Florida

Department of Environmental Protection

Bioassays of

Alpha Resins Corporation

Kathleen, Polk County, Florida

NPDES #FL0029653

Sampled 6/7/93

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August 1993

Biology Section
Division of Technical Services

Bioassays of

Alpha Resins Corporation

Kathleen, Polk County, Florida

NPDES #FL0029653

Biology Section
Bureau of Laboratories
August 1993

Introduction

Alpha Resins Corporation, Kathleen, Polk County, Florida, NPDES #FL0029653, tests performed on 8 to 10 June, 1993.

This facility is located on North Galloway Road in Kathleen and manufactures polyester resin. Non-contact, once-through cooling water is sent to a mixing basin where it is combined with cooling tower discharge water. The combined cooling water streams are discharged over a V-notch weir to an unnamed ditch which flows under Galloway Road to a swamp, then to Hidden Lake. The maximum discharge is 0.8 MGD (NPDES file and a facility summary prepared by Michelle Holton, FDEP, Southwest District).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1991, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition (EPA/600/4-90/027).

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays with a sample of effluent from this facility. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi* (formerly *Notropis leedsi*). The test results indicated minimal toxicity (1 death to *C. dubia*). Total residual chlorine and total ammonia were not detected in the sample.

Conclusion

The sample of effluent collected from this facility on 7 June, 1993, showed minimal toxicity (1 death to *C. dubia*).

Table 1. Concentration series and volumes used for the 48-hour static acute screening bioassays of the Alpha Resins Corporation effluent performed on 8 to 10 June, 1993.

Ceriodaphnia dubia (water flea)

Concentration	Dilution Water	Sample	Total Volume
Control	20 mL	0 mL	20 mL
100 %	0 mL	20 mL	20 mL

Cyprinella leedsi (bannerfin shiner, formerly *Notropis leedsi*)

Concentration	Dilution Water	Sample	Total Volume
Control	500 mL	0 mL	500 mL
100 %	0 mL	500 mL	500 mL

Table 2. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Alpha Resins Corporation, Kathleen, Polk County, Florida, NPDES# FL0029653, performed on 8 to 10 June, 1993.

Facility:	**Alpha Resins Corporation**		NPDES #	FL0029653	Facility Type: **Polyester Resin Manufacturer**
Location:	Kathleen		Contact / District:	Pat Fricano/SW	
County:	Polk		Test type:	static acute screen	
Sample Collection Date:	6/7/93	Time: 1030	# tests:	2	Receiving Water: ditch to swamp to Hidden Lake
Test Beginning Date:	6/8/93	Time: 1300	Chlorination Type:	**Non-chlorinated**	
Test Ending Date:	6/10/93	Time: 1300			**Page 1 of 1**

Total Residual Cl2	mg/l	Method
Field:	0.00	-
Lab:	< 0.03	DR-100

Ammonia	Total (mg/l)	Unionized (mg/l)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	< 0.017	0.00

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	120	125
20% Dilute Mineral Water (cladocerans):	75	80
100% Sample:	110	105

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

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours

	SURVIVAL			pH			Temperature			Dissolved Oxygen			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
Control	5	5	5	8.3	-	8.0	24.1	-	24.3	8.8	-	7.9	120	130
Control	5	5	5		-	8.0	-	-	-	-	-	7.9	-	130
Control	5	5	5	-	-	8.0	-	-	-	-	-	7.9	-	135
Control	5	5	5	-	-	8.0	-	-	-	-	-	8.0	-	135
100%	5	5	5	8.2	-	8.3	23.9	-	24.8	8.8	-	7.7	205	215
100%	5	5	5	-	-	8.3	-	-	-	-	-	7.8	-	235
100%	5	5	5	-	-	8.3	-	-	-	-	-	7.8	-	230
100%	5	5	4	-	-	8.3	-	-	-	-	-	7.7	-	230

Organism: ***Cyprinella leedsi*** Age: 10 days

	SURVIVAL			pH			Temperature			Dissolved Oxygen			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
Control	5	5	5	7.8	8.2	8.3	23.5	24.1	24.0	8.5	8.8	7.8	245	260
Control	5	5	5	7.8	8.2	8.3	-	-	-	-	8.8	7.8	245	250
100%	5	5	5	8.2	8.2	8.3	23.9	24.0	24.0	8.8	8.7	7.8	230	240
100%	5	5	5	8.2	8.2	8.3	-	-	-	-	8.7	7.8	230	260

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Alpha Resins Corp.
Location: Alpha Resins
County: Polk
Contact/District: Pat Fricano / SW
NPDES Permit #: FL0029653-001 **Outfall #:** 001
55870 93 JUN 08 07

Sample Collection: Date 6-7-93 Time 10:30 - 11
Test Beginning: Date 6-8-93 Time 1300
Test Ending: Date 6-10-93 Time 1300
Organism Batch #: **Diluent Batch #:** 11
Organism Age: < 24hrs.
Test Organism: Ceriodaphnia Dubia

Test Type: (Screening) | Definitive
(Static) | Static-Renewal | Flow-through

Test Number: 1 of 2

Remarks:

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.4 @ 23.7	985 @ 1,000 9900 @ 10,000 @24.5
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.3 @ 24.0	980 @ 1,000 9890 @ 10,000 @24.4
48 hr	7.0 @ 7.0 9.0 @ 9.0	24.1 @ 24.2	8.4 @ 23.7	980 @ 1,000 9880 @ 10,000 @24.5

