

Bioassays of

Crystal International, Inc.

Plant City, Hillsborough County, Florida

NPDES #FL0037389

Sampled 1/27/03

April 2003

Biology Section

Division of Resource Assessment & Management

Comprehensive Quality Assurance Plan #870346G

Bioassays of

Crystal International, Inc.

Plant City, Hillsborough County, Florida

NPDES #FL0037389

Biology Section
Bureau of Laboratories
April 2003

Crystal International, Inc., 1111 West Haines Street, Plant City, Hillsborough County, Florida, NPDES #FL0037389, tests performed on 28 to 30 January 2003.

Introduction

This fruit crystal manufacturer has an average daily flow of 2.2MGD (January-December, 2002). The freeze-drying dehydration process utilizes barometric-condenser-induced vacuums. Non-contaminated cooling water from the two barometric towers is discharged with stormwater run-off into the Westside Canal, which flows into the Class III freshwaters of Pemberton Creek (facility information provided by, Andrea Grainger FDEP, Tampa).

Methods

Samples were collected by Andrea Grainger following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOP's are available on the web at: http://www.floridadep.org/labs/qa/sops.htm

The toxicity tests discussed in this report were performed following internal DEP SOP's TA07-01 and TA07-02. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

Toxicity Test Results

Ceriodaphnia dubia 48-hr acute screen – Not Toxic
Cyprinella leedsi 48-hr acute screen – Not Toxic

See Table 1 for bioassay bench sheets.

Chemistry Results

Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory.

See Table 2 for chemicals detected in the analytical chemistry samples.
See Table 3 for a complete list of chemical analyses performed.

Conclusion

The sample of effluent collected from this facility on January 27, 2003, did not show acute toxicity to either test species during the 48-hour bioassay tests.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from Crystal International, Inc., 1111 West Haines Street, Plant City, Hillsborough County, Florida, NPDES# FL0037389, performed from 28 to 30 January 2003.

Facility:	**Crystal International, Inc.**	**NPDES #:**	**FL0037389**	Facility Type:	**fruit crystal**	**Analysts:**	Jacquelyn Brynda
Location:	1111 West Haines Street, Plant City	Contact/District:	Grainger/SW		**manufacturer**		Christa Pierini
County:	Hillsborough	Test type:	static acute screen				Marshall Faircloth
Sample Collection Date:	1/27/2003 Time: 1010	# tests:	2	Receiving Water:	Pemberton Creek		
Test Beginning Date:	1/28/2003 Time: 1530	Chlorination Type:	non-chlorinated		Class III Fresh		
Test Ending Date:	1/30/2003 Time: 1300	FDEP SOP#:	TA07_01, TA07_02		**Page 1 of 1**	**Reviewer:**	David Whiting

Organism: ***Ceriodaphnia dubia*** Life stage: <24 hours [A]Feeding: YCT, Algae

Chamber size: 30mL Food Batch #'s: 5 , 10

	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	0/20	5	5	5	8.2	-	8.0	25.0	-	25.2	7.9	-	7.4	186	215
Control B	0/20	5	5	5	-	-	8.1	-	-	25.2	-	-	7.4	-	215
Control C	0/20	5	5	5	-	-	8.2	-	-	24.6	-	-	7.4	-	225
Control D	0/20	5	5	5	-	-	8.1	-	-	24.6	-	-	7.4	-	200
100% A	20/0	5	5	5	8.0	-	8.5	24.6	-	25.5	8.0	-	7.3	359	390
100% B	20/0	5	5	5	-	-	8.5	-	-	25.2	-	-	7.3	-	420
100% C	20/0	5	5	5	-	-	8.5	-	-	25.0	-	-	7.4	-	415
100% D	20/0	5	5	5	-	-	8.5	-	-	24.9	-	-	7.4	-	400

[A] Organisms fed prior to testing.

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 23.0-25.5°C.
Incubator #3 temperature range for the test period was 24.5-25.0°C.

