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NAS CECIL FIELD, FL  
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LETTER OF TRANSMITTAL AND 28 JUNE 2001 UNIVERSITY OF FLORIDA COMMENTS ON  
DRAFT TECHNICAL MEMORANDUM FOR NO FURTHER ACTION AT POTENTIAL SOURCE  
OF CONTAMINATION 44 NAS CECIL FIELD FL

7/9/2001

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION



Jeb Bush  
Governor

# Department of Environmental Protection

Twin Towers Building  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

David B. Struhs  
Secretary

July 9, 2001

Commanding Officer  
Mr. Mark Davidson, Code 1879  
SOUTHNAVFACENGCOM  
Post Office Box 190010  
North Charleston, SC 29419-9010

RE: Draft Technical Memorandum for No Further Action, Potential Source of Contamination 44 (PSC 44), Ditch from DRMO to Wastewater Treatment Plant, Naval Air Station Cecil Field, Florida.

Dear Mr. Davidson:

The Department has completed its review of the Draft Technical Memorandum for No Further Action, Potential Source of Contamination 44 (PSC 44), Ditch from DRMO to Wastewater Treatment Plant, Naval Air Station Cecil Field, dated June 2001 (received June 29, 2001), prepared and submitted by Tetra Tech NUS, Inc. I have attached comments from the Department's risk assessors with the University of Florida's Center for Environmental & Human Toxicology. Their comments must be addressed before the Department may concur with no further action at this site.

If you have any concerns regarding this letter, please contact me at (850) 488-3693.

Sincerely,

David P. Grabka  
Remedial Project Manager

CC: Satish Kastury, FDEPA  
Debbie Vaughn-Wright, USEP, Atlanta  
John Flowe, City of Jacksonville  
Scott Glass, SOUTHNAVFACENGCOM  
Mark Speranza, TtNUS, Pittsburgh  
Sam Ross, CH2M Hill Constructors, Atlanta  
Mike Fitzsimmons, FDEP, Northeast District

TJB *ESN* JJC *ESN* ESN

"Protect, Conserve and Manage Florida's Environment and Natural Resources"



June 28, 2001

Ligia Mora-Applegate  
Bureau of Waste Cleanup  
Florida Department of Environmental Protection  
Room 471A, Twin Towers Office Building  
2600 Blair Stone Rd.  
Tallahassee, FL 32399

Dear Ms. Mora-Applegate:

We have reviewed at your request the document "Draft Memorandum for No Further Action, Potential Source of Contamination 44 Ditch from DRMO to Wastewater Treatment Plant" prepared by Tetra Tech NUS, Inc. PSC 44 is an area previously used for cleaning aircraft. Hazards and risks to human health have been evaluated, portions of the site have been excavated, and the area is now considered clean from a human health perspective. In this document, an Ecological Risk Assessment (ERA) is presented for the adjacent ditch, which has a total length of 200 ft.

The screening-level ERA compared maximum concentrations of contaminants with the lowest ecological screening values available from EPA Region IV and from FDEP. Four SVOCs, two pesticides, two PCB mixtures, and seven inorganics were identified as Chemicals of Potential Concern (COPCs) in surface soil. In addition, seven inorganics and acetone were selected as COPCs in surface water, and one VOC, 21 SVOCs, 15 pesticides, two PCBs, and 17 inorganic analytes were retained as COPCs for sediments. After this first screening was performed, identified COPCs were evaluated through a food chain model including several terrestrial and aquatic birds and mammals as receptors. COPCs that were identified as posing risks to higher receptors through the food chain model were once again compared with other sets of screening criteria of various levels of conservatism (or lack thereof) until they were screened out. In the end, each of the discussions on individual COPCs ends with a statement that risks to ecological receptors are "negligible" or "low".

With respect to the food chain modeling exercise, we have the following comments:

1. There are large uncertainties associated with the selection of species-specific parameters to be included in a food chain model. Therefore, it is preferable to utilize receptors that are well documented, and whose parameters offer some degree of conservatism. The species selected to

represent the avian piscivore guild (the green heron, *Butorides striatus*) is not included in the USEPA's Wildlife Exposure Factors Handbook (WEFH). Its home range had to be estimated using an allometric equation for predatory birds of debatable appropriateness for this particular case, yielding a value of 100 Ha (245 acres). We think that the belted kingfisher, *Ceryle alcyon* is a better representative of this guild in that it is present in Florida and is documented in the WEFH. Foraging ranges have been estimated to average 8 Ha (20 acres) for this species (Fry and Fry, 1992).

2. The least shrew is a fossorial insectivore that feeds almost exclusively on invertebrates embedded in the soil matrix. The 3% incidental soil ingestion does not seem appropriate given that it has been estimated that earthworms, shrew's favorite prey, can contain 20 to 30% soil (Beyer et al. 1994). Therefore, we think a soil ingestion value of 10% based on a range presented by Beyer et al. (1993) for the closely related short-tailed shrew (*Blarina brevicauda*) should be used.
3. We fail to see why the mockingbird is assumed to occupy an area larger than PSC 44, because "Home range data (are) not available" (footnote of Table B-2). Values for territory size from south-central Florida are presented in page 2 of Appendix B (0.31 Ha in winter; 1.27 Ha in summer). Mockingbirds are highly territorial and constantly defend these areas throughout the day. Therefore, at least during the breeding season, they must obtain all their food from these areas.
4. Risks and hazards to ecological receptors exposed to a contaminated site are the result of simultaneous exposure to the contaminants present at that site. To acknowledge this fact in the modeling exercise (as well as during screening), Hazard Quotients (HQs) for chemicals with the same mechanism of toxicity and/or target organ(s) should be added. This correction would likely change the outcome of the screening and food chain modeling phase for DDT and its breakdown products, chlordane (alpha and gamma), and endrin (endrin, endrin aldehyde, and endrin ketone). The fact that laboratories report these as separate entities does not mean that exposure occurs in that fashion or that their toxic effects are independent.
5. We would like to point out that some of the criteria used for screening are not intended for this purpose. For example, for dieldrin the discussion provided in page 6-13 states "Because of the low concentration and frequency of detection, risks from dieldrin are expected to be negligible". However, maximum concentrations for this chemical were found to exceed the Probable Effect Level (PEL) of the Florida Sediment Quality Guidelines. The supporting document for these criteria states in page 15, Chapter 3 Vol. 2, that concentrations above the PEL are those for "which biological effects are usually or

always observed” and further states that exceedances “represent significant and immediate hazards to exposed organisms” (emphasis in the original).

The ditch is small, and the ecological risk management objectives may be different from a larger site in a more pristine area. However, if the risk assessment objectives are to provide a full assessment of potential ecological impacts, some revision of the analysis is recommended per the comments above. Additionally, the document should offer a more detailed discussion of the general setting of the site and the possibility of off-site movement of contaminants.

We hope these comments are helpful. Should you have any questions, please do not hesitate to contact us.

Sincerely,



Hugo G. Ochoa, D.V.M., Ph.D.



Stephen M. Roberts, Ph.D.

#### References

- Beyer, W.N. Conner, E., and Geroud, S. 1993. Estimates of soil ingestion by wildlife. US Fish and Wildlife Service, Patuxent Wildlife Research Center, Laurel, MD.
- Beyer, W.N. Conner, E., and Geroud, S. 1994. Survey of soil ingestion by wildlife. *Journal of Wildlife Management* 58:375-382.
- Fry, C.H., and Fry, K. 1992. Kingfishers, Bee-eaters and Rollers, A Handbook. Princeton University Press, Princeton, NJ.