and the full names of the EPA

reference documents which are cited as "Source" should be included on these tables instead for easy referral and completeness.

Provide the rationale for selecting an exposure duration value of 1 year for the construction exposure scenario. This value appears too low to be used to represent an industrial/occupational exposure setting.

44) Page O-11, Table O-6: The typographical errors in "RfD_o" and "RfD_i" throughout these equations should be corrected.

45) Appendix M2, Page 3-20, Paragraphs 3 and 4: Justification should be provided for using PVC as a well construction material. See General Comment No. 4.

46) Appendix M2, Page 3-20, Paragraph 3: The text states well development "will continue for 1 hour or until further development does not yield improvement in water clarity." A development time of 1 hour will not likely allow for the water to become free from visible sediment. In addition, the text does not specify how long development will continue before the determination is made that the water clarity is not improving. The ECB SOPQAM, which does not put a time constraint on well development, states that "the new monitoring well shall be developed until the column of water in the well is free of visible sediment, and the pH, temperature, and specific conductivity have stabilized." Since mud-rotary drilling is being used at OU 3, adequate well development will definitely take more than 1 hour. The ECB SOPQAM also states that "continuous flushing for several days may be necessary to complete the well development." The well development criteria in the RI/FS Work Plan should be modified to be consistent with the ECB SOPQAM.

47) Appendix M2, Page 3-20, Paragraph 3: The RI/FS Work Plan does not specify the waiting period between placement of the bentonite seal and placement of the cement-bentonite grout. The ECB SOPQAM states that the bentonite seal "shall be allowed to hydrate a minimum of eight hours or the manufacturer's recommended hydration time, whichever is longer." The RI/FS Work Plan should be consistent with this criterion.

48) Table 3-2 of Appendix M1: Lower quantitations limits should be used for any potable water samples by selecting a low concentration or drinking water method for organics. A low concentration method would not be needed for all groundwater as it would not be appropriate for contaminated samples.

49) Page 9-1 of Appendix M1: Note that the ESD now requires full CLP (Level D) deliverables for data packages which they are to review, which should be about ten percent of the total sample results.

50) Page 1-2, the last sentence: See comment 32.

51) Page O-1 of Appendix O: Note that screening by the Region III table should be sufficient without use of the concentration-toxicity screening. However, the attached March 1994 version must be used instead of the 1992 version referenced.

52) Page O-1: The non-detects should be included in the calculation of the upper 95 percent confidence limit by proxy concentration, such as one-half the sample quantitation limit.

53) Page O-3, Table O-1: The conversion factor should be 10^{-6} not 10^{4} for both ingestion and dermal contact sections.

54) Table O-1: The ingestion formula cannot be used for inhalation of particulates. See the attached Correction to RAGS - Part B for the proper calculation.

55) Page O-5, Table O-3: Inhalation of volatiles from household use is presented. Please see attached supplemental guidance on this subject.

56) Table O-3: The Exposure Frequency should be 130 days as in Table O-2, not 30 days.

57) Table O-6: Dermal pathways should be included. Also, equations for soil should be added.

Comments concerning radioactive contamination:

1) The site has a history of widespread Radium-226 contamination. However, not all areas are being evaluated for radionuclides. To ensure that there are no undetected radionuclides in the "low potential" areas, all environmental samples should be screened for gross alpha and gross beta particles. Alpha levels above screening criteria of 5 picocuries per gram for soil or 5 picocuries per liter for water require additional analysis for radium. The beta screening criteria is 15 and 50 picocuries per liter (40 CFR 141.26). Beta particle activity between 15 and 50 picocuries per liter require analysis for Strontium-89 and Cesium-134. Levels above 50 picocuries per liter require beta isotopic analysis to identify the radionuclides detected. All buildings should undergo a walk through radiation screening survey utilizing a sensitive gamma radiation survey meter with a scintillation detector. These steps should provide an increased data base for risk assessment and an adequate confidence level for the workplan related to radioactivity.

2) Radium cleanup levels for Superfund sites are based on 40 CFR 192. This standard (5 picocuries per gram (soil) and 5 picocuries per liter) is a health based standard (10E-4 risk) and has previously been used as the ARAR for superfund sites.

3) Due to previous groundwater data showing elevated levels of Radium-226 (Monthly Compliance Monitoring and Analysis Report), all groundwater samples should be analyzed for Radium 226. This is in addition to the above recommended analysis.

4) All personnel utilizing radiation detection devices and/or providing health physics/radiation safety services should meet minimum qualifications for health physics technicians. Qualifications should be comparable to the Nuclear Regulatory Commissions requirements for health physics technicians (ANSI 18.1), which set educational, testing, and experience standards.

5) An individual should be designated as the Radiation Safety Officer and have appropriate education, training, and experience per Nuclear Regulatory Commission requirements (10 CFR 19/20).

The plan should include how the quick turn-around data and DPT data will be integrated and evaluated in real time to make the field decisions. Without the ability to analyze data trends in real time, making logical defensible decisions in the field becomes problematic.

The plan should make clear that each grid will be investigated, but that sampling will extend beyond the grid boundaries if necessary.

Attachments (5)

1. Supplemental Guidance to RAGS: Calculating the Concentration Term
2. Draft Exposure Factors
3. March 1994 Region III Screening Table
4. Correction to RAGS - Part B
5. Draft Region IV Bulletin on Domestic Water Use