7704 G-000-104.232

OHIO ENVIRONMENTAL PROTECTION AGENCY DISCHARGE MONITORING REPORTS- FERNALD ENVIRONMENTAL MANAGEMENT PROJECT - NPDES PERMIT NUMBER 1LO00004*ED - MAY 1996

06/11/96

C:EC(RTS):96-0049
FERMCO OEPA
32
REPORT

7704

Fernald Environmental

FERMCO

Restoration Management Corporation P. O. Box 538704 Cincinnati, Ohio 45253-8704 (513) 648-3000

June 11, 1996

Fernald Environmental Management Project
Letter No. C:EC(RTS):96-0049

Ohio Environmental Protection Agency
Division of Surface Water
C M & E - Permit Comp. Unit
P.O. Box 1049
Columbus, Ohio 43266-1049

Gentlemen:

OHIO ENVIRONMENTAL PROTECTION AGENCY DISCHARGE MONITORING REPORTS - FERNALD ENVIRONMENTAL MANAGEMENT PROJECT - NPDES PERMIT NUMBER 1IO00004*ED - MAY, 1996

Enclosed are the Ohio Environmental Protection Agency Discharge Monitoring Report forms for the Fernald Environmental Management Project (FEMP) for May, 1996. Also enclosed is the "Laboratory Analysis Report" detailing the results of the May, 1996 Acute Toxicity Screen. The sampling, analysis and reporting of this toxicity data were performed by CT&E Environmental Services Inc. under subcontract to FERMCO. The next scheduled toxicity screen is for July, 1996.

If you have any questions or comments regarding these reports, please contact Frank Johnston at (513) 648-5294.

Sincerely,

Stephen M. Beckman
Manager
Air & Water Programs

SMB:MML:wjw
Enclosures

000001

Fernald Environmental
FERMCO
Restoration Management Corporation

c: S. L. Blankenship, FERMCO
D. J. Carr, FERMCO
K. A. Chaney, EM-423,QO
D. E. Faris, FERMCO
R. D. George, FERMCO
T. D. Hagen, FERMCO
B. S. Perkins, FERMCO
C. G. Siefert, FERMCO
E. P. Skintik, DOE-FN
AR Coordinator
A&WP Files
File Record Storage Copy 108.13

CT&E Environmental Services Inc.
Laboratory Division

Laboratory Analysis Report

OHIO EPA NPDES BIOMONITORING REPORT FORM

GENERAL INFORMATION

1. Facility Name: FERMCO OH58868-70

2. Address: P.O. Box 398704 Reporting date: 05/14/9

   Cincinnati, OH 45239-8704

3. Ohio EPA Permit Number: 1I000004*ED

4. Application (NPDES) Number: _____

5. Facility Contact: Mr. Larry Evans 6. Phone No.: (513)648-5376

7. Consultant/Testing Lab Name: CT&E Environmental Services Inc.

8. Consultant/Lab Contact: Kevin Howerton 9. Phone No.: (513)752-9696

10. Receiving Water(s) of Discharge: _____

11. Outfall(s) Tested: Effluent Upstream NearField
    Average Daily Flows on Day Sampled(MGD): _____ _____ _____

12. Is your current Standard Operating Procedure (SOP) Manual on file wit Ohio EPA?(Yes/No) Yes. If yes, date submitted: 01/09/96 . If no, a SOP tha follows Ohio EPA and/or U.S. EPA protocols must be submitted as soon a possible in order to eliminate the need to include this information wit every report.

I certify under penalty of law that I have personally examined and a familiar with the information submitted in this document and based on m inquiry of those individuals immediately responsible for obtaining th information, I believe the submitted information is true, accurate an complete. I am aware that there are significant penalties for submittin false information, including the possibility of fine and imprisonment.

_____ Signature

_____ Date

_____ Name(typed or printed)

_____ Title

1258 Greenbrier Street, Charleston, WV 25311-1002 — Tel: (304) 346-0725 Fax: (304) 346-0761
4643 Benson Avenue, Baltimore, MD 21227-1410 — Tel: (410) 247-7400 Fax: (410) 247-7402
4440 Glen Este-Withamsville Road, Suite 900, Cincinnati, OH 45245-1331 — Tel: (513) 752-9696 Fax: (513) 752-2614

OEPA Permit No.: 1I000004*ED

ACUTE TOXICITY TEST SAMPLING DATA

TABLE 1

Sampling Summary for Acute Toxicity Tests

Sampling Location & Description	Sample Collection Beginning MM/DD/Time	Sample Collection Ending MM/DD/Time	Weather/Receiving Stream Conditions
Final Effluent:			
Outfall No.: 1I000004001 Type: Composite Volume Collected: 1 Gal	05/09/11:00	05/10/11:00	
Upstream Station:			
Waterbody: Great Miami River Station No.: Type: Grab Volume Collected: 1 Gal	05/10/11:25		
Downstream Station(Near-field):			
Waterbody: Great Miami River Station No.: 1I000004901 Type: Grab Volume Collected: 1 Gal	05/10/11:35		
Additional Stations(If needed):			
Waterbody: Station No.: Type: Volume Collected:			

OEPA Permit No.: 1I000004*ED

TOXICITY TEST CONDITIONS

TABLE 2

Summary of Toxicity Test Conditions

1. Test Species and Age: Pimephales promelas 27 days old
2. Test Type and Duration: 48 Hour Static Acute Screen
3. Test Dates: 05/10/96 - 05/12/96
4. Test Temperature: 25°C
5. Light Quality: Ambient Laboratory Illumination
6. Photoperiod: 16 hours light, 8 hours darkness
7. Feeding Regime: none
8. Size of Test Vessel: 1.5 L beaker
9. Volume and Depth of Test Solutions: volume=1000 ml depth=9cm
10. No. of Test Organisms per Test Vessel: ten (10)
11. No. of Test Vessels per Test Solution: two (2)
12. Total No. of Test Organisms per Test Solution: twenty (20)
13. Test Concentrations
    (as percent by volume effluent): 100
    Upstream: 100
    Near Field: 100
14. Renewal of Test Solutions: none
15. Dilution and Primary Control Water: Upstream
16. Secondary Control Water: Rearing Unit Water
17. Aeration? Before/During Test: none
18. Endpoints Measured: LC50 and EC50
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternate diluent: NA

OEPA Permit No.: 1I000004*ED

ACUTE TOXICITY TEST RESULTS

TABLE 3

Results of a *Pimephales promelas* 24-Hour Static Acute Toxicity Test Conducted 05/10/96 -05/12/96 Using Effluent from Outfall 1I000004001.

