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NAS WHITING FIELD  
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LETTER REGARDING U S NAVY RESPONSES TO U S GEOLOGICAL SURVEY COMMENTS  
ON DRAFT REMEDIAL INVESTIGATION AND FEASIBILITY STUDY WORK PLAN NAS  
WHITING FIELD FL  
7/13/1992  
ABB ENVIRONMENTAL



July 13, 1992

Commanding Officer  
Attn: Ms. Kimberly Queen, Code 1859  
Souther Division  
Naval Facilities Engineering Command  
2155 Naval Eagle Drive  
Charleston SC 29411-0068

**SUBJECT: Response to Comments  
Remedial Investigation and Feasibility Study Workplan  
Outlying Landing (OLF) Barin, Foley, Alabama  
Navy CLEAN District I  
Contract N62467-89-D-0317**

Dear Kim:

Enclosed is a copy of the Point-by-Point Responses to U.S. Geological Survey comments on the subject document. All comments and clarifications requested by USGS have been incorporated in the workplan.

If you have any questions, please call me at (904) 656-1293 [ext. 314].

Very truly yours,

ABB ENVIRONMENTAL SERVICES INC.

A handwritten signature in cursive script, appearing to read 'Rao V.R. Angara', is written above the typed name.

Rao V.R. Angara  
Task Order Manager

cc: Eric Blomberg, ABB-ES  
File: 7541-02-WKP

ABB Environmental Services Inc.

**RESPONSE TO COMMENTS (Workplan)  
of  
SOUTHERN DIVISION, NAVAL FACILITIES ENGINEERING COMMAND**

Comment Number	Comment	Response
1.	<p>There is a glaring deficiency in the documents that exclude quantifying the surface water. Numerous publications document the complexity of ground and surface water interaction in that area of the State. Without continuous record of discharge of Wolf and Sandy Creeks, it becomes practically impossible to separate the groundwater component from the stream flow. Also, several references are made regarding contributions from storm drainage without any apparent method to determine storm hydrographs. These data are needed to determine loads. A strong recommendation is to include the establishment of continuous operating stations on both streams. Also missing is documentations of the methodology for determining discharge during sample collection.</p>	<p>The objective of the Remedial Investigation (RI) is to confirm the Site Inspection (SI) results and expand the investigation to assess contamination of surface water and sediment at several locations along Sandy Creek. Thus, the intent of the Phase I Remedial Investigation (RI) is to determine if groundwater is discharging into Sandy Creek and if contaminants are present in the surface water and sediment of Sandy Creek. The stream characteristics will be quantified during a later stage of the investigation. Limited sampling during the SI identified the presence of various contaminants in the sediment and no contamination in the surface water of Sandy Creek.</p> <p>In addition to surface water and sediment sampling, one monitoring well will be installed adjacent to Sandy Creek to provide groundwater flow and quality information between the sites and Sandy Creek.</p> <p>Based on the results of the above investigations continuous operating stations may be installed (to enable calculation of mass loading) in Wolf and Sandy Creeks at a later stage of the RI.</p>
2.	<p>Page 3-4, 3-7, The discussion of the geology of the area is rather vague. The presence of the Citronelle Formation and the Miocene Series is discussed, but the thickness of the Citronelle is not clearly defined. The "hardpan" at 56 feet below land surface (page 3-15) may be the base of the Citronelle. Philip Reed reported in Alabama Geological Map 94 (1971) that the base of the Citronelle at many exposures in Baldwin County is marked by a limonite-cemented sandstone that locally is gravelly.</p>	<p>Geological reference provided by the USGS will be reviewed and a clearer discussion of the area geology will be presented.</p> <p>The "hardpan" was only detected in one of the three deep (100 feet) soil borings at OLF Barin. Based on the limited number of deep subsurface borings the base of the Citronelle Formations cannot be determined at this stage of the RI. Additional deep subsurface soil explorations proposed for the RI should provide more information to determine the location of the base of the Citronelle Formation.</p>
3.	<p>Values for pH on Page 408 for wells WHF020b-1 through WHF-20B-5 are extremely low for naturally occurring groundwater. The lowest pH value reported by Reed (AGSM 96, 1971) for groundwater in Baldwin County is 4.5. I suppose that these low pH values are result of contamination.</p>	<p>Agree. A review of the SI field notebooks indicated that the pH meter readings were not agreeing with readings obtained from the pH paper. The pH paper readings of 5.5 is probably a more accurate representation of groundwater pH than the pH meter readings of 3.7 to 4.3. During the Phase RI field program, groundwater pH will be measured for samples obtained from all new and existing monitoring wells.</p>
4.	<p>In sentence on Page 3-17 "both systems are unconfined and exist under water table piezometric conditions", I suggests deleting "exist" and replacing with "are", and deleting "piezometric".</p>	<p>The sentence will be change to read "both systems are unconfined and are under water table conditions."</p>

