

Biological Assessment of

International Paper Company, Pensacola Mill

Escambia County

NPDES # FL0002526

Sampled September 9-10, 2013

May 2014

Biology Section

Bureau of Laboratories

Division of Environmental Assessment and Restoration

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CONTENTS

Facility Overview

Methods

Results

Conclusion

Literature Cited

Tables

Table 1. Effluent limits, Class III Freshwater Criteria and chemical, microbiological and toxicological data

Table 2. Effluent limits, Class III Freshwater Criteria and metals data

Table 3. Measured and predicted freshwater algal growth potential (AGP)

Table 4. Florida Wetland Condition Index - Vegetation (WCI-V)

Appendices

Appendix A. Map of facility

Appendix B. Facility Summary

Appendix C. Explanation of measurements

Appendix D. Chain of Custody

Appendix E. Physical/Chemical field sheets

Appendix F. Chemical analyses of effluent and receiving water

Appendix G. Toxicological results

Appendix H. Florida Wetland Condition Index – Vegetation (WCI-V) plant taxa list

EPA End Sheet

Facility Overview

The International Paper Company, Pensacola Mill is a producer of unbleached linerboard Kraft paper and bleached Kraft pulp. The wastewater treatment system treats industrial process wastewater, stormwater associated with industrial activity, and pretreated sanitary wastewaters. The facility discharges continuously via an effluent transmission pipeline to a wetland constructed by the facility approximately 10 miles south. Waters from the wetland, a Class III Fresh Water, flow into the brackish waters of lower Eleven Mile Creek, also a Class III Fresh Water, and through Wicker and Tee Lakes, both Class III Marine Estuarine Waters, all of which flow to Upper Perdido Bay, a Class III Marine Water (see map Appendix A). Additionally, the Emerald Coast Utilities Authority Central Water Reclamation Facility (ECUA) combines effluent with International Paper Pensacola Mill effluent to discharge into the wetlands. The permitted design flow of the system is 23.8 million gallons per day (MGD) from International Paper and 5.0 MGD from ECUA. The annual average flow for September 2012 to August 2013 was 23.14 MGD. The flow measured during this survey was 22.5 MGD from the International Paper and 4.009 MGD from the ECUA (Northwest District sampling staff).

Biological assessments are prepared by FDEP staff to provide information for review of NPDES permit renewal applications. Biological assessments, in conjunction with other information concerning the subject facility and its receiving-water body, are used to determine appropriate permit conditions.

See the Facility Summary (Appendix B) for a description of the facility, summary of permit limits, Consent Order (CO), and Discharge Monitoring Report (DMR) information. The facility is operating under a consent order to perform management and monitoring of the wetlands project area constructed to receive effluent.

Methods

The purpose of this investigation was to determine the discharge's effects on the biota of the receiving waters. Effluent samples were taken as grab and composite samples from the parshall flume at monitoring location EFF-3, ahead of where the effluent from International Paper mixes with effluent from ECUA and enters the 10-mile long effluent transmission pipeline to outfall D-003 and the wetland effluent distribution system. Chemical and biological comparisons were made between the Test Wetland, located approximately 1,800 m south of the wetland distribution system, and the Control Wetland, located approximately 2,000 m west-southwest of the wetland distribution system and 1,800 m west-northwest of the Test Wetland (see map, Appendix A). Both wetlands are owned by International Paper Company, but only the Test Wetland was modified and planted during construction of the effluent transmission pipeline and wetland effluent distribution system.

All field and laboratory biological methods followed Bureau of Laboratories and Biology Section Standard Operating Procedures (see http://www.dep.state.fl.us/labs/library/lab_sops.htm and http://www.dep.state.fl.us/water/sas/sop/sops.htm for details) and met DEP quality assurance/quality control standards (see http://www.dep.state.fl.us/water/sas/qa/index.htm). Explanations of specific methods and measurements can be found in Appendix C.

The following were involved in this investigation: Rick Abad, Frank Butera, and Nathan Mulkey (FDEP Northwest District Office, Pensacola), and FDEP Central Laboratory in Tallahassee. The report was reviewed by District representatives and the Point Source Studies Review Committee (Mike Tanski, Andrew Tintle, and Jennifer Weger).

