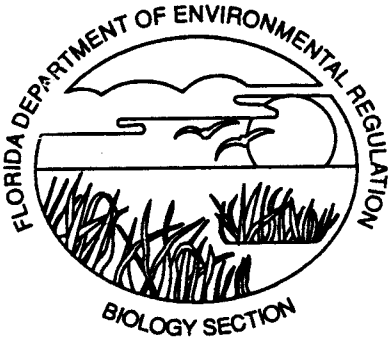


Bioassays of

American Cyanamid

Milton, Santa Rosa County, Florida

NPDES #FL0002593

Sampled 2/12/90

July 6, 1990

Biology Section
Division of Administrative and Technical Services

Bioassays of

American Cyanamid

Milton, Santa Rosa County, Florida

NPDES #FL0002593

Biology Section
Bureau of Laboratories
July 6, 1990

Introduction

American Cyanamid, Milton, Santa Rosa County, Florida, NPDES #FL0002593, outfall #001, on 13 to 19 February, 1990.

This facility is located near Milton in Santa Rosa County and according to the NPDES file, it produces acrylic fiber. Concentrated process water is disposed of in a deep well constructed in 1976 (J. May, Northwest District, personal communication), and any remaining process water is discharged through outfall #001 to Escambia Bay.

The toxicity tests discussed in this report were performed in accordance with methods described by Weber *et al.*, 1989, *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, 2nd Edition, and by the FDER Biology Section, 1985, *Quality Assurance Manual for Performing Acute Toxicity Tests*, 2nd Edition.

Results and Discussion

The test using the test organism *C. dubia* was originally set up as a seven day chronic reproduction test. Due to inadequate control reproduction, the test is presented as a seven day static renewal acute bioassay.

The samples of discharge taken from this facility on 12, 14, and 16 February, 1990 were not toxic to the bioassay test organism, the waterflea, *Ceriodaphnia dubia*. The sample taken on 12 February, 1990 did not affect the Microtox® assay test organism, *Photobacterium phosphoreum*. The sample taken on 14 February, 1990, was stimulatory to the Microtox® test organism. A Microtox® test was not performed on the sample taken on 16 February, 1990. Chemical analyses were not performed on the samples.

Conclusion

The samples taken from this facility on 12, 14, and 16 February, 1990 were not toxic.

Table 1. Concentration Series and Volumes Used for These Static Bioassays.

Ceriodaphnia dubia (water flea)

Total Volume	Concentration	Dilution Water	Sample
Control	15.0 ml	0.0 ml	15 ml
6.25%	14.06 ml	0.94 ml	15 ml
12.5%	13.12 ml	1.88 ml	15 ml
25.0%	11.25 ml	3.75 ml	15 ml
50.0%	7.5 ml	7.5 ml	15 ml
100.0%	0.0 ml	15.0 ml	15 ml

Table 2. Data recorded during the three static renewal bioassays performed on samples taken from outfall #001 of the American Cyanamid facility, NPDES #FL0002593, Santa Rosa County, Florida, on 12, 14, and 16 February, 1990.

Facility:	**American Cyanamid**		**NPDES #**	**FL0002593**	Facility Type: **Chemical Processing**
Location:	1801 Cyanamid Road, Milton, Florida		Contact/District:	G. Smith / NW	
County:	Santa Rosa		Test type:	static renewal	
Sample Collection Date:	**2/12/90**	Time: 1428	# tests:	3	Receiving Water: Escambia Bay
Test Beginning Date:	2/13/90	Time: 1300	Chlorination Type:	**nonchlorinated**	
Test Ending Date:	2/15/90	Time: 1300			**Page 1 of 1**

Organism: ***Ceriodaphnia dubia*** Life stage: neonate
LC50: - Binomial: - Moving Average: - Probit: -

