Florida
Department of Environmental Protection

Bioassays of

Erly Juice, Inc.

Lakeland, Polk County, Florida

NPDES #FL0001457

Sampled 4/27/93

August 1993

Biology Section
Division of Technical Services

Bioasays of

Erly Juice, Inc.

Lakeland, Polk County, Florida

NPDES #FL0001457

Biology Section
Bureau of Laboratories
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Introduction

Erly Juice, Inc., Lakeland, Polk County, Florida, NPDES #FL0001457, tests performed on 28 to 30 April, 1993.

The facility is located at 4100 Frontage Road South in Lakeland and is a citrus processing plant. Wastewater from the plant is routed to a two-stage, aerated lagoon system, followed by a polishing pond. Lagoon #1 receives medium-strength wastes which have been pre-treated by either shaker screens or a settling basin. Lagoon #2 receives effluent from Lagoon #1 and low-strength wastewater and treated sanitary wastes from a Marolf Unit. The polishing pond receives effluent from Lagoon #2. A maximum of 2.37 MGD of treated wastewater from the polishing pond is discharged to Itchepackesassa Creek, then to Blackwater Creek, and finally to the Hillsborough River (NPDES file).

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 results did not indicate toxicity.

Conclusion

The sample of effluent collected from this facility on 27 April, 1993, did not show toxicity.

Table 1. Concentration series and volumes used for the 48-hour static acute screening bioassays of the Erly Juice, Inc., effluent performed on 28 to 30 April, 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 Erly Juice, Inc., facility, Lakeland, Polk County, Florida, NPDES# FL0001457, performed on 28 to 30 April, 1993.

Facility:	Early Juice, Inc.		NPDES #	FL0001457	Facility Type: Citrus Processing Plant
Location:	Lakeland		Contact / District:	Pat Fricano/SW	
County:	Polk		Test type:	static acute screen	
Sample Collection Date:	4/27/93	Time: 1054	# tests:	2	Receiving Water: Itchepackasassa Creek
Test Beginning Date:	4/28/93	Time: 1300	Chlorination Type:	not chlorinated	
Test Ending Date:	4/30/93	Time: 1300			Page 1 of 1

Total Residual Cl2	mg/l	Method
Field:	not measured	
Lab:	0.08	DR-100

Ammonia	Total (mg/l)	Unionized (mg/l)
Control Water (fish):	< 0.017	0
20% Dilute Mineral Water (cladocerans):	< 0.017	0
100% Sample:	< 0.017	0

Alk & Hardness	Alkalinity (mg/l)	Hardness (mg/l)
Control Water (fish):	120	130
20% Dilute Mineral Water (cladocerans):	65	75
100% Sample:	290	180

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	8.2	-	8.2	23.5	-	24.0	8.5	-	7.9	160	190
Control	5	5	5	-	-	8.2	-	-	-	-	-	7.9	-	180
Control	5	5	5	-	-	8.2	-	-	-	-	-	7.9	-	175
Control	5	5	5	-	-	8.2	-	-	-	-	-	7.9	-	175
100%	5	5	5	8.2	-	8.9	23.6	-	24.1	7.6	-	8.4	720	750
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.4	-	760
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.4	-	760
100%	5	5	5	-	-	8.9	-	-	-	-	-	8.4	-	755

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

	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	7.9	8.1	8.4	22.9	23.1	23.4	8.3	8.5	7.9	240	250
Control	5	5	5	7.9	8.1	8.4	-	-	-	8.3	8.5	8.0	240	245
100%	5	5	5	8.2	8.2	8.4	23.8	23.1	23.5	7.5	6.3	6.0	780	780
100%	5	5	5	8.2	8.2	8.4	-	-	-	7.6	6.3	6.2	785	775

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Early Juice
Location:
County: POLK
Contact/District: Pat Fricano / SW Tampa
NPDES Permit #: FL0001457 Outfall #: 001
93APR28 06 54468

Sample Collection: Date 4/27/93 Time 1054-1127
Test Beginning: Date 4/28/93 Time 1300
Test Ending: Date 4/30/93 Time 1300
Organism Batch #: 18 Diluent Batch #: 7
Organism Age: <24 hrs.
Test Organism: Ceriodaphnia dubia

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

Test Number: 1 of 2

Remarks: greenish yellow effluent.

