



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Admin.
National Ocean Service
Office of Ocean Resource Conservation and Assessment
Hazardous Materials Response and Assessment Division
c/o EPA Waste Management Division (HEE-6)
J.F. Kennedy Federal Building
Boston, MA 02203
15 November 1994

**COPY FOR YOUR
INFORMATION**

Ms. Kimberlee Keckler
U.S. EPA Waste Management Division
J.F. Kennedy Federal Building
Boston, MA 02203

Dear Kimberlee:

Thank you for the Thames River and Goss Cove data summaries for the Naval Submarine Base at Groton, CT prepared by Menzi-Cura & Associates for the Navy. The principal difficulty I had in reviewing this data is that it is simply data without the concomitant interpretation. Hence, this review is not complete as it cannot comment on the Navy/Menzie-Cura explanation of potential biological injury. Nevertheless, the following comments are provided:

1. Goss Cove sediments are significantly impacted by both organic and inorganic (principally arsenic, lead and zinc) contaminants. These concentrations are above that found in the Thames River upstream of the Navy base. I recommend future studies measuring biological uptake and impact through both laboratory and in-situ toxicity/bioaccumulation tests.
2. The deployed mussels in the Thames River show little in the way of inorganic or organic uptake but the test cycle may have been too short. NOAA recommends a 90 day test rather than the 30 days used. In addition, there is no way to tell if the mussels were injured. We only know the tissue residue level, not actual injury to the mussel. The test should have been designed to measure growth and to measure body condition.
3. In my review of the available data, oysters apparently uptake zinc and copper readily. However, I believe the copper may be somewhat higher than normal and I would recommend the Navy addressing and explaining these concentrations. However, I believe they likely are within ranges found elsewhere.
4. Concentrations of contaminants in Thames River sediments were elevated above the upstream background samples in some locales. It should be noted that the concept of background for the river is not well founded given the close proximity of background samples T1SD1 and T1SD2 in a tidal river. Of interest are Stations T4SD2, T3SD1 and T3SD4, each of which show elevated organic contaminants; several locations also show at least one inorganic contaminant elevated above the ER-M (T2SD1, T2SD2, T5SD1, T4SD2, T3SD4). Further study is necessary at some of these locations (e.g., toxicity testing). Note, the organic carbon concentrations at all locations are approximately 1% indicating that most of the contaminants are likely biologically available. No AVS data were provided.

5. I have not reviewed the benthic community data. I will await the interpretation by Menzie-Cura before providing comments on these results.

Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to be 'K. Finkelstein', written in a cursive style.

Kenneth Finkelstein, Ph.D.

cc: Dave McDonald