

Effluent Quality Assessment

Morton Salt

Brevard County

NPDES #FL0042005

Sampled February 08, 2010

May 2010

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration

Quality Manual No. 870346G
NELAC Certification No. E31780

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Morton Salt, 450 Cargo Road, Port Canaveral, Brevard County, Florida, 32920. NPDES #FL0042005. Effluent samples for bioassay and chemical analyses for this facility were collected on February 8, 2010.

Introduction

Morton Salt is a bulk terminal for salt importation. Activity at the facility primarily involves drying and packaging salt. Wastewater and contact storm-water are treated by settling in an onsite retention pond prior to discharge through a catch basin into the Port Canaveral Middle Turning Basin via Outfall D-001. (See Appendix F for detailed facility information provided by William Hesser of FDEP Central District).

Methods

Samples were collected from the EFF-02 NPDES sampling point for Outfall D-001 by Phil Kane and Steve Kent (FDEP Central District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling. All DEP SOPs are available on the web at: http://www.floridadep.org/labs/qa/sops.htm.

See Appendix A for the completed chain of custody form.

The 96-hour acute screening toxicity tests and the algal growth potential (AGP) test were performed following internal DEP SOPs TA07_03, TA07_04, and TA08_01 through TA08_09. All internal DEP SOPs are available on the web at: http://www.floridadep.org/labs/cgi-bin/sop/biosop.asp.

An aliquot of the AGP sample was salinity adjusted (approximately 1.5 parts per thousand (ppth) to 7 ppth) to meet the minimum salinity requirements of the marine test species.

Due to the comment “the salts (effluent) will not support marine life” from a facility employee to a DEP employee during the sampling event, aliquots of the bioassay sample were salinity-adjusted using 40 Fathoms® artificial sea salts. The purpose of the salinity adjustments was to ensure that the minimum salinity in the samples (1 ppth for *Menidia beryllina* and 6 ppth for *Americamysis bahia*) that the lab has found to be necessary to support the test species was comprised of seawater ions in seawater proportions. The sample aliquots were adjusted from an apparent salinity of approximately 22.2 parts per thousand (ppth) to a salinity of approximately 30 ppth for the *Americamysis bahia* test and to a salinity of approximately 24.4 ppth for the *Menidia beryllina* test. The salinity adjustments were made based on a meter reading of 23.4 ppth salinity (see Morton Salt Bioassay log-in entry - Appendix G) in the sample in the adjustment container; therefore, the final salinity adjustments (based on the log-in salinity value) were approximately 2 ppth greater than the minimum salinity the lab has found necessary to support the test species. It should be noted that the effluent salinity as calculated by the Chemistry Laboratory was 21.7 ppth (Table 2) based on the chloride concentration. Salt controls used for each test were prepared by diluting 30 ppth artificial seawater (ASW) with well water to a salinity of approximately 22.2 ppth then salting this solution with artificial sea salts to match the salinity of the test solutions (approximately 24.4 ppth and approximately 30 ppth). The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of either test.

Results and Discussion

Toxicity Test Results

Tests were performed February 9 - 13, 2010.

Americamysis bahia 96-hour acute screening bioassay – LC_{50} < 100%, 100%* mortality in 100% sample at 96 hours

Americamysis bahia 96-hour acute screening bioassay – (salinity adjusted sample)	LC_{50} = 100%, 50%* mortality in 100% sample at 96 hours
Menidia beryllina 96-hour acute screening bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours
Menidia beryllina 96-hour acute screening bioassay – (salinity adjusted sample)	LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

The original bioassay sample and the salinity adjusted aliquot were acutely toxic to the *Americamysis bahia* test organisms; but, were not acutely toxic to the *Menidia beryllina* test organisms.

The chemistry results confirmed that the ion makeup of the sample was not in seawater proportions. The observed mortality in the A. bahia test is likely due to the seawater-ion imbalance of the sample. Previous research conducted by the FDEP Biology Section demonstrated that A. bahia is much more sensitive to seawater-ion imbalances than is M. beryllina (Wolfe, et al. 1995). The calcium concentration was measured at 252 mg/L at 21.7 ppth salinity (salinity based on chloride concentration). This is approximately 97% of the normal concentration for calcium in seawater of this salinity. The magnesium concentration was measured at 165 mg/L at 21.7 ppth salinity. This is approximately 21% of the normal concentration for magnesium in seawater of this salinity. The decreased magnesium concentration is a potential source of toxicity in this sample, but other unidentified sources of toxicity cannot be ruled out without performing the major-seawater-ion imbalance toxicity testing protocols cited above.

*NOTE: In a 96-hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

See Appendix B for bioassay bench sheets. See Appendix C for results of the last 20 standard reference toxicant (SRT) tests and the bench sheets and statistical analyses of the SRT tests that correspond to these facility tests. See Appendix D for test organism receipts.

Algal Growth Potential

The effluent Algal Growth Potential (AGP) was 0.3 U (U - Material was analyzed for but not detected; the report value is the minimum detection limit) mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (1987) found that AGP values above 5.0 mg dry weight/L represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The ratio of total nitrogen to total phosphorus in the effluent suggests that the effluent is phosphorus-limited (Table 1a; Miller et al., 1978). Since ortho-phosphate was detected between the method detection limit (MDL) and the practical quantitation limit (MDL) and was an estimated concentration; the ratio of inorganic nitrogen to ortho-phosphate was not calculated. To determine actual nutrient limitation, a limiting-nutrient algal growth potential test should be performed.

The salinity-adjusted effluent AGP was 3.0 U (U - Material was analyzed for but not detected; the report value is the minimum detection limit) mg dry wt/L of the saltwater species *Dunaliella tertiolecta* (Table 1b). Raschke and Schultz found that AGP values above 10.0 mg dry weight/L represent a "problem" threshold for marine receiving waters,

implying nutrient enrichment (personal communication, Marshall Faircloth, et. al. FDEP, with Ron Raschke USEPA Region 4 1987).

See Table 1 for AGP results.

Chemistry Results

Total residual chlorine was not detected in the bioassay sample in the laboratory. Total ammonia (0.299 mg N/L) was detected in the bioassay sample in the laboratory. Based on the pH, salinity, and temperature of the bioassay sample as measured in the laboratory, the calculated unionized ammonia concentration was < 0.02 mg N/L. The total ammonia concentration in the sample collected and preserved for chemical analysis was 0.66 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg N/L.

The effluent iron concentration (710 µg/L) violated both the criterion for Class III marine waters (≤ 300 µg/L; 62-302.530(38), F.A.C.) and the facility's NPDES permitted limit (≤ 300 µg/L). The effluent nickel concentration (11.3 µg/L) exceeded the criterion for Class III marine waters (≤ 8.3 µg/L; 62-302.530(44), F.A.C.); however, nickel was also detected in the equipment blank (0.55 I) (I – the reported value is between the laboratory MDL and PQL). Aluminum, chromium, copper and nickel were detected in the effluent at levels that comply with Class III marine water quality criteria (62-302.530, F.A.C.). Lead was detected in the effluent between the laboratory MDL and PQL. Fecal coliforms were not detected in the effluent.

See Table 2 for results of analytes detected in the effluent, and corresponding limits. See Appendix E for a complete list of chemical analyses performed.

Conclusion

The effluent sample collected from the EFF-01 NPDES sampling point for Outfall D-001 for this facility on February 8, 2010, and the salinity adjusted aliquot of effluent were acutely toxic to the *Americamysis bahia* test organisms during the 96-hour acute screening bioassays, but were not toxic to the Menidia beryllina test organisms. The ion-imbalance as shown by the decreased magnesium concentration is a potential source of toxicity in this sample, but other unidentified sources of toxicity cannot be ruled out without performing the major-seawater-ion imbalance toxicity testing protocols. The AGP result was less than the "problem" threshold for both fresh and marine receiving waters. The effluent iron concentration (710 µg/L) violated both the criterion for Class III marine waters (≤ 300 µg/L; 62-302.530(38), F.A.C.) and the facility's NPDES permitted limit (≤ 300 µg/L). The effluent nickel concentration (11.3 µg/L) exceeded the criterion for Class III marine waters (≤ 8.3 µg/L; 62-302.530(44), F.A.C.); however, nickel was also detected in the equipment blank ((0.55 I) (I – the reported value is between the laboratory MDL and PQL)). Additional effluent water quality samples collected on February 8, 2010, did not exceed applicable water quality standards or permit limits.

Literature Cited

Maloney, T. E., W. E. Miller, and D. T. Specht. 1974. The Marine Algal Assay Procedure: Bottle Test. National Environmental Research Center Office of Research and Development. U. S. EPA, Corvallis, Oregon. 43 p.

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.

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.

Wolfe, et al. 1995. Protocols for determining Major-Seawater-Ion Toxicity in Membrane-Technology Water-Treatment Concentrate. Florida Department of Environmental Protection, Bureau of Laboratories. 96pp.

Table 1a. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), orthophosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus for efluent samples collected from the Morton Salt facility on February 8, 2010.

Morton Salt												
Location	AGP (measured)		Predicted AGP (TSIN) ± 20%			Predicted AGP (OP) ± 20%			Predicted AGP (TN) ± 20%			Predicted AGP (TP) ± 20%			Inorganic N:P ratio	Total N:P ratio
Effluent	0.3	U	3.6	±	0.7	3.0	±	0.6	38.3	±	7.7	5.6	±	1.1	13.6	77.6

Table 1b. Measured algal growth potential (AGP; mg dry weight/L) of the saltwater species *Dunaliella tertiolecta* and ratios of nitrogen to phosphorus for efluent samples collected from the Morton Salt facility on February 8, 2010.

Morton Salt				
Location	AGP (measured)		Inorganic N:P ratio	Total N:P ratio
Effluent*	3.0	U	13.6	77.6

* - sample salinity adjusted to 7ppt

Table 2. Effluent limits, Class III Criteria for predominantly marine waters and chemical data for samples collected from the Morton Salt facility on February 8, 2010.

