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LETTER REGARDING U S NAVY RESPONSES TO REGULATORY COMMENTS FOR  
NORTH GRINDER LANDFILL OPERABLE UNIT 1 (OU 1) (DRAFT) REMEDIAL  
INVESTIGATION/FEASIBILITY STUDY WORKPAN NTC ORLANDO FL  
2/20/1995  
ABB ENVIRONMENTAL



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February 20, 1995

Barbara Nwokike, Code 187300  
Southern Division  
Naval Facilities Engineering Command  
P.O. Box 190010  
Charleston, SC 24919-9010

RECEIVED  
FEB 22 1995  
J. PERRY

Dear Ms. Nwokike:

Subject: Response to Comments  
EPA comments, dated 09Jan95  
FDEP comments, dated 18Jan95

Attached is our response to EPA and FDEP comments for the North Grinder Landfill OU 1 (Draft) RI/FS Workplan. In order to confront any issues that may not have been fully resolved, and in light of recent personnel changes for the Orlando project at EPA, we suggest that a telephone conference call be set up as soon as Mr. Brown and Mr. Clowes have had an opportunity to read the comments so that we may finalize the workplan. We are in the process of making appropriate revisions to the text and/or figures to reflect the comments but will not produce the final document until we have discussed our responses with the other BCT members.

Please call me if you have any questions.

Sincerely,

ABB Environmental Services, Inc.

Richard P. Allen  
Principal Scientist

cc: Nancy Rodrigues, USEPA Region IV  
Craig Brown, USEPA Region IV  
David Clowes, FDEP  
Wayne Hansel, SOUTHDIV

ABB Environmental Services, Inc.

Response to Comments  
EPA comments, dated 09Jan95

The following is our response to 24 EPA comments dated 09Jan95.

1. Comment 1 is noted and appropriate text has been corrected.
2. Comment 2 is noted and text has been revised as follows: in Section 2.2, Paragraph 1, the second and third sentences now read, "Aerial photographs indicate that landfilling operations started sometime after 1939 and before 1947 (ABB-ES, 1994b; 1994d). At that time, the property was wooded. The property was taken over by the U.S. Army Air Corps in 1940."
3. Comment 3 is noted and text has been revised as follows: in Section 2.3, p. 2-7, first paragraph, after last sentence ending with "...flow rates in the surficial aquifer," insert the following: "The prevalence of karst activity and sinkhole development throughout the Greater Orlando area must be considered in any hydrogeologic characterization."
4. Comment 4 indicates there is confusion in the terminology which ABB-ES used in the statistical sampling section presented in Section 2.6. Some of that confusion may have resulted from the fact that there is a typographical error in Section 2.6, p. 2-17, bullet item no. 2. In the third line of that bullet, the word "biased" should have read "based". To correct any remaining confusion, the text has been revised as follows. The two bulleted items now read:

"Samples to evaluate gas generation and migration from the landfill will be taken. Hydrologic, groundwater, and surface soil data will be collected on a grid or biased basis due to the potential heterogeneity involved.

In areas where contamination is considered to be either unlikely or more homogeneously distributed (sediment and surface water) a statistically based sampling methodology will be applied."

In addition, in the last paragraph on p. 2-17, fifth line, the phrase "...will not exceed..." has been replaced by "...will equal or exceed..."

ABB-ES believes that any detailed discussion of receptors over and adjacent to the landfill and the exposure units (EU) appropriate for these receptors is unnecessary given that the presumptive remedy will be utilized. However, the sampling approach outlined above addresses EPA concerns regarding EU criteria addressed in comments and at the January 12 and 13 BCT meeting. The sampling approach proposed is sufficient to support the FS and any risk evaluations which may need to be conducted.

5. In Comment 5, Paragraph 2, EPA expressed concerns that the direct contact and ingestion pathway for terrestrial wildlife should be identified as a potential deviation. ABB-ES agrees that under the presumptive remedy, the direct contact and ingestion pathway is more properly identified as a potential deviation. The conceptual model (Figure 2-7, p. 2-21) has been revised to reflect this.

In Comment 5, Paragraph 3, ABB-ES observes that under the presumptive remedy, a proper cap or adequate cover materials will be installed, and containment, treatment or venting of landfill gases will take place. The presumptive remedy, along with a maintenance and monitoring program to be included with the remedy, eliminates the need to consider these pathways in the conceptual model. However, it should be noted that sampling data will be collected from appropriate media to permit proper engineering design.

