UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

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NSWC CRANE
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REPLY TO THE ATTENTION OF:

DW-8J

January 13, 2003

Mr. Tom Brent
Naval Surface Warfare Center
EPD, Code 095 B-3260
300 Highway 361
Crane, IN 47522-5001

Re: Comments on Risk Evaluation for Indiana Bats Consuming Insects Along Little Sulphur Creek

Dear Mr. Brent:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the Risk Evaluation for Indiana Bats Consuming Insects Collected Along Little Sulphur Creek received January 2002.

Comments on this risk evaluation are attached to this letter. These comments were developed by Dan Mazur, U.S. EPA Ecologist, in coordination with the U.S. Fish and Wildlife agency.

If you have any questions regarding this matter, please contact me at (312) 886-7890.

Sincerely,

Peter Ramanauskas
Environmental Engineer
WMB, Corrective Action Section

Enclosures: 1

Filename F:\USER\PRAMANAU\Crane\Bat QAPP\Indiana Bat Risk Eval Comments.wpd

cc: Doug Griffin, IDEM (w/ encl)
Lori Pruitt, USFWS (w/ encl)
Dan Mazur, USEPA (w/o encl)

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Comments on Risk Evaluation for Indiana Bat

General Comments

Comment 1:

Although the exposure dose developed was appropriately conservative for the protection of a population (except for the issue of body weight, see specific comment # 5), the method needs to be revised to address an endangered species.

Comment 2:

There is no management goal or an assessment endpoint identified for the Indiana Bat at this site. This report needs to be revised to apply methods that are protective of an endangered species.

Comment 3:

Exposure equations need to be revised for persistent bio-accumulative chemicals (e.g., lead). This is of importance since the Indiana Bat can be expected to live for 15 to 20 years and potential body contaminant levels are expected to increase, during winter hibernation, as percent body lipids decrease. Following hibernation, a reproducing female may transfer this potential body burden of contaminants to it's young during gestation and/or feeding (i.e., lactation). In some species (e.g., gray bat), pesticides may be many times greater in the bat's milk than in the food source consumed by the female bat.

Specific Comments

Comment 1:

Page 1, Section Background, 2nd paragraph, 1st sentence: Cite the NSWC 2001 report as source of facts given in this paragraph.

Comment 2:

Page 1, Section Background, 2nd paragraph, 7th sentence: The comment on sample contamination from paint chips needs to be deleted as no specific control measurements were provided to evaluate relative contribution. This topic may be moved to the summary section and presented as a qualitative measure of uncertainty.

Comment 3:

Page 1: A new section, to precede the "Food Chain Model Procedure," is needed to address assessment endpoints for the Indiana bat. The level organization needing protection will be

revised to cover individual effects involving an endangered species as discussed in the Guidelines for Ecological Risk Assessment (EPA/630/R-95/002F April 1998), see section 3.3.1.1 Ecological Relevance (1st paragraph) and Part B: Response to Science Advisory Board and Public Comments, Section 2. Response to General Comments (6th paragraph). These endpoints need to incorporate two levels of individual sensitivity, see section 3.3.1.2 Susceptibility to Known or Potential Stressors (EPA/630/R-95/002F April 1998). Contaminant exposure to a pup during lactation and long term (10 years) adult exposure to persistent bio-accumulative chemicals (e.g., lead) during hibernation needs to be evaluated.

Comment 4:

Table 4, Calculation of Exposure Parameters for the Little Brown Bat: The development of average weight and ingestion rates are intended to be protective of a population. This table will need to be revised to support sensitive individual criteria as noted in specific comment number three.

Comment 5:

Tables 4 and 5: A consistent body weight was not applied in the development of conservative values for ingestion rate and dose. In table 4, the conservative food ingestion rate of 0.0081 Kg/day was calculated using an average body weight of 7.2 g as follows:

= [(food ingestion rate: 1.12 g /g-day) x (**average** body weight: 7.2 g)] / [constant: Kg / 1,000g]
= 0.0081 Kg /day (= 0.0081 Kg <u>of food per **average** bat body weight</u> / day)

In table 5, the conservative dose was calculated by multiplying the conservative food ingestion rate times the chemical concentration then dividing by the minimum body weight. An example calculation for aluminum follows:

= [(ingestion rate: 0.0081 Kg/day) x (aluminum: 32 mg/Kg)] / [**minimum** body weight: 6.03 g]
x [constant: 1,000 g / Kg]
= 43 mg/ Kg-day (= 43 mg <u>of Al</u> / Kg <u>of **minimum** bat body weight per</u> day)

This report needs to use consistent body weight data for the development of a receptor exposure dose.