Morton Salt NPDES #FL0042005	Class III Criteria	Effluent Limits	Effluent	
Organic Constituents (µg/L)				
None Detected	-		None Detected	
Metals (µg/L unless otherwise noted)				
Aluminum	≤ 1,500	-	900	
Arsenic	≤ 50	-	0.75	U
Cadmium	≤ 8.8	-	0.09	U
Calcium (mg/L)	-	-	252	
Chromium-III	-	-	21.7	
Copper	≤ 3.7	-	2.4	
Iron	≤ 300	≤ 300 s	710	
Lead	≤ 8.5	-	1.1	I
Magnesium (mg/L)	-	-	165	
Mercury	≤ 0.025	-	-	
Nickel	≤ 8.3	-	11.3	F
Selenium	≤ 71	-	0.6	U
Silver	≤ 2.3	-	0.075	U
Zinc	≤ 86	-	25	U
Nutrients (mg/L)				
Ortho-phosphate	-	-	0.007	IJ
Total Phosphorus	-	Report	0.013	
Total Ammonia	-	Report	0.66	
Un-ionized Ammonia	-	-	< 0.02	c
Nitrate and Nitrite	-	Report	0.029	
Total Kjeldahl Nitrogen	-	-	0.98	
Organic Nitrogen	-	-	0.32	c
Total Nitrogen	-	Report	1.009	c
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 4.0	≥ 5.0 s	7.7	
pH (SU)	6.5 - 8.5	6.5 - 8.5 s	7.2	
Conductivity (µmhos/cm)	-	-	2872	
Temperature (°C)	-	-	38.6	
Salinity	-	-	21.7	*
Sample Depth (m)	-	-	0.2	
Total Residual Chlorine (mg/L)	≤ 0.01	-	0.03	UQ£
Chlorophyll *a* (µg/L) - Corrected	-	-	0.55	U
Phaeophytin (µg/L)	-	-	0.4	U
Total Dissolved Solids (mg/L)	-	Report	17,300	
CBOD, 5 day (mg/L), N - inhibited	-	-	0.74	IJ
Oils and Greases (mg/L)	≤ 5.0	≤ 5.0 s	1.4	U
Chloride (mg/L)	-	Report	12,000	A
Flow (MGD)	-	≤ 0.0840 dm	0.0732	dm
Hardness (mg $CaCO_3$)	-	-	1308.71	c
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms	≤ 400s #	-	2	UQ

Value exceeds the Class III Water Quality Criteria or permit limits

c - Value is calculated
dm - Daily maximum
s - Single sample
t - Shall not exceed 29 NTUs above background
A - Value reported is the mean of two or more determinations
F - Analyte was detected in both sample and field blank (0.55 I µg/L)
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
Q - Sample held beyond normal holding time
U - Material analyzed for but not detected; value reported is the method detection limit
* Salinity calculated from chloride concentration
£ - Analysis performed in bioassay laboratory
- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2010-02-08-20
Morton Salt

Event ID *

Customer: CEN-DIST
Project ID: FYI3
PMAS: 1143

Requester: Jennifer Paris
Collected By: KANE, KENT
Sampling Agency: FDEP CENTRAL DISTRICT

Field Report Prepared By: KANE
Send Final Report To: ~~Gary Miller~~ PK KANE

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
	MORTON SALT 450 CARGO ROAD PORT CANAVERAL, FL. 32920	☐ Comp ☑ Grab Date 2/8/10 Time 0927 Eastern/Central	PK Date Time Eastern/Central	
	Field ID: MORT	Tot Res Chlorine (mg/L):	Diss Oxygen (mg/L): 7.71	Storet Station Number:
	Matrix: EFFLUENT	Temp (C): 38.56	pH: 7.16	Sample Depth: ☒ m ☐ ft .2
				2872 SCK ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm) 2872
				NPDES Number: FL0042005
	Latitude o ' "	Longitude o ' "	Comments: Sample pH checked	

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
	MORTON SALT 450 CARGO ROAD PORT CANAVERAL, FL. 32920	☐ Comp ☑ Grab Date 2/8/10 Time 0927AM Eastern/Central	PK Date Time Eastern/Central	
	Field ID: MORT	Tot Res Chlorine (mg/L):	Diss Oxygen (mg/L): 7.7	Storet Station Number:
	Matrix: EFFLUENT BIOASSAY	Temp (C): 38.6	pH: 7.2	Sample Depth: ☒ m ☐ ft .2
				2872 ☐ Salinity (PPTh) ☒ Sp Conductance (umho/cm)
				NPDES Number: FL0042005
	Latitude o ' "	Longitude o ' "	Comments: BIOASSAY	

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
	MORTON SALT 450 CARGO ROAD PORT CANAVERAL, FL. 32920	☐ Comp ☑ Grab Date Time 0945 Eastern/Central	PK Date Time Eastern/Central	
	Field ID: MORT	Tot Res Chlorine (mg/L):	Diss Oxygen (mg/L): PK	Storet Station Number:
	Matrix: BLANK	Temp (C):	pH:	Sample Depth: ☐ m ☐ ft
				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
				NPDES Number: FL0042005
	Latitude o ' "	Longitude o ' "	Comments: Sample pH checked / NO Blank for [redacted] received empty bottle. ABJ 2.9.10.	

Lab ID *	Location	Collection (begin)	Collection (end)	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Eastern/Central	PK Date Time Eastern/Central	
	Field ID	Tot Res Chlorine (mg/L):	Diss Oxygen (mg/L):	Storet Station Number:
	Matrix:	Temp (C):	pH:	Sample Depth: ☐ m ☐ ft
				☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)
				NPDES Number:
	Latitude o ' "	Longitude o ' "	Comments: 3 Bioassay Recd in Tox by J.D. 10:35 2.9.10	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
KANE/KENT	2/8/10	FEDEX						

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: Morton Salt NPDES minor

Address: 450 Cargo Road, Port Canaveral, Fl. 32920

City: Port Canaveral **County:** Brevard

Contact/District: Phil Kane / Central

NPDES Permit #: FL 0042005

LIMS Job #: TIH-2010-02-09129 **LIMS Sample #:** 1247668

Lims Data Entry: 2-18-2010 MF Data Entry Verification: 2.18.2010 JD

Sample Collection: Date: 2-8-10 Time: 9:27

Hold Time Start: Date: 2-8-10 Time: 9:27

Comments:
The effluent bioassay samples were salinity adjusted with Kosher Kathams artificial ocean salts to ensure that ~~from~~ the ~~the~~ minimum osmolarities required for the test organisms were present. There was verbal confirmation for a facility employee to a FDEP Central District employee that the "salts" in the effluent would not support marine life. MF 2-19-2010

Initial sample handling:

Instructions: Check yes or no. If yes is checked, complete blanks

PH adjustment: ☐ yes ☑ no Initial pH: ____ NaOH ____ N HCl ____ N ____ Drops mL Final pH: ____

Aeration: ☐ yes ☑ no Initial DO: ____mg/L Final DO: ____mg/L Duration: ____minutes Rate: ~ ____bubbles/min

Salinity adjusted (Test 1): ☑ yes ☐ no Initial Salinity: 22.2 ppt Final Salinity: 30 ppt (Salts) Hypersaline brine

Salinity adjusted (Test 2): ☑ yes ☐ no Initial Salinity: 22.2 ppt Final Salinity: 28.3 ppt (Salts) Hypersaline brine

Dechlorination: ☐ yes ☑ no ____mL of 0.025N Sodium Thiosulfate per liter of sample. Final TRC: ____

Sample Validation:

Instructions: Check yes or no. Fill in temperatures.

Temperature: Shipped ≤ 6°C ☑ Yes ☐ No — IF Hand Delivered: Cooling ☐ Yes ☐ No (received ____°C collected____°C)

Holding Time: ≤ 36 Hours ☑ Yes ☐ No (Composite-end of collection; grab-when collected; 4 in 24 - time last sample collected)

Investigators' Signatures:	Initials:
Bruce Alexander	BA
Chelsea French	CF
Marshall Faircloth	MF
James Daniels	JD
REVIEWER Loretta Wolfe	

Diluent/Control Batch#:				29-10	2-9-10				
Water Quality Parameters	20% DMW	Well Water	Moderately Hard Water	Salt Water (ASW) NSW Test 1	Salt Water (ASW) NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A	NOT measured		MF
Lab Total Residual Cl_2 (mg/L):				<0.03	NM(a)		<0.03	BA SD/BA	BA
Alkalinity (mg/L as $CaCO_3$):				243	NM(a)		122	BA	JD
Hardness (mg/L as $CaCO_3$):				—	—		>400	BA	JD
Total Ammonia (mg/L as N):				<0.034	NM(a)		0.2985	BA/MF	JD
Conductivity: ☐ µmhos ☑ mmhos				45.7	NM(a)	46.4	35.7	CF	BA
Salinity (ppth):				29.6	24		22.4	CF	BA

(a) parameters not measured (N/M) since parameters of concern (TRC and Ammonia) were not detected in the higher concentration if measured. MF 2-22-10 Found in 2-9-10 29.6 ppth ASW.

