

Bioassays of

Stone Container Inc.

Duval County

NPDES #FL0000400

Sampled September 22, 2003

March 2004

Biology Section
Bureau of Laboratories
Division of Resource Assessment and Management

Quality Manual No. 870346G
NELAC Certification No. E31780

Stone Container Corporation-Jacksonville Mill, 9469 Eastpoint Road, Jacksonville, Duval County, Florida, NPDES #FL0000400, samples collected on September 22, 2003.

Introduction

This facility is a pulp and paper mill that produces paper products using pulp derived from recycled paper products and purchased bleached pulp. The facility has a permitted maximum daily flow of 20 MGD and an average daily flow of 6.7 MGD (January 1, 2002 – July 31, 2003). The flow during the inspection survey was 8.9 MGD (September 22, 2003). Treatment of industrial wastewater consists of grit removal, primary clarification, aeration in two 3.5-acre unlined ponds, and additional aeration in one 60-acre unlined aeration stabilization basin. Treated wastewater is discharged from the 60-acre aeration basin to Outfall 001via a Parshall plume and then through four-36 inch diffusers into the Class III marine surface waters of the St. Johns River. The facility has a mixing zone for copper, lead, and pH. (Facility information provided by Reza Shayan, FDEP, Northeast District, Jacksonville).

Methods

Samples were collected from the NPDES sampling point by Pat O'Connor and Reza Shayan (FDEP Northeast District) 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 and algal growth potential tests discussed in this report were performed following internal DEP SOP's TA07_03,TA07_04, TA07_13, and TA08_01 through TA08_06. All internal DEP SOP's are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp

The bioassay sample was salinity adjusted, from an initial salinity of <1 ppt to a salinity of 20 ppt, with 40 Fathoms® artificial seas salts and used in both the *Americamysis bahia* and *Menidia beryllina* test. Prior to pouring up the test replicates, the bioassay sample was aerated due to the dissolved oxygen (DO) concentration (2.0 mg/L) being less than the minimum required DO concentration of 4.0 mg/L for test initiation. The bioassay sample was aerated for 20 minutes to 7.8 mg/L. The DO concentrations in the *Americamysis bahia* test 100% sample replicates had dropped below the recommended minimum DO concentration of 4 mg/L; however, there was no mortality in the mysid test during the 48-hour test period. The DO concentration in the *Menidia* test did not fall below the recommended minimum.

Toxicity Test Results

Tests were performed September 23-25, 2003.

Americamysis bahia 48-hr acute screening bioassay – Not Toxic; LC_{50} >100%, 0% mortality in 100% sample at 48 hours

Menidia beryllina 48-hr acute screening bioassay –Toxic; LC_{50} <100, 65% mortality at 48 hours in 100% sample

See Table 1 for bioassay bench sheets.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 93.7 mg dry wt/L of *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. The AGP data reveals that the effluent is nitrogen-limited, and there is evidence of growth inhibition. Raschke and Shultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh

receiving waters, implying nutrient enrichment. The effluent AGP value was more than 18 times the “problem” threshold. Due to laboratory protocol (since changed) at the time of the AGP analysis, an analysis was not performed with a saltwater test species. The "problem" threshold for marine receiving waters is 10.0 mg dry wt/L; therefore, the presumptive evidence suggests that nutrient-enrichment would have been demonstrated with the saltwater test species.

See Table 2 for AGP results.

Chemistry Results

Total residual chlorine was not detected in the bioassay sample in the laboratory. The total ammonia and unionized ammonia concentrations were 3.52 mg/L and 0.290 mg/L, respectively, in the bioassay sample.

See Table 3 for results of analytes detected in the effluent.
See Appendix 1 for a complete list of chemical analyses performed.

Conclusion

The effluent sample collected from this facility on September 22, 2003, showed acute toxicity to the fish test species, *Menidia beryllina*, producing 65% mortality within 48 hours. The effluent did not show acute toxicity to the invertebrate test species, *Americamysis bahia*. The cause of mortality observed in the fish species was not determined. The unionized ammonia concentration in the sample was less than the unionized ammonia concentrations generally reported to produce toxicity in *Menidia beryllina* (~0.9 mg/L) (Miller et al., 1990). The dissolved oxygen concentration (0.3 mg/L) of the effluent at the time of sample collection and also the dissolved oxygen concentration (2.0 mg/L) in the bioassay sample both were in violation of the Class III Marine dissolved oxygen criterion of $\geq$ 5.0 mg/L. The effluent AGP value was 18 times greater than the "problem” threshold for fresh receiving waters and 9 times greater than the “problem” threshold for marine receiving waters, therefore the effluent presumably would be a source of nutrient enrichment in the St. Johns River.