Organism: ***Cyprinella leedsi*** Life stage: 10 days [C]Feeding: artemia

Chamber size: 1L Food Batch #: 01940425G

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[D]			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	8.0	8.4	24.0	25.2	26.6	8.0	7.1	6.9	263	280
Control B	0/500	5	5	5	8.0	8.0	8.4	24.0	25.8	25.3	8.0	7.2	7.3	254	285
Control C	0/500	5	5	5	7.9	8.1	8.4	24.1	26.1	25.1	8.0	7.2	7.2	261	285
Control D	0/500	5	5	5	7.9	8.1	8.4	24.0	25.9	25.5	8.0	7.1	7.2	256	285
100% A	500/0	5	5	5	8.0	8.3	8.5	24.1	25.8	25.6	8.1	7.2	7.3	352	400
100% B	500/0	5	5	5	8.0	8.3	8.5	24.2	25.5	25.3	8.1	7.2	7.2	358	395
100 % C	500/0	5	5	5	8.0	8.3	8.5	24.4	25.5	25.9	8.2	7.1	7.1	357	400
100% D	500/0	5	5	5	8.1	8.3	8.5	24.4	25.8	26.0	7.9	7.1	7.2	354	405

[C] Organisms fed prior to testing.

[D] Temperatures of room and test incubator were continuously recorded on a strip chart recorder.
Room Temperature range for the test period was 23.0-25.5°C.
Incubator #3 temperature range for the test period was 24.5-25.0°C.

LIMS	
Job number:	TLH-2003-01-28-03
sample number:	649544

Data Transcription Verification	
date:	3/7/2003
by:	Christa Pierini
	James Daniels

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):	139	147
Control water (water flea):	80	86
100% Sample:	178	180

Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light : 8 hours of dark.

Table 2. Results of chemical analyses on the effluent from Crystal International, Inc., sampled on January 27, 2003.

Metals

Calcium	55.1	mg/L	A
Chromium	3.3	ug/L	I
Copper	0.75	ug/L	I
Iron	51	ug/L	A
Magnesium	10.1	mg/L	A

Pesticides and Herbicides

None detected

Nutrients

Ammonia-N	0.189	mg N/L	
Total Kjeldahl Nitrogen	0.24	mg N/L	I
Ortho-Phosphate	0.042	mg P/L	
Total Phosphorous	0.048	mg P/L	

Base, Neutral, & Acid Extractable Organics

None detected

[A] The reported value is an average of two or more values.
[I] The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Table 3. Chemical Analyses performed on the effluent from Crystal International, Inc., sampled on January 27, 2003.

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
1/27/2003 10:10	28196	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	1,2,4-Trichlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	1,2-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	1,3,5-Trinitrobenzene	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	1,3-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	1,4-Dichlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	1,4-Naphthoquinone	19	ug/L	UJ	19	75
1/27/2003 10:10	28196	BNA-Water	1-Naphthylamine	9.4	ug/L	U	9.4	38
1/27/2003 10:10	28196	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	2,4,5-Trichlorophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2,4,6-Trichlorophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2,4-Dichlorophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2,4-Dimethylphenol	47	ug/L	U	47	190
1/27/2003 10:10	28196	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
1/27/2003 10:10	28196	BNA-Water	2,4-Dinitrotoluene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2,6-Dichlorophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2,6-Dinitrotoluene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Acetylaminofluorene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Chloronaphthalene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Chlorophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Methyl-4,6-dinitrophenol	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	2-Methylnaphthalene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Naphthylamine	9.4	ug/L	U	9.4	38
1/27/2003 10:10	28196	BNA-Water	2-Nitroaniline	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Nitrophenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	2-Picoline	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
1/27/2003 10:10	28196	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	U	19	75
1/27/2003 10:10	28196	BNA-Water	3-Methylcholanthrene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	3-Nitroaniline	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7