	SURVIVAL			Dissolved Oxygen			pH			Temperature			Conductivity	
Concentrations	# at 0 hr	Live at 24 hr	Live at 48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
TEST 1 Control	10*	10	10	8.7	-	7.7	8.2	-	8.0	21.3	-	-	160	-
6.25%	10*	10	10	8.6	-	7.7	8.2	-	8.1	21.7	-	-	180	-
12.50%	10*	10	10	8.7	-	7.8	8.1	-	8.0	21.7	-	-	190	-
25%	10*	10	10	8.6	-	7.5	8.0	-	7.9	21.5	-	-	210	-
50%	10*	10	10	8.8	-	7.5	7.9	-	7.9	21.5	-	-	255	-
100%	10*	10	10	8.6	-	7.5	7.5	-	7.6	21.5	-	-	350	-
TEST 2 Control	10**	10	9	8.7	-	6.9	8.2	-	7.9	21.3	-	-	170	-
6.25%	10**	10	10	8.7	-	7.0	8.2	-	7.9	21.8	-	-	180	-
12.5%	10**	10	10	8.8	-	6.8	8.2	-	7.8	22.0	-	-	190	-
25%	10**	10	10	8.9	-	7.1	8.2	-	7.9	22.2	-	-	205	-
50%	10**	10	10	9.1	-	6.9	8.2	-	7.7	22.6	-	-	240	-
100%	10**	10	10	9.4	-	6.3	8.1	-	7.4	23.8	-	-	330	-
TEST 3 Control	9***	8***	8	6.9	-	9.1	8.2	-	7.9	21.5	-	19.9	170	160
6.25%	10	10	10	7.0	-	9.0	8.2	-	8.0	21.6	-	20.1	175	170
12.5%	10	9***	9	6.8	-	9.0	8.2	-	7.9	21.7	-	20.4	185	180
25%	10	10	10	7.1	-	9.0	8.1	-	8.0	21.9	-	20.9	200	195
50%	10	10	10	6.9	-	9.0	8.0	-	7.8	22.0	-	21.9	235	230
100%	10	10	10	6.3	-	9.1	7.7	-	7.6	22.7	-	23.9	310	315

TEST 2			**TEST 3**		
Sample Collection Date:	**2/14/90**	Time: 1406	Sample Collection Date:	**2/16/90**	Time: -
Test Beginning Date:	2/15/90	Time: 1300	Test Beginning Date:	2/17/90	Time: 1200
Test Ending Date:	2/17/90	Time: 1200	Test Ending Date:	2/19/90	Time: 0800

* Ten replicate vials with one organism in each vial.
** Test organisms were transferred to each new test.
*** Dead organisms were not replaced.

Total Residual Cl2	mg/l	Method
Field:	0.0	DR-100
3 Samples Lab:	0.0	Hach
Lab:	-	-

TEST 1

Ammonia	Total (mg/l)	Unionized (mg/l)
Cond. Control		
Water (daphnids):	0.00	0.00
100% sample	not recorded	-

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Cond. Control		
Water (daphnids):	55	80
100% Sample:	10	<4

Salinity (ppt)	
Control Water:	0
100% Sample:	0

TEST 2

Ammonia	Total (mg/l)	Unionized (mg/l)
Cond. Control		
Water (daphnids):	0.00	0.00
100% sample	14.10	0.24

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Cond. Control		
Water (daphnids):	55	80
100% Sample:	10	<4

TEST 3

Ammonia	Total (mg/l)	Unionized (mg/l)
Cond. Control		
Water (daphnids):	0.00	0.00
100% sample	22.70	0.65

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Cond. Control		
Water (daphnids):	55	80
100% Sample:	20	<6

Table 3. Microtox test results, American Cyanamid, Santa Rosa County, NPDES #FL0002593, on 13 February, 1990.

Microtox Test

% Sample	Final Reclaimed Water nonchlorinated	
	5-min	15-min
0	92	55
0	74	45
0	90	53
12.38	79	47
12.38	94	58
12.38	92	59
24.75	74	47
24.75	79	50
24.75	79	50
49.5	78	51
49.5	81	51
49.5	79	51
99	74	48
99	81	52
99	79	51

EC_{50} Nonchlorinated (15 minute, 15 °C) = no measureable effect

EC_{50} (15 minute, 15 °C) is calculated using the Data Reduction Computer Program developed by Microbics Corporation for the Sharp Model EL-5100 calculator. *Microbics Systems Operating Manual, 1982.*

Table 4. Microtox test results, American Cyanamid, Santa Rosa County, NPDES #FL0002593, on 14 February, 1990.