Test Solutions	Cumulative Percent Mortality (Cumulative Percent Mortality)a			
	24-hr	48-hr	72-hr	96-hr
Primary Control/ Dilution Water	0 (0)	0 (0)	( )	( )
Secondary Control	0 (0)	0 (0)	( )	( )
10% Effluent	( )	( )	( )	( )
18% Effluent	( )	( )	( )	( )
32% Effluent	( )	( )	( )	( )
56% Effluent	( )	( )	( )	( )
100% Effluent	0 (0)	0 (0)	( )	( )
Near Field Sample	0 (0)	0 (0)	( )	( )

LC50 Values (EC50) Values

24-hr >100%(>100%)

48-hr >100%(>100%)

72-hr ( )

96-hr ( )

Calculated TUa Value: AA

Method(s) used to Determine LC50, EC50 and Confidence Limit Values:

LC50 95% Confidence Limits (EC50 95% Confidence Limits)

	24-hr	48-hr	72-hr	96-hr
LL(Lower Limit)	( )	( )	( )	( )
UL(Upper Limit)	( )	( )	( )	( )

a = cumulative percent effected is the total percentage of test organisms observed dead, immobile, exhibiting loss of equilibriu or other defined endpoints.

OEPA Permit No.: 1I000004*ED

TOXICITY TEST CONDITIONS

TABLE 4

Summary of Toxicity Test Conditions

1. Test Species and Age: Ceriodaphnia dubia less than 24 hours old
2. Test Type and and Duration: 48 Hour Static Acute Screen
3. Test Dates: 05/10/96 - 05/12/96
4. Test Temperature: 25°C
5. Light Quality: Ambient Laboratory Illumination
6. Photoperiod: 16 hours light, 8 hours darkness
7. Feeding Regime: none
8. Size of Test Vessel: 30 ml cup
9. Volume and Depth of Test Solutions: volume=20 ml depth=2 cm
10. No. of Test Organisms per Test Vessel: four (4)
11. No. of Test Vessels per Test Solution: five (5)
12. Total No. of Test Organisms per Test Solution: twenty (20)
13. Test Concentrations
    (as percent by volume effluent): 100
    Upstream: 100
    Near Field: 100
14. Renewal of Test Solutions: none
15. Dilution and Primary Control Water: Upstream
16. Secondary Control Water: Rearing Unit Water
17. Aeration? Before/During Test: none
18. Endpoints Measured: LC50 and EC50
19. If secondary control water used as diluent due to toxicity in primary control water, indicate number of consecutive tests conducted with alternate diluent: NA

OEPA Permit No.: 1I000004*ED

ACUTE TOXICITY TEST RESULTS

TABLE 5

Results of a *Ceriodaphnia dubia* 24-Hour Static Acute Toxicity Test Conducted 05/10/96 -05/12/96 Using Effluent from Outfall 1I000004001.

Test Solutions	Cumulative Percent Mortality (Cumulative Percent Mortality)a			
	24-hr	48-hr	72-hr	96-hr
Primary Control/ Dilution Water	0 (0)	0 (0)	( )	( )
Secondary Control	0 (0)	0 (0)	( )	( )
10% Effluent	( )	( )	( )	( )
18% Effluent	( )	( )	( )	( )
32% Effluent	( )	( )	( )	( )
56% Effluent	( )	( )	( )	( )
100% Effluent	0 (0)	5 (5)	( )	( )
Near Field Sample	5 (5)	5 (5)	( )	( )

LC50 Values (EC50) Values

24-hr >100% (>100%)

48-hr >100% (>100%)

72-hr ( )

96-hr ( )

Calculated TUa Value: NA

Method(s) used to Determine LC50, EC50 and Confidence Limit Values:

LC50 95% Confidence Limits (EC50 95% Confidence Limits)

	24-hr	48-hr	72-hr	96-hr
LL(Lower Limit)	( )	( )	( )	( )
UL(Upper Limit)	( )	( )	( )	( )

a = cumulative percent effected is the total percentage of test organisms observed dead, immobile, exhibiting loss of equilibriu or other defined endpoints.

OEPA Permit No.:1I000004*ED

ADDITIONAL TOXICITY TEST INFORMATION

1. Limit all raw data and statistical calculations/printouts obtained during test(s). Data must be presented in tabular form and must include all physical and/or chemical measurements recorded during the tests and sampling (e.g. temperature, conductivity, dissolved oxygen, pH, hardness, alkalinity, etc.). See attached

2. Method(s) used to verify near-field and/or far-field sampling locations must be included if instream testing is required. Maps, sketches and/or drawings may be used to show locations.

CONCLUSIONS/COMMENTS

Indicate below any other relevant information that may aid in the evaluation of this report. Include any deviations from your SOP that were necessary for these tests and any recent Standard Reference Toxicant(SRT) results obtained. Do these results agree with previous SRT results? Attach additional pages as needed.

Attached, May Quality Assurance/Quality Control Report. See attached cusum chart for summary of previous QA/QC test results.

ACUTE TOXICITY TEST DATA

FERMCO

EFFLUENT

	Pimephales promelas		*Ceriodaphnia dubia*	
Concentration	% Mortality	% Effected	% Mortality	% Effected
100	0	0	5	5
Upstream Control	0	0	0	0
CT&E Control	0	0	0	0
Near Field	0	0	5	5
	48 LC50 = >100%		48 LC50 = >100%	
	48 EC50 = >100%		48 EC50 = >100%	
	TUa = NA		TUa = NA	

BIOASSAY LABORATORY TEST REPORT

FOR: FERMCO
May 1996 **LAB NO.** OH58868,58870
DATE RECEIVED 05/10/96
SAMPLE DATE: 05/10/96 **TIME:** 11:00 **DATE ANALYZED** 05/10/96

SOURCE: Effluent, Near Field **ANALYST** KH, JB

NOTE: ALL RESULTS EXPRESSED IN MG/L UNLESS OTHERWISE DESIGNATED. < = LESS THAN

NOTE: METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS TO FRESHWATER & MARINE ORGANISMS EPA-600/4-85-013

Source of Dilution Water: Upstream (OH58869)