1/27/2003 10:10	28196	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	4-Aminobiphenyl	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	4-Bromophenyl phenyl ether	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	4-Chloro-3-methylphenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	4-Chloroaniline	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	4-Nitroaniline	0.94	ug/L	UJ	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
1/27/2003 10:10	28196	BNA-Water	5-Nitro-o-toluidine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Acenaphthene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Acenaphthylene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Acetophenone	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Aniline	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Anthracene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzidine	94	ug/L	U	94	380
1/27/2003 10:10	28196	BNA-Water	Benzo(a)anthracene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzo(a)pyrene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzo(b)fluoranthene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzo(g,h,i)perylene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzo(k)fluoranthene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Benzyl alcohol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Bis(2-chloroethoxy)methane	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Bis(2-chloroethyl)ether	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Bis(2-chloroisopropyl)ether	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
1/27/2003 10:10	28196	BNA-Water	Butyl benzyl phthalate	4.7	ug/L	U	4.7	19
1/27/2003 10:10	28196	BNA-Water	Chrysene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Di-n-butyl phthalate	4.7	ug/L	U	4.7	19
1/27/2003 10:10	28196	BNA-Water	Di-n-octyl phthalate	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Dibenzo(a,h)anthracene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Dibenzofuran	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Diethyl phthalate	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Dimethyl phthalate	47	ug/L	U	47	190

1/27/2003 10:10	28196	BNA-Water	Dimethylaminoazobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Dinoseb	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	Diphenylamine	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	Ethyl methanesulfonate	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Fluoranthene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Fluorene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	Hexachlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Hexachlorobutadiene	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Hexachlorocyclopentadiene	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Hexachloroethane	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Hexachloropropene	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	Indeno(1,2,3-cd)pyrene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Isophorone	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Isosafrole	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Methapyrilene	3.8	ug/L	UJ	3.8	15
1/27/2003 10:10	28196	BNA-Water	Methyl methanesulfonate	0.94	ug/L	UJ	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	N-Nitrosodi-n-butylamine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	N-Nitrosodiethylamine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	N-Nitrosodiphenylamine	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	N-Nitrosomorpholine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	N-Nitrosopiperidine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	Naphthalene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	U	19	75
1/27/2003 10:10	28196	BNA-Water	Pentachlorobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Pentachloroethane	47	ug/L	U	47	190

1/27/2003 10:10	28196	BNA-Water	Pentachloronitrobenzene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Pentachlorophenol	2.8	ug/L	U	2.8	11
1/27/2003 10:10	28196	BNA-Water	Phenacetin	3.8	ug/L	U	3.8	11
1/27/2003 10:10	28196	BNA-Water	Phenanthrene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Phenol	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Pyrene	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	Pyridine	3.8	ug/L	U	3.8	15
1/27/2003 10:10	28196	BNA-Water	Safrole	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:10	28196	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.5
1/27/2003 10:10	28196	BNA-Water	o-Toluidine	0.94	ug/L	U	0.94	3.8
1/27/2003 10:10	28196	Bio-AGP/LimNut	Algal Growth Potential	1.24	mg DryWt/I	J	0.1	0.3
1/27/2003 10:10	28196	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
1/27/2003 10:10	28196	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	0.85	ug/L	U	0.85	2.6
1/27/2003 10:10	28196	Bio-Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC5(	100	LC50	L		
1/27/2003 10:10	28196	Bio-Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	LC50	L		
1/27/2003 10:10	28196	GC-Water	Alachlor	0.57	ug/L	U	0.57	2.28
1/27/2003 10:10	28196	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
1/27/2003 10:10	28196	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
1/27/2003 10:10	28196	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Chlorpyrifos Methyl	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Diazinon	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Ethoprop	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
1/27/2003 10:10	28196	GC-Water	Fonofos	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Hexazinone	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
1/27/2003 10:10	28196	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
1/27/2003 10:10	28196	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92