In Comment 5, Paragraph 4, potential deviation no. 2, p. 2-20, has been rewritten so that it now reads:

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"(2) Contaminated offsite groundwater. It is possible that contaminants have leached into the groundwater from contact with landfill materials, and that area residents are currently withdrawing this water from the surficial aquifer (or may in the future) and using it in sprinkler systems for irrigation (creating potential inhalation and dermal exposure) and/or as a potable water source."

Sampling of landfill cover soil is intended for engineering design purposes and not for pathway and exposure concerns as represented in the conceptual model. Landfill cover thickness, continuity and quality concerns are addressed under the presumptive remedy.

6. In Comment 6, Paragraph 1, the workplan assumes that landfill cover will be maintained to prevent exposure to humans, but that the cover may not prevent exposure to burrowing terrestrial biota. For purposes of these discussions, onsite refers to anything within the boundary of the landfill as defined by the geophysical survey and sampling programs.

As indicated by the conceptual site model and as referenced in Tables 2-4 through 2-6, both probable and potential exposure pathways will be evaluated during the RI. The conceptual site model considers the presence of landfill gases, regardless of the source of the contaminant, thus keeping the emphasis on a simple conceptual site model. The proposed 60 soil vapor implants around the perimeter of the landfill will permit monitoring for contaminants at a sampling frequency appropriate to findings of prior soil vapor analyses.

In Comment 6, Paragraph 2, ABB-ES recognizes that there may be some utilities which currently pass through the landfill wastes. But the use of the presumptive remedy would preclude the maintenance of existing utilities or installation of any future utilities. This is why ABB-ES has stated that any future reuse scenarios would involve the abandonment of any utilities which pass through landfill wastes.

7. In Comment 7, Paragraph 1, EPA suggests revising the second paragraph of Paragraph 2.7.3.2, p. 2-35. With minor modifications, ABB-ES would suggest it be revised as follows:

"The probable contaminated media are subsurface soil within and beneath the landfill and groundwater beneath the landfill; potential contaminated media include air, surface water, and sediment." (ABB-ES does not believe that contaminated groundwater offsite is probable, nor that contaminated surface soil is a probable condition).

In Comment 7, Paragraph 2, text will be revised as suggested.

8. Comment 8 was discussed at the BCT on January 12 and 13, and the BCT agreed to proceed as outlined in the workplan, with the proviso that if the geophysical program is inconclusive regarding the thickness of final cover, then hand-augered holes will be used to verify the thickness of the cover material at an appropriate number of locations. EPA suggested that soil cover thickness be determined at each soil gas sampler location and at each surface soil sampling station. As more than 250 soil gas samplers will be installed during the passive soil gas program (they will be installed on grid nodes 50 feet apart over the landfill footprint), ABB-ES suggests that soil cover thickness be measured at 10% of these locations, or a maximum of 25 locations. ABB-ES suggest that this effort is sufficient to support engineering cap evaluation. Appropriate text has been added in Chapter 3.0 to reflect this.

9. Comment 9 is noted.

10. Comment 10. One of the goals of a workplan is to establish DQOs that will support risk evaluation and remedial alternative evaluations. As agreed upon at the BCT, decision rules for determining whether remediation

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is warranted will be developed during the RI evaluation consistent with the presumptive remedy, with input from EPA and FDEP. At this point in the RI/FS process, it is not deemed appropriate to develop decision rules for potential pathways and exposures, since they have not been demonstrated to exist.

It is ABB-ES's view that the proposed sampling plan and associated DQOs sufficiently support the project goal of collecting data to design the presumptive remedy and evaluate possible risks associated with potential pathways, as shown in the conceptual site model. As stated in the EPA comment, the effort to develop acceptable error in the sampling program is not warranted when considering that remedial alternatives to eliminate the probable pathways have already been determined. Thus, the focus of data collection and evaluation is for the support of engineering design and not risk evaluation.

11. Comment 11 was discussed at the BCT of January 12 and 13 and it was agreed that ABB-ES would not revise the workplan because (1) geophysics will probably not be of use in determining the depth of waste at OU 1, and (2) it will also likely be of little use in defining subsurface lithology since the literature indicates the surficial aquifer is reasonably homogeneous.

Any uncertainties which remain after the remedial investigation is completed can be managed through development of contingent actions during the remedial alternatives evaluation and design.

12. In response to Comment 12, up to 275 passive soil gas samplers will be installed on a 50-foot grid over the landfill footprint. At the BCT meeting of January 12 and 13, it was agreed that the passive soil gas data was to be used only in engineering considerations during cap design and would not be used for evaluating risk. After the presumptive remedy is implemented (which will likely include an enhanced soil cover or installation of an impermeable cap with a venting system), a portion of the monitoring program under the presumptive remedy will include ambient air monitoring.