V 1.8 1/13/10

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1247668 | SOP#: TA 07 03 | Test # 1 of 2

Test Species:
Batch #: 2,9,10 Age: 5days
- ☐ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☐ *Menidia beryllina*
- ☒ *Americamysis bahia*
- ☐ Other:_____

Test Validation
Control Survival ≥ 90%: ☒ Yes ☐ No
Temperature Range ≤ 3° C: ☒ Yes ☐ No

Diluent (Batch # 2,9,10)
☒ ASW ☐ 20% DMW ☐ MHW ☐ Well

Test Type: ☒ Acute ☐ Definitive ☐ Static ☐ Static Renewal ☐ Flow-Through

Test Duration: ☐ 48 hr ☒ 96 hr ☐ ___hr

Test Started: Date 2-9-10 Time 1400

Test Ended: Date 2-13-10 Time 1200

Chamber Size 400 ml
Test Volume: 350 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	tox25	5	5	5	5	5	5
	B	tox26	5	5	5	5	5	5
	C	tox27	5	5	5	5	5	5
	D	tox28	5	5	5	5	5	5
50% Reg. Sample	A	tox29	5	5	5	5	5	5
	B	tox30	5	5	5	5	5	5
	C	tox31	5	5	5	5	5	5
	D	tox32	5	5	5	5	5	5
100% Reg. Sample	A	tox33	5	0 SD	–	–	–	–
	B	tox34	5	0 SD	–	–	–	–
	C	tox35	5	0 SD	–	–	–	–
	D	tox36	5	0 SD	–	–	–	–
100% Salt Sample	A	tox37	5	5	5	5	5	4 1D
	B	tox38	5	5	4 1D	4	4	2 2D
	C	tox39	5	5	4 1D	4	4	1 3D
	D	tox40	5	5	5	5	4 1D	3 1D
Checked or Verified by:			SD	CF	SD	CF	SD	CF

Food
NA ☑ YCT Batch# ~~10-30-09~~ mf for SD
NA ☐ P. subcapitata Batch# ~~12223-09~~ mf for SD
☑ Artemia Lot# 23613

Feeding and Artemia Batch #
☐ 0 hr 2-10 ☑ Prior to Test
☑ 24 hr 2-10
☑ 48 hr 2-10 ☑ Prior to Renewal
☑ 72 hr 2-10

Temperature Range (°C)
Incubator # 2
min 25.5 max 27.4 mean 26.5
Incubator #___
min.____max.____mean____
Waterbath #___
min.____max.____mean____
Room B246
min. 21.9 max 23.8 mean 22.9
Light Intensity (ft. candles): 50-100
Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: SD / CF
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 100% LC50: 70.71
Calculated LC50 (Definitive) 95% CI Not reliable Method TSK

Comments: TSK LC50 95% Confidence Intervals are not reliable. mf 2/19/2010

V. 2.5 1-13-10

Pg 8

Substitute highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration)

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Survival Bench Sheet

LIMS Sample # 1247668 **SOP#:** TA 0704 **Test #** 2 **of** 2

Test Species:
Batch #: 2.9.10 Age: 13 days
- ☐ *Ceriodaphnia dubia*
- ☐ *Cyprinella leedsi*
- ☐ *Pimephales promelas*
- ☒ *Menidia beryllina*
- ☐ *Americamysis bahia*
- ☐ Other:______

Test Validation
Control Survival ≥ 90%: ☒ Yes ☐ No
Temperature Range ≤ 3° C: ☒ Yes ☐ No

Diluent (Batch #2.9.10)
☒ ASW ☐ 20% DMW
☐ MHW ☐ Well

Test Type: ☒ Acute ☐ Definitive
☐ Static ☐ Static Renewal ☐ Flow-Through

Test Duration:
☐ 48 hr
☒ 96 hr
☐ __hr

Chamber Size 1000 ml
Test Volume: 250 ml

Test Started: Date 2-9-10 Time 1430

Test Ended: Date 2-13-10 Time 1220

Concentration	Replicate	Chamber #	Test Hour: 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Ctrl	A	E1	10	~~9~~ 10	9	9	9	9
	B	E2	10	~~9~~ 10	9	9	9	9
50 % Reg. sample	A	E3	10	10	10	10	10	10
	B	E4	10	10	10	10	10	~~9~~ 10
100% Reg. sample	A	E5	10	10	10	10	10	10
	B	E6	10	10	10	10	10	10
100% Salt sample	A	E7	10	10	10	10	10	10
	B	E8	10	10	10	10	10	10
		Checked or Verified by:	JD	CF	JD	CF	JD	CF

Food
NA ☐ YCT Batch# ~~10-30-09~~ MF for JD
NA ☐ P. subcapitata Batch# ~~12-23-09~~ MF for JD
☑ Artemia Lot# 23613

Feeding and Artemia Batch #
☑ 0 hr 22-10 ☑ Prior to Test
☐ 24 hr____
☑ 48 hr 24-10 ☑ Prior to Renewal
☑ 72 hr____

Temperature Range (°C)

Incubator # 2
min. 25.5 max. 27.4 mean 26.5

Incubator #___
min._____ max._____ mean_____

Waterbath #___
min._____ max._____ mean_____

Room B246
min. 21.9 max. 23.8 mean 22.9

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

Loaded/ Verified by: JD / CF
m = missing, d = dead, BR/AR Before/ After Renewal

Test Results:
Screening Tests: Report LC50 as >100%, =100%, or <100%.
% mortality in 100% sample: 0% LC50: >100%
Calculated LC50 (Definitive) 95% CI______ Method______

Comments:

V. 2.5 1-13-10

Substitute highest test concentration used if other than 100% (example: Ocean outfall tested at 30% concentration)

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Appendix B. (continued)



FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1247668 Test # 1 of 2

Test Species:

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☒ *Americamysis bahia*
☐ *Cyprinella leedsi* ☐ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L)
☐ Yes ☒ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity* (ppth)
Ctrl	A	0 hr	8.4	24.0	6.9	45.7	29.6
	B	24 hr	8.3	24.3	5.6	46.2	29.8
	C	48 hr BR	8.1	24.2	5.5	46.5	30.2
	C	48 hr AR	8.1	24.0	6.3	46.9	29.7
	D	72 hr	8.0	25.2	5.9	48.0	31.2
	A	96 hr	8.10	24.4	5.7	47.1	30.4
50% Reg. Sample	A	0 hr	8.3	24.1	6.9	41.0	26.2
	B	24 hr	8.1	24.4	5.3	40.5	25.8
	C	48 hr BR	8.1	24.6	5.4	41.6	26.6
	C	48 hr AR	8.2	24.0	6.3	41.7	26.6
	D	72 hr	8.0	24.9	5.6	43.3	27.7
	A	96 hr	8.0	25.1	5.7	42.5	27.3
100% Reg. Sample	A	0 hr	75	25.4	6.3	35.7	22.4
	B	24 hr	7.9	24.4	6.0	35.4	22.3
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
100% Salt Sample	A	0 hr	8.2	24.0	5.8	46.4	30.0
	B	24 hr	8.0	24.3	5.5	45.9	29.7
	C	48 hr BR	7.9	24.7	5.5	46.7	30.3
	C	48 hr AR	8.1	24.0	6.4	46.3	30.0
	D	72 hr	7.9	24.8	5.8	48.2	31.4
	A	96 hr	7.8	24.9	5.3	42.5	30.5
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: CF
24 hr: CF
48 hr BR: CF
48 hr AR: CF
72 hr: CF
96 hr: CF

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V. 2.3 1-13-10

Appendix B. (continued)

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1247668 Test # 2 of 2

Test Species:

☐ *Ceriodaphnia dubia* ☐ *Pimephales promelas* ☐ *Americamysis bahia*
☐ *Cyprinella leedsi* ☒ *Menidia beryllina* ☐ Other:_____

Test aerated: (if DO is < 4.0 mg/L) ☐ Yes ☒ No

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity* (ppth)
Ctrl	A	0 hr	8.4	24.0	7.2	36.7	23.5
	B	24 hr	8.3	24.0	6.1	37.4	23.6
	A	48 hr BR	8.2	25.5	5.9	37.6	23.8
	A	48 hr AR	8.3	24.0	6.6	37.1	23.4
	B	72 hr	8.2	24.9	5.6	38.9	24.7
	A	96 hr	8.0	24.4	6.9	37.0	23.3
50% Reg. Simple	A	0 hr	8.3	24.0	7.2	36.7	23.1
	B	24 hr	8.2	24.2	6.1	36.0	22.7
	A	48 hr BR	8.1	25.3	5.9	36.7	23.2
	A	48 hr AR	8.2	24.0	6.5	37.4	23.6
	B	72 hr	8.0	25.6	5.6	38.8	24.7
	A	96 hr	8.0	25.3	6.4	37.5	23.7
100% Reg. Simple	A	0 hr	7.5	25.6	6.1	35.6	22.3
	B	24 hr	7.7	24.1	6.1	34.8	21.9
	A	48 hr BR	7.9	25.5	5.9	35.5	22.3
	A	48 hr AR	7.7	24.0	5.7	36.8	23.3
	B	72 hr	7.9	25.4	5.5	36.2	24.2
	A	96 hr	7.8	24.8	6.4	37.4	23.7
100% Silt Simple	A	0 hr	7.5	24.0	5.7	38.3	24.3
	B	24 hr	7.7	24.3	6.1	38.3	24.3
	A	48 hr BR	7.9	25.4	6.0	38.6	24.5
	A	48 hr AR	7.8	24.0	6.2	35.3	24.3
	B	72 hr	7.9	25.6	5.6	40.1	25.6
	A	96 hr	7.8	25.2	6.4	38.8	24.6
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: CF
24 hr: CF
48 hr BR: CF
48 hr AR: CF
72 hr: CF
96 hr: CF

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V. 2.3 1-13-10

Bioassay Instrument ID

Test ID: ~~TC47668~~ BA 1247668 Morton Salt Dates: 2-9-10

METER / DEVICE	ID	SOP	Parameter	Method	v used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
Accumet AR-10 pH Meter	93312105	TA06_23	pH	SM 4500 H+	✓
Mettler-Toledo SevenMulti Conductivity Meter	SN 1225117049 Probe H04257	TA06_25	Conductivity	SM 2510 B	✓
			Salinity	SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Thermometer (DO probe)	YSI 5750 SN 05J1720	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓
Hach Pocket Colorimeter II	05050C026378	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	✓
Alkalinity (Hach Kit)	No SN	TA06_08	Alkalinity	SM 2320 B	✓
Hardness (Hach Kit)	No SN	TA06_09	Hardness	SM 2340 C	✓
OHAUS Balance 250D	1125481084	TA06_21 TA06_27	Weight	-	
S-Weights	BIO-S-WEIGHTS-01	NA	Balance check	-	

SM-2530B modified to allow use of electronic and non-mercury filled thermometers.

