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Submit 1 week prior
final

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
841 Chestnut Building
Philadelphia, Pennsylvania 19107

March 25, 1998

Commander, Atlantic Division
Naval Facilities Engineering Command
Environmental Quality Division
Code: 1823
Norfolk, Virginia 23511-6287
Attn.: Dawn Boucher Hayes

Action Memorandum
1 pg
5 hydro
around
bdg 67 (SWMU 5a)

SUBJECT: Draft Final Site 11 RI/FS Work Plan
Allegany Ballistics Laboratory, Rocket Center, West Virginia

Dear Dawn:

The EPA has reviewed the draft Final Work Plan for Site 11 Remedial Investigation (RI) and Feasibility Study (FS) at the Allegany Ballistics Laboratory (ABL), Rocket Center, West Virginia. The document was prepared for the Navy by CH2M HILL.

GENERAL COMMENTS

1. It might be more appropriate to use additional hydropunch testing to define the extent of the plume in the alluvial aquifer and to better determine the location for the more permanent alluvial monitoring well to the west of 11GW6. *Get prelim to pinpoint location of 11GW9 + #2K SWMU 52 + Site 10 Greg + Dawn*
2. It is not clear how NAPLs will be identified, other than visually. No mention was made of using an interface probe or shaking groundwater with appropriate dyes in a vial for determining presence of DNAPL in the bedrock borings or from F-Well. Please discuss how DNAPLs might be identified in the field. *bailer + interface probe for wells*
3. There is some concern about the utility of installing two 2-inch bedrock wells in a single borehole, the procedure is difficult not only because of possible grout contamination, as noted, but also because of potential problems with yield from these wells later on. Additionally, if it is envisioned that the locations of these wells would ever be appropriate for pumping, two inch wells would not be appropriate for this activity. Please indicate if the driller has experience in the construction of this type well. *CH2 to insert*
4. There is no discussion about background sampling for soil or alluvial groundwater and if the lack of this information might affect how the risk assessment is performed. Also, please note that direct push soil and groundwater data can not be used for risk assessment. *CH2 oversight. Not planned for ext wells.*

815 bld & 215

put 11GW1, 5 as upgrad + 11GW10

*Reg + Dawn
ext
work
for*

SPECIFIC COMMENTS

1. **Page 2-1. Fourth Paragraph.** It is suggested that sufficient analytical results have been collected within the former diked area and the former boiler house area that suggest that soil cleanup had been achieved. In the last sentence please indicate later sampling found more contamination; i.e. "...had been achieved, however samples taken during the ASI indicated deeper contamination."
2. **Page 3-1. Third Paragraph.** Please identify and discuss the major fracture zones identified in F-well at depths of 32-36, 82-86, 126 and 129 feet below ground surface (bgs), as well as the possible minor zones at 62-64, 112, 148, and 158 feet bgs.
3. **Page 3-1/4-1. Last Paragraph.** Groundwater flow in the bedrock and alluvial aquifers apparently moves toward the North Branch Potomac River. However, the river was not considered in the conceptual site model. Please discuss how the river may be included, if analytical data indicates that it may be impacted by contaminated groundwater, in a risk assessment. *ND near River*
4. **Page 3-4. Last Paragraph.** Please add "Soil boring SBF2, located closest to the former oil pit, had the greatest number and the highest concentrations SVOC detections."
5. **Page 4-3. First Paragraph.** For soils, also identify VOC and SVOC compounds as PCCs.
6. **Page 4-3. Second Paragraph.** It is noted that this RI will fill the remaining data gaps for Site 11 ASI. Please note that the data should have been collected using similar methods and QA/QC methodologies as for the RI. Otherwise, its use for quantitative risk assessment is limited.
7. **Page 5-5. First Paragraph.** The *rotosonic* split spoon samples from the alluvial well boring 11GW7 could be screened in the field and samples collected from the intervals with the highest hits and sent to the lab for TCL VOC/SVOC analysis. *migrating due east?*
with ~ 100% higher than 11GW7 \$500-\$600/ea. if needed.
8. **Page 5-5. Second Paragraph.** Please discuss why screening across the water table was selected for the new alluvial wells. Please consider constructing alluvial well 11GW7 with the 10 foot screen at the base of the alluvial aquifer, especially if the alluvium is thick in this area. *DROP sentence in WP*
10' dug DNAPL zone & would miss zone
9. **Page 5-6. Second Bullet.** Please add a discussion of the timing for installation of the bedrock well pair in the alluvial aquifer downgradient direction. If the decision on the location is to be based on the six existing alluvial wells, can't that be decided soon, and certainly before additional alluvial wells are installed. *fracture strikes & dips in 1990.*
fracture trace analysis = 2 predominant fractures @ ABL Do either fracture
10. **Page 5-6. Stage 1 Paragraph.** Based on indications from F-well, please indicate that flowing sands may be encountered at some depth (less than 250 feet) while drilling these boreholes. What will be done if these sands are encountered? *put as well location of alluvial direction if not move*

