US EPA ARCHIVE DOCUMENT

108801

VALIDATION SHEET CRF#_____ PAGE____ OF_____

FORMULATION:			IA	IB	T	FW	EC	R		
% a.i.	SC#	CHEMICAL NAME	Validator:					Date:		
Technical		Metolachlor CGA-24705	R. Balcomb					7/20/78		
			Test Type: Rainbow Trout 96-hr LC_{50}							
			Test ID.# ES-G							

CITATION: Buccafusco, Robert J., 1978. Acute Toxicity of CGA-24705 to Rainbow Trout (Salmo gairdneri). Report #BW-78-6-186. EG & G - Wareham, Mass.

VALIDATION CATEGORY: Core

RESULTS:

LC_{50} Values (mg/l)			
24 hr.	48 hr.	72 hr.	96 hr.
>8.8	>6.0 <8.8	4.7 (4.0-5.5)[1]	3.9 (3.3-4.6)

([1]95% Confidence interval)

PROCEDURE: The study generally follows EPA guidelines. Young Rainbow Trout, mean wt. 0.68 (0.17-1.2) grams - mean length 45 (39-53) millimeters, were held for 14 days prior to testing at the test temperature of 12°C. The testing was performed in 19.6-liter glass jars with 10 fish used per concentration level; the test concentrations (nominal) were: 0.88, 1.3, 1.9, 2.8, 4.1, 6.0, and 8.8 mg/l. Control and acetone-control groups were also tested. The statistical analysis followed a moving average approach (Harris, E.K. 1959. Biometrics, Vol. 4 #3. pp. 157-164).

VALIDATION CATEGORY RATIONALE: The study adhers to EPA guidelines. The statistics were checked by recalculating via the Weil technique (Weil, Carroll S., 1952. Biometric, Vol. 8, No. 3 p. 249-263). A comparable value was obtained: 96-hr LC_{50} = 3.80 (3.37-4.27) mg/l.

REPAIRABILITY: N/A

SPECIAL NOTE: The report descirbed the test material only as CGA-24705. Dr. Jack A. Norton, Regulatory Specialist for Ciba-Geigy, was contacted by phone (919-292-7100) for a more complete description of the compound. CGA-247-5 is, according to Dr. Norton, technical metolachlor.

Amendment to Data Evaluation
by R. Balcomb 7/20/78

.t Species Rainbow trout PROBIT ANALYSIS WORK SHEET Chemical Metolachlor
urce Date Tested 6/78
o. Period 96 hrs. Analysis by: Henry T. Craven 9/21/78
(Name) (Title) (Date)

Concentration	No. dead/ /No. tested	Observed % Mortality	Expected % Mortality	O-E	Contributions to Chi (Nomo #1)
control	0/10	0			
1.9	0/10	0 (0)	0.9	0.9	0.009
2.8	0/10	0 (4.7)	15	11.3	0.090
4.1	7/10	70	60	10	0.045
6.0	10/10	100 (99.7)	99.9	.2	0.004
8.8	10/10	100 (99.7)	99.9	.2	0.004

Total 0.152

tal Fish Tested = 50
nber of Doses (K) = 5
grees of freedom (K-2) = 3

Chi^2 = Total Cont. to Chi x $\frac{\text{Total fish}}{K}$ = 1.52

Chi^2 (p=.05) for 3 deg of freedom = 7.82

DETERMINE fLC_{50}:

LC_{84} _____
LC_{50} _____
LC_{16} _____

$S = \frac{LC_{84}/LC_{50} + LC_{50}/LC_{16}}{2}$ = _____

N' (Fish used between 16% and 84% E) = _____
$\sqrt{N'}$ = _____

$fLC_{50} = S^{2.77}/\sqrt{N'} = S$ _____ (Nomo. #2) = _____

DETERMINE fS:

R (Largest/Smallest dose plotted) _____
S (As determined above) _____
A (Nomo. #3 using R and S) _____

$fS = A^{10(K-1)/K\sqrt{N'}} = A$ _____ (Nomo. #2) = _____

DETERMINE fLC_y:

