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LETTER REGARDING U S FISH AND WILDLIFE SERVICE COMMENTS ON RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION/REMEDIAL INVESTIGATION WORK PLAN FOR SITE 1 AND SITE 41 MCRD PARRIS S ISLAND SC
2/26/1998
U S FISH AND WILDLIFE SERVICE

16.01.00.0008

United States Department of the Interior

FISH AND WILDLIFE SERVICE
P.O. Box 12559
217 Fort Johnson Road
Charleston, South Carolina 29422-2559

February 26, 1998

Mr. Kenneth Lapierre
Remedial Project Manager
U. S. Environmental Protection Agency
Region 4
61 Forsythe Street, SW
Atlanta, Georgia 30303

Re: *RCRA Facility Investigation/Remedial Investigation Work Plan for Site 1 - Incinerator Landfill and Site 41 - Former Incinerator Marine Corps Recruit Depot Parris Island, South Carolina U. S. EPA Identification No. SC6 170 022 762*

Dear Mr. Lapierre:

The U. S. Fish and Wildlife Service has reviewed the above-referenced documents and offer the following comments for your consideration.

As we discussed at the January 21, 1998, partnering team meeting, the Service's major problem with the proposed workplan for this site results from the proposed application of EPA's *Presumptive Remedy for CERCLA Municipal Landfill Sites* guidance which assumes containment (capping, hydraulic controls, institutional controls) rather than treatment (removal) is the remedy. We understand this approach was suggested in order to avoid wetland destruction via excavation of landfilled material. Under certain circumstances, the Service agrees that this presumptive remedy is appropriate. However, when incinerator wastes and combustible trash were disposed of in intertidal saltmarsh and paint thinners (mineral spirits), diesel fuels, kerosene, and strippers (methyl chloride) were poured onto the landfill (marsh) and burned, we do not believe it is appropriate to assume that that portion of the landfill where intertidal marsh now exists or any other portion of this landfill will not need treatment. Containment, such as capping, would prevent human and wildlife exposure; institutional controls could be utilized to prevent human exposure to site contaminants, but no such controls could be employed to prevent exposure and possible injury to fish and wildlife. The Service appreciates concern about destruction of intertidal saltmarsh such as would occur if this portion of the landfill were excavated and has no desire to excavate wetlands unless absolutely necessary. However, we must first determine the nature and extent of contamination within this area and the ecological risks associated with exposure to that contamination prior to making risk management decisions such as the type of remedy required at this site. In addition, the "presumptive remedy" itself

could result in marsh destruction in that the containment remedy typically requires capping of the landfill. As we stated at the meeting, we believe the issue of presumptive remedy at this site is premature and should not dictate the sampling effort of the Remedial Investigation at this stage.

We therefore suggest that the objectives of this investigation as discussed on page 1-1 (and other locations in the document) be expanded to include characterization of the nature and extent of contamination within the landfill itself as well as potential contaminant migration from the site. There was considerable confusion at the meeting regarding the figures showing sampling locations relative to the landfill boundary and existing marsh versus upland areas and it appeared that all proposed sediment sampling locations (Figure 7-1) were outside the landfill boundary which would be consistent with the proposed objective of identifying and characterizing offsite contaminant migration. However, a closer look at Figure 7-2, Proposed Soil Boring and Surface Soil Sample Locations, indicates that a number of "soil boring and surface soil" sample locations appear to be in the marsh as opposed to in the upland (e.g., SB01, BS02, SB03, SS12, SS14, and possibly SS05); these would thus be sediment as opposed to surface soil samples. The actual depiction of the upland/wetland boundary on these and all other figures in the document needs clarification. However, there clearly needs to be sampling of the marsh portion of the landfill as we believe was agreed to at the partnering team meeting. The plan already proposes surface soil samples (and apparently sediments) within the landfill boundary which will provide a characterization of the nature and extent of surface soil contamination within the landfill and allow an assessment of ecological risks associated with exposure to those surface soils (and sediments). Our recommendation to expand the stated objectives of the investigation, therefore, does not appear inconsistent with the proposed sampling plan. References to only offsite migration throughout the document in terms of nature and extent characterization, exceedances of regulatory standards, and human and ecological risk should be modified.

As to the location of sediment and surface water sampling locations in the wetlands within and adjacent to the landfill, we suggest that samples be placed along a transect from the shoreline to the furtherest sampling location (taking into consideration any obvious or suspected depositional areas as recommended by NOAA). We believe this will provide a more accurate characterization of contaminant concentrations within and outside the landfill relative to offsite movement and the gradation of contaminant concentrations from the source.

