UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JAN 20 1995

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

Subject: Letter Dated December 9, 1994 from Jellinek, Schwartz & Connolly, Inc. (JSC) Addressing Malathion Oyster Shell Deposition Study (MRID 422449901)

From: Anthony F. Maciorowski, Chief
Ecological Effects Branch
Environmental Fate and Effects Division (7507C)

To: Linda Propst, Section Head
Special Review and Reregistration Division (7508W)

JSC has provided additional information on sample dilution errors and an addendum containing recalculated measured concentration levels. The explanation provided for the cause of dilution errors is judged reasonable. This study is reclassified core and meets the guideline requirement (72-3e) for an oyster shell deposition study using Cythion 57% EC. Based upon mean measured concentrations, the EC_{50} for eastern oysters exposed to CYTHION 57% EC is 2.9 mg/l relative to new shell growth. This classifies the formulated product as moderately toxic to estuarine invertebrates. A copy of the amended DER is appended.

If you have any questions concerning this memo please contact Joanne Edwards. She may be reached at (703) 305-6736.

1

DATA EVALUATION RECORD

1. **CHEMICAL**: Malathion

2. **TEST MATERIAL**: CYTHION 57% EC; CAS No. 000121-75-5; Lot No. AC7461-108; 60.3% active ingredient; a clear, light yellow liquid.

3. **STUDY TYPE**: 72-3(e). Mollusc 96-Hour, Flow-Through Shell Deposition Study. Species Tested: Eastern Oyster (*Crassostrea virginica*).

4. **CITATION**: Wade, B. and J. Wisk. 1992. Effect of CYTHION Insecticide 57% EC on New Shell Growth in the Eastern Oyster Under Flow-Through Conditions. Laboratory Report No. 3913032-0200-3140. Performed by Environmental Science and Engineering, Inc. Gainesville, FL. Submitted by American Cyanamid Company, Princeton, NJ. EPA MRID 42249901.

5. **REVIEWED BY**:

Joanne S. Edwards, M.S.
Entomologist
Ecological Effects Branch
Environmental Fate and
Effects Division (7507C)

Signature: Joanne S Edwards
Date: 11/19/95

6. **APPROVED BY**:

Leslie W. Touart, Ph.D.
Supervisory Biologist
Ecological Effects Branch
Environmental Fate and
Effects Division (7507C)

Signature: L. W. T.
Date: 11-19-95

7. **CONCLUSIONS**: This study is reclassified core and meets the guideline requirement (72-3e) for an oyster shell deposition study using Cythion 57% EC. JSC has provided additional explanation on sample dilution errors. The explanation is deemed adequate. JSC states in their letter that a careful review of the raw data revealed that the ESE used slightly different sample analysis schemes, sufficient to result in dilution errors, for analysis of the Day 0 and Day 4 samples, because a different number of samples was analyzed on those days (refer to sample analysis scheme discussion in letter, attached). Based upon recalculated values (Enclosure 1), the mean measured concentrations in this study were 0.99, 1.36, 2.96, 4.84, and 8.48 mg/L Cythion 57%.

Based upon the recalculated mean measured concentrations,

2

the EC_{50} for eastern oysters exposed to CYTHION 57% EC is unchanged. The EC_{50} is 2.9 mg/l relative to the new shell growth of the solvent control oysters. This classifies the formulated product as moderately toxic to the eastern oyster. The NOEC is revised to 1.36 mg/l (recalculated mean measured concentration).

8. **RECOMMENDATIONS:** N/A

9. **BACKGROUND:** Reregistration action. This study was reviewed in 1992 and classified invalid (memorandum of October 19, 1992, D. Urban to J. Edwards). It was reviewed again by EEB in early 1994 in response to JSC's letter of December 9, 1994 (memorandum of April 26, 1994, A. Maciorowski to L. Propst. In that memorandum JSC was informed that the study would remain classified invalid until justification of the variability in measured concentrations was provided.