In accordance with discussions at the BCT meeting of January 12 and 13, ABB-ES will use a Industrial Scientific MX251 Combustible Gas Analyzer or equivalent to measure methane concentrations in the cover materials during the installation and retrieval of the passive soil gas samplers. The text of the workplan will be revised accordingly.

13. Comment 13 is noted. During discussions at the BCT on January 12 and 13, ABB-ES presented the rationale for the subsurface investigation strategy presented in the workplan. In those discussions, a step-by-step approach was presented starting with the geophysical program, and continuing with the TerraProbe<sup>™</sup>, cone penetrometer, and monitoring well installation programs. This resulted in a consensus from members of the BCT that the strategy is sound. Accordingly, the text will not be revised.

14. In accordance with changes made in Section 2.6 resulting from EPA comment no. 4, the first paragraph in Subsection 3.4.1, p. 3-8 was revised to be consistent with the biased sampling approach suggested by EPA and FDEP. This first paragraph now reads:

"The surface soil sampling program will be conducted based on the sampling methodology presented in Section 2.6. For the North Grinder Landfill, it is proposed that one surface soil sample per acre be taken (approximately 15) within the depth range of 0 to 1 foot. Samples would be located within the landfill cover material and sampled systematically throughout the landfill footprint. Each sample would be composited from five locations within the central portion of each one acre block as indicated in the composite pattern presented in Figure 3-?. Samples taken for VOCs would not be composited, but would be taken from the central node of the composite pattern."

As per discussions at the BCT meeting of January 12 and 13, 10% of samples in each media (soils, groundwater,

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surface water, and sediment) will be submitted for PCB analysis. Dioxins will only be analyzed if PCBs are detected. The text has been revised in several places to reflect this modification.

15. In accordance with Paragraph 1 of Comment 15, ABB-ES has revised Subsection 3.4.2, Paragraph 1, Sentence 1 to read: "Surface water and sediment sampling will only be completed if groundwater analyses from monitoring wells (Section 3.5) indicate that the surficial aquifer or underlying aquifers are contaminated and it is likely that contaminants have migrated to the surface water body."

Subsection 3.4.2, Paragraph 6, Sentence 1 (Page 3-9) has been revised to read: "Surface water and sediment sampling would be completed in shallow water along the southern shorelines of the lakes, or in a zone(s) of groundwater discharge if one can be identified."

Regarding Paragraph 2 of Comment 15, in ABB-ES's view, since the base has not verified the source of the radium used in the painting process, both potential sources (Uranium and Thorium) would be analyzed. This would also be useful in comparing against upgradient concentrations since these radionuclides can lead to high levels of radium (through decay) that would not be a result of base activities.

Regarding Paragraph 3 of Comment 15, it is ABB-ES's position that leachability analysis is vital in the consideration of the impact of potential remedial technologies when remediating sediments. For example, in an aquatic environment, one needs to consider the impact of remediating sediments versus leaving them in place, and leachability analysis will give a more accurate indication of any long term impact involved in leaving sediments in place than total constituent analysis. PCBs will be treated as discussed in Comment 14.

The following text will be added to the workplan on p. 3-12:

"'Upgradient' refers to any point in the direction from which groundwater flows. 'Downgradient' refers to any point in the direction toward which groundwater flows. The term 'lateral' refers to any location located downgradient that is also offset laterally from the direction of groundwater flow. Implicit in all three terms is their spatial relationship to a point of interest, in this case, the North Grinder Landfill. 'Characterization' is a term that refers to the placement of monitoring wells within a contaminant plume such that they characterize the plume sufficiently to predict contaminant concentrations and migration pathways. The ultimate goal of the placement of characterization wells and wells outside of a contaminant plume is to enable evaluation of risks and screening of remedial alternatives."

16. The terms listed in Comment 16 will be defined appropriately in the text.

17. Regarding Comment 17, ABB-ES wishes to clarify that implementation of the presumptive remedy will eliminate any exposure risks onsite, and as such, exposure risks onsite will not be evaluated. Offsite risks will be evaluated consistent with identified exposures indicated on the conceptual site model or as developed during the remedial investigation.

18. Comment 18 is so noted. The first sentence of Section 6.4 has been revised to read, "IDW will be containerized for characterization and classification." No IDW will be redeposited back to its originating borehole. IDW will be handled in accordance with Chapter 6 of the workplan and the POP (ABB-ES, 1994a, Section 4-10, pp. 4-68 to 4-70).

19. Part 1 of Comment 19 is so noted. To address Part 2 of Comment 19, the last two sentences on p. 6-6 have been deleted.

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20. It is the Navy's position that IDW will be handled in a manner consistent with the CERCLA program (even though NTC, Orlando is not an NPL-listed site) and consistent with RCRA requirements and base standard procedures.