Microtox Test

% Sample	Final Reclaimed Water nonchlorinated	
	5-min	15-min
0	76	34
0	67	30
0	64	30
12.38	67	30
12.38	65	31
12.38	54	26
24.75	56	27
24.75	57	27
24.75	59	29
49.5	57	28
49.5	58	28
49.5	54	26
99	53	26
99	63	30
99	58	27

EC_{50} Nonchlorinated (15 minute, 15 °C) = 6310% sample

EC_{50} (15 minute, 15 °C) is calculated using the Data Reduction Computer Program developed by Microbics Corporation for the Sharp Model EL-5100 calculator. *Microbics Systems Operating Manual, 1982.*

Table 5. Microtox test results, American Cyanamid, Santa Rosa County, NPDES #FL0002593, on 15 February, 1990.

Microtox Test

% Sample	Final Reclaimed Water nonchlorinated 5-min	15-min
0	87	51
0	84	44
0	90	47
12.38	91	52
12.38	91	52
12.38	94	52
24.75	91	52
24.75	97	57
24.75	98	57
49.5	96	56
49.5	93	54
49.5	99	58
99	98	60
99	97	60
99	91	55

EC_{50} Nonchlorinated (15 minute, 15 °C) = stimulatory

EC_{50} (15 minute, 15 °C) is calculated using the Data Reduction Computer Program developed by Microbics Corporation for the Sharp Model EL-5100 calculator. *Microbics Systems Operating Manual, 1982.*

Table 6. Microtox test results, American Cyanamid, Santa Rosa County, NPDES #FL0002593, on 16 February, 1990.

Microtox Test

% Sample	Final Reclaimed Water nonchlorinated	
	5-min	15-min
0	95	36
0	90	36
0	78	32
12.38	81	34
12.38	81	34
12.38	82	35
24.75	84	36
24.75	84	35
24.75	86	37
49.5	88	38
49.5	90	34
49.5	83	36
99	75	34
99	69	31
99	69	30

EC_{50} Nonchlorinated (15 minute, 15 °C) = 962% sample

EC_{50} (15 minute, 15 °C) is calculated using the Data Reduction Computer Program developed by Microbics Corporation for the Sharp Model EL-5100 calculator. *Microbics Systems Operating Manual, 1982.*

DER Biology Section — *Ceriodaphnia dubia* Chronic-bioassay Bench Sheet

Sample Source: American Cyanamid
NPDES Permit #: FL 0002593 **Outfall #:** 001
Log #:

Sample Collection: Date 2/12/90 Time 1428
Test Beginning: Date 2/13/90 Time 1300
Test Ending: Date 2/19/90 Time 1300

		New Sample				Old Sample	
	Conc.	pH (SU)	Temp (°C)	DO (mg/l)	Cond (µmhos/cm)	pH (SU)	DO (mg/l)
Day 1 Sample A (test 1)	Control	8.2	21.3	8.7	160		
	6.25%	8.2	21.7	8.6	180		
	12.5%	8.1	21.7	8.7	190		
	25%	8.0	21.5	8.6	210		
	50%	7.9	21.5	8.8	255		
	100%	7.5	21.5	8.6	350		
Day 2 Sample A	Control	8.0		7.7			
	6.25%	8.1		7.7			
	12.5%	8.0		7.8			
	25%	7.9		7.5			
	50%	7.9		7.5			
	100%	7.6		7.5			
Day 3 Sample B (test 2)	Control	8.2	21.3	8.7	170		
	6.25%	8.2	21.8	8.7	180		
	12.5%	8.2	22.0	8.8	190		
	25%	8.2	22.2	8.9	205		
	50%	8.2	22.6	9.1	240		
	100%	8.1	23.8	9.4	330		
Day 4 Sample B	Control	7.9	~~6.9~~ 7.8	6.9			
	6.25%	7.9	~~7.0~~ 7.9	7.0			
	12.5%	7.8	~~6.8~~ 7.8	6.8			
	25%	7.9	~~7.0~~ 7.9	7.1			
	50%	7.7	~~6.9~~ 7.7	6.9			
	100%	7.4	~~6.3~~ 7.4	6.3			
Day 5 Sample C (test 3)	Control	8.2	21.5		170		
	6.25%	8.2	21.6		175		
	12.5%	8.2	21.7		185		
	25%	8.1	21.9		200		
	50%	8.0	22.0		235		
	100%	7.7	22.7		310		
Day 6 Sample C	Control	8.3	19.9	9.1	160	7.9 8.0 8.0	7.9 7.5 7.8
	6.25%	8.2	20.1	9.0	170	8.0 8.0 8.0	7.6 7.7 7.4
	12.5%	8.2	20.4	9.0	180	7.9 8.0 8.0	7.4 7.5 7.4
	25%	8.1	20.9	9.0	195	8.0 7.9 7.8	7.6 7.4 7.3
	50%	8.0	21.9	9.0	230	7.8 7.8 7.7	7.3 7.4 7.0
	100%	7.7	23.9	9.1	315	7.6 7.6 7.6	7.3 7.6 7.5
Day 7 Sample C	Control					7.	
	6.25%						
	12.5%						
	25%						
	50%						
	100%						
Measured by:		MFSW	MFSW	MFSW	MFSW	SW	SW
Recorded by:		MFSW	MFSW	MFSW	MFSW	MF	MF