Insert other device information in blank spaces(if used). Test ID = Facility or SRTs (acute SRT–Chronic SRT)

BA on 2-10-10

V 1.1 6/12/08 MF

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Appendix C. SRT Bench Sheets and Statistical Analysis

Florida Department of Environmental Protection
Bureau of Laboratories

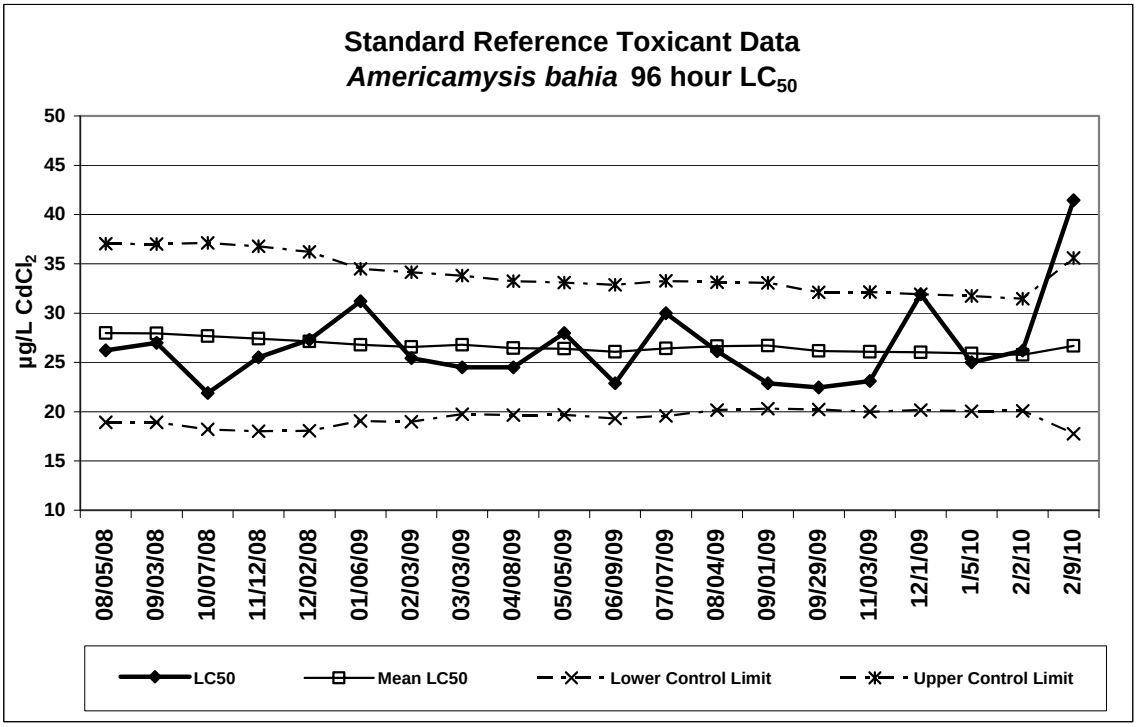
Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Americamysis bahia (mysid shrimp) - Cadmium Chloride ($CdCl_2$)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
08/05/08	26.21	27.98	4.52	18.93	37.03
09/03/08	26.98	27.96	4.53	18.91	37.02
10/07/08	21.89	27.66	4.73	18.21	37.11
11/12/08	25.50	27.40	4.69	18.01	36.78
12/02/08	27.31	27.13	4.53	18.07	36.20
01/06/09	31.20	26.79	3.86	19.07	34.50
02/03/09	25.44	26.56	3.79	18.97	34.15
03/03/09	24.49	26.78	3.52	19.75	33.81
04/08/09	24.49	26.45	3.39	19.66	33.23
05/05/09	27.98	26.39	3.36	19.68	33.10
06/09/09	22.89	26.09	3.39	19.32	32.87
07/07/09	30.00	26.43	3.43	19.57	33.28
08/04/09	26.14	26.65	3.24	20.16	33.13
09/01/09	22.89	26.69	3.19	20.30	33.07
09/29/09	22.46	26.17	2.97	20.22	32.11
11/03/09	23.12	26.08	3.04	20.00	32.15
12/1/09	31.91	26.03	2.94	20.16	31.91
1/5/10	25.00	25.91	2.92	20.06	31.75
2/2/10	26.18	25.77	2.84	20.09	31.46
2/9/10	41.45	26.68	4.46	17.76	35.59

CV = 16.71

Lower Confidence Limit = mean - 2 * Std Dev
Upper Confidence Limit = mean + 2 * Std Dev

EPA reference 75th quartile CV = 26%



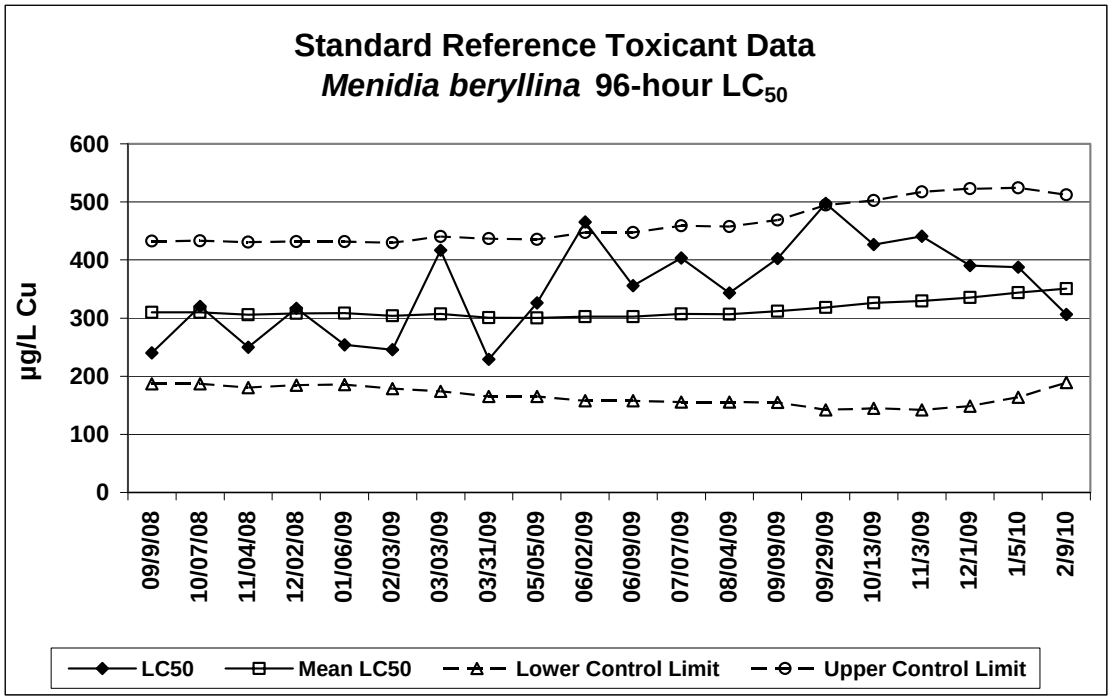
Appendix C. (continued)

Florida Department of Environmental Protection
Bureau of Laboratories

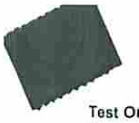
Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Menidia beryllina (inland silverside) - Copper Chloride ($CuCl_2$) as Cu

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
09/9/08	240.07	309.81	61.44	186.93	432.70
10/07/08	319.95	310.00	61.47	187.06	432.94
11/04/08	249.81	305.57	62.50	180.57	430.57
12/02/08	316.79	308.13	61.82	184.48	431.78
01/06/09	253.83	308.45	61.51	185.44	431.46
02/03/09	245.51	304.15	62.80	178.55	429.74
03/03/09	416.64	307.01	66.63	173.74	440.27
03/31/09	228.94	300.89	67.96	164.97	436.80
05/05/09	326.07	300.24	67.64	164.97	435.52
06/02/09	465.39	302.54	72.50	157.54	447.53
06/09/09	355.67	302.52	72.48	157.55	447.48
07/07/09	403.35	307.19	75.91	155.37	459.02
08/04/09	343.29	306.49	75.48	155.52	457.45
09/09/09	402.57	311.84	78.40	155.03	468.65
09/29/09	497.5	318.42	88.10	142.21	494.62
10/13/09	426.5	326.12	90.57	144.97	502.27
11/3/09	441.06	329.60	93.69	142.22	516.99
12/1/09	390.28	335.59	93.54	148.51	522.68
1/5/10	387.66	343.92	90.17	163.57	524.26
2/9/10	306.1	350.85	80.73	189.39	512.30

CV = 23.01
EPA reference 75th quartile CV = 21%



Appendix C. (continued)



FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one) [X] *Americamysis bahia* Method 2007.0 TA07.03; [ ] *Menidia Beryllina* Method 2008.0 TA07.04; [ ] *Hyalella azteca* Method 100.1 EPA-600-R-99-064; [ ] *Ceriodaphnia dubia* Method 2002.0 TA07.01; [ ] *Cyprinella leedsi* Method 2000.0 TA07.02; [ ] *Pimephales promelas* Method 2000.0 TA07.02

Test Type: [ ] non-renewal [X] renewal

Test Page 1 of 2

Diluent/ Batch #: ASW / 2.1.10 — Organism Batch: 2.9.10 — Test Beginning: Date: 2.9.10 Time: 1300