Test Species: *Ceriodaphnia dubia* **Age:** <24 Hrs **Temperature Range:** 25°C

Type of Test: 48 Hour Static Acute Screen **Test Container:** 30 ml cup

Replications: Two **No. of Organisms per Replications:** Ten

NPDES Permit No: _____ **Beginning: Date** 05/10/96 **Time** 15:30
Ending: Date 05/12/96 **Time** 15:30

Start **Temperature:** 25.0 °C

Effluent %	Upstream Control	2nd Control	100	Near Field			
Hardness	188	182	316	204			
DO	8.18	6.75	7.80	8.18			
pH, std. units	8.10	7.87	8.20	8.12			
Alkalinity	150.9	111.8	215.8	153.1			
Sp.Conductance umhos/cm	377	471	665	412			

24 Hours **Temperature:** 25.3°C

No. Surviving	20 (20)	20 (20)	20 (20)	19 (19)			

48 Hours **Temperature:** 25.4°C

No. Surviving	20 (20)	20 (20)	19 (19)	19 (19)			

Test Results: **48 Hours LC50 = >100%** **TUa = NA**
EC50 = >100% **TUa = NA**

NOTE: Number in parenthesis equals number not adversely effected(EC50).

NOTE: DUE TO FRAGILE STRUCTURE PER DAPHNIA ORGANISMS, DISSOLVED OXYGEN, HARDNESS, ALKALINITY, SP. CONDUCTANCE, & pH READING COULD NOT BE TAKEN AFTER THE ORGANISM HAD BEEN ADDED TO THE SAMPLE. THESE ANALYSES COULD CAUSE INJURY TO THE DAPHNIA ORGANISM.

BIOASSAY LABORATORY TEST REPORT

FOR: FERMCO
May 1996 **LAB NO:** OH58868,58870
DATE RECEIVED: 05/10/96
SAMPLE DATE: 05/10/96 **TIME:** 11:00 **DATE ANALYZED:** 05/10/96

SOURCE: Effluent, NearField **ANALYST:** KH, JB
NOTE: ALL RESULTS EXPRESSED IN MG/L UNLESS OTHERWISE DESIGNATED. <=LESS THAN
NOTE: METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS TO FRESHWATER & MARINE ORGANISMS EPA-600/4-85-013
Source of Dilution Water: Upstream (OH58869)

Test Species: *Pimephales promelas* **Age:** 27 days **Temperature Range:** 25°C

Type of Test: 48 Hr Static Acute Screen **Test Container:** 1500 ml beaker

Replications: Two **No. of Organisms per Replications:** Ten

NPDES Permit No: _____ **Beginning: Date** 05/10/96 **Time** 15:30
Ending: Date 05/12/96 **Time** 15:30

Start **Temperature:** 25.0°C

Effluent %	Upstream Control	2nd Control	100	Near Field			
Hardness	188	182	316	204			
D.O.	8.18	6.75	7.80	8.18			
pH, std units	8.10	7.87	8.20	8.12			
Alkalinity	150.9	111.8	215.8	153.1			
Sp.Conduct., umhos/cm	377	471	665	412			

24 Hours **Temperature:** 24.3°C

No. Surviving	20 (20)	20 (20)	20 (20)	20 (20)			
D.O.	6.96	7.17	7.27	7.09			
pH, std. units	8.24	8.14	8.36	8.27			

48 Hours **Temperature:** 24.3°C

No. Surviving	20 (20)	20 (20)	20 (20)	20 (20)			
D.O.	6.98	7.28	7.11	7.05			
pH, std. units	8.28	8.26	8.44	8.35			

72 Hours

No. Surviving							
D.O.							
pH, std. units							

96 Hours

No. Surviving							
D.O.							
pH, std. units							

TEST RESULTS: **48 Hour LC50 = >100%** **TUa = AA**
48 Hour EC50 = >100% **TUa = AA**

NOTE: Number in parenthesis equals number not adversely effected(EC50).

QUALITY ASSURANCE/QUALITY CONTROL

ACUTE

MAY 1996

BIOASSAY LABORATORY TEST REPORT

FOR: Quality Assurance/Quality Control
May 1996 **LAB NO:**
DATE RECEIVED:
SAMPLE DATE: **TIME:** **DATE ANALYZED:** 05/07/96

SOURCE: Sodium Chloride **ANALYST:** KH, JB

NOTE: ALL RESULTS EXPRESSED IN MG/L UNLESS OTHERWISE DESIGNATED. <=LESS THAN

NOTE: METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS TO FRESHWATER & MARINE ORGANISMS EPA-600/4-85-013

Source of Dilution Water: Rearing Unit Water

Test Species: *Pimephales promelas* **Age:** 12 Days **Temperature Range:** 25°C

Type of Test: 48 Hr Static Acute **Test Container:** 1500 ml beaker

Replications: Two **No. of Organisms per Replications:** Ten

NPDES Permit No: **Beginning: Date** 05/07/96 **Time** 14:30
Ending: Date 05/09/96 **Time** 14:30

Start **Temperature 25.0°C**

Effluent mg/L	Control	8000	9000	10000	11000		
Hardness	186						
D.O.	6.52	6.98	7.07	7.14	7.08		
pH, std units	7.87	7.81	7.78	7.77	7.78		
Alkalinity	96.6				102.1		
Sp.Conduct., umhos/cm	518	13560	15640	17180	18660		

24 Hours **Temperature 24.6°C**

No. Surviving	20	20	20	17	9		
D.O.	6.76	7.10	7.13	7.00	6.74		
pH, std. units	8.02	7.96	7.96	7.93	7.90		

48 Hours **Temperature 24.7°C**

No. Surviving	20	20	20	7	2		
D.O.	7.18	7.07	7.08	6.72	6.65		
pH, std. units	8.17	8.03	7.96	7.89	7.89		

72 Hours

No. Surviving							
D.O.							
pH, std. units							

96 Hours

No. Surviving							
D.O.							
pH, std. units							

TEST RESULTS: 48 Hour LC50 = 9969 mg/L

EPA PROBIT ANALYSIS PROGRAM
USED FOR CALCULATING EC VALUES
Version 1.4

QA/QC May 1996 P. promelas

Conc.	Number Exposed	Number Resp.	Observed Proportion Responding	Adjusted Proportion Responding	Predicted Proportion Responding
8000.0000	20	0	0.0000	0.0000	0.0001
9000.0000	20	0	0.0000	0.0000	0.0436
10000.0000	20	13	0.6500	0.6500	0.5209
11000.0000	20	18	0.9000	0.9000	0.9502