test val: 1/5 | 1/10 | 1 | 5 | 10

Investigators' Signatures

Marshall Fairbuth
Steven H Wells

Reviewer

Remarks:

Conductivity

pH	DO	conductivity	temp
7.9	8.3 @ 22°C	130 @ 130	21.1 @ 21.2°C
7.9	8.5 @ 21.5°C	135 @ 24.1 @ 335	21.0 @ 21.3°C
7.9	8.5 @ 21.8°C	136 @ 23.9 @ 334	21.8 @ 22.1
7.9	9.0 @ 21.0°C	130 @ 21.1°C	20.5 @ 22.7

DER Biology Section — *Ceriodaphnia dubia* Chronic-bioassay Bench Sheet

Sample Source: American Cyanamid
NPDES Permit #: FL0002593 **Outfall #:** 001

Sample Collection: Date 2/12/90 Time 1418
Test Beginning: Date 2/14/90 Time 1300
Test Ending: Date 2/19/90 Time 1300

		Replicate Number																				Total		Grand Total	
		1		2		3		4		5		6		7		8		9		10					
	Conc.	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng
Day 1 Sample A	Control	1		1		1		1		1		1		1		1		1		1		10		10	
	6.25%	1		1		1		1		1		1		1		1		1		1		10		10	
	12.5%	1		1		1		1		1		1		1		1		1		1		10		10	
	25%	1		1		1		1		1		1		1		1		1		1		10		10	
	50%	1		1		1		1		1		1		1		1		1		1		10		10	
	100%	1		1		1		1		1		1		1		1		1		1		10		10	
Day 2 Sample A	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 3 Sample B	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 4 Sample B	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 5 Sample C	Control	1		X		1		1		1		1		1		1		1		1		9	6		6
	6.25%	1		1		1		1		1		1		1		1		1		1		10	6		6
	12.5%	1		1		1		1	3	1		1	#	1		1	1	1		1		10	4		4
	25%	1	1	1	1	1		1		1		1	4	1		1		1		1		10	6		6
	50%	1	1	1		1		1		1		1		1		1		1		1	1	10	2		2
	100%	1		1	2	1		1		1		1	3	1		1		1	4	1	2	10	11		11
Day 6 Sample C	Control	1		X		1		1		1		1		1		1		X		1		8	0		0
	6.25%	1		1		1		1		1		1		1		1		1		1		10	0		0
	12.5%	1		1	2	1		1		1		1	3	1		X		1		1		9	5		9
	25%	1		1		1	4	1		1	3	1		1	2	1	1	1		1		10	10		16
	50%	1		1		1	3	1	2	1		1*		1	1	1	4	1	2	1		10	12		14
	100%	1	1	1		1		1		1	2	1		1		1	4	1		1		10	7		18
Day 7 Sample C	Control	1		X		1		1		1		1		1		1		X		1		8	0		0
	6.25%	1		1		1		1		1	1	1		1		1		1		1	6	10	1		1
	12.5%	1		1		1		1		1		1		1	2	X		1		1		9	2		11
	25%	1		1		1		1		1		1		1		1		1		1		10	0		16
	50%	1		1	1	1		1		1		1		1		1		1		1		10	1		15
	100%	1	7	1	6	1		1	3	1	5	1	6	1	6	1	7	1	7	1	6	10	54		72
Measured by:																									
Recorded by:																									