Toxicant/ Batch#: $CaCl_2$ / 2.9.10 — Age: 5 days — Test Ending: Date: 2.13.10 Time: 1200

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	SP
Alkalinity (mg/L as $CaCO_3$):	243	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	--	TA06_09	--
Total Ammonia (mg/L as N):	<0.034	TA06_17	BA
Conductivity: µmhos (mmhos)	32.3	TA06_25	CF
Salinity (ppth):	20.0	TA06_25	CF

Food:	Batch
[ ] YCT	10-30-09
[ ] *P. subcapitata*	12-23-09
[✓] Artemia Lot #	23613

Artemia Batch:

0 hr:	2.2-10
24 hr:	2.3-10
48 hr:	2.4-10
72 hr:	2.5.10

Chamber size: 500 mL

Test volume: 350 mL per replicate

Concentrations prepared by: B

Temperature Range °C:(if used)

Test Incubated in: Incubator # 2 Waterbath # ____ Incubator # 2 min 25.5 max 27.1 mean 26.5

Light Intensity: 50-100 Ft. candles — Waterbath # ___ min ___ max ___ mean ___

Photoperiod: 16 hours Light / 8 hours dark — Room B246 min 21.9 max 23.8 mean 22.9

Feeding: √as needed

[✓]	Before test
[✓]	0 hr
[✓]	24 hr
[✓]	48 hr
[✓]	72 hr

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

Concentration µg/L mg/L g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	tox 1	5	5	5	5	5	5
	B	tox 2	5	5	5	5	5	5
	C	tox 3	5	5	5	5	5	5
	D	tox 4	5	5	5	5	5	5
20	A	tox 5	5	5	5	5	5	5
	B	tox 6	5	5	5	5	5	5
	C	tox 7	5	5	5	5	5	5
	D	tox 8	5	5	5	5	5	5
30	A	tox 9	5	5	5	5	5	5
	B	tox 10	5	5	5	5	5	5
	C	tox 11	5	5	5	5	5	5
	D	tox 12	5	5	5	5	5	5
45	A	tox 13	5	5	239	2	2	1 10
	B	tox 14	5	5	329	3	2 1D	1 1D
	C	tox 15	5	5	419	4	3 1D	2 1D
	D	tox 16	5	5	329	3	2 1D	2
67	A	tox 17	5	5	1-19	1	0 1D	-
	B	tox 18	5	5	0 39	—	—	-
	C	tox 19	5	5	239	2	0 2D	-
	D	tox 20	5	5	1-19	1	1	0 1D
100	A	tox 21	5	5	0 39	-	—	-
	B	tox 22	5	5	0 39	-	-	-
	C	tox 23	5	4 1D	0 19	-	-	-
	D	tox 24	5	5	0 39	-	-	-
Organisms loaded by: B		Checked by:	CF	CF	B	CF	CF	CF

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Loading Verified by: CF — AR = after renewal

m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures

Jana Daniels

Chelsea French

Marshall Faircloth

Bree Abernathy

Reviewer

Comments: Report of 48 hour QC failed test of 2-2-2010- PASSED MF 2-18-2010 See PP 3334

Method: TSK

Statistics: LC50

95% confidence intervals	Lower	Upper
48 hour: 50.93	45.42	57.08
96 hour: 41.45	38.17	45.01

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Revised 7/15/2008 mf

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters

Methods from EPA-821-R-02-012 except *H. azteca*

Test Page 2 of 2

Test Organism: (check one)
- [X] *Americamysis bahia* Method 2007.0 TA07.03
- [ ] *Menidia Beryllina* Method 2006.0 TA07.04
- [ ] *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- [ ] *Ceriodaphnia dubia* Method 2002.0 TA07.01
- [ ] *Cyprinella leedsi* Method 2000.0 TA07.02
- [ ] *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 2,9/10 Time: 1300
Test Ending: Date: 2/13/10 Time: 1200

Test Type: [ ] non-renewal [✓] renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L g/L	Replicate	Test Hour	pH (SU)	Temperature (° C)	Dissolved Oxygen (mg/L)	Conductivity [ ] µmhos [✓] mmhos	Salinity (ppth)
Control	A	0 hr	8.3	24.0	7.3	32.3	20.0
	B	24 hr	8.3	24.0	6.4	33.2	20.8
	C	48 hr BR	8.1	24.7	5.5	33.4	20.9
	C	48 hr AR	8.3	24.0	6.4	33.3	20.8
	D	72 hr	7.9	24.8	5.4	34.4	21.6
	A	96 hr	8.1	24.1	5.7	33.3	20.9
20	A	0 hr	8.3	24.0	7.3	32.9	20.5
	B	24 hr	8.3	24.1	6.4	33.1	20.6
	C	48 hr BR	8.0	24.4	5.6	33.8	21.2
	C	48 hr AR	8.3	24.1	6.4	33.2	20.7
	D	72 hr	8.1	24.4	5.4	34.3	21.5
	A	96 hr	8.1	23.8	5.8	33.9	21.2
30	A	0 hr	8.3	24.0	7.3	32.9	20.5
	B	24 hr	8.3	24.0	6.3	33.2	20.7
	C	48 hr BR	8.1	24.5	5.5	34.4	21.5
	C	48 hr AR	8.3	24.0	6.5	33.4	20.8
	D	72 hr	8.2	24.5	5.9	34.9	21.9
	A	96 hr	8.1	23.9	5.8	33.9	21.2
45	A	0 hr	8.3	24.0	7.3	32.9	20.5
	B	24 hr	8.3	24.1	6.3	33.2	20.7
	C	48 hr BR	8.1	24.3	5.3	33.5	21.0
	C	48 hr AR	8.3	24.1	6.5	33.1	20.7
	D	72 hr	8.2	24.4	5.9	34.5	21.6
	A	96 hr	8.1	23.9	5.9	33.6	21.1
67	A	0 hr	8.3	24.0	7.3	32.8	20.4
	B	24 hr	8.2	24.0	6.1	32.8	20.5
	C	48 hr BR	8.1	24.4	5.4	34.3	21.5
	C	48 hr AR	8.3	24.0	6.5	32.9	20.5
	D	72 hr	8.2	24.0	6.0	34.5	21.6
	D	96 hr	8.1	24.0	5.9	33.6	20.9
100	A	0 hr	8.3	24.1	7.3	33.0	20.6
	B	24 hr	8.2	24.2	6.1	33.3	20.8
	C	48 hr BR	8.1	24.2	5.4	34.0	21.3
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Jana Daniels
Chelsea French
Marshall Faircloth
Bruce Alexander

Reviewed By: Loretta Wolfe

Measured by:
0 hr: CF
24 hr: CF
48 hr BR: CF
48 hr AR: CF
72 hr: CF
96 hr: CF

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet

Method from EPA-821-R-02-012 except *H. azteca*

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☒ *Menidia Beryllina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Type: ☐ non-renewal ☒ renewal

Test Page 1 of 2

Diluent/ Batch #: ASW 12.1.10
Toxicant/ Batch#: $CuCl_2$ 12.9.10

Organism Batch: 2.9.10
Age: 13 days

Test Beginning: Date: 2.9.10 Time: 1305
Test Ending: Date: 2.13.10 Time: 1200

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	~~B.SD~~
Alkalinity (mg/L as $CaCO_3$):	243	TA06_08	BA
Hardness (mg.L as $CaCO_3$):	–	TA06_09	–
Total Ammonia (mg/L as N):	<0.034	TA06_17	BA
Conductivity: µmhos (mmhos)	32.1	TA06_25	CF
Salinity (ppth):	20.0	TA06_25	CF

Food:	Batch
☐ YCT	10-30-09
☐ *P. subcapitata*	12-23-09
☑ Artemia Lot #	23613

Artemia Batch:
0 hr: 22-10
24 hr:
48 hr: 24-10
72 hr:

Chamber size: 1000 mL
Test volume: 500 mL per replicate

Concentrations prepared by: BD
Temperature Range °C: (if used)
Test Incubated in: Incubator # ___ Waterbath # 2 Incubator # 2 min 25.5 max 27.4 mean 26.5
Light Intensity: 50-100 Ft. candles Waterbath # ___ min ___ max ___ mean ___
Photoperiod: 16 hours Light / 8 hours dark Room B246 min 21.9 max 23.8 mean 22.9

Feeding: √as needed
- ☐ Before test
- ☐ 0 hr
- ☑ 24 hr
- ☐ 48 hr
- ☒ 72 hr 02/13/10

all species 2 hrs prior to test

mysids daily

all species except *H. azteca* 2 hr prior to renewal

H. azteca 0 hr and 48 hr

Concentration µg/L	mg/L	g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control			A	D1	10	10	10	10	10	10
			B	D2	10	10	10	10	10	10
200			A	D3	10	10	10	10	10	10
			B	D4	10	10	320	8	8	8
300			A	D5	10	9 10D	7D	7	7	7
			B	D6	10	7 3D	6D	6	6	6
400			A	D7	10	4 6D	2D	2	2	2
			B	D8	10	3 7D	1D	1	1	1
500			A	D9	10	0 10D	–	–	–	–
			B	D10	10	0 10D	–	–	–	–
600			A	D11	10	0 10D	–	–	–	–
			B	D12	10	0 10D	–	–	–	–
Organisms loaded by: CF			Checked by:		BD	CF	BD	CF	CF	CF

Loading Verified by: BD AR = after renewal
m = missing d = dead BR = before renewal hr = hour

Investigators' Signatures
James Daniels
Chelsea French
Marbell Fairchild
Bree Alexander
Reviewer: Loretta Wolfe

Comments: Repeat of 2-2-10 test MF-2/18/2010
See Pages 31-32 for initial test MF 3-15-10

H. azteca		
0 hr	Alk	Hrd
Well		
100%		
96 hr	Alk	Hrd
Well		
100%		

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: 306.1	273.8	336
96 hour: 306.1	273.8	336