Chi - Square Heterogeneity = 3.281

Mu = 3.998642
Sigma = 0.025962

Parameter	Estimate	Std. Err.	95% Confidence Limits	
Intercept	-149.021484	31.100308	(-209.978088,	-88.064880)
Slope	38.518452	7.775446	(23.278576,	53.758327)

Theoretical Spontaneous Response Rate = 0.0000

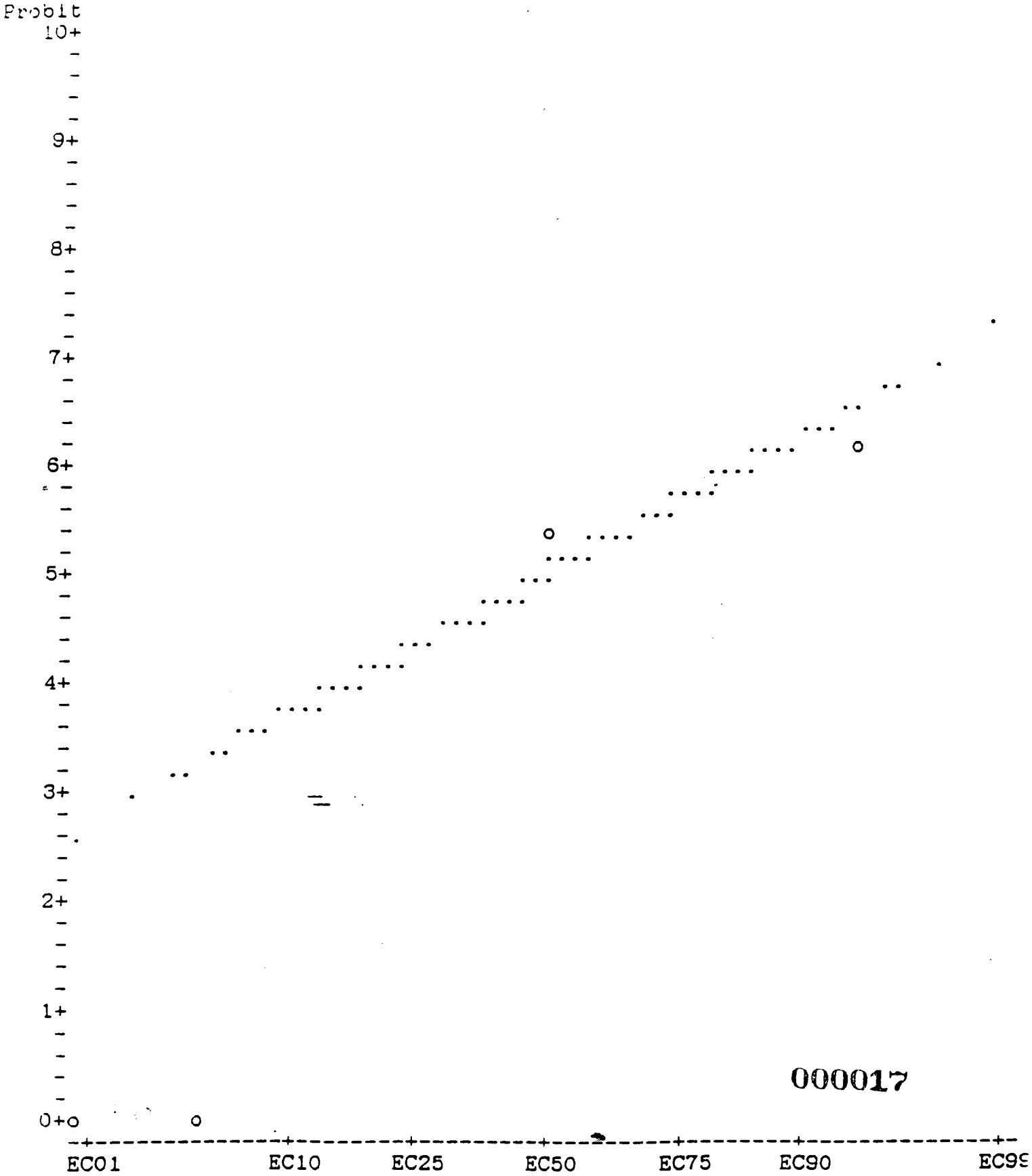
QA/QC May 1996 P. promelas

Estimated EC Values and Confidence Limits

Point	Conc.	Lower 95% Confidence Limits	Upper 95% Confidence Limits
EC 1.00	8674.5596	7863.3945	9079.6592
EC 5.00	9035.1914	8395.1709	9366.9131
EC10.00	9233.5605	8687.7510	9529.7891
EC15.00	9369.8945	8887.0850	9645.5098
EC50.00	9968.7725	9692.4326	10243.6152
EC85.00	10605.9229	10310.7188	11153.1641
EC90.00	10762.5273	10437.5615	11407.2725
EC95.00	10998.8066	10620.6523	11803.0264
EC99.00	11456.0732	10958.2461	12599.4014

QA/QC May 1996 P. promelas

PLOT OF ADJUSTED PROBITS AND PREDICTED REGRESSION LINE



BIOASSAY LABORATORY TEST REPORT

FOR: Quality Assurance/Quality Control
May 1996 **LAB NO.**
DATE RECEIVED
SAMPLE DATE: **TIME:** **DATE ANALYZED** 05/07/96

SOURCE: Sodium Chloride **ANALYST** KH, JB

NOTE: ALL RESULTS EXPRESSED IN MG/L UNLESS OTHERWISE DESIGNATED. < = LESS THA
NOTE: METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS TO FRESHWATER & MARINE ORGANISMS EPA-600/4-85-013

Source of Dilution Water: Rearing Unit Water

Test Species: *Ceriodaphnia dubia* **Age:** <24 Hrs **Temperature Range:** 25°C

Type of Test: 48 Hour Static Acute **Test Container:** 30 ml cup

Replications: Five **No. of Organisms per Replications:** Four

NPDES Permit No: **Beginning: Date** 05/07/96 **Time** 14:30
Ending: Date 05/09/96 **Time** 14:30

Start				Temperature 25.0°C			
Effluent mg/L	Control	1000	2000	3000	4000		
Hardness	186						
DO	6.52	6.94	7.00	6.97	6.95		
pH, std. units	7.87	7.84	7.88	7.86	7.86		
Alkalinity	96.6				98.0		
Sp.Conductance umhos/cm	518	2310	4090	5870	7490		

24 Hours				Temperature 25.6°C			
No. Surviving	20	20	20	10	0		

48 Hours				Temperature 25.5°C			
No. Surviving	20	20	18	5	0		

Test Results: 48 Hours LC50 = 2588 mg/L

NOTE: DUE TO FRAGILE STRUCTURE PER DAPHNIA ORGANISMS, DISSOLVED OXYGEN, HARDNESS, ALKALINITY, SP. CONDUCTANCE, & pH READING COULD NOT BE TAKEN AFTER THE ORGANISM HAD BEEN ADDED TO THE SAMPLE. THESE ANALYSES COULD CAUSE INJURY TO THE DAPHNIA ORGANISM.