Page 2-8, Verification Step; Page 3-1, Sediment; Pages 3-1 and 3-2, Groundwater; Page 4-2, Sediments and Groundwater paragraphs: While no organic compounds were detected in the four groundwater samples, only one was located within the landfill boundary and that location recorded dissolved lead at a concentration an order of magnitude greater than locations outside the landfill boundary. Dissolved lead concentrations at all sampling locations exceeded the chronic State water quality standard for protection of saltwater aquatic life. Also, no information is provided on organic compound detection limits in the subject workplan or in the Verification Step report, so the significance of the fact that none were detected in the groundwater cannot be determined. Both chloroform (352 ug/kg and 215 ug/kg) and benzene (16 ug/kg) were detected in sediment samples. According to Figure 2-4, metals other than lead and chromium were detected in sediment samples; arsenic, barium, and cadmium were also detected. Please revise these sections accordingly.

Pages 4-6 through 4-10, Analytical Parameter Rationale: The Service agrees with the proposed analytical parameters per media, with the exception of hexavalent chromium (as discussed below) and dioxins and furans. Considering the historical use of the site, we believe it may be appropriate to sample at lease a percentage of all media samples for dioxins and furans. Page 3 of 4 in Table 4-3 is missing; the table on page 4-9 is for Site 2 and is page 5 of 5. Please correct.

Page 4-12, Hexavalent Chromium: The hexavalent form of chromium has been shown to be more toxic than the trivalent form; the State water quality standard is based on the concentration of hexavalent chromium. Therefore, the Service recommends an increase in the number of samples to be analyzed for hexavalent chromium (preferably all, but at least three samples from each media). The statement that "This analysis will not be conducted on surface water samples because chromium was not detected in surface water during previous investigations" should be removed. First, previous investigations did not include surface water sampling, according to statements on page 4-1 and in Table 4-1 (page 4-3). Second, the water quality standard for the protection of saltwater aquatic life is based on hexavalent chromium. Third, the water quality for protection of human health is 673,033 ug/L trivalent chromium and 50 ug/L hexavalent chromium. Surface water samples should be analyzed for hexavalent chromium.

Page 7-1, Surface Water and Sediment Sampling: There is no indication of how and to what depth the surface water samples will be taken. Please specify. Sediment sampling to a depth of 6 inches (with one exception to 12 inches) will not allow determination of the vertical extent of site contaminants either within or outside the landfill boundary. While the 0-6-inch depth would sample the zone of highest biological activity and that most likely to affect most aquatic organisms, burrowers such as the fiddler crabs may dig as much as 2 to 3 feet into the sediment. Also, contaminated sediments may lie under 6 inches or more of depositional sediments but could still present exposure pathways to benthic and other aquatic organisms via burrowing and/or sediment erosion during storm events. The Service therefore recommends that sediment samples within the landfill boundary include depths of 0-6 inches, 6-12 inches, 2 feet, and 3 feet. Sediment samples outside the landfill boundary should include at a minimum depths of 0-6 inches and 6-12 inches. Depending upon the contaminant concentrations at these depths, additional sediment samples may be needed. As requested by NOAA and SCDNR, the Service would like to assist in locating the background sampling locations.

Pages 7-2 through 7-6, Table 7-1: This Table needs to be modified to reflect additional sediment sample depths. Also, "(Feet below ground surface)" should be removed from the Sample Depth column for Surface Water; water depth at which the samples will be taken should be shown.

Page 7-14, Surface Soil Sampling: Again, the 0-1 foot surface soil sample depth will not adequately characterize the vertical extent of site contaminants nor provide adequate data for an ecological risk assessment. We recognize this sampling is proposed to assess potential contaminant transport via surface runoff to surface water and sediment and potential pathways to human and ecological receptors, not specifically to characterize the nature and extent of contamination within the landfill itself in accordance with the "presumptive remedy" approach. Depending upon contaminant concentrations in sediments and surface waters adjacent to the upland portion of the landfill, this may be an appropriate approach to soil sampling within the

upland. We are somewhat concerned however about those animals that may burrow below 1 foot and also about potential plant uptake via the roots and animal exposure via contaminants bioaccumulated in the plants. This is a topic we would like to discuss further with the team.

Groundwater Sampling: With the exception of the existing surficial aquifer monitoring well (PAI1-GW04), all proposed groundwater monitoring locations are outside the landfill boundary. Groundwater/interstitial water in marsh areas of the landfill proper should also be sampled. Depending upon the contaminant concentrations and ecological risk, groundwater sampling within the upland portion of the landfill may be necessary to determine the appropriate remedy (containment or treatment). Containment of contaminated groundwater may be difficult and/or infeasible where there is transport of contaminants to ecological receptors via tidal influence.

The Service appreciates the opportunity to provide these comments. Please call me at (803) 559-7909 if you have any questions or would like to discuss these comments

Sincerely,

Catherine D. Duncan
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Specialist

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