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Revised 7/15/2008 mf

Appendix C. (continued)

FDEP Biology Laboratory - Acute SRT Bench Sheet
0-96 hour parameters
Methods from EPA-821-R-02-012 except *H. azteca*
Test Page 2 of 2

Test Organism: (check one)
- ☐ *Americamysis bahia* Method 2007.0 TA07.03
- ☒ *Menidia Berylina* Method 2006.0 TA07.04
- ☐ *Hyalella azteca* Method 100.1 EPA-600-R-99-064
- ☐ *Ceriodaphnia dubia* Method 2002.0 TA07.01
- ☐ *Cyprinella leedsi* Method 2000.0 TA07.02
- ☐ *Pimephales promelas* Method 2000.0 TA07.02

Test Beginning: Date: 2.9.10 Time: 1305
Test Ending: Date: 2.13.10 Time: 1200
Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L g/L	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☒ mmhos	Salinity (ppth)
Control	A	0 hr	8.3	24.0	7.2	32.1	20.0
	B	24 hr	8.3	24.9	6.4	32.6	20.3
	A	48 hr BR	8.2	25.3	6.3	33.0	20.6
	A	48 hr AR	8.3	24.0	6.7	33.1	20.6
	B	72 hr	8.3	24.9	6.1	34.6	21.7
	A	96 hr	8.2	24.0	6.7	33.5	21.0
200	A	0 hr	8.3	24.0	7.2	32.9	20.5
	B	24 hr	8.3	24.9	6.4	32.8	20.5
	A	48 hr BR	8.2	25.6	6.3	33.1	20.6
	A	48 hr AR	8.3	24.1	6.7	33.2	20.7
	B	72 hr	8.3	24.6	6.1	34.3	21.5
	A	96 hr	8.2	24.0	6.7	33.4	20.8
300 ~~400~~ JD	A	0 hr	8.3	24.0	7.1	32.9	20.5
	B	24 hr	8.3	25.8	6.4	33.0	20.5
	A	48 hr BR	8.2	25.5	6.3	33.5	20.9
	A	48 hr AR	8.3	24.1	6.7	33.0	20.6
	B	72 hr	8.3	24.6	6.1	34.4	21.5
	A	96 hr	8.2	24.0	6.7	33.5	20.9
400 ~~500~~ JD	A	0 hr	8.3	24.0	7.2	32.9	20.5
	B	24 hr	8.3	25.0	6.4	32.8	20.5
	A	48 hr BR	8.2	25.6	6.2	33.5	20.9
	A	48 hr AR	8.3	24.1	6.7	32.8	20.5
	B	72 hr	8.3	24.9	6.1	34.0	21.3
	A	96 hr	8.2	24.0	6.7	33.3	20.8
500	A	0 hr	8.3	24.1	7.2	32.7	20.5
	B	24 hr	8.3	25.4	6.4	32.7	20.3
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
600	A	0 hr	8.3	24.1	7.2	32.8	20.5
	B	24 hr	8.3	25.6	6.4	32.7	20.4
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
James Davis
Chelsea French
Marshall Faircloth
Bree Alexander
Reviewed By: Letitia Wolfe

Measured by:
0 hr: CF
24 hr: CF
48 hr BR: CF
48 hr AR: CF
72 hr: CF
96 hr: CF

Measure/record salinity for marine tests

Comments:

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Revised 07/15/2008 MF

Appendix C. (continued)

DATE: 2-9-10 DURATION: 96 h TOXICANT : CdCl2
SPECIES: *Americamysis bahia*

RAW DATA: Concentration (ug/L)	Number Exposed	Mortalities
.00	20	0
20.00	20	0
30.00	20	0
45.00	20	14
67.00	20	20
100.00	20	20

SPEARMAN-KARBER TRIM: .00%

SPEARMAN-KARBER ESTIMATES: LC50: 41.45
95% LOWER CONFIDENCE: 38.17
95% UPPER CONFIDENCE: 45.01

DATE: 2-9-10 DURATION: 96 h TOXICANT : CuCl2
SPECIES: *Menidia beryllina*

RAW DATA: Concentration (ug/>L)	Number Exposed	Mortalities
.00	20	0
200.00	20	2
300.00	20	7
400.00	20	17
500.00	20	20
600.00	20	20

SPEARMAN-KARBER TRIM: 10.00%

SPEARMAN-KARBER ESTIMATES: LC50: 314.39
95% LOWER CONFIDENCE: 282.57
95% UPPER CONFIDENCE: 349.79

Appendix D. Test Organisms

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 2/8/10

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia	250	4 DA-IS	MS100204	25	8.0	25 15.0
Menidia beryllina	250	12 DAYS	SS100127	25	8.0	20 14.3
						Hardness mg/L
Cyprinella leedsi	150	11 DAYS	CL100128	25	7.8	80
Pimephales promelas						
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: _____

Shipped Via: FedEx

Notes: _____

Thank you for your order.

4569 Samuel Street · Sarasota, FL 34233 · Tel: 941-925-3594 · Fax: 941-922-3874 · Web: www.biologylab.com

Appendix E. Chemical Analyses performed on the effluent from the Morton Salt facility EFF-02 NPDES sampling point for Outfall D-001 sampled on February 8, 2010.

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:27	Effluent	AGP/LN	Algal Growth Potential	0.300	U	mg DryWt/L	0.300	0.900
2/8/2010 9:27	Effluent	AGP/LN	Algal Growth Potential, Salinity Adjusted	3.00	U	mg DryWt/L	3.00	3.00
2/8/2010 9:27	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.74	IJ	mg/L	0.2	2
2/8/2010 9:27	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.55	U	ug/L	0.55	1.7
2/8/2010 9:27	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.4	U	ug/L	0.4	1.2
2/8/2010 9:27	Effluent	Microbiology	Fecal Coliforms-Membrane Filter	2	UQ	#/100 mL	2	2
2/8/2010 9:27	Effluent Bioassay	Toxicology	Bioassay-Acute-Screen-SW-Mysid, LC50	100	K	LC50		
2/8/2010 9:27	Effluent Bioassay	Toxicology	Bioassay-Acute-Screen-SW-Fish, LC50	100	L	LC50		
2/8/2010 9:27	Effluent	Metals	Zinc	25	U	ug/L	25	100
2/8/2010 9:27	Effluent	Metals	Iron	710		ug/L	30	120
2/8/2010 9:27	Effluent	Metals	Calcium	252		mg/L	0.37	1.5
2/8/2010 9:27	Effluent	Metals	Lead	1.1	I	ug/L	0.6	2.4
2/8/2010 9:27	Effluent	Metals	Chromium	21.7		ug/L	0.9	3.6
2/8/2010 9:27	Effluent	Metals	Aluminum	900		ug/L	60	240
2/8/2010 9:27	Effluent	Metals	Arsenic	0.75	U	ug/L	0.75	3
2/8/2010 9:27	Effluent	Metals	Magnesium	165		mg/L	0.2	0.8
2/8/2010 9:27	Effluent	Metals	Selenium	0.6	U	ug/L	0.6	2.4
2/8/2010 9:27	Effluent	Metals	Copper	2.4		ug/L	1.5	1.5
2/8/2010 9:27	Effluent	Metals	Nickel	11.3		ug/L	0.75	3
2/8/2010 9:27	Effluent	Metals	Cadmium	0.09	U	ug/L	0.09	0.36
2/8/2010 9:27	Effluent	Metals	Silver	0.075	U	ug/L	0.075	0.3
2/8/2010 9:27	Effluent	Nutrients	NO2NO3-N	0.029		mg N/L	0.004	0.01
2/8/2010 9:27	Effluent	Nutrients	Ammonia-N	0.66		mg N/L	0.01	0.02
2/8/2010 9:27	Effluent	Nutrients	Kjeldahl Nitrogen	0.98		mg N/L	0.08	0.2
2/8/2010 9:27	Effluent	Nutrients	TDS	17300		mg/L	750	3000
2/8/2010 9:27	Effluent	Nutrients	Chloride	12000	A	mg Cl/L	20	50
2/8/2010 9:27	Effluent	Nutrients	O-Phosphate-P	0.007	IJ	mg P/L	0.004	0.01
2/8/2010 9:27	Effluent	Nutrients	Total-P	0.013		mg P/L	0.004	0.01
2/8/2010 9:27	Effluent	Overflow	Oil and Grease	1.4	U	mg/L	1.4	5
2/8/2010 9:27	Effluent	Pesticides	Ametryn	0.05	UJ	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Chlorpyrifos Ethyl	0.05	U	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Diazinon	0.05	UJ	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Ethoprop	0.1	U	ug/L	0.1	0.4

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:27	Effluent	Pesticides	Metalaxyl	0.25	U	ug/L	0.25	1
2/8/2010 9:27	Effluent	Pesticides	Naled	0.8	U	ug/L	0.8	3.2
2/8/2010 9:27	Effluent	Pesticides	Methoxychlor	0.05	UJ	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Hexazinone	0.1	UJ	ug/L	0.1	0.4
2/8/2010 9:27	Effluent	Pesticides	Norflurazon	0.15	U	ug/L	0.15	0.6
2/8/2010 9:27	Effluent	Pesticides	Phorate	0.05	U	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Toxaphene	0.75	U	ug/L	0.75	3
2/8/2010 9:27	Effluent	Pesticides	Fonofos	0.1	U	ug/L	0.1	0.4
2/8/2010 9:27	Effluent	Pesticides	Parathion Ethyl	0.15	U	ug/L	0.15	0.6
2/8/2010 9:27	Effluent	Pesticides	Alpha-BHC	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	DDE-p,p'	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Dieldrin	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Endosulfan I	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Endosulfan II	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Atrazine	0.05	U	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Bromacil	0.2	UJ	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	Chlorpyrifos Methyl	0.1	U	ug/L	0.1	0.4
2/8/2010 9:27	Effluent	Pesticides	Fenamiphos	0.2	U	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	Endrin	0.05	UJ	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	Gamma-BHC	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	Butylate	0.2	U	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	Mevinphos	0.2	U	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	Simazine	0.05	U	ug/L	0.05	0.2
2/8/2010 9:27	Effluent	Pesticides	DDT-p,p'	0.03	U	ug/L	0.03	0.12
2/8/2010 9:27	Effluent	Pesticides	Delta-BHC	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	Azinphos Methyl	0.2	UJ	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	Aldrin	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	Endosulfan Sulfate	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Endrin Aldehyde	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Chlordane	0.2	U	ug/L	0.2	0.8
2/8/2010 9:27	Effluent	Pesticides	DDD-p,p'	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Pesticides	Heptachlor	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	Alachlor	0.6	UJ	ug/L	0.6	2.4
2/8/2010 9:27	Effluent	Pesticides	Ethion	0.05	U	ug/L	0.05	0.2

