BIOLOGICAL CONSULTANTS

Water Pollution - Water Quality - Biological Surveys - Fishery Biology

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October 4, 1974

Monsanto Industrial Chemicals Co.
Attention: Mr. Edward E. Stewart
W. G. Krummrich Plant
Sauget, Illinois 62201

Dear Mr. Stewart:

Thank you for your letter of October 1, 1974. I inadvertently omitted consideration of the anomalous fishes, and am pleased to submit the information you requested herein:

Choccolocco Creek, Fish Station 7, Highway 95, Martha H. Williams Bridge, June 11, 1974

1) The single goldfish (Carassius auratus) specimen we retained as a part of the ichthyological survey segment of the total study (catalogued into the fish collection) has deformed fins and in general was in poor condition, i.e. the left pectoral fin is a deformed stub, the bones of the skull exhibit improper proportions for the species, the eyes were popping out of the sockets, etc.

   In the same way the three (3) goldfish we sent you for residue analysis from this station were affected. The goldfish feeds off the bottom and hence is particularly subject to picking up large amounts of P.C.B. residues from the substrate since soil particles are picked up with their food.

   In general the goldfish, when we lifted them from the net in the field, hemorrhaged from the gills. We have observed this in the field on many other occasions, in past years of course.

2) No other species exhibited anomalies that would be considered anything other than the usual frequency in the field.

Highway 93 Bridge on Choccolocco Creek, Fish Station 8, June 11, 1974

The four bluegill submitted for residue analysis exhibited some hemorrhaging within the integument. Such occurrences have been noted many times in past years of the survey.

Choccolocco Creek, Highway 77 Bridge, Fish Station 10, June 12, 1974:

The sunfish submitted for residue analysis (Lepomis megalotis, longear sunfish; Lepomis microlophus, redear sunfish) showed some hemorrhaging in the integument, and outward indications of what might have been neurological damage. Although the fishes were in very poor condition one has to be very careful in ascribing these observations to P.C.B. effects at this station since some of the debilitation was undoubtedly due to disease and a heavy parasite load. The latter are related to the proximity of this station to the reservoir downstream. The effects seen may be affected by P.C.B. levels, but to what degree one honestly can't say. In other words, we must be objective here and refrain from ascribing all negative aspects concerning the fishes to P.C.B. related problems.

Over the years we have attempted to include some of the deformed fishes in the residue analysis work, for obvious reasons, and we have continued to retain some and catalogue them into the permanent fish collection. In this way we have a lasting record for the various abnormalities if it becomes necessary to study the specimens further at some future date. By this I mean that one could X-ray the fishes and study the skeleton with respect to bone growth, proportions of the skull, and so forth. At this point I don't personally feel that such a study is indicated; I merely want to state that the material is available if Monsanto wishes to do this in the future.

In summary we would have to say that we did not find any more or any less abnormalities than in previous years of the survey.

Thank you for your consideration.

Very truly yours,

Gerald E. Gunning, Ph.D.
Biological Consultant