Literature Cited

Miller, W. E., T. E. Maloney, and J. C. Greene. 1978. The *Selenastrum capricornutum* Printz algal assay bottle test. EPA-600/9-78-018. U. S. EPA, Cincinnati, Ohio. 126 p.

Miller et al. 1990. *The Acute and Chronic Toxicity of Ammonia to Marine Fish and Invertebrates*, Archives of Environmental Contamination and Toxicology 19:40-48.

Raschke, R. L. and D. A. Schultz. 1987. The use of the algal growth potential test for data assessment. J. Wat. Poll. Cont. Fed. 59(4): 222-227.

Weber, C. I. 1993. Methods for measuring the acute toxicity of effluents to freshwater and marine organisms. 4th edition. EPA/600/4-90/027. U. S. EPA, Cincinnati, Ohio. 216 pp.

USEPA. 2000. Nutrient Criteria Technical Guidance Manual – River and Streams. EPA-822-B-00-002.

USEPA. 2002. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to freshwater organisms. 4th Edition. EPA-821-R-02-013

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from Stone Container Corporation, 9469 Eastport Road, Jacksonville, Duval County, Florida, NPDES# FL0000400, performed from day 23 to 25 September, 2003.

Facility:	**Stone Container Corporation**		**NPDES #:**	**FL0000400**	Facility Type:	**Pulp and Paper Mill**	**Analysts:**	Christa Pierini
Location:	Location:	9469 Eastport Road, Jacksonville	Contact/District:	Patrick O'Connor/Northeast				Joshua Ayres
County:	County:	Duval	Test type:	static acute screen				James Daniels
Sample Collection Date:	9/22/2003	Time: 1010	# tests:	2	Receiving Water:	St. Johns River		Marshall Faircloth
Test Beginning Date:	9/23/2003	Time: 1500	Chlorination Type:			Class III marine		
Test Ending Date:	9/25/2003	Time: 1400	FDEP SOP#:	SOP TA07_03/04		**Page 1 of 1**	**Reviewer:**	Rob Buda

Organism: ***Americamysis bahia*** Life stage: 5 days [A]Feeding: artemia Conductivity

Chamber size: 1 L Food Batch #: 0194025G Uncorrected

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature °C[B]			Diss. Oxygen mg/L			mmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hour	48 hour
Control A	0/500	5	5	5	8.4	8.4	8.2	24.0	25.0	26.0	7.0	6.5	4.0	32.0	35.4
Control B	0/500	5	5	5	8.4	8.4	8.2	24.0	24.6	25.8	7.2	6.7	3.8	32.5	35.3
Control C	0/500	5	5	5	8.4	8.4	8.2	24.0	25.5	25.6	7.4	6.1	3.4	32.6	35.4
Control D	0/500	5	5	5	8.4	8.4	8.2	24.0	26.0	25.0	7.3	6.2	3.5	32.0	35.5
Salt Control A	0/500	5	5	5	8.3	8.4	8.1	24.0	25.2	26.0	7.3	5.6	3.5	30.4	34.4
Salt Control B	0/500	5	5	5	8.3	8.4	8.1	24.0	24.5	25.7	7.4	5.7	3.2	30.9	33.4
Salt Control C	0/500	5	5	5	8.3	8.4	8.1	24.0	25.6	25.4	7.4	5.5	3.2	30.5	33.3
Salt Control D	0/500	5	5	5	8.4	8.4	8.1	24.1	25.2	25.1	7.4	5.5	3.0	30.6	33.1
100% A	500/0	5	5	5	8.2	8.4	8.3	24.0	24.8	26.0	7.3	6.0	2.9	31.0	34.0
100% B	500/0	5	5	5	8.2	8.4	8.3	24.0	25.5	25.8	7.4	6.1	2.3	31.2	34.7
100% C	500/0	5	5	5	8.2	8.4	8.3	24.0	25.0	25.5	7.2	6.0	2.3	30.8	33.9
100% D	500/0	5	5	5	8.2	8.4	8.3	24.1	24.8	26.0	7.2	6.1	2.3	31.4	34.3

[A] Organisms were fed daily.

[B] Temperatures of room and test incubator were continuously recorded on a strip chart recor
Room Temperature range for the test period was 23.5 - 25.0 °C.
Incubator #3 temperature range for the test period was 25.0 - 26.0 °C.