SHW
SW
SW
SW
SW

Investigators' Signatures

Steven W Wolfe

Marshall Faircloth

Remarks: * testing was shutdown in control flood

reviewer

DER Biology Section — *Ceriodaphnia dubia* Chronic-bioassay Bench Sheet

Sample Source: American Cyanamid
NPDES Permit #: FL0002593 **Outfall #:** 001

Sample Collection: Date 2/12/90 Time 1428
Test Beginning: Date 2/13/90 Time 1300
Test Ending: Date 2/19/90 Time 1300

		Replicate Number																				Total		Grand Total	
		1		2		3		4		5		6		7		8		9		10					
	Conc.	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng	#Live	#Yng
Day 1 Sample A	Control	1		1		1		1		1		1		1		1		1		1		10		10	
	6.25%	1		1		1		1		1		1		1		1		1		1		10		10	
	12.5%	1		1		1		1		1		1		1		1		1		1		10		10	
	25%	1		1		1		1		1		1		1		1		1		1		10		10	
	50%	1		1		1		1		1		1		1		1		1		1		10		10	
	100%	1		1		1		1		1		1		1		1		1		1		10		10	
Day 2 Sample A	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 3 Sample B	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 4 Sample B	Control	1		1		1		1		1		1		1		1		1		1		10			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 5 Sample C	Control	1		1		1		1		1		1		1		1		1		1		9			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		1		1		1		10			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 6 Sample C	Control	1		X		1		1		1		1		1		1		X		1		8			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		X		1		1		9			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Day 7 Sample C	Control	1		X		1		1		1		1		1		1		X		1		8			
	6.25%	1		1		1		1		1		1		1		1		1		1		10			
	12.5%	1		1		1		1		1		1		1		X		1		1		9			
	25%	1		1		1		1		1		1		1		1		1		1		10			
	50%	1		1		1		1		1		1		1		1		1		1		10			
	100%	1		1		1		1		1		1		1		1		1		1		10			
Measured by:																						[illegible]			
Recorded by:																						[illegible]			

Investigators' Signatures

Steven H Welz

Mark A Lambert

Reviewer

Remarks:

MICROTOX™ Data Reduction Sheet

SOURCE: American Cyanamid

GRAPH CALC EC 50 (15 MIN, 15 °C) = ~~0.99~~ %SAMPLE mg/L

SAMPLE DATA:

SAMPLE TYPE (EFFLUENT, LEACHATE, ETC.):

DATE ASSAYED: 2/13/90 TIME: 1:00 PM

VISUAL COLOR: CORRECTION REQUIRED: YES NO

VISUAL TURBIDITY: SEPARATION REQUIRED: YES NO

INITIAL pH: pH ADJUSTED TO: WITH:

OSMOTICALLY ADJUSTED WITH: MOAS (DRY NaCl) OTHER

PRIMARY DILUTION OF SAMPLE:

OPERATOR: MS Campos REAGENT VIAL LOT NO. M-

REMARKS:

MICROTOX™ TEST

SAMPLE CUVETTE	% SAMPLE	READINGS 5 MIN	READINGS 15 MIN	Γ5	Γ15	NOTES
A1	0	92	55	X	X	
B1		74	45			
C1		90	53			
A2	12.38	79	47		-.07	
B2		94	58			
C2		92	59			
A3	24.75	74	47		.04	
B3		79	50			
C3		79	50			
A4	49.5	78	51		00	
B4		81	51			
C4		79	51			
A5	99	74	48		.01	
B5		81	52			
C5		77	51			
EC_{50} (MIN, °C)					~~0.99~~	No Blank

REVIEWED BY:

DATE: 7/24/90

MICROTOX™ Data Reduction Sheet

SOURCE: American Cyanamid

GRAPH CALC EC 50 (15 MIN, 15 °C) = 6310.69 %SAMPLE mg/L

SAMPLE DATA:

SAMPLE TYPE (EFFLUENT, LEACHATE, ETC.):