Comment Number	Comment	Response
5.	Figure 3-10, The figure needs to show for which aquifer the potentiometric surface is given.	Figure 3-10 will be changed to show potentiometric surface is for Pliocene-Miocene aquifer.
6.	Page 3-17, Section 3.4.1, <u>Hydrogeology</u> states that "Although the formations comprising these aquifers differ somewhat in their origin, age, and lithology, both systems are unconfined and exist under water table piezometric conditions throughout the southern part of Baldwin County." Walter and Kidd (1979) report numerous wells that penetrate confined or semi-confined zones between 300 and 500 feet bls south of the Barin field area; including a flowing well about 6 miles south of Barin field with a depth of 500 feet. A well drilled at Gulf Shores State Park in 1977 to a depth of 500 feet bls had a potentiometric head of 15 feet above land surface.	This statement is only applicable at shallow depths (less than 300 feet bls) of the Pliocene-Miocene aquifer. A paragraph will be added to the Hydrogeology section stating that at greater depths (300 to 500 feet bls) clayey sediments in the Miocene series create semi-confining to confining conditions in the Pliocene-Miocene aquifer.
7.	Page 3017, section 3.4.2. <u>Aquifer Characteristics</u> Assuming the wells were constructed according to the specifications given in Appendix __, "slug test methods would not give reliable results. The hydraulic conductivity obtained apply only to the material close to the well, which in this case would be the sand rock installed around the screen.  Measured values of hydraulic conductivity reported by Walter and Kidd (1979) ranged from 175 to 900 gal/day/ft <sup>2</sup> for the aquifer from 70 to 250 feet bls and 170 to 430 gal/day/ft <sup>2</sup> for the aquifer near 350 feet bls. The values shown in table 3-3 give the overall geometric mean of 82 gal/day/ft <sup>2</sup> based on slug tests.	Slug test were conducted during the SI to provide hydraulic conductivity estimates for the for the aquifer from 15 to 100 feet bls.  Accurate estimates of aquifer characteristics are vital for determining fate and transport of contaminants in groundwater during the RI and the design of remedial systems during the Feasibility Study process.  Therefore, a pumping test is proposed during the Ri field program later in this year. The pumping test should provide a more representative hydraulic conductivity measurement for the aquifer from 15 to 100 feet bls.
8.	Table 3-3, The table separates the wells into "Deep Wells" and "Water Table Wells". According to the text, all of the wells are water-table wells.	Table 3-3 of the RI/FS workplan is correct. There are three deep monitoring wells (100 feet bls, WHF-19B-1D through 3D) and five water table monitoring wells (WHF-20B-1- through 5). The text will be changed to reflect the difference between the deep and the water table monitoring wells.
9.	Page 3-21, Section 3.4.2, The last sentence in the first paragraph should use sediments instead of soil.	Agree.
10.	The last sentence states that "porosity is estimated to the 0.25". How was this estimated?	The porosity for poorly sorted sand and gravel (typical of sediments at OLF Barin) ranges from 0.20 to 0.35 (Fetter, 1980). The effective porosity was then estimated at 0.25 which is the lower end of the porosity range for these sediments.