EPA PROBIT ANALYSIS PROGRAM
USED FOR CALCULATING EC VALUES
Version 1.4

EPA PROBIT ANALYSIS PROGRAM
USED FOR CALCULATING EC VALUES
Version 1.4

QA/QC May 1996 C. dubia

Conc.	Number Exposed	Number Resp.	Observed Proportion Responding	Adjusted Proportion Responding	Predicted Proportion Responding
1000.0000	20	0	0.0000	0.0000	0.0000
2000.0000	20	2	0.1000	0.1000	0.0892
3000.0000	20	15	0.7500	0.7500	0.7800
4000.0000	20	20	1.0000	1.0000	0.9886

Chi - Square Heterogeneity = 0.366

Mu = 3.412916
Sigma = 0.083134

Parameter	Estimate	Std. Err.	95% Confidence Limits	
Intercept	-36.053223	8.169732	(-52.065895,	-20.040548)
Slope	12.028782	2.383588	(7.356950,	16.700615)

Theoretical Spontaneous Response Rate = 0.0000

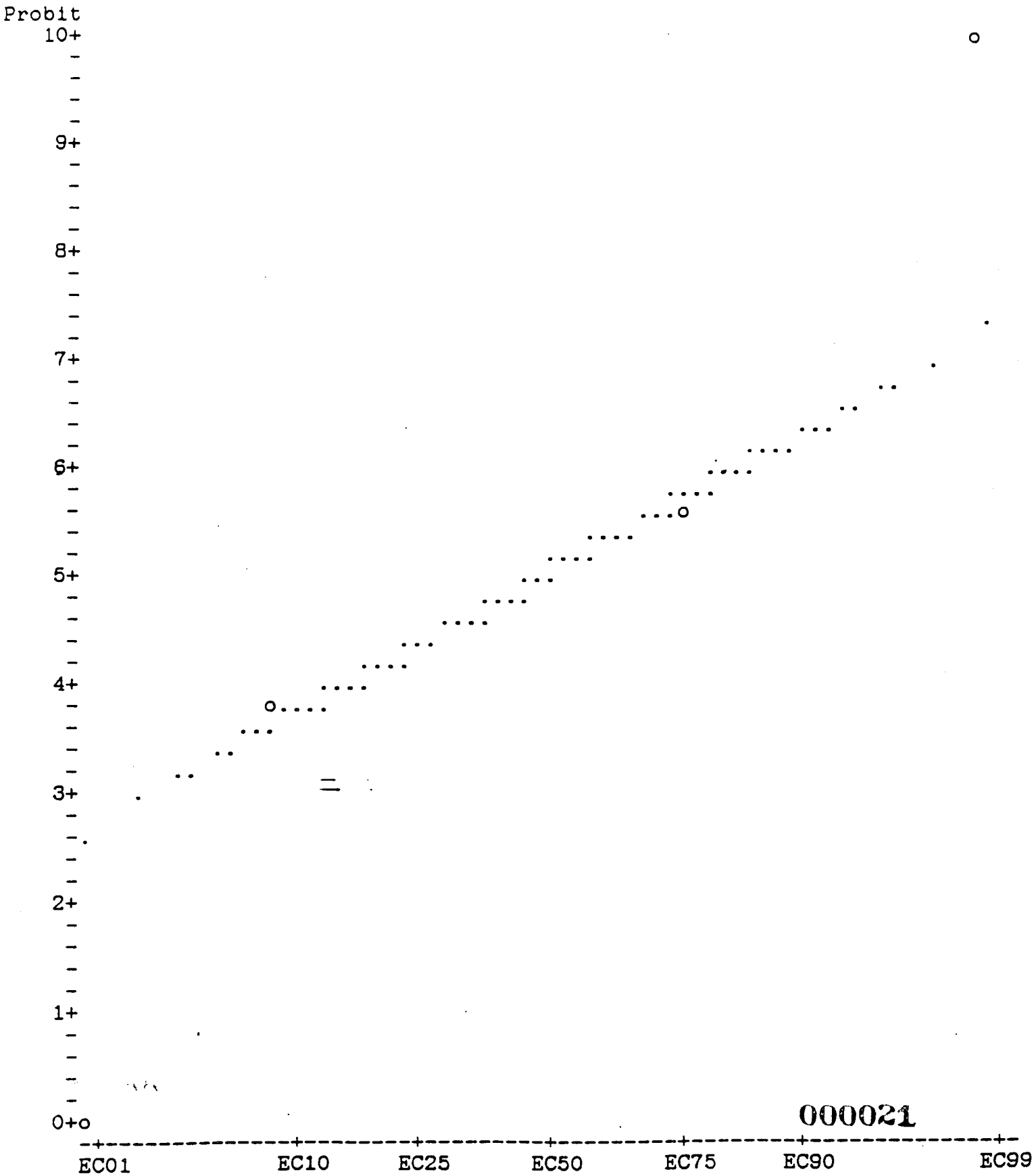
QA/QC May 1996 C. dubia

Estimated EC Values and Confidence Limits

Point	Conc.	Lower 95% Confidence	Upper Limits
EC 1.00	1657.7594	1201.3313	1931.9334
EC 5.00	1888.7253	1477.1409	2136.2571
EC10.00	2024.7502	1646.0393	2258.2456
EC15.00	2122.0520	1768.5709	2347.4707
EC50.00	2587.7119	2337.2505	2834.3164
EC85.00	3155.5576	2876.2747	3674.9814
EC90.00	3307.2014	2996.0012	3940.5317
EC95.00	3545.3823	3173.4495	4382.2812
EC99.00	4039.3416	3516.1333	5377.5874