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	22.8 @ 22.8	8.5 @ 23.3	979 @ 1,000 9870 @ 10,000 (23.8°C)
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.6	8.4 @ 24.3	987 @ 1,000 9970 @ 10,000 (24.3)
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.7	8.5 @ 23.6	985 @ 1,000 9940 @ 10,000 (23.4)

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	5	5	5	8.2		8.2	23.5		24.0	8.5		7.9	160		190
Control	B	5	5	5			8.2						7.9			180
Control	C	5	5	5			8.2						7.9			175
Control	D	5	5	5			8.2						7.9			175
100%	A	5	5	5	8.2		8.9	23.6		24.1	7.6		8.4	720		750
100%	B	5	5	5			8.9						8.4			760
100%	C	5	5	5			8.9						8.4			760
100%	D	5	5	5			8.4						8.4			755
Measured/Loaded by:		MF	MF	TM	MF		MF	MF		MF	MF		MF	MF		TMF
Recorded by:		MF	MF	TM	TM		TM	TM		TM	TM		TM	TM		TM

Investigators' Signatures

Marshall Faircloth
Robin Kaler
Tina Mikulski

Reviewer

form updated 10/20/92

Water Quality Parameters	Salt Water/ Well Water	20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			not measured		
Lab Total Residual Cl2:	<0.03	<0.03	0.08*	DR100	TM
Alkalinity:	120	65	290	Hach	TM
Hardness:	130	75	180	Hach	TM
Total Ammonia:	<0.017	<0.017	<0.017	Orion	JMS

Ammonia Ammonia Sample

Cl2 Blank: _____ Meter Slope: 55.8 Blank: <0.017 Salinity: 0 ppt

* suspected portion of the dark yellow-green sample. MF

DER Biology Section — Acute Bioassay Bench Sheet

Sample Source: Early Juice
Location:
County: POLK
Contact/District: Pat Fricano / SW Tampa
NPDES Permit #: FL0001457 93APR2806 54468
Outfall #: 001

Sample Collection: Date 4/27/93 Time 1054-1127
Test Beginning: Date 4/28/93 Time 13:00
Test Ending: Date 4/29/93 Time 1300
Organism Batch #: 18 Diluent Batch #: well
Organism Age: 10 days
Test Organism: Mysidopsis bahia

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

Test Number: 2 of 2

Remarks: 96 hr static renewal effluent

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
0 hr	7.0 @ 7.0 9.0 @ 9.0	22.8 @ 22.8	8.5 @ 23.3	979 @ 1,000 9870 @ 10,000
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.6	8.4 @ 23.8	987 @ 1,000 9970 @ 10,000
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.6 @ 23.7	8.5 @ 23.6	985 @ 1,000 9940 @ 10,000

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	19	5	5	5	7.9	8.1	8.4	22.9	23.1	23.4	8.3	8.5	7.9	240	240	250
Control	8	5	5	5	7.9	8.1	8.4				8.3	8.5	8.0	240	240	245
100%	10	5	5	5	8.2	8.2	8.4	23.8	23.1	23.5	7.5	6.3	6.0	780	755	780
100%	981	5	5	5	8.2	8.2	8.4				7.6	6.3	6.2	785	765	775
Measured/Loaded by:		TM	MF	TM	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
Recorded by:		MF	MF	TM	TM	TR	TM	TM	TR	TM	TM	TR	TM	TM	TR	TM

Investigators' Signatures

Marshall Faircloth
Robin Rader
Tina Michaloski

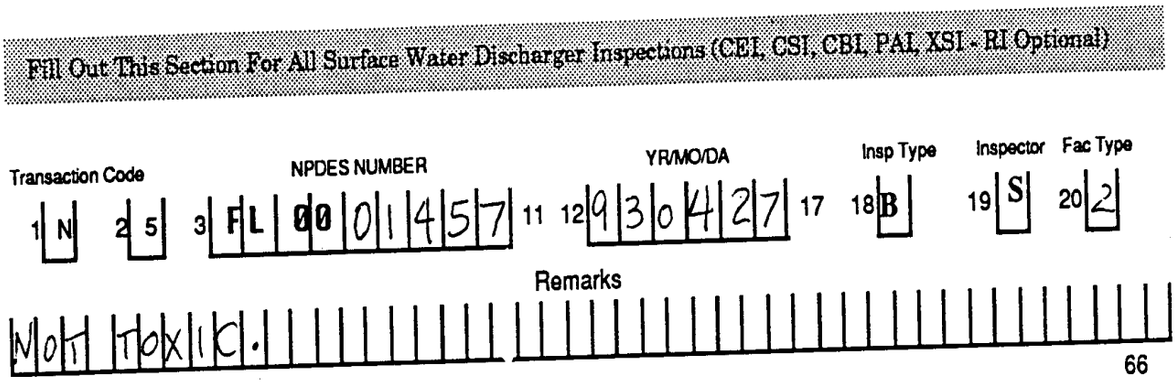
Reviewer

form updated 10/20/92

	Salt Water/ Well Water	Water Quality Parameters: 20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2:			not measured		
Lab Total Residual Cl2:	<0.03	<0.03	0.08	DR/10	TM
Alkalinity:	120	65	290	Hach	TM
Hardness:	130	75	180	Hach	TM
Total Ammonia:	<0.07	<0.07	<0.07	Orion	JMF

Cl_2 Blank: _____ Ammonia Meter Slope: -55.8 Ammonia Blank: <0.07 Sample Salinity: 0 ppt

The Bioassay of Erly Juice, Inc., effluent sampled on April 27, 1993, NPDES #FL0001457.



The Priority Pollutants Analyses for the Bioassay of Erly Juice, Inc., effluent sampled on April 27, 1993, NPDES #FL0001457.