LIMS	
Job number:	TLH-2003-09-23-02
sample number:	704224

Data Transcription Verification
date: 11/24/2003
by: Cathy Oaks / Brad Richardson

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

Ammonia	**Total (mg/L)**	**Unionized (mg/L)**
Control water:	<0.034	<0.017
100% Sample:	3.52	0.290

Alk & Hardness	**Alkalinity (mg/L)**	**Hardness (mg/L)**
Control water	251	-
100% Sample:	499	275

Organism: ***Menidia beryllina*** Life stage: 13 days [C]Feeding: artemia Conductivity

Chamber size: 1 L Food Batch #: 0194025G Uncorrected

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature °C[D]			Diss. Oxygen mg/L			mmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hr	24 hr	48 hr	0 hour	48 hour
Control A	0/500	5	5	5	8.0	8.4	8.3	24.0	25.7	26.0	7.2	6.1	4.8	32.2	35.0
Control B	0/500	5	5	5	8.0	8.4	8.3	24.0	25.8	26.0	7.2	6.1	4.9	32.7	35.5
Control C	0/500	5	5	5	8.0	8.4	8.3	24.0	25.1	26.0	7.3	5.9	5.2	32.5	35.6
Control D	0/500	5	5	5	8.0	8.4	8.3	24.0	25.6	25.9	7.4	6.0	5.2	32.6	35.5
Salt Control A	0/500	5	5	5	8.3	8.4	8.3	24.1	26.0	25.7	7.4	5.7	5.5	31.2	33.9
Salt Control B	0/500	5	5	5	8.3	8.4	8.3	24.0	25.2	25.6	7.5	5.7	5.4	31.1	33.2
Salt Control C	0/500	5	5	5	8.3	8.4	8.3	24.0	25.4	25.4	7.5	5.7	5.4	31.1	33.5
Salt Control D	0/500	5	5	5	8.3	8.4	8.3	24.1	25.9	25.4	7.5	5.6	5.5	31.1	33.3
100% A	500/0	5	5	3	8.2	8.4	8.4	24.0	25.7	26.0	7.5	5.4	4.4	31.3	34.9
100% B	500/0	5	5	2	8.1	8.4	8.4	24.0	26.0	26.0	7.0	5.4	4.3	31.2	34.9
100 % C	500/0	5	5	2	8.1	8.4	8.4	24.0	25.0	25.4	7.0	5.4	4.2	31.4	33.6
100% D	500/0	5	4	0	8.1	8.4	8.4	24.0	25.6	25.1	7.0	5.2	4.2	31.3	33.8

[C] Organisms were 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 23.5 - 25.0 °C.
Incubator #3 temperature range for the test period was 25.0 - 26.0 °C.
Light Intensity during the test was 50-100 foot candles.
Photoperiod during the test was 16 hours of light: 8 hours of dark.

Mortality	**Percent**
Control water (mysids):	0%
100% (mysids):	0%
Control water (fish):	0%
100 % (fish):	65%

Salinity [E]	**ppt**
Mysid control:	20
Menidia control:	20
Salinity adj. 100% sample	20

[E] Salinity based on conductivity and temperature.
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. Measured and predicted algal growth potential (AGP) for total soluble nitrogen (TSIN) and ortho phosphate (OP) limitation

Location	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (OP) ± 20%	Inorganic N:P ratio
Effluent	93.7	155.8 ± 31.16	322.5 ± 64.5	5.47

Table 3. Effluent limits, Class III Criteria and chemical data from samples collected from the Stone Container Corporation on 22 September, 2003.

Stone Container Corporation 9/22/03	Class III Marine Stds	Effluent Limits	Effluent
Organic Constituents (µg/L)			
Metribuzin	-	-	0.1 I
Metals (µg/L unless otherwise noted)			
Aluminum	≤ 1,500	1,500 m	471
Arsenic	≤ 50	-	6 U
Cadmium	≤ 9.3	-	0.028 I
Calcium (mg/L)	-	-	84.1
Chromium-III	-	-	3 U
Copper	≤ 3.7	7.0 m	1.8 I
Iron	≤ 300	-	123
Lead	≤ 8.5	14.0 m	0.63
Magnesium (mg/L)	-	-	20.6
Nickel	≤ 8.3	-	3 U
Selenium	≤ 71	-	1 I
Silver	≤ 0.07	-	0.02 U
Zinc	≤ 86	86 m	9.9 I
Nutrients (mg/L)			
Ortho-phosphate	-	-	0.75
Total Phosphorus	-	-	1.2
Ammonia	-	-	4.1
Unionized Ammonia	-	-	0.25 c
Nitrate+Nitrite	-	-	0.004 U
Color	-	-	300
Total Kjeldahl Nitrogen	-	-	7.5
Organic Nitrogen	-	-	3.4 c
Total Nitrogen	-	-	7.5 c
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 5		0.3
pH (S.U.)	-	6.0 - 9.0	7.9
Conductivity (umhos/cm)	-	-	1175
Temperature (^{o}C)	-	37.8 m	28
Oil and Grease (mg/l)	≤ 5	5.0 m	3 I
Hardness (mg/L)	-	-	294.8 c