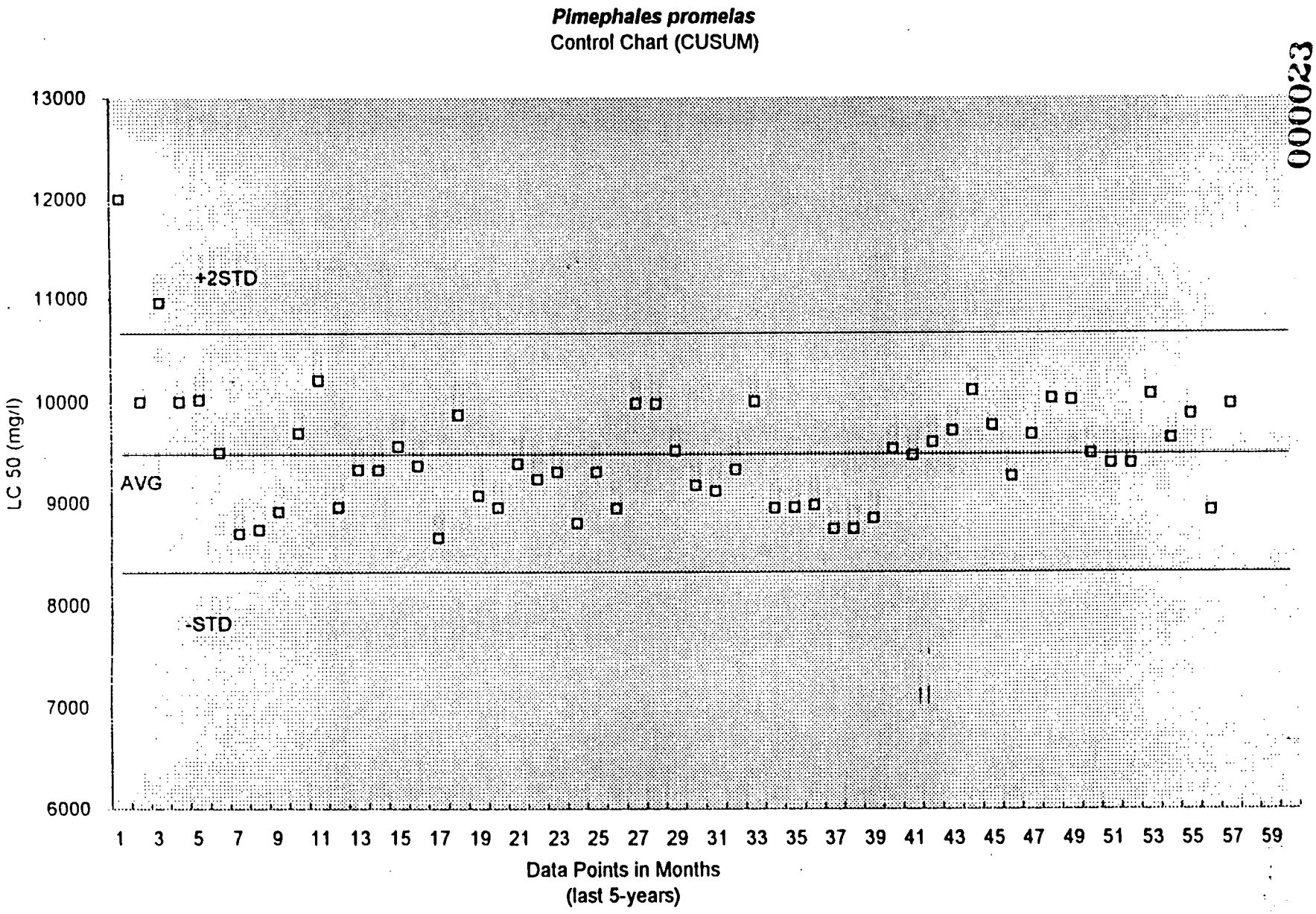
QA/QC May 1996 C. dubia

PLOT OF ADJUSTED PROBITS AND PREDICTED REGRESSION LINE



CONTROL (CUSUM) CHART

May 1996



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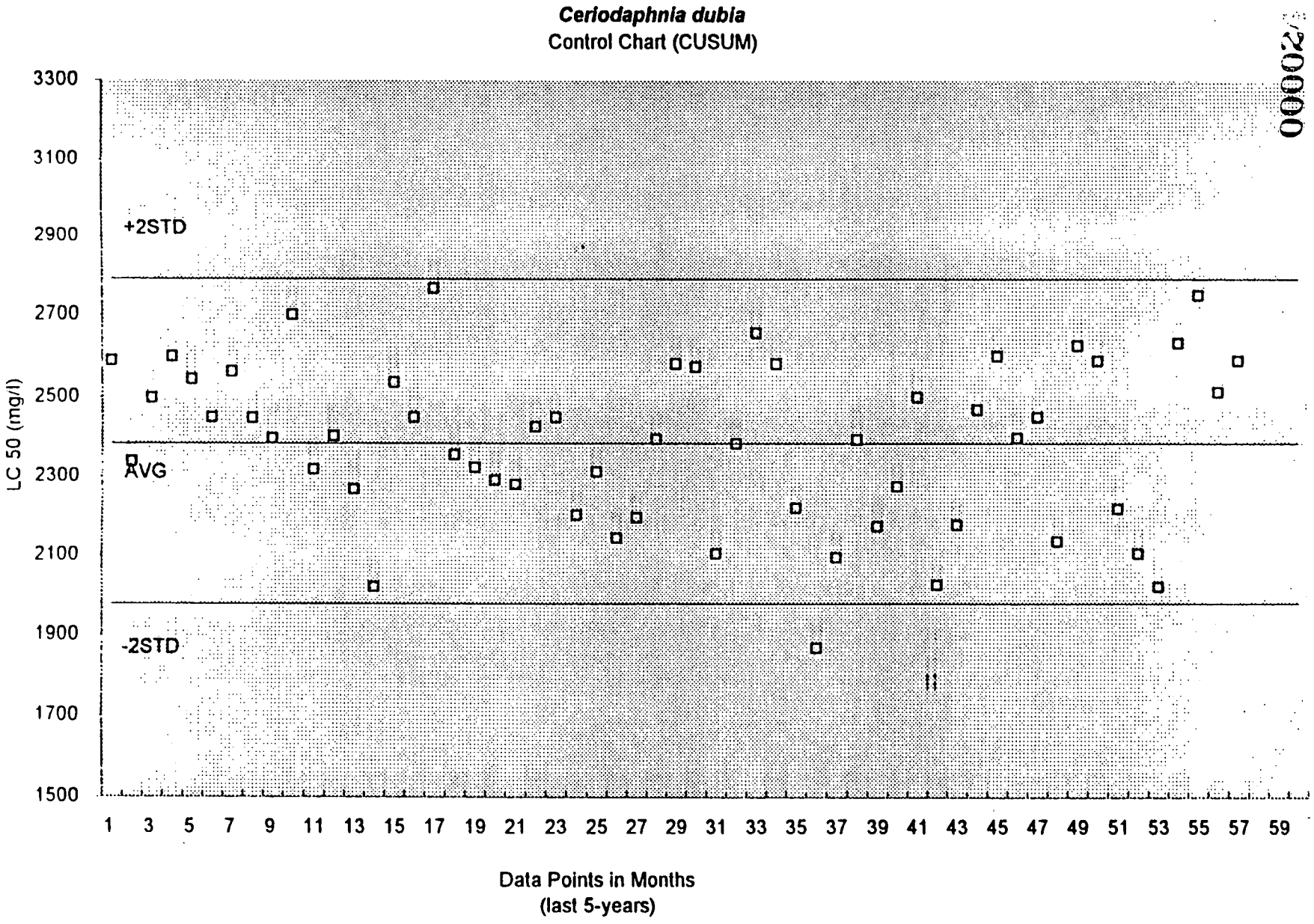
May 1996