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:27	Effluent	Pesticides	Malathion	0.15	U	ug/L	0.15	0.6
2/8/2010 9:27	Effluent	Pesticides	Metolachlor	0.5	U	ug/L	0.5	2
2/8/2010 9:27	Effluent	Pesticides	Metribuzin	0.1	UJ	ug/L	0.1	0.4
2/8/2010 9:27	Effluent	Pesticides	Parathion Methyl	0.1	UJ	ug/L	0.1	0.4
2/8/2010 9:27	Effluent	Pesticides	Prometryn	0.15	UJ	ug/L	0.15	0.6
2/8/2010 9:27	Effluent	Pesticides	Beta-BHC	0.01	U	ug/L	0.01	0.04
2/8/2010 9:27	Effluent	Pesticides	Heptachlor Epoxide	0.02	U	ug/L	0.02	0.08
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Anthracene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	4.7	U	ug/L	4.7	19
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Dimethyl phthalate	9.4	U	ug/L	9.4	38
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Hexachlorobenzene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.5
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	4.7	U	ug/L	4.7	19
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Isophorone	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Naphthalene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.5
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.5
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	56
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Acenaphthene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Chrysene	0.94	U	ug/L	0.94	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Benzidine	94	U	ug/L	94	380
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	56
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Fluorene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2-Nitrophenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	56
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Acenaphthylene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Diethyl phthalate	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Fluoranthene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.5
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Pentachlorophenol	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Phenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Pyrene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	9.4	U	ug/L	9.4	38
2/8/2010 9:27	Effluent	Priority Organic Pollutants	2-Chlorophenol	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Hexachloroethane	2.8	U	ug/L	2.8	11
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Priority Organic Pollutants	Phenanthrene	0.94	U	ug/L	0.94	3.8
2/8/2010 9:27	Effluent	Field Parameter	Specific Conductance	2872		umhos/cm		
2/8/2010 9:27	Effluent	Field Parameter	Temperature	38.56		C		
2/8/2010 9:27	Effluent	Field Parameter	pH	7.16				
2/8/2010 9:27	Effluent	Field Parameter	Sample Depth	0.2		m		
2/8/2010 9:27	Effluent	Field Parameter	Dissolved Oxygen	7.71		mg/L		
2/8/2010 9:27	Effluent Bioassay	Field Parameter	Specific Conductance	2872		umhos/cm		
2/8/2010 9:27	Effluent Bioassay	Field Parameter	Dissolved Oxygen	7.7		mg/L		
2/8/2010 9:27	Effluent Bioassay	Field Parameter	Temperature	38.6		C		

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:27	Effluent Bioassay	Field Parameter	pH	7.2				
2/8/2010 9:45	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
2/8/2010 9:45	Blank	Metals	Zinc	5	U	ug/L	5	20
2/8/2010 9:45	Blank	Metals	Chromium	0.3	U	ug/L	0.3	1.2
2/8/2010 9:45	Blank	Metals	Iron	30	U	ug/L	30	120
2/8/2010 9:45	Blank	Metals	Copper	0.5	U	ug/L	0.5	0.5
2/8/2010 9:45	Blank	Metals	Aluminum	60	U	ug/L	60	240
2/8/2010 9:45	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
2/8/2010 9:45	Blank	Metals	Cadmium	0.03	U	ug/L	0.03	0.12
2/8/2010 9:45	Blank	Metals	Nickel	0.55	I	ug/L	0.25	1
2/8/2010 9:45	Blank	Metals	Selenium	0.2	U	ug/L	0.2	0.8
2/8/2010 9:45	Blank	Metals	Magnesium	0.04	U	mg/L	0.04	0.16
2/8/2010 9:45	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
2/8/2010 9:45	Blank	Metals	Lead	0.2	U	ug/L	0.2	0.8
2/8/2010 9:45	Blank	Nutrients	Total-P	0.004	U	mg P/L	0.004	0.01
2/8/2010 9:45	Blank	Nutrients	Kjeldahl Nitrogen	0.08	U	mg N/L	0.08	0.2
2/8/2010 9:45	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
2/8/2010 9:45	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01
2/8/2010 9:45	Blank	Nutrients	Ammonia-N	0.01	U	mg N/L	0.01	0.02
2/8/2010 9:45	Blank	Pesticides	Heptachlor	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	Butylate	0.19	U	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Parathion Methyl	0.095	UJ	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Alpha-BHC	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	DDE-p,p'	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Heptachlor Epoxide	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Toxaphene	0.71	U	ug/L	0.71	2.8
2/8/2010 9:45	Blank	Pesticides	Atrazine	0.047	U	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Bromacil	0.19	UJ	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Ethoprop	0.095	U	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Fonofos	0.095	U	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Prometryn	0.14	UJ	ug/L	0.14	0.56
2/8/2010 9:45	Blank	Pesticides	Endosulfan I	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Gamma-BHC	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	Alachlor	0.57	UJ	ug/L	0.57	2.3

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:45	Blank	Pesticides	Delta-BHC	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	Endosulfan Sulfate	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Azinphos Methyl	0.19	UJ	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Chlorpyrifos Ethyl	0.047	U	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Naled	0.76	U	ug/L	0.76	3
2/8/2010 9:45	Blank	Pesticides	Phorate	0.047	U	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	DDT-p,p'	0.028	U	ug/L	0.028	0.11
2/8/2010 9:45	Blank	Pesticides	Dieldrin	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Endosulfan II	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Ametryn	0.047	UJ	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Fenamiphos	0.19	U	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Malathion	0.14	U	ug/L	0.14	0.56
2/8/2010 9:45	Blank	Pesticides	Metolachlor	0.47	U	ug/L	0.47	1.9
2/8/2010 9:45	Blank	Pesticides	Metribuzin	0.095	UJ	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Mevinphos	0.19	U	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Endrin Aldehyde	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Diazinon	0.047	UJ	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Aldrin	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	DDD-p,p'	0.019	U	ug/L	0.019	0.076
2/8/2010 9:45	Blank	Pesticides	Ethion	0.047	U	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Metalaxyl	0.24	U	ug/L	0.24	0.96
2/8/2010 9:45	Blank	Pesticides	Norflurazon	0.14	U	ug/L	0.14	0.56
2/8/2010 9:45	Blank	Pesticides	Parathion Ethyl	0.14	U	ug/L	0.14	0.56
2/8/2010 9:45	Blank	Pesticides	Endrin	0.047	UJ	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Chlorpyrifos Methyl	0.095	U	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Hexazinone	0.095	UJ	ug/L	0.095	0.38
2/8/2010 9:45	Blank	Pesticides	Simazine	0.047	U	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Pesticides	Beta-BHC	0.0095	U	ug/L	0.0095	0.038
2/8/2010 9:45	Blank	Pesticides	Chlordane	0.19	U	ug/L	0.19	0.76
2/8/2010 9:45	Blank	Pesticides	Methoxychlor	0.047	UJ	ug/L	0.047	0.19
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	14	U	ug/L	14	57
2/8/2010 9:45	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Dimethyl phthalate	9.5	U	ug/L	9.5	38
2/8/2010 9:45	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:45	Blank	Priority Organic Pollutants	2-Chloronaphthalene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Hexachlorobutadiene	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Pyrene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Chrysene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Fluoranthene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Hexachlorobenzene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.6
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	9.5	U	ug/L	9.5	38
2/8/2010 9:45	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.6
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.6
2/8/2010 9:45	Blank	Priority Organic Pollutants	Naphthalene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.6
2/8/2010 9:45	Blank	Priority Organic Pollutants	2-Nitrophenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Acenaphthylene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	14	U	ug/L	14	57
2/8/2010 9:45	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Fluorene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
2/8/2010 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	4.7	U	ug/L	4.7	19
2/8/2010 9:45	Blank	Priority Organic Pollutants	Diethyl phthalate	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Phenanthrene	0.95	U	ug/L	0.95	3.8

Appendix E. (continued)

Date Sampled	Field ID	Analysis	Component	Value	Qualifier	Units	MDL	PQL
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Anthracene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzidine	95	U	ug/L	95	380
2/8/2010 9:45	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Pentachlorophenol	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Phenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	2-Chlorophenol	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
2/8/2010 9:45	Blank	Priority Organic Pollutants	Acenaphthene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.95	U	ug/L	0.95	3.8
2/8/2010 9:45	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	4.7	U	ug/L	4.7	19
2/8/2010 9:45	Blank	Priority Organic Pollutants	Hexachloroethane	2.8	U	ug/L	2.8	11
2/8/2010 9:45	Blank	Priority Organic Pollutants	Isophorone	0.95	U	ug/L	0.95	3.8

Appendix F. Facility Summary, Effluent Limits, and Permit Violations Recorded on Discharge Monitoring Report

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: William Hesser	**Contact Number: 407-893-3313**
Facility Name (as it appears on permit): Morton Salt NPDES Minor	**Former Names:**
NPDES Permit Number: FL0042005	**Permit Expiration Date: January 8, 2013**
Physical Address: 450 Cargo Road, Port Canaveral, FL 32920	
District: Central District	**County: Brevard**
Function of Facility: Salt terminal, drying and packaging	
Facility Type: Primary SIC 5169 Bulk Terminal for Salt Importation	**Permitted Capacity (MGD): 0.0840 MGD**
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): D-001 0.05989 MGD based on most recent 12 reported monthly averages.	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months):	
Description of type of Discharge: ☐ **Continuous** ☒ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	

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Appendix F. (continued)

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):
At the nearest accessible point after final treatment, but prior to the actual discharge with the receiving water.