1/27/2003 10:10	28196	GC-Water	Metribuzin	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
1/27/2003 10:10	28196	GC-Water	Naled	0.76	ug/L	U	0.76	3.04
1/27/2003 10:10	28196	GC-Water	Norflurazon	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
1/27/2003 10:10	28196	GC-Water	Parathion Methyl	0.095	ug/L	U	0.095	0.38
1/27/2003 10:10	28196	GC-Water	Phorate	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	GC-Water	Prometryn	0.14	ug/L	U	0.14	0.56
1/27/2003 10:10	28196	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
1/27/2003 10:10	28196	Metals-Water	Aluminum	20	ug/L	U	10	40
1/27/2003 10:10	28196	Metals-Water	Arsenic	10	ug/L	U	3	12
1/27/2003 10:10	28196	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
1/27/2003 10:10	28196	Metals-Water	Calcium	55.1	mg/L	A	0.05	0.2
1/27/2003 10:10	28196	Metals-Water	Chromium	3.3	ug/L	I	2	8
1/27/2003 10:10	28196	Metals-Water	Copper	0.75	ug/L	I	0.75	3
1/27/2003 10:10	28196	Metals-Water	Iron	51	ug/L	A	7	28
1/27/2003 10:10	28196	Metals-Water	Lead	0.1	ug/L	U	0.1	0.4
1/27/2003 10:10	28196	Metals-Water	Magnesium	10.1	mg/L	A	0.01	0.04
1/27/2003 10:10	28196	Metals-Water	Nickel	2	ug/L	U	2	8
1/27/2003 10:10	28196	Metals-Water	Selenium	1	ug/L	U	1	4
1/27/2003 10:10	28196	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
1/27/2003 10:10	28196	Metals-Water	Zinc	4	ug/L	U	4	16
1/27/2003 10:10	28196	Nutrients-Liquid	Ammonia-N	0.2	mg N/L		0.01	0.02
1/27/2003 10:10	28196	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
1/27/2003 10:10	28196	Nutrients-Liquid	N_KJEL_TOT	0.24	mg N/L	I	0.06	0.4
1/27/2003 10:10	28196	Nutrients-Liquid	O-Phosphate-P	0.042	mg P/L		0.004	0.01
1/27/2003 10:10	28196	Nutrients-Liquid	Total-P	0.048	mg P/L		0.015	0.04
1/27/2003 10:30	28197	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	1,2,4-Trichlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	1,2-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	1,3,5-Trinitrobenzene	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	1,3-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	1,3-Dinitrobenzene	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	1,4-Dichlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	1,4-Naphthoquinone	19	ug/L	UJ	19	76
1/27/2003 10:30	28197	BNA-Water	1-Naphthylamine	9.5	ug/L	U	9.5	38
1/27/2003 10:30	28197	BNA-Water	2,3,4,6-Tetrachlorophenol	1.9	ug/L	U	1.9	7.6

1/27/2003 10:30	28197	BNA-Water	2,4,5-Trichlorophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2,4,6-Trichlorophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2,4-Dichlorophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2,4-Dimethylphenol	48	ug/L	U	48	190
1/27/2003 10:30	28197	BNA-Water	2,4-Dinitrophenol	14	ug/L	U	14	57
1/27/2003 10:30	28197	BNA-Water	2,4-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2,6-Dichlorophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2,6-Dinitrotoluene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Acetylaminofluorene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Chloronaphthalene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Chlorophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	2-Methylnaphthalene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Naphthylamine	9.5	ug/L	U	9.5	38
1/27/2003 10:30	28197	BNA-Water	2-Nitroaniline	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Nitrophenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	2-Picoline	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	3,3'-Dichlorobenzidine	38	ug/L	U	38	150
1/27/2003 10:30	28197	BNA-Water	3,3'-Dimethylbenzidine	19	ug/L	U	19	76
1/27/2003 10:30	28197	BNA-Water	3-Methylcholanthrene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	3-Nitroaniline	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	4,4'-DDD	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	4,4'-DDE	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	4,4'-DDT	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	4-Aminobiphenyl	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	4-Bromophenyl phenyl ether	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	4-Chloro-3-methylphenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	4-Chloroaniline	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	4-Chlorophenyl phenyl ether	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	4-Nitroaniline	0.95	ug/L	UJ	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	4-Nitrophenol	14	ug/L	U	14	57
1/27/2003 10:30	28197	BNA-Water	5-Nitro-o-toluidine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Acenaphthene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Acenaphthylene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Acetophenone	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Aldrin	1.4	ug/L	U	1.4	5.7

