LETTER REGARDING SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES COMMENTS ON RESOURCE CONSERVATION AND RECOVERY ACT FACILITY INVESTIGATION/REMEDIAL INVESTIGATION FOR SITE 3 MCRD PARRIS ISLAND SC
5/25/1999
SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES

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South Carolina Department of
Natural Resources

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Director
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May 25, 1999

Mr. David D. Brayack
Tetra Tech Nus, Inc.
661 Anderson Dr.
Pittsburgh, PA 15220-2745

RE: RCRA Facilities Investigation/Remedial Investigation;
Site/SWMU 3 – Causeway Landfill;
MCRD Parris Island;
Beaufort County, SC

Dear Mr. Brayack:

Personnel with the S.C. Department of Natural Resources (SCDNR) have reviewed the above referenced document and offer the following comments.

The statement on p. 2-25 that *"...common blue mussels (Mytilus edulis)...live in the marshes in large numbers"* is incorrect. This primarily northern species is found only infrequently in South Carolina, and should be deleted from the list of common marsh species.

On p. 2-26, the inclusion of *"killifish (Fundulus spp.)"* among freshwater fishes is incorrect. Instead, *"killifish and mummichogs (Fundulus spp.)"* should be included in the list of common saltwater marsh species on the previous page.

In Section 4.0, the inclusion of a map showing all six background locations would be helpful to the reader in interpreting the nature and extent of contamination at Site 3. Similarly, in Table 4-1, the inclusion of all parameters analyzed (including non-detects, along with detection limits), and some indication of which background concentrations exceeded ecological or human health screening criteria, would also be helpful.

On p. 4-21 (and elsewhere in the document), it is suggested that the presence of asphalt at the surface may be responsible for the high levels of PAHs detected at station PAI-03-SD-022. If there is evidence to support this hypothesis (e.g., a PAH "fingerprint" that is characteristic of asphalt, or the presence of identifiable asphalt fragments in the sample) this should be presented in the text.

On p. 4-22, it is stated that *"Barium, chromium, and lead were all detected at higher concentrations in the sediments in 1998 than in samples collected in 1988"*. No explanation is offered, however, for this apparent increase in sediment contamination over the ten-year period. It is unclear whether this is due to leaching, erosion, spatial variability, or some other factor. This should be discussed in the text.

On p. 7-6, replace *"birds that feed on aquatic organisms"* with *"piscivorous birds"* and replace *"predatory birds"* with *"carnivorous birds"* in the list of ecological receptor groups. Similarly, in order to maintain consistency in terminology throughout the document, replace *"Predatory Bird"* with *"Carnivorous Bird"* in Table 7-3, and replace *"raptor"* with *"avian carnivore"* on p. 7-20 (section 7.3.3.7, first sentence).

On p. 7-6, *"terrestrial and aquatic vegetation"* are listed among the ecological receptor groups to be considered; however, only *"terrestrial plants"* are included among the receptors in the Conceptual Site Model (Figure 7-1), and neither terrestrial nor aquatic plants appear to be considered elsewhere in the document. This omission should be corrected.

In Figure 7-1, under *"Exposure Medium"*, delete the *"Direct Contact"* box or replace with *"Soil"*. Under *"Exposure Mechanism"* for soil, replace *"Dermal Contact – Soil"* with *"Direct Contact"*, to be consistent with the terminology used for sediments, and to be applicable to terrestrial plants. Finally, under *"Receptors"* for sediments and surface water, add *"Aquatic Plants"*, as described above.

In Table 7-3 (p. 7-18), no literature citations are given for the exposure parameters listed for red drum (*Sciaenops ocellatus*), and no information on "home range" is given. The body weight listed (1400 g or 3.08 lb) is approximately equal to the average body weight of a two-year-old subadult red drum. According to Wenner (1992), over 94% of the food items in the stomachs of subadult red drum were crustaceans (mostly fiddlers crabs, mud crabs, blue crabs, and grass shrimp), and the other 6% were fishes (primarily mummichogs). This suggests that an assumed diet for exposure assessment would be 100% prey for red drum. Wenner (1992) also presents statistics that indicate the greatest number of red drum were recaptured within 1 mile of where they were tagged and released, suggesting a relatively small home range for this species. The exposure parameters for red drum should be revised in light of this information.

In Table 7-17 (p. 7-51), no ER-M values are given for 4,4'-DDE or 4,4'-DDT; however, there are ER-M values for "p,p'-DDE" and "Total DDT", to which concentrations of these analytes are generally compared. These ER-M values should be listed in Table 7-17.

On p. 7-57, it is stated that using a value of one-half the detection limit for those non-detected pesticides whose reported detection limits exceeded the Region IV Ecological Screening Values (ESVs) *"contributes to a conservative assessment when the actual value may have been considerably less."* This argument ignores the fact that the actual value could also have been considerably more. The text should be revised to acknowledge this equally likely possibility.

On p. 7-62, it is stated that *"the NOELs and LOELs used in this assessment are based on laboratory studies that do not take into account mitigating or ameliorating physical and chemical conditions in the environment."* It should also be noted that laboratory studies frequently ignore "exacerbating" conditions as well, such as the possibility of synergistic effects of complex mixtures of chemicals, and altered sediment chemistry due to periodic hypoxia and resultant pH depression (even in estuarine waters). These possibilities should be acknowledged in the section on "uncertainty" as well.

On p. 8-4 it is stated in conclusion 13.0 that *"The sediment data is adequate to proceed to a feasibility study/corrective measures study"*; however, the presence of elevated levels of several PAHs in the one sample taken at the northwest end of the causeway (including 5 exceedances of ER-L levels, and two exceedances of ER-M levels), suggests that some additional sampling may be required to adequately determine the nature and extent of any contamination in this area before a feasibility study is conducted.

In appendix F-4 (Technical Memorandum), the method of determining acceptable background concentrations of pesticides should be changed from using the 95th percentile to using 2x the mean (as agreed in our conference call on 5/17). In addition, the pesticide concentrations detected at the three background locations on Parris Island (or half the detection limit for non-detects) should be included in the calculation of the mean (also as agreed in our conference call on 5/17). The text and tables of the RFI/RI should then be reviewed and modified to reflect any changes in the interpretation of the pesticide data as a result of the altered calculation of "background" concentrations.

We hope you find these comments helpful. If you have any questions, please contact Priscilla Wendt, the SCDNR project manager for this site, at 803-762-5068.

Sincerely,

Robert E. Duncan
Environmental Programs Director

cc: Timothy J. Harrington, MCRD Parris Island
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