

Bioassays of

Florida Select Citrus

Groveland, Lake County, Florida

NPDES #FL0002755

Sampled 12/10/01

May 2002

Biology Section
Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

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Bureau of Laboratories
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Introduction

Florida Select Citrus, 305 West Broad Street, Groveland, Lake County, Florida, NPDES #FL0002755, tests performed on 11 to 13 December 2001.

This facility has a design flow of 0.30 MGD and an annual average daily flow of 0.03 MGD. The effluent consists of non-contact cooling water and stormwater runoff. The wastewater receives no treatment before being discharged into wetlands north of the facility that flow into the Class III fresh waters of Lake Catherine (facility information provided by Michael Hall and NPDES files, FDEP, Orlando).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of effluent collected from this facility. The test species used for these bioassays were the waterflea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyrprinella leedsi*. The test results did not indicate toxicity to either test species within 48 hours (Table 1).

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. Further chemical analyses were performed on the sample, and several metals were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on December 10, 2001, did not show acute toxicity to the either test species within 48 hours.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from Florida Select Citrus, 305 West Broad Street, Groveland, Lake County, Florida, NPDES# FL0002755, performed from 11 to 13 December 2001.

Facility:	**Florida Select Citrus**		**NPDES #**	**FL0002755**	Facility Type:	**Industrial**	**Analysts:** Della Parker-Hanson
Location:	305 West Broad Street		Contact/District:	Kane/Central		**Wastewater**	Joshua Ayres
County:	Lake		Test type:	static acute screen		**Treatment Plant**	Gary Hardie
Sample Collection Date:	12/10/01	Time: 0850	# tests:	2	Receiving Water:	Wetlands to Lake Catherine	Marshall Faircloth
Test Beginning Date:	12/11/01	Time: 1500	Chlorination Type:	non-chlorinated			
Test Ending Date:	12/13/01	Time: 1540				**Page 1 of 1**	**Reviewer:** David Whiting

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

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	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 A	0/20	5	5	5	8.3	-	8.3	24.2	-	23.8	7.9	-	7.6	175	180
Control B	0/20	5	5	5	-	-	8.3	-	-	23.7	-	-	7.6	-	180
Control C	0/20	5	5	5	-	-	8.3	-	-	23.6	-	-	7.7	-	180
Control D	0/20	5	5	5	-	-	8.3	-	-	23.5	-	-	7.7	-	180
100% A	20/0	5	5	5	8.2	-	8.7	24.4	-	24.0	6.7	-	7.9	305	304
100% B	20/0	5	5	5	-	-	8.7	-	-	23.9	-	-	8.0	-	310
100% C	20/0	5	5	5	-	-	8.7	-	-	23.7	-	-	8.0	-	315
100% D	20/0	5	5	5	-	-	8.7	-	-	23.7	-	-	7.9	-	320

[A] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-26.0 °C.
Incubator #2 temperature range for the test period was 25.0-27.0°C.

Organism: ***Cyprinella leedsi*** Life stage: 15 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	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 A	0/500	5	5	5	8.0	8.3	8.5	24.2	25.9	24.8	7.6	6.8	7.0	250	280
Control B	0/500	5	5	5	8.0	8.3	8.5	24.4	25.5	24.9	7.5	6.8	7.1	260	290
Control C	0/500	5	5	5	8.0	8.3	8.5	24.4	25.5	24.7	7.5	7.0	7.1	265	290
Cotnrol D	0/500	5	5	5	8.1	8.3	8.5	24.2	25.1	24.6	7.5	6.9	7.2	265	290
100% A	500/0	5	5	5	8.2	8.3	8.3	24.4	25.2	24.5	6.4	6.7	7.2	315	335
100% B	500/0	5	5	5	8.2	8.3	8.3	24.6	25.6	24.5	6.4	6.7	7.1	320	330
100 % C	500/0	5	5	5	8.2	8.3	8.3	24.7	25.5	24.7	6.2	6.6	7.0	320	335
100% D	500/0	5	5	5	8.2	8.3	8.3	24.6	25.1	24.7	6.4	6.6	7.0	320	340

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 24.0-26.0°C.
Incubator #3 temperature range for the test period was 24.0-26.0°C.

LIMS	
Job number:	TLH-2001-12-11-38
sample number:	566255

Data Transcription Verification	
date:	2/18/02
by:	Karla Whiddon
	Della Parker-Hanson

Total Residual CL2	mg/L	Method
Field:	-	-
Lab:	<0.03	Hach

Ammonia	Total (mg/L)	Unionized (mg/L)
Control water (fish):	<0.017	<0.017
Control water (water flea):	<0.017	<0.017
100% Sample:	<0.017	<0.017

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control water (fish):	141	132
Control water (water flea):	76	78
100% Sample:	141	150

Table 2. Results of chemical analyses on the effluent from Florida Select Citrus sampled on December 10, 2001.

Metals

Calcium	50.4	mg/L	A
Copper	1.3	µg/L	I
Iron	47	µg/L	I
Magnesium	4.9	mg/L	A
Zinc	20	µg/L	

Pesticides and Herbicides

None detected

Base, Neutral, & Acid Extractable Organics

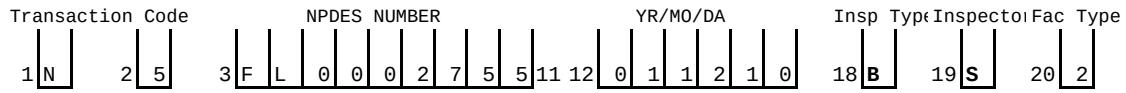
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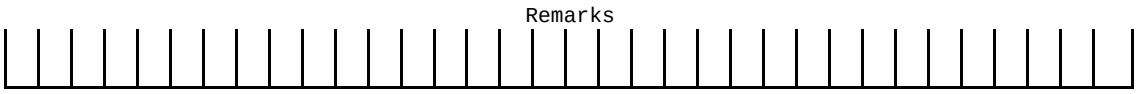
[A] Value reported is the mean of two or more determinations.

[I] The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

The Bioassay of Florida Select Citrus effluent sampled on December 10, 2001, NPDES #FL0002755.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, X

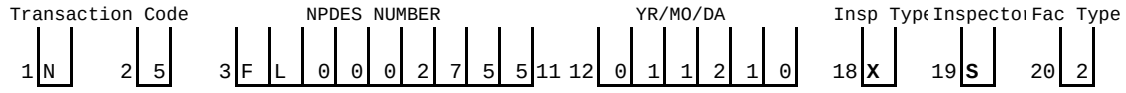


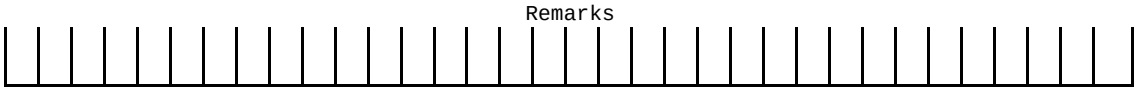


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The Priority Pollutants Analysis for Bioassay of Florida Select Citrus effluent sampled on December 10, 2001, NPDES #FL0002755.

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