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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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SUBJECT Runoff protocol on bare soil to simulate an agricultural use pattern as to an application on grassy sites.

FROM Miachel Rexrode, Fisheries Biologist, EEB, HED

TO Mr. W. Miller, Registration Division (TS-767)

THRU: Harry Craven, Section Head, EEB, HED (TS-769)

THRU: Clayton Bushong, Chief, EEB, HED (TS-769)

Mobay submitted a memo on October 6, 1980, regarding the runoff protocol for Amaze (Oftanol) on turf.

The Ecological Effects Branch still maintains that Mobay be required to conduct a monitoring study to determine whether Amaze (Oftanol) will reach the aquatic environment as a result of runoff. The following rationale for requiring this study still applies:

1) persistence of pesticide in the environment

2) octanol/water parition coefficient greater than 1000 (Oftanol is about 4230)

3) potential for acute and chronic impact on non-target aquatic invertebrates-freshwater and marine (particularily commercial species of shrimp and oysters).

4) The calculated EEC for water is .48 ppm.[1]

Mobay questions EEB's request for a runoff study on grassy sites and suggested that the study be conducted on bare soil to simualte an agriculatural use pattern. The Ecological Effects Branch has reviewed this suggestion but is still unlcear as to the reasoning behind this request, or the defination of "bare soil to simulate an agricultural use pattern."

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1/ The lentic situation we shall consider is 1.0 acre pond, 0.5 feet deep, in a drainage basin containing 100 acres of treated vegtation and a small (<1 acre) margin around the pond edge left untreated. Under the proposed use patterns, typical sites would be farm ponds and ponds on golf courses. Applications are made with ground equipment, thereby eliminating drift as a major concern. All pond loading occurs from runoff events.

Immediately after a 2 lb oftanol/acre treatment, a rainfall creates a severe run-off event. Two percent of the applied chemical runs off into the pond as a result of a 0.1 inch rainfall run-off.

Therefore: 2 lb/acre x 100 acre x (0.02)
= 4 lb oftanol enters the pond.

After the rainfall the amount of water in the pond increases to 3.63×10^6 lb. There is a 2" active hydrosoil layer. Assuming an instantaneous equilibrium in partition (Kd = 5.6)

EEC water = 0.48 ppm
EEC hydrosoil = 2.7 ppm

These are reasonable worst-case estimates for the stated conditions.