**RESPONSE TO COMMENTS (SAP, QAPP, and HASP)**  
**of**  
**SOUTHERN DIVISION, NAVAL FACILITIES ENGINEERING COMMAND**

Comment Number	Comment	Response																																									
<b>HASP</b>																																											
1.	What are qualifications of Health and Safety Manager, Health and Safety Supervisor, Task Order Manager, Site Supervisor, and Health and Safety Officer? Who is on site day-to-day?	The qualifications of the identified individuals will be added the document. The Site Supervisor and the Health and Safety Officer will be on site during the field program.																																									
2.	Page 4-1, section 4.1.2.2, "Extreme caution should be <u>tested</u> "? Typo?	Typo corrected. Extreme caution should be <u>used</u> .																																									
3.	Section 11.1.1, Snake bite kits should be part of F.A. equipment. Please be more specific about where zones will be set up. Sketches would be best.	Suggestion incorporated. Snake bite kits will be added to the list of F.A. equipment.																																									
4.	Section 11.2, Notify local emergency personnel when working in Level C Vs B.	Suggestion incorporated. "Local emergency officials will be informed when work is being conducted in Level B or Level C."																																									
5.	<table border="0" style="width: 100%;"> <tr> <td style="width: 20%;">Table 4-1</td> <td style="width: 20%;"><u>TLV (mg/m<sup>3</sup>)</u></td> <td style="width: 20%;"><u>PEL</u></td> <td style="width: 40%;"></td> </tr> <tr> <td>Cyanide</td> <td>5 (OSHA)</td> <td></td> <td rowspan="14">The appropriate PEL and TLV values will be added to Table 4-1.</td> </tr> <tr> <td>Mercury</td> <td>0.01 (OSHA)</td> <td></td> </tr> <tr> <td>Lead</td> <td>0.05 (OSHA)</td> <td></td> </tr> <tr> <td>Ethylene dibromide</td> <td>20 ppm (OSHA)</td> <td></td> </tr> <tr> <td>Carbon tetrachloride</td> <td>5 ppm</td> <td></td> </tr> <tr> <td>Trans-1,2-dichloroethylene</td> <td>200 ppm</td> <td></td> </tr> <tr> <td>1,1,2-Trichloroethylene</td> <td>10 ppm</td> <td>10 ppm</td> </tr> <tr> <td>1,1,1-Trichloroethylene</td> <td>350 ppm</td> <td>350 ppm</td> </tr> <tr> <td>Dichloromethane</td> <td>50 ppm</td> <td></td> </tr> <tr> <td>4,4'-DDT</td> <td>1</td> <td></td> </tr> <tr> <td>Dieldrin</td> <td>0.25</td> <td></td> </tr> <tr> <td>Tetrachloroethylene</td> <td>25 ppm</td> <td></td> </tr> </table>	Table 4-1	<u>TLV (mg/m<sup>3</sup>)</u>	<u>PEL</u>		Cyanide	5 (OSHA)		The appropriate PEL and TLV values will be added to Table 4-1.	Mercury	0.01 (OSHA)		Lead	0.05 (OSHA)		Ethylene dibromide	20 ppm (OSHA)		Carbon tetrachloride	5 ppm		Trans-1,2-dichloroethylene	200 ppm		1,1,2-Trichloroethylene	10 ppm	10 ppm	1,1,1-Trichloroethylene	350 ppm	350 ppm	Dichloromethane	50 ppm		4,4'-DDT	1		Dieldrin	0.25		Tetrachloroethylene	25 ppm		
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<b>SAP/QAPP</b>		
1.	Page 3-6, Section 3.1, Add PCB and PAH analysis to upstream samples from Sandy Creek.	PAH and PCB analysis have been added to upstream samples from Sandy Creek.
2.	Table 3-4, Pages 3-14 to 3-17, Incorrect analytical methods are listed on chart. NEESA 47 B requires CLP analysis for volatiles and semivolatiles. The 600 series of analyses are for NPDES sampling - SW-846 methods are used for soil and sediments. If the NPDES methods are to be used, please provide explanation in report. This comment also applies to Table 2-3 and 2-4 in QAPjP.	TCL-COP and TCL-CIP methods (CLP) will be used to analyze samples collected at OLF Barin. The relevant tables will be modified to delete the method numbers presented in the Preliminary Draft Workplan. Tables 2-3 and 2-4 of the QAPjP will also be revised.
3.	A work request to repair fence should be submitted and repairs completed <u>immediately</u> or the sampling will be useless due to the risk of additional contamination of this site.	The activity has been informed about the need to repair the damaged fence. The fence will be repaired as soon as possible.
4.	CH2M Hill is not site approved for Barin according to my records. Please submit site approval request.	CH2M Hill was chosen as the laboratory based on available data. The laboratory selection will be made two months field program begins. The text in the document will be revised and will not identify any specific laboratory. <u>Section 8.0, Page 8-1 (QAPP)</u> will be revised to read " <b>ABB-ES will select a NEESA approved subcontract laboratory to analyze all samples collected during the Phase I RI field program. Per NEESA guidelines, the subcontract laboratory will be site approved prior to sample collection.</b> "