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control	A	5	5	5	8.3		8.0	24.1		24.3	8.8		7.9	120		130
Control	B	5	5	5			8.0						7.9			130
Control	C	5	5	5			8.0						7.9			135
Control	D	5	5	5			8.0						8.0			135
100%	A	5	5	5	8.2		8.3	23.9		24.8	8.8		7.7	205		215
100%	B	5	5	5			8.3						7.8			235
100%	C	5	5	5			8.3						7.8			230
100%	D	5	5	4			8.3						7.7			230
Measured/Loaded by:		TR	TM	TR	TM		TM	TM		TM	TM		TM	TM		TM
Recorded by:		TR	TR	TR	TR		TR	TR		TR	TR		TR	TR		TR

Investigators' Signatures

John C. Rader

Tina Mikulski

Marshall Faircloth

Reviewer

form updated 10/20/92

Water Quality Parameters	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			0		KH
Lab Total Residual Cl2:	<0.03	<0.03	<0.03	DR-100	TR
Alkalinity:	120	75	110	Hach	TR
Hardness:	125	80	105	Hach	TR
Total Ammonia:	<0.017	<0.017	<0.017	Orion	MF

Cl_2 Blank: _____ Ammonia Meter Slope: -54.7 Ammonia Blank: <0.017 Sample Salinity: _____ ppt

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Alpha Resins Corp.
Location: Alpha Resins Corp.
County: Polk
Contact/District: Pat Fricano / SW
NPDES Permit #: FL0029653-001 Outfall #: 001
55870 93 Jun 08 07

Sample Collection: Date 6-7-93 Time 1015-11
Test Beginning: Date 6-8-93 Time 1300
Test Ending: Date 6-10-93 Time 1300
Organism Batch #: 24 Diluent Batch #: well
Organism Age: 10 days
Test Organism: Notropis Leedsi

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 2 of 2

Remarks:

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.4 @ 23.7	985 @ 1,000 9900 @ 10,000 @ 24.
24 hr	7.0 @ 7.0 9.0 @ 9.0	24.2 @ 24.3	8.3 @ 24.0	980 @ 1,000 9890 @ 10,000 @ 24.4
48 hr	7.0 @ 7.0 9.0 @ 9.0	24.1 @ 24.2	8.4 @ 23.7	980 @ 1,000 9880 @ 10,000 @ 24.

Conc.	Chamber #	Number Live 0	24	48	pH 0	24	48	Temperature (°C) 0	24	48	D.O. (mg/L) 0	24	48	Cond. (mmhos/cm) / Cond. (µmhos/cm) 0	24	48
Control A	44	5	5	5	7.8	8.2	8.3	23.5	24.1	24.0	8.5	8.8	7.8	245	260	260
Control B	682	5	5	5	7.8	8.2	8.3					8.8	7.8	245	250	250
100% A	11	5	5	5	8.2	8.2	8.3	23.9	24.0	24.0	8.8	8.7	7.8	230	240	240
100% B	65	5	5	5	8.2	8.2	8.3					8.7	7.8	230	255	260
Measured/Loaded by:		TM	TR	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM	TM
Recorded by:		TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR	TR

Investigators' Signatures

Robin C. Rader
Tina Mikeldis
Marshall Faircloth

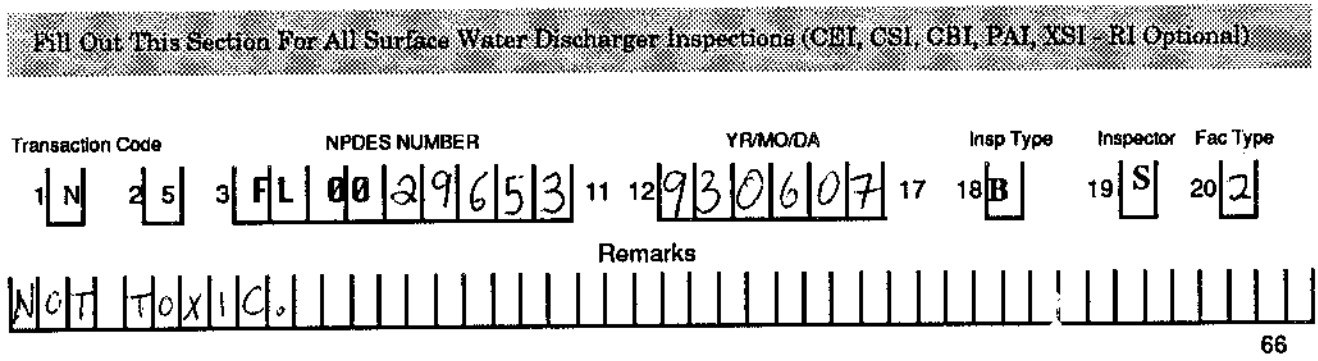
Reviewer

	Salt Water/ Well Water	Water Quality Parameters 20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			0		KH
Lab Total Residual Cl2:	<0.03	<0.07	<0.03	DR-100	TR
Alkalinity:	120	75	110	Hach	TR
Hardness:	125	80	105	Hach	TR
Total Ammonia:	<0.017	<0.017	<0.017	Orion	MF

Cl_2 Blank: ____ Ammonia Meter Slope: -54.7 Ammonia Blank: <0.017 Sample Salinity: ____ ppt

form updated 10/20/92

The Bioassay of the Alpha Resins Corporation effluent sampled on June 7, 1993, NPDES# FL0029653.



The Priority Pollutants Analysis for the Bioassay of the Alpha Resins Corporation effluent sampled on June 7, 1993, NPDES# FL00[illegible]9653.