1/27/2003 10:30	28197	BNA-Water	Aniline	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Anthracene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzidine	95	ug/L	U	95	380
1/27/2003 10:30	28197	BNA-Water	Benzo(a)anthracene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzo(a)pyrene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzo(b)fluoranthene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzo(g,h,i)perylene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzo(k)fluoranthene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Benzyl alcohol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Bis(2-chloroethoxy)methane	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Bis(2-chloroethyl)ether	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Bis(2-ethylhexyl)phthalate	14	ug/L	U	14	57
1/27/2003 10:30	28197	BNA-Water	Butyl benzyl phthalate	4.8	ug/L	U	4.8	19
1/27/2003 10:30	28197	BNA-Water	Chrysene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Di-n-butyl phthalate	4.8	ug/L	U	4.8	19
1/27/2003 10:30	28197	BNA-Water	Di-n-octyl phthalate	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Dibenzo(a,h)anthracene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Dibenzofuran	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Dieldrin	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	Diethyl phthalate	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Dimethyl phthalate	48	ug/L	U	48	190
1/27/2003 10:30	28197	BNA-Water	Dimethylaminoazobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Dinoseb	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Endosulfan I	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	Endosulfan II	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	Endosulfan sulfate	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	Endrin	1.4	ug/L	UJ	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	Endrin aldehyde	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	Ethyl methanesulfonate	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Fluoranthene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Fluorene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Heptachlor	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	Heptachlor epoxide	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	Hexachlorobenzene	0.95	ug/L	U	0.95	3.8

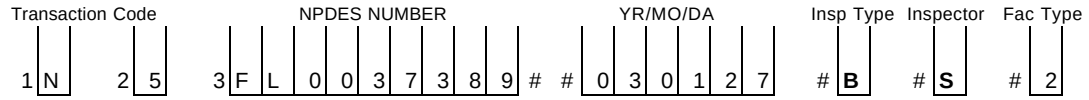
1/27/2003 10:30	28197	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Hexachloropropene	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	Indeno(1,2,3-cd)pyrene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Isophorone	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Isosafrole	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Methapyrilene	3.8	ug/L	UJ	3.8	15
1/27/2003 10:30	28197	BNA-Water	Methyl methanesulfonate	0.95	ug/L	UJ	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	N-Nitrosodi-n-butylamine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	N-Nitrosodi-n-propylamine	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	N-Nitrosodiethylamine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	N-Nitrosodimethylamine	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	N-Nitrosomethylethylamine	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	N-Nitrosomorpholine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	N-Nitrosopiperidine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	N-Nitrosopyrrolidine	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	Naphthalene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Nitrobenzene	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	Nitroquinoline-1-oxide	19	ug/L	U	19	76
1/27/2003 10:30	28197	BNA-Water	Pentachlorobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Pentachloroethane	48	ug/L	U	48	190
1/27/2003 10:30	28197	BNA-Water	Pentachloronitrobenzene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	11
1/27/2003 10:30	28197	BNA-Water	Phenacetin	3.8	ug/L	U	3.8	11
1/27/2003 10:30	28197	BNA-Water	Phenanthrene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Phenol	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Pyrene	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	Pyridine	3.8	ug/L	U	3.8	15
1/27/2003 10:30	28197	BNA-Water	Safrole	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	BNA-Water	alpha-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	beta-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	delta-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	gamma-BHC	1.4	ug/L	U	1.4	5.7
1/27/2003 10:30	28197	BNA-Water	m,p-Cresols	1.9	ug/L	U	1.9	7.6
1/27/2003 10:30	28197	BNA-Water	o-Cresol	1.9	ug/L	U	1.9	7.6