c - calculated value.
h - Value is based on water hardness as mg/L CaCO3.
m - Daily maximum value
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U - Material was analyzed for but not detected. The value reported is the minimum detection limit.

Appendix 1. Chemical Analyses performed on the effluent from Stone Container Corporation, sampled on September 22, 2003.

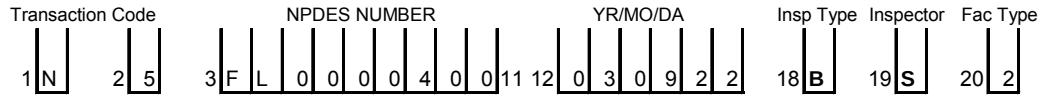
Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,2,4,5-Tetrachlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,2,4-Trichlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,2-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,3,5-Trinitrobenzene	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,3-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,3-Dinitrobenzene	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,4-Dichlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1,4-Naphthoquinone	20	ug/L	U	20	78
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	1-Naphthylamine	9.8	ug/L	U	9.8	39
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,3,4,6-Tetrachlorophenol	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4,5-Trichlorophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4,6-Trichlorophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4-Dichlorophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4-Dimethylphenol	49	ug/L	U	49	200
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4-Dinitrophenol	15	ug/L	UJ	15	59
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,4-Dinitrotoluene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,6-Dichlorophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2,6-Dinitrotoluene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Acetylaminofluorene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Chloronaphthalene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Chlorophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Methyl-4,6-dinitrophenol	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Methylnaphthalene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Naphthylamine	9.8	ug/L	U	9.8	39
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Nitroaniline	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Nitrophenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	2-Picoline	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	3,3'-Dichlorobenzidine	39	ug/L	U	39	160
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	3,3'-Dimethylbenzidine	20	ug/L	U	20	78
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	3-Methylcholanthrene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	3-Nitroaniline	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4,4'-DDD	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4,4'-DDE	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4,4'-DDT	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Aminobiphenyl	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Bromophenyl phenyl ether	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Chloro-3-methylphenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Chloroaniline	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Chlorophenyl phenyl ether	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Nitroaniline	0.98	ug/L	UJ	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	4-Nitrophenol	15	ug/L	U	15	59
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	5-Nitro-o-toluidine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	7,12-Dimethylbenz(a)anthracene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Acenaphthene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Acenaphthylene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Acetophenone	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Aldrin	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Aniline	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Anthracene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Azobenzene/1,2-Diphenylhydrazine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzidine	98	ug/L	UJ	98	390
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzo(a)anthracene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzo(a)pyrene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzo(b)fluoranthene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzo(g,h,i)perylene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzo(k)fluoranthene	0.98	ug/L	U	0.98	3.9

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Benzyl alcohol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Bis(2-chloroethoxy)methane	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Bis(2-chloroethyl)ether	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Bis(2-chloroisopropyl)ether	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Bis(2-ethylhexyl)phthalate	15	ug/L	U	15	59
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Butyl benzyl phthalate	4.9	ug/L	U	4.9	20
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Chrysene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Di-n-butyl phthalate	4.9	ug/L	U	4.9	20
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Di-n-octyl phthalate	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dibenzo(a,h)anthracene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dibenzofuran	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dieldrin	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Diethyl phthalate	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dimethyl phthalate	49	ug/L	U	49	200
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dimethylaminoazobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Dinoseb	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Diphenylamine	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Endosulfan I	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Endosulfan II	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Endosulfan sulfate	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Endrin	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Endrin aldehyde	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Ethyl methanesulfonate	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Fluoranthene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Fluorene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Heptachlor	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Heptachlor epoxide	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Hexachlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Hexachlorobutadiene	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Hexachlorocyclopentadiene	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Hexachloroethane	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Hexachloropropene	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Indeno(1,2,3-cd)pyrene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Isophorone	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Isosafrole	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Methapyrilene	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Methyl methanesulfonate	0.98	ug/L	UJ	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosodi-n-butylamine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosodi-n-propylamine	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosodiethylamine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosodimethylamine	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosodiphenylamine	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosomethylethylamine	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosomorpholine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosopiperidine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	N-Nitrosopyrrolidine	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Naphthalene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Nitrobenzene	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Nitroquinoline-1-oxide	20	ug/L	UJ	20	78
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pentachlorobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pentachloroethane	49	ug/L	U	49	200
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pentachloronitrobenzene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pentachlorophenol	2.9	ug/L	U	2.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Phenacetin	3.9	ug/L	U	3.9	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Phenanthrene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Phenol	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pyrene	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Pyridine	3.9	ug/L	U	3.9	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	Safrole	0.98	ug/L	U	0.98	3.9