11. **Page 5-6. Last Paragraph.** It is not clear how NAPLs will be identified. No mention was made of using an interface probe or shaking groundwater with appropriate dyes in a vial for determining presence of NAPL. Please discuss how NAPLs might be identified in the field.
12. **Page 5-8. Hydropunch Paragraph.** Please discuss the proposed depths from which the samples will be taken at each location. Also, please drop the word "adequately" in the second bullet.
13. **Page 5-9 Fourth Paragraph.** Subsurface soil samples should be collected at continuous, but discrete intervals to the cobble layer, not simply at 3-5 feet and 8-10 feet bgs. The sample with the highest level of field screening indicated contamination or the sample interval directly above the water table (if no contamination is detected with the field screening) sent to the lab for complete TCL VOC/SVOC and TAL analysis, in addition to the proposed TPH-DRO analysis. Previous sampling detected VOC and SVOC contamination in SBF2 from depths between 9.5-10.5 and 12.0-13.0 and in SBF6 at a depth of 16.0-17.0. Also, please move on Figure 5-1, the proposed soil sampling location SB-4 to the southeast corner of the former diked fuel-storage area. *Send highest* *↓ not so sure will do cont.*
14. **Page 5-14. Fourth Paragraph.** The new RAGS Part D-standardized tables should be used in the risk assessment. Note that there is a requirement for interim deliverables of the tables. Also, the latest version of the Exposure Factors handbook (August 1996) should be used.
15. **Page 5-15. First Paragraph.** The comparison of onsite data to background data for potential contaminants of concern should be performed at the risk characterization phase for contaminants that drive the risk. This should be done using the appropriate t-statistic for determining differences between sample means.
16. **Page 5-15. Table 5-3.** Please include exposure to subsurface soil for the resident. This scenario assumes that subsurface soil will be used as fill material and will become surface soil. Also, recreational use of the river should be considered.
17. **Page 5-16. Fourth Paragraph.** In the second sentence, please drop the word "necessary" and replace with the phrase "Monte Carlo risk analysis is proposed".
18. **Page 5-17. First Paragraph.** Please update the reference document to the 1997 edition. Also, please include a short discussion indicating that the ERA at Site 11 may be limited because the site is in an industrial area, covered by buildings and asphalt paving.
19. **Page 5-18. Last Paragraph.** It is recommended that the comparative analysis of technologies for the remedial action includes a component that compares the risk reduction based on the **actual concentration levels** that the technology can meet.

20. **Quality Assurance Project Plan. Page 2-2 and Page 8-1.** The most recent CLP SOW for Organic Analysis, Low Concentration Water is OLC02.1, February 1996. This method should be used, not the one listed in Table 8-1 (QAPP.)
21. **Page 15-1. QA/QC.** Please include a table showing the method detection limits. The detection limits should not exceed the RBC for the respective contaminants being analyzed at the site.
22. **Appendix A. Standard Operating Procedures.** The SOPs for calibrating field equipment state that the calibration will be done at the beginning of the day. The calibrations should also be checked throughout the sampling day and at the end of the day.

If you have any questions concerning these comments, please call me (215) 566-3364.

Sincerely,



Bruce W. Beach
Remedial Project Manager

cc: Tom Bass, WV DEP
Wendy Noe, MDE
Dawn Boucher, LANTDIV
Greg Mott, CH2M Hill
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