1/27/2003 10:30	28197	BNA-Water	o-Toluidine	0.95	ug/L	U	0.95	3.8
1/27/2003 10:30	28197	GC-Water	Alachlor	0.66	ug/L	U	0.66	2.64
1/27/2003 10:30	28197	GC-Water	Ametryn	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Atrazine	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Azinphos Methyl	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Bromacil	0.22	ug/L	U	0.22	0.88
1/27/2003 10:30	28197	GC-Water	Butylate	0.22	ug/L	U	0.22	0.88
1/27/2003 10:30	28197	GC-Water	Chlorpyrifos Ethyl	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Chlorpyrifos Methyl	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Diazinon	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Ethion	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Ethoprop	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Fenamiphos	0.22	ug/L	U	0.22	0.88
1/27/2003 10:30	28197	GC-Water	Fonofos	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Hexazinone	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Malathion	0.16	ug/L	U	0.16	0.64
1/27/2003 10:30	28197	GC-Water	Metalaxyl	0.27	ug/L	U	0.27	1.08
1/27/2003 10:30	28197	GC-Water	Metolachlor	0.55	ug/L	U	0.55	2.2
1/27/2003 10:30	28197	GC-Water	Metribuzin	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Mevinphos	0.22	ug/L	U	0.22	0.88
1/27/2003 10:30	28197	GC-Water	Naled	0.88	ug/L	U	0.88	3.52
1/27/2003 10:30	28197	GC-Water	Norflurazon	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Parathion Ethyl	0.16	ug/L	U	0.16	0.64
1/27/2003 10:30	28197	GC-Water	Parathion Methyl	0.11	ug/L	U	0.11	0.44
1/27/2003 10:30	28197	GC-Water	Phorate	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	GC-Water	Prometryn	0.16	ug/L	U	0.16	0.64
1/27/2003 10:30	28197	GC-Water	Simazine	0.055	ug/L	U	0.055	0.22
1/27/2003 10:30	28197	Metals-Water	Aluminum	10	ug/L	U	10	40
1/27/2003 10:30	28197	Metals-Water	Arsenic	10	ug/L	U	3	12
1/27/2003 10:30	28197	Metals-Water	Cadmium	0.025	ug/L	U	0.025	0.1
1/27/2003 10:30	28197	Metals-Water	Calcium	0.05	mg/L	U	0.05	0.2
1/27/2003 10:30	28197	Metals-Water	Chromium	2	ug/L	U	2	8
1/27/2003 10:30	28197	Metals-Water	Copper	0.75	ug/L	U	0.75	3
1/27/2003 10:30	28197	Metals-Water	Iron	7	ug/L	U	7	28
1/27/2003 10:30	28197	Metals-Water	Lead	0.1	ug/L	U	0.1	0.4
1/27/2003 10:30	28197	Metals-Water	Magnesium	0.01	mg/L	U	0.01	0.04
1/27/2003 10:30	28197	Metals-Water	Nickel	2	ug/L	U	2	8

1/27/2003 10:30	28197	Metals-Water	Selenium	1	ug/L	U	1	4
1/27/2003 10:30	28197	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
1/27/2003 10:30	28197	Metals-Water	Zinc	4	ug/L	U	4	16
1/27/2003 10:30	28197	Nutrients-Liquid	Ammonia-N	0.011	mg N/L	I	0.01	0.02
1/27/2003 10:30	28197	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
1/27/2003 10:30	28197	Nutrients-Liquid	N_KJEL_TOT	0.06	mg N/L	U	0.06	0.4
1/27/2003 10:30	28197	Nutrients-Liquid	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
1/27/2003 10:30	28197	Nutrients-Liquid	Total-P	0.015	mg P/L	U	0.015	0.04

The Bioassay of Crystal International, Inc., effluent sampled on January 27, 2003, NPDES #FL0037389.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



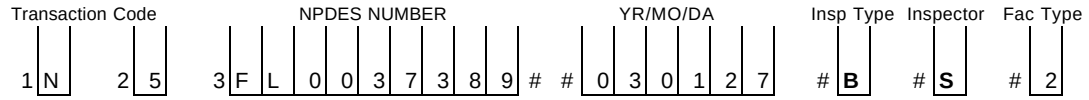
Remarks



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The Priority Pollutants Analysis for Bioassay of Crystal International, Inc., effluent sampled on January 27, 2003, NPDES #FL0037389.

Fill Out This Section For All Surface Water Discharger Inspections(CEI, CSI, CBI, PAI, XSI-RI Optional)



Remarks



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