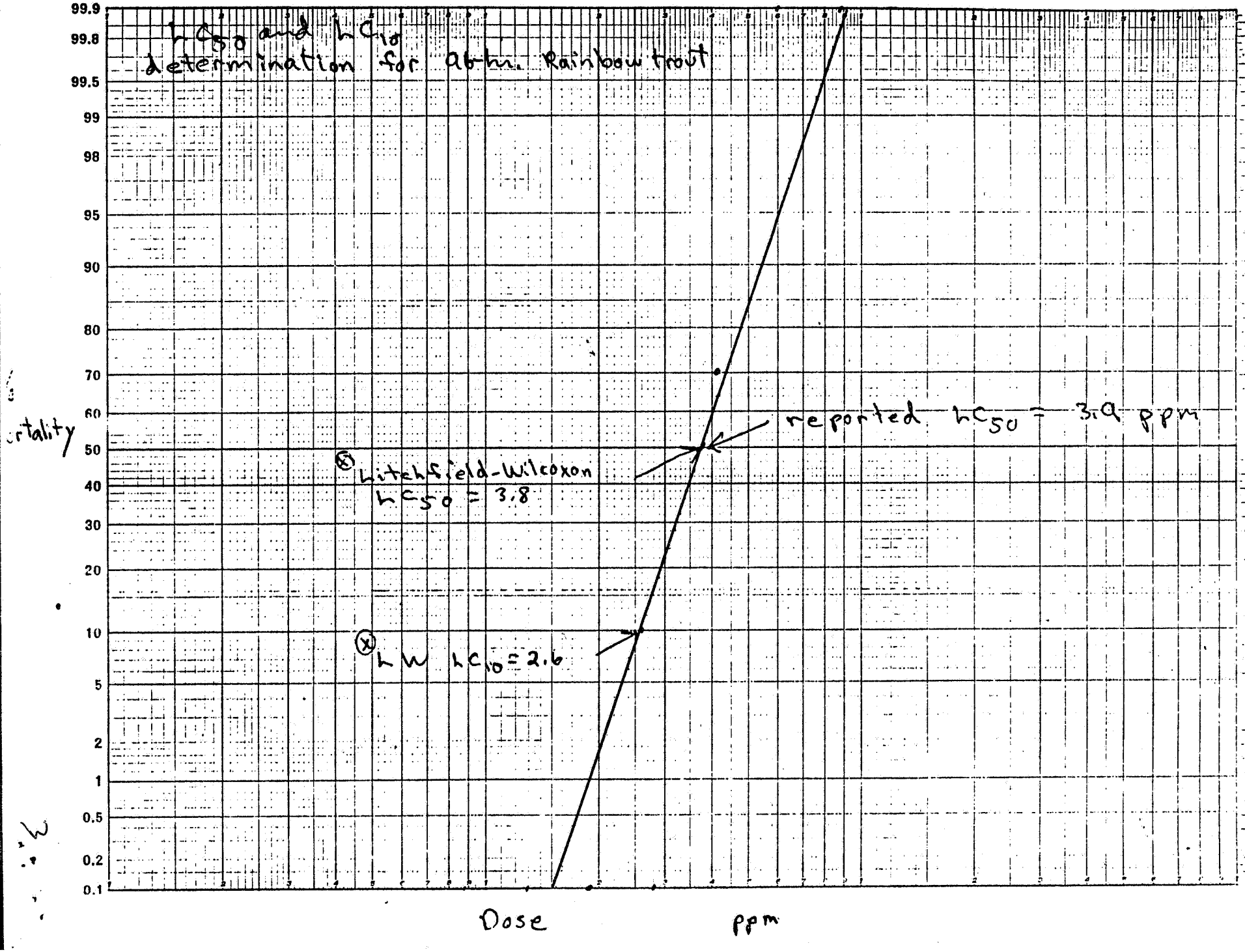
$(fS)^x = fS^{2.33 \text{ or } 1.30}$ (Table 3 and Nomo. #2) = _____

fLC_y (Nomo. #4 using $(fS)^x$ and fLC_{50}) = _____

RESULTS (LC_x and Confidence Limits at p = .05):

LC_1 = _____
Lower Limit (LC_1/LC_y) _____
Upper Limit (LC_1 X LC_y) _____

LC_{50} = _____
Lower Limit (LC_{50}/fLC_{50}) _____
Upper Limit (LC_{50} X fLC_{50}) _____

LC_{99} = _____
Lower Limit (LC_{99}/LC_y) _____
Upper Limit (LC_{99} X LC_y) _____

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