Date Sampled	Field ID	Analysis Group	Component	Result	Units	Remark	MDL	PQL
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	alpha-BHC	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	beta-BHC	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	delta-BHC	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	gamma-BHC	1.5	ug/L	U	1.5	5.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	m,p-Cresols	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	o-Cresol	2	ug/L	U	2	7.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	BNA-Water	o-Toluidine	0.98	ug/L	U	0.98	3.9
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Bio-AGP/LimNut	Algal Growth Potential	93.7	mg DryWt/L		0.1	0.3
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Bio-Chl-a	Chlorophyll-A, Monochromatic, Water	1.7	ug/L	U	1.7	5.1
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Bio-Chl-a	Phaeophytin-A, Monochromatic, Water	1.7	ug/L	U	1.7	5.1
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	LC50	K		
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Bio-Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	LC50	L		
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Alachlor	0.58	ug/L	U	0.58	2.32
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Ametryn	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Atrazine	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Azinphos Methyl	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Bromacil	0.19	ug/L	U	0.19	0.76
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Butylate	0.19	ug/L	U	0.19	0.76
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Chlorpyrifos Ethyl	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Chlorpyrifos Methyl	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Diazinon	0.048	ug/L	UJ	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Ethion	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Ethoprop	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Fenamiphos	0.19	ug/L	U	0.19	0.76
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Fonofos	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Hexazinone	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Malathion	0.14	ug/L	U	0.14	0.56
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Metalaxyl	0.24	ug/L	U	0.24	0.96
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Metolachlor	0.48	ug/L	U	0.48	1.92
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Metribuzin	0.1	ug/L	I	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Mevinphos	0.19	ug/L	U	0.19	0.76
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Naled	0.77	ug/L	UJ	0.77	3.08
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Norflurazon	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Parathion Ethyl	0.14	ug/L	U	0.14	0.56
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Parathion Methyl	0.096	ug/L	U	0.096	0.384
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Phorate	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Prometryn	0.14	ug/L	UJ	0.14	0.56
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	GC-Water	Simazine	0.048	ug/L	U	0.048	0.192
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Aluminum	471	ug/L		7	28
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Arsenic	6	ug/L	U	6	24
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Cadmium	0.028	ug/L	I	0.025	0.1
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Calcium	84.1	mg/L		0.05	0.2
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Chromium	3	ug/L	U	3	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Copper	1.8	ug/L	I	1.2	4.8
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Iron	123	ug/L		15	60
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Lead	0.63	ug/L		0.05	0.2
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Magnesium	20.6	mg/L		0.02	0.08
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Nickel	3	ug/L	U	3	12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Selenium	1	ug/L	I	1	4
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Silver	0.02	ug/L	U	0.02	0.08
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Metals-Water	Zinc	9.9	ug/L	I	4	16
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	Ammonia-N	4.1	mg N/L		0.2	0.4
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	Color	300	PCU		25	25
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	N_KJEL_TOT	7.5	mg N/L		0.12	0.4
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	O-Phosphate-P	0.75	mg P/L		0.012	0.03
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Nutrients-Liquid	Total-P	1.2	mg P/L		0.04	0.12
9/22/2003 10:10	STONE CONTAINER- FINAL EFFLUENT	Overflow	Oil and Grease	3	mg/l	I		

The Bioassay of Stone Container Corporation effluent sampled on September 22, 2003, NPDES #FL0000400.

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





The Priority Pollutants Analysis for Bioassay of Stone Container Corporation effluent sampled on September 22, 2003, NPDES #FL0000400.

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