Regarding Part 2 of Comment 20 (PPE), the text under the heading PPE has been revised to read, "The incidental contact with waste or contaminated media by personal protective equipment (PPE) typical of CERCLA site investigations does not warrant management of PPE as non-hazardous, solid waste. However, if exposure to radioactive materials occurs, PPE will only be regarded as hazardous if radiological measurements indicate radioactivity in excess of 2,000 pCi/g."

21. Comment 21 is so noted.

22. Comment 22 is so noted. During the BCT of January 12 and 13, it was discussed and agreed upon by the BCT that, consistent with the preamble of the presumptive remedy, any aspect of the CERCLA municipal landfill should be utilized where applicable.

23. Regarding Comment 23, Part 1, text on Table 8-1, p. 8-3 has been revised to read "Compacted clay covered with a synthetic membrane (20 mil minimum) followed...".

For Part 2 of Comment 23, Table 8-1, on p. 8-6, ABB-ES has eliminated interceptor trenches in the process options listing.

24. As recommended in Comment 24, 40 CFR Part 270 was deleted from the ARARs list because no offsite remedial actions are anticipated. ABB-ES has also replaced 40 CFR Part 257 with 40 CFR Part 258 as the more appropriate solid waste regulation.

Response to Comments  
FDEP comments, dated 18Jan95

The following is our response to 11 FDEP comments dated 18Jan95.

1. Comment 1 is noted and appropriate text has been corrected.
2. The response to EPA Comments 4 and 14 may help to clarify some of the confusion generated in Section 2.6. During the BCT meeting of January 12 and 13, a biased surface soil sampling approach was recommended by EPA and FDEP, and text has been revised in Section 2.6 and Subsection 3.4.1 to address those recommendations. A figure showing potential surface soil sampling locations over the landfill footprint and the pattern for compositing samples will be provided.
3. FDEP Comment 3 is addressed with the response to EPA Comment 4, repeated here for clarity:

There is confusion in the terminology which ABB-ES used in the statistical sampling section presented in Section 2.6. Some of that confusion may have resulted from the fact that there is a typographical error in Section 2.6, p. 2-17, bullet item no. 2. In the third line of that bullet, the word "biased" should have read "based". To correct any remaining confusion, the text has been revised as follows. The two bulleted items now read:

"• Samples to evaluate gas generation and migration from the landfill will be taken. Hydrologic, groundwater, and surface soil data will be collected on a grid or biased basis due to the potential heterogeneity involved.

• In areas where contamination is considered to be either unlikely or more homogeneously distributed (sediment and surface water) a statistically based sampling methodology will be applied."

In addition, in the last paragraph on p. 2-17, fifth line, the phrase "...will not exceed..." has been replaced by "...will equal or exceed...".

4. To address Comment 4, Subsection 2.7.1, potential deviation no. 2, p. 2-20, has been rewritten so that it now reads:

"(2) Contaminated offsite groundwater. It is possible that contaminants have leached into the groundwater from contact with landfill materials, and that area residents are currently withdrawing this water from the surficial aquifer and using it in sprinkler systems for irrigation (potential inhalation and dermal contact of contaminants) and/or as a potable water source."

It is ABB-ES's position that this pathway should remain a potential deviation, since in an urban environment, it is unlikely that area residents are utilizing the surficial aquifer as a potable water source. It is our view that insufficient contamination exists in the surficial aquifer that would result in an inhalation and/or dermal exposure risk. However, this pathway will be evaluated during the RI portion of this investigation.

5. In Section 2.8, p. 2-41, Paragraph 4, the text has been revised to now read:

"• Soil. Soil samples will be systematically collected from the existing soil cover (0 to 12 inches) to evaluate the quality and thickness of cover material used."

6. During discussions at the BCT on January 12 and 13, ABB-ES presented the rationale for the subsurface investigation strategy presented in the workplan. In those discussions, a step-by-step approach was presented starting with the geophysical program, and continuing with the TerraProbe™, cone penetrometer, and monitoring well

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installation programs. This resulted in a consensus from members of the BCT that the strategy is sound. Accordingly, the text will not be revised.

7. ABB-ES knows of no areas adjacent to the landfill that may have received storm water runoff from the landfill. More than one-half of the area over the former landfill is paved, and well-maintained grass with no signs of stress constitutes the remaining portion of the landfill. However, if such areas are discovered during the remedial investigation, appropriate samples will be collected.

8. A careful edit of p. 3-13 was completed to eliminate typographical errors.

9. Comment 9 is noted.

10. Comment 10 is noted.

11. Comment 11 is noted.