

A CLINICAL FIELD TRIAL TO DETERMINE:
**ANALYTICAL VERIFICATION OF CHLORAMINE-T TO CONFIRM TARGET DOSAGE IN A
BATH SOLUTION ADMINISTERED USING A FLOW-THROUGH TREATMENT METHOD**

Study Number: BFTC-01-CHLT-FT-01

Study start date: July 24, 2001

Study end date: July 27, 2001

Study Director

James D. Bowker, M.S.
U.S. Fish and Wildlife Service
Bozeman Fish Technology Center
National Investigational New Animal Drug Office
4050 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-587-9265 ext. 126
FAX: 406-582-0242

ORIGINAL

Investigator

Daniel Carty, M.S.
U.S. Fish and Wildlife Service
Bozeman Fish Technology Center
National Investigational New Animal Drug Office

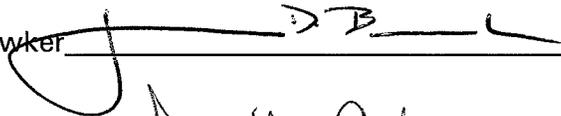
Testing Facility

Bozeman Fish Technology Center
National Investigational New Animal Drug Office
4050 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-587-9265
FAX: 406-582-0242

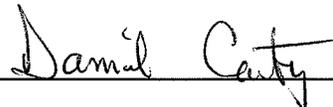
Sponsor

David A. Erdahl, Ph.D
U.S. Fish and Wildlife Service
Bozeman Fish Technology Center
National Investigational New Animal Drug Office

James D. Bowker

 Jan 3, 2002

Daniel Carty

 Jan 3, 2002

Abstract

The United States Fish and Wildlife Service's (USFWS) National Investigational New Animal Drug Office (NIO) designed and conducted a study to demonstrate that the target concentration of a waterborne chemical, such as chloramine-T, could be achieved and maintained in a raceway using a "charged" flow-through treatment method. The study was conducted at the USFWS's Bozeman Fish Technology Center by staff from the NIO following guidelines described in Study Protocol Number BFTC-01-CHLT-FT. The objective of the study was to document that concentrations of chloramine-T measured in water samples taken from various locations within a raceway at various times during a 1 h treatment were within $\pm 25\%$ of the target dosage of 12 mg/L chloramine-T (i.e., within a range of 9 - 15 mg/L chloramine-T). Dosing and collection of water samples to verify chloramine-T concentrations were done in two 58 ft x 6 ft x 3.7 ft raceways. Each raceway was dosed in duplicate (i.e., total of four dosing trials). Water flow to each raceway was turned off and chloramine-T was weighed out, diluted in 9 gal of water, and added to the raceway to pre-treat (i.e., "charge") the water to initially establish a chloramine-T concentration of 12 mg/L in a static bath. Water flow to the raceway was resumed at a predetermined flow rate, and a chloramine-T stock solution was metered into the raceway inflow water to maintain the target dosage. Water samples were collected at 27 locations within the raceway at times = 0, 30, and 60 min (total number of samples per raceway dosing was $3 \times 27 = 81$) and measured to verify chloramine-T concentration. The mean overall chloramine-T concentration from

the four trials was 10.8 mg/L, which fell within the $\pm 25\%$ of the target dose acceptable to U. S. Food and Drug Administrations Center for Veterinary Medicine. Mean chloramine-T concentrations from the four exposure trials ranged from 10.5 to 11.0 mg/L and deviated from the target dose by no more than 12.5%. As a result of the findings from this study, we believe that adequate data have been generated to demonstrate that the target dose of a waterborne chemical such as chloramine-T can be achieved and maintained using a flow through treatment method. Consequently, it stands to reason that chloramine-T therapy used in a flow through system will be as effective in controlling mortality caused by bacterial gill disease as when used in a static bath.