Description of Permitted Outfall(s):
D-001 is in the Port Canaveral Middle Turning Basin (Class III Marine Waters)

Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility):

The facility generates wastewater in three operations on-site. These are the wet scrubber, the wash down of vehicles and equipment and contact storm water runoff from the materials storage and handling areas.

The wet scrubber unit is used to reduce salt dust in the air created by bulk handling of salt. The water in the scrubber is recycled internally at 100 gpm using a recycle tank and is discharged periodically. The wastestream discharged from the scrubber is 0.060 MGD average daily flow.

The second wastestream is process wastewater from the wash down of vehicles and equipment used in the handling of salt. This is generated at the rate of 10 gpm for approximately 12 hours per week.

The third wastestream is contact storm water run off from the materials storage and handling areas. Storm water flows into the retention pond via sheet flow and storm water inlets. The retention pond is equipped with an under drain system and overflow weir. The under drain system and overflow weir discharge through a catch basin into the Port Canaveral Middle Turning Basin via outfall D-001.

The lined 24-inch deep retention pond provides settling for the combined wastestreams, which are then discharged into the catch basin and then to outfall D-001. The retention pond has an under drain system that allows for recovery of the retention volume. The liner is provided in this pond to protect the tie rods supporting the adjacent sea wall from corrosion. The retention pond under drain system consists of perforated pipe, surrounded with filter fabric. Any material that may settle out in the pond shall be removed as required for system maintenance and disposed of in a Department approved manner. Any water collected in the under drain System also discharges into the catch basin.

Appendix F. (continued)

PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes

Discharge Limitations					Monitoring Requirements	
Parameters (units)	Monthly Average	Daily Maximum	Daily Minimum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	Report	0.0840	--	Daily	Meter	EFF-01
Iron, Total Recoverable (MG/L)	--	0.3	--	Monthly	Grab	EFF-02
Nitrogen, Nitrate, Total[1] (as N) (MG/L)	--	Report	--	Monthly	Grab	EFF-02
Nitrogen, Ammonia, Total (as N) (MG/L)	--	Report (1)	--	Monthly	Grab	EFF-02
Chloride (as Cl) (MG/L)	--	Report	--	Monthly	Grab	SWA-01
Chloride (as Cl) (MG/L)	--	*	--	Monthly	Grab	EFF-02
Solids, Total Dissolved (TDS) (MG/L)	Report	Report	--	Monthly	Grab	EFF-02
Solids, Total Suspended (MG/L)	Report	Report	--	Monthly	Grab	EFF-02
Oxygen, Dissolved (DO) (MG/L)	--	--	5.0	Monthly	Grab	EFF-02
pH (SU)	--	8.5	6.5	Monthly	Grab	EFF-02
Oil and Grease (MG/L)	--	5.0	--	Quarterly	Grab	EFF-02
Phosphorus, Total (as P) (MG/L)	--	Report	--	Quarterly	Grab	EFF-02
Nitrogen, Total (MG/L)	--	Report	--	Quarterly	Grab	EFF-02

Appendix F. (continued)

PART I: Continued	
Receiving Waters: **Port Canaveral Middle Turning Basin**	**Classification (indicate whether fresh or marine):** **Class III Marine**
Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):	
Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):	
Facility Mixing Zone Details (if applicable):	

List Permit Violations (DMR data) and plant upsets that occurred at the plant within the last year:

Date	Parameter and Units	Limit	Result

Describe previous FYI and WQBEL study:

September 19, 2005, Department personnel conducted a Fifth Year Inspection (FYI).

Describe previous or current Enforcement Actions (including WLs):

Describe any violations or problems noted in previous inspection:

Discuss whether DMR trends within previous five years are improving or declining:

Additional Comments (this should include a trend of the Effluent, i.e. if the facility is now Reuse):

Appendix F. (continued)

PART II: Sampling Event Information	
Date(s) sample collected:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

FDEP Biology Section Bioassay Sample Log-In Sheet

Facility	LIMS Job and Sample Numbers	Time & Date Sampled	Time & Date Received in Tox	Receiving Temp °C	Initials	Phys-Chem (after warming) DO (mg/L)	Temp (°C)	pH	Cond / Salinity	Initials	Sample Disposal	Comments
Winter Haven 1/3	1230408 TLH-2009-11-15	16 Nov 09 0920	11.17.09 10:12	2.2	JD	11.4	24.1	8.2	874 µ / .38	JD	Date: 4.20.10 Method: E Initials: JD	aerated ~5 minutes - DO = 7.7 after aeration
Winter Haven 2/3	1231366 TLH-2009-11-19	18 Nov 09 0910	11.19.09 9:35	0.4	JD	9.3	24.5	8.0	889 µ / 0.38	JD	Date: 4.20.10 Method: E Initials: JD	Aerated ~ 5 minutes DO = 7.3 after aeration
Winter Haven 3/3	1231801 TLH-2009-11-2301	11-20-09 0930	11-20-09 0910	1.2°C	MF	10.7	25.4	8.1	895 µ / 0.39	MF	Date: 4.20.10 Method: E Initials: JD	aerated 5 minutes DO = 7.5 after aeration MF 11-21-09
IRCD	TLH-2009-12-08-85 1239895	12.7.09 9:38	10:26 12.8.09	1.9	JD	8.2	24.5	7.5	1102 µm / 0.50 ppt	JD	Date: 4.20.10 Method: E Initials: JD	
JEA-Northside	TLH-2010-01-12-10 1247648	1-11-10 10:43	10:31 1-12-10	2.9	JD	8.4	24.5	8.0	35.9 mS / 22.91	BA	Date: 4.20.10 Method: E Initials: JD	
Morton Salt	TLH-2010-02-09-25 1247668	2-8-10 9:27	10:35 2-9-10	0.9	CF	5.0	25.1	7.3	33.2 mm / 23.2	CF	Date: 4.20.10 Method: E Initials: JD	Salinity from 23.4 to 30.4 for mysid 4.21.10 23.4 to 24.5 for Inidis
Mulberry	TLH-2010-02-23-32 1251281	2.22.10 0910	2.23.10 10:09 JD	2.8	JD	9.8	24.8	7.5	847 µm / 0.36 ppt	JD	Date: 4.20.10 Method: E Initials: JD	
Hastings	TLH-2010-02-27-48 1251350	2.22.10 1500	10:26 2.23.10	1.3	JD	7.8	25.0	6.9	602 µm / 0.23 ppt	JD	Date: 4.20.10 Method: E Initials: JD	
Mulberry 2/3	TLH-2010-02-25-61 1252101	2-24-10 0830	9:52 2.25.10	1.1	JD	9.6	24.4	7.5	832 µm / 0.35	MF	Date: 4.20.10 Method: E Initials: JD	
Mulberry 3/3	Samples arrived after holding time 3/1/10		3.1.10 0915	1.0	JD						Date: 4.20.10 Method: E Initials: JD	Samples arrived late due to FedEx error
Midcounty 1/3	TLH-2010-03-02-62 1252865	3-1-10 0800	3-2-2010 10:18	8.1 Lab Temp	MF	7.7	24.2	7.7	1056 µm / 0.47	MF	Date: 4.20.10 Method: E Initials: JD	aerated 3 - pm final DO 7.6

Receiving Temp = Temperature as received in Chemistry Receiving

Conductivity: µ = micromhos, m = millimhos

Disposal Method: E = expended during test, D = discarded after test

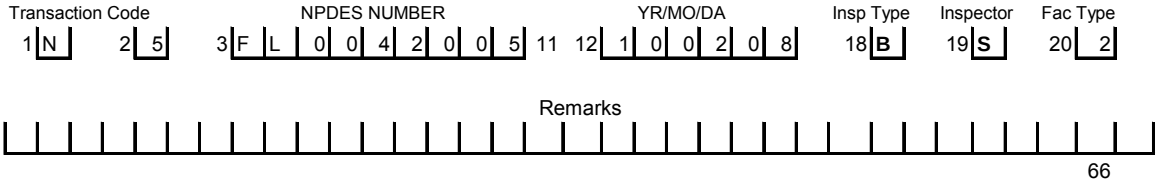
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Appendix H. EPA End Sheet

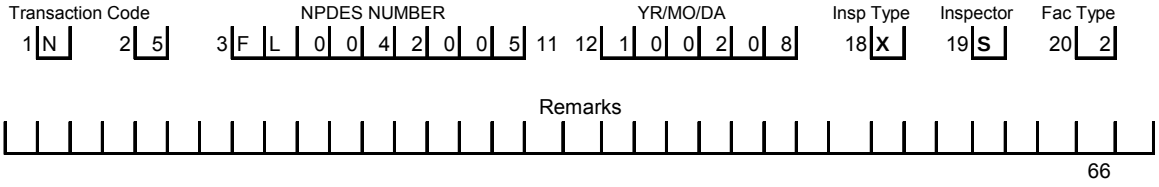
The Bioassay of Morton Salt effluent sampled on February 8, 2010. NPDES #FL0042005.

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



The Priority Pollutants Analysis of Morton Salt effluent sampled on February 8, 2010. NPDES #FL0042005.

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



Biological Analyses of Morton Salt effluent sampled on February 8, 2010. NPDES #FL0042005.

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