DATE ASSAYED: 2/14/90 TIME: 10:30

VISUAL COLOR: CORRECTION REQUIRED: YES NO

VISUAL TURBIDITY: SEPARATION REQUIRED: YES NO

INITIAL pH: pH ADJUSTED TO: WITH:

OSMOTICALLY ADJUSTED WITH: MOAS (DRY NaCl) OTHER

PRIMARY DILUTION OF SAMPLE:

OPERATOR: MB Campos REAGENT VIAL LOT NO. M-

REMARKS:

MICROTOX™ TEST

SAMPLE CUVETTE	% SAMPLE	READINGS 5 MIN	READINGS 15 MIN	Γ5	Γ15	NOTES
A1	0	76	34	X	X	
B1		67	30			
C1		64	30			
A2	12.38	67	30		.08	
B2		65	31			
C2		54	26			
A3	24.75	56	27		.13	
B3		57	27			
C3		59	29			
A4	49.5	57	28		.15	
B4		58	28			
C4		54	26			
A5	99	53	26		.13	
B5		63	30			
C5		58	27			
EC_{50} (MIN, °C)					4.58	

6310.69

REVIEWED BY:

DATE: 7/24/90

MICROTOX™ Data Reduction Sheet

SOURCE: American Cyanamid

GRAPH CALC EC 50 (15 MIN, 15 °C) = Stimulatory %SAMPLE mg/L

SAMPLE DATA:

SAMPLE TYPE (EFFLUENT, LEACHATE, ETC.): 10, 30

DATE ASSAYED: 2/15/90 TIME:

VISUAL COLOR: CORRECTION REQUIRED: YES NO

VISUAL TURBIDITY: SEPARATION REQUIRED: YES NO

INITIAL pH: pH ADJUSTED TO: WITH:

OSMOTICALLY ADJUSTED WITH: MOAS DRY NaCl OTHER

PRIMARY DILUTION OF SAMPLE:

OPERATOR: REAGENT VIAL LOT NO. M- NLN

REMARKS:

MICROTOX™ TEST

SAMPLE CUVETTE	% SAMPLE	READINGS 5 MIN	READINGS 15 MIN	Γ5	Γ15	NOTES
A1	0	87	51		~~+.09~~	
B1		84	44			
C1		90	47			
A2	12.38	91	52		+.09	
B2		91	52			
C2		94	52			
A3	24.75	91	52		+.15	
B3		97	57			
C3		98	57			
A4	49.5	96	56		+.15	
B4		93	54			
C4		99	58			
A5	99	98	60		+.19	
B5		97	60			
C5		91	55			
EC_{50} (MIN, °C)						Stimulatory

REVIEWED BY:

DATE: 7/24/90

MICROTOX™ Data Reduction Sheet

SOURCE: American cyanamid

GRAPH CALC EC 50 (15 MIN, 15 °C) = 962.95 (%SAMPLE) mg/L

SAMPLE DATA:

SAMPLE TYPE (EFFLUENT, LEACHATE, ETC.):

DATE ASSAYED: 2/16/90 TIME: 11:30 AM

VISUAL COLOR: CORRECTION REQUIRED: YES NO

VISUAL TURBIDITY: SEPARATION REQUIRED: YES NO

INITIAL pH: pH ADJUSTED TO: WITH:

OSMOTICALLY ADJUSTED WITH: MOAS (DRY NaCl) OTHER

PRIMARY DILUTION OF SAMPLE:

OPERATOR: MB Campos REAGENT VIAL LOT NO. M- NLN

REMARKS:

MICROTOX™ TEST

SAMPLE CUVETTE	% SAMPLE	READINGS 5 MIN	READINGS 15 MIN	Γ5	Γ15	NOTES
A1	0	95	36	X	X	
B1		90	36			
C1		98	32			
A2	12.38	81	34		.01	
B2		81	34			
C2		82	35			
A3	24.75	84	36		-.04	
B3		84	35			
C3		86	37			
A4	49.5	88	38		-.04	
B4		80	34			
C4		83	36			
A5	99	75	34		.09	
B5		69	31			
C5		69	30			
EC_{50} (MIN, °C)					962.95	

REVIEWED BY: JKS

DATE: 7/24/90