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9002 M 9501 900212 4500 7704

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY
Fernald Environmental
Management Project
P.O. Box 538704
Cincinnati, OH 45253-8704

1IO00004001 MAY 1996 1 2 03/24/90 OH0009

4001 PARSHALL FLUME, EFFLUENT TO GREAT MIAMI RI
Hamilton

FORM

	1	1	1	3	2	3	3	2	2	2
	999	999	999	1	998	1	1	998	998	998
	CONDUI FLOW MGD	pH (MIN) S.U.	pH (MAX) S.U.	WATER TEMP. C	TOT.SUSP SOLIDS MG/L	DISS. OXYGEN MG/L	O & G TOTAL MG/L	NITRO NH3-N MG/L	NITRO NO2+NO3 MG/L	FLUOR TOTA MG/
	50050	00402	00401	00010	00530	00300	00550	00610	00630	0095
01	4.369	7.3	8.5	14	7.6					
02	4.186	7.3	7.9	14	5.2	8.8	AA	AA	10.5	0.5
03	3.069	7.5	8.1	16	2.3					
04	3.650	7.5	8.3	16	8.4					
05	3.947	7.4	8.3	16	11.4					
06	3.782	7.4	8.0	16	6.0					
07	3.778	7.4	8.2	16	6.2					
08	2.387	7.4	7.7	16	4.0	9.1	AA	AA	13.2	0.5
09	2.767	7.3	7.5	17	2.0					
10	2.307	7.3	7.7	17	AA					
11	2.786	7.3	7.5	16	AA					
12	2.712	7.3	7.6	16	AA					
13	2.751	7.3	7.6	15	AA					
14	2.712	7.3	7.5	16	AA					
15	3.658	7.0	7.6	16	9.0					
16	4.065	6.9	8.4	15	9.8					
17	4.072	7.2	8.4	15	7.2					
18	4.757	7.3	8.5	16	9.6					
19	3.873	7.2	7.4	17	5.6					
20	3.278	7.3	7.4	15	2.4					
21	2.362	7.3	7.6	15	2.4	8.6	AA	AA	14.0	0.5
22	2.560	7.3	7.5	17	3.2					
23	3.307	7.3	7.5	17	2.0					
24	3.342	7.2	8.4	16	2.8					
25	3.478	7.3	7.4	14	2.0					
26	3.406	7.3	8.4	15	2.0					
27	4.020	7.2	8.4	17	4.0	11.0	AA	AA	8.9	0.4
28	4.316	7.2	7.6	18	4.0					
29	4.069	7.2	7.6	15	3.6					
30	3.634	7.2	7.5	16	AA					
31	3.129	7.2	7.5	16	2.8					
	106.529	N/A	N/A	N/A	137.5	37.5	AA	AA	46.6	2.0
	3.436	N/A	N/A	16	4.8	9.5	AA	AA	11.1	0.5
	4.757	7.5	8.5	18	11.4	11.0	AA	AA	14.0	0.5
	2.307	6.9	7.4	14	AA	8.6	AA	AA	8.9	0.4

AA: 00530 - 2.0 mg/l; 00550 - 5.0 mg/l; 00610 - 0.10 mg/l; 00630 - 0.1 mg/l;
AA: 00951 - 0.01 mg/l.

000025

REPORTER

6/11/96 Mgr. A&WP FERMCO

9002 M 9501 900212

4500

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY
Fernald Environmental
Management Project
P.O. Box 538704
Cincinnati, OH 45253-8704

1IO00004001 MAY 1996 2 2 03/24/90 OH00095

4001 PARSHALL FLUME, EFFLUENT TO GREAT MIAMI RIV
Hamilton

FORM

	2	3	2	2	2
	998	1	998	998	998
	COPPER TOT,REC UG/L	CHROMI HEX-DS UG/L	C-BOD 5 DAY MG/L	TOX ACU-CER TUa	TOX ACU-PI TUa
	01119	01220	80082	61425	61427
01					
02	AA	AA			
03					
04					
05					
06			AA		
07					
08	AA	AA			
09				AA	AA
10					
11					
12					
13			AA		
14					
15					
16					
17					
18					
19					
20			AA		
21	AA	AA			
22					
23					
24					
25					
26					
27	AA	AA	AA		
28					
29					
30					
31					
	AA	AA	AA	N/A	N/A
	AA	AA	AA	N/A	N/A
	AA	AA	AA	N/A	N/A
	AA	AA	AA	N/A	N/A

AA: 01119 - 14.0 ug/l; 01220 - 6.0 ug/l; 80082 - 2.0 mg/l.
AA: 61425 & 61427 - less than 10 % mortality.

000026

REPORTER

Mgr. A&WP FERMCO

·9002·M 9501 900212 4500
MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY 1IO000004002 MAY 1996 1 2 03/24/90 OH00095
Fernald Environmental
Management Project
P.O. Box 538704 4002 SPILLWAY FROM STORMWATER RETENTION BASIN
Cincinnati, OH 45253-8704 Hamilton
FORM

	2 4	3 1	2 4	3 1	2 4	2 4	2 4	2 4	2 4	2 4
	CONDUI FLOW MGD	pH S.U.	TOT.SUSP SOLIDS MG/L	O & G Total MG/L	NITRO NH3-N MG/L	NITRO NO2+NO3 MG/L	PHOS TOTAL MG/L	FLUORI TOTAL MG/L	NICKEL TOT,REC UG/L	SILVI TOT,RI UG/
	50050	00400	00530	00550	00610	00630	00665	00951	01074	0107
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15	2.133	7.8	37	AA	0.23	1.4	0.19	0.40	AA	AA
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
	2.133	N/A	37	AA	0.23	1.4	0.19	0.40	AA	AA
	2.133	N/A	37	AA	0.23	1.4	0.19	0.40	AA	AA
	2.133	7.8	37	AA	0.23	1.4	0.19	0.40	AA	AA
	2.133	7.8	37	AA	0.23	1.4	0.19	0.40	AA	AA

AA: 00530 - 2.0 mg/l; 00550 - 5.0 mg/l; 00610 - 0.10 mg/l; 00630 - 0.1 mg/l.
AA: 00665 - 0.1 mg/l; 00951 - 0.01 mg/l; 01074 - 17.0 ug/l; 01079 - 10.0 ug/
00610, 00630, 00951, 01074, 01079: Result reflects the flow-weighted average
two samples collected from 1430 hrs. on 05/15/96 through 0500 hrs. on 05/16/9

REPORTER

Mgr. A&WP FERMCO

002 M 9501 900212

4500

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY
Fernald Environmental
Management Project
P.O. Box 538704
Cincinnati, OH 45253-8704

1IO00004002 MAY 1996 2 2 03/24/90 OH0009

4002 SPILLWAY FROM STORMWATER RETENTION BASIN
Hamilton

FORM

	2	2	3	2
	4	4	1	4
	CHROMI TOT,REC UG/L	COPPER TOT,REC UG/L	CHROMI HEX-DS UG/L	CHLORINE TOT,RESI MG/L
	01118	01119	01220	50060
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15	AA	18.0	AA	0.01
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
	AA	18.0	AA	0.01
	AA	18.0	AA	0.01
	AA	18.0	AA	0.01
	AA	18.0	AA	0.01

000028

AA: 01118 - 6.0 ug/l; 01119 - 14.0 ug/l; 01220 - 6.0 ug/l; 50060 - 0.1 mg/l.

01118, 01119: Result reflects the flow-weighted average for two samples collected from 1430 hrs. on 05/15/96 through 0500 hrs. on 05/16/96.

REPORTER

Mgr. A&WP FERMCO

9005 M 9009 900212

4500

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY
Fernald Environmental
Management Project
P.O. Box 538704
Cincinnati, OH 45253-8704

1IO000004589 MAY 1996 1 1 03/24/90 OH0009

4589 SEWAGE SLUDGE AFTER PLANT 8 DEWATERING
Hamilton

FORM

3	3	3	3	3	3	3	3
1	1	1	1	1	1	1	1
CADMIUM CD,TOT MG/KG	CHROMI CR,TOT MG/KG	COPPER CU,TOT MG/KG	LEAD PB,TOT MG/KG	NICKEL NI,TOT MG/KG	ZINC ZN,TOT MG/KG	SLUDGE WEIGHT D-TONS	MERCURY HG,TOT MG/KG
01028	01029	01043	01052	01068	01093	70316	71921

01
02
03
04
05
06
07
08
09
10
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23
24
25
26
27
28
29
30
31

NO SLUDGE REMOVED DURING MONTH.

REPORTER

Mgr. A&WP FERMCO

9002 M 9501 900212 **4500**

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY 1IO00004601 MAY 1996 1 1 03/24/90 OH00095
Fernald Environmental
Management Project
P.O. Box 538704 4601 SEWAGE TREATMENT PLANT EFFLUENT
Cincinnati, OH 45253-8704 Hamilton FORM

	1	3	2	2	2	3
	999	1	998	998	998	1
	CONDUI FLOW MGD	pH S.U.	C-BOD 5 DAY MG/L	TOT.SUSP SOLIDS MG/L	AMMONI NH3-N MG/L	FEC CO MF-FCB #/100ML
	50050	00400	80082	00530	00610	31616
01	0.109	7.8	AA	4.2		
02	0.107	7.9			0.29	
03	0.089	7.8				
04	0.056	7.6				
05	0.075	7.8				
06	0.091	7.7	AA	2.4		AA
07	0.075	7.6				
08	0.075	7.5	AA	5.2		
09	0.071	7.4				
10	0.071	7.5				
11	0.148	7.7				
12	0.073	8.0				
13	0.090	8.2	AA	3.2		27
14	0.098	7.7				
15	0.165	7.7	2.4	11.8		
16	0.116	7.6				
17	0.080	7.6				
18	0.067	7.7				
19	0.063	7.7				
20	0.131	7.8	10.5	8.0		AA
21	0.087	7.6			0.14	
22	0.085	7.6				
23	0.081	7.6	AA	6.4		
24	0.082	7.7				
25	0.067	7.7				
26	0.086	7.7				
27	0.121	7.9	AA	3.0		AA
28	0.094	8.0				
29	0.097	7.9	AA	5.2		
30	0.092	7.9				
31	0.085	7.6				
	2.827	N/A	26.9	49.4	0.43	87
	0.091	N/A	3.2	6.0	0.22	22
	0.165	8.2	10.5	11.8	0.29	27
	0.056	7.4	AA	2.4	0.14	AA

AA: 00530 - 2.0 mg/l; 00610 - 0.10 mg/l; 31616 - 20 colonies/100ml.
AA: 80082 - 2.0 mg/l.

000030

REPORTER

Mgr. A&WP FERMCO

9002 M 9501 900212 4500 7704

MONTHLY REPORT FORM

U.S. DEPARTMENT OF ENERGY
Fernald Environmental
Management Project
P.O. Box 538704
Cincinnati, OH 45253-8704

1IO00004901 MAY 1996 1 1 03/24/90 OH0009

4901 DOWNSTREAM MONITORING FOR ACUTE TOXICITY
Hamilton

FORM

3	3
1	1
TOX ACU-CER % Aff	TOX ACU-PI % Aff
61432	61444
AA	AA

AA: NO MORTALITIES OBSERVED.

000031

REPORTER

Mgr. A&WP FERMCO