Results

Organic Constituents (See Table 1 and Appendix F)

- 1,4 -dioxane was detected in the effluent grab sample. Similar amounts were detected in the Test Wetland grab sample and in the field blank; however, the Test Wetland grab sample was improperly preserved (Y-qualifier) and the amount detected in the field blank indicates sample or lab contamination for this analyte.
- Adsorbable organic halides were detected in the effluent composite sample and complied with effluent permit limits. This analyte was not detected in the field blank. Adsorbable organic halides samples were not scheduled at the Control or Test Wetlands.
- Diethyl phthalate was detected in the effluent and Test Wetland grab samples at levels between the method detection limit (MDL) and the practical quantitation limit (PQL). It was not detected in the Control Wetland grab sample or in the field blank.
- 1,2,3,4,5,6,7,8-octachlorodibenzo-*p*-dioxin (OCDD) was detected in the effluent grab sample and in the field blank at levels between the MDL and the PQL. OCDD samples were not scheduled at the Control or Test Wetlands.
- 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) is a permitted effluent analyte and was not detected in the effluent grab sample or field blank.

Nutrients (See Table 1 and Appendix F)

- Ortho-phosphate, total phosphorus, total ammonia, and nitrate+nitrite amounts in the effluent grab samples were higher than the amounts detected in the Test Wetland samples for each nutrient, which were both higher than the amounts detected in the Control Wetland samples. Ortho-phosphate and nitrate+nitrite were not detected in the Control Wetland samples.
- Total Kjeldahl nitrogen, total nitrogen, organic nitrogen, and total organic carbon amounts in the effluent grab sample were higher than the amounts detected in both the Test and Control Wetland samples, which were similar for each of these nutrients.
- Total ammonia and total organic carbon were detected at levels between the MDL and the PQL in the field blank. No other nutrients were detected in the field blank.

Physical and Chemical Parameters (See Table 1 and Appendices D, E and F)

- The Test Wetland dissolved oxygen (mg/L) was below the minimum limit for Class III Freshwater Quality Criterion (62-302.530(30), F.A.C.). Dissolved oxygen (mg/L and % saturation) of the effluent and the Control Wetland complied with the Class III Freshwater Quality Criteria (62-302.530, F.A.C.) and/or effluent permit limits (%saturation).
- The pH (Standard Units) of the effluent complied with effluent permit limits. However, the Test Wetland pH (7.12 S.U.) was similar to the effluent pH (6.69 S.U.) and more than one unit above a background pH that was determined to be 4.0 S.U., and therefore exceeded the Class III Freshwater Quality Criterion (62-302.530(51)(c), F.A.C.). The Control Wetland pH (4.27) complied with the Class III Freshwater Quality Criterion (62-302.530(51)(c), F.A.C.).
- The effluent specific conductance (1,771 µmhos/cm) and Test Wetland specific conductance (1,515 µmhos/cm) exceeded Class III Freshwater Quality Criterion (62-302.530(22), F.A.C.), although the effluent did comply with the effluent permit limits established by the Consent Order interim limits. The Control Wetland complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Chlorophyll *a* (corrected) of the Control Wetland sample was more than twice that of the effluent grab (I-qualified) and Test Wetland samples.
- Chemical oxygen demand (COD) was detected in the effluent grab sample, but was below the MDL in the Test Wetland sample.
- Oils and greases were detected between the MDL and the PQL in the effluent grab sample which complied with the Class III Freshwater Quality Criteria (62-302.530, F.A.C) and effluent permit limits. They were not detected in the field blank.
- Fluoride detected in the effluent grab sample and in the Test Wetland sample complied with the Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Total Suspended Solids (TSS; lbs/day) were detected in the effluent composite sample in an amount that complied with effluent permit limits and were also detected at levels between the MDL and PQL in both the Test and Control Wetland samples.

Toxicity Whole Effluent Test (See Table 1 and Appendices G and H)

- Tests were performed September 10 through 17, 2013.
- The effluent sample IC25 for the fish, *Pimephales promelas*, during the chronic definitive bioassay was 22.3%, which was below the minimum effluent permit limit of 100%.
- The effluent sample IC25 for the water flea, *Ceriodaphnia dubia,* during the chronic definitive bioassay was 100%, and therefore, complied with effluent permit limits.

Microbiology (See Table 1 and Appendix F)

- Enterococci and fecal coliform analyses were performed by the University of West Florida, Pensacola, Florida.
- Fecal coliforms were detected in the effluent grab sample and in the Test Wetland sample at levels which complied with the Class III Freshwater Quality Criterion (62-302.530(6), F.A.C.) and facility permit limits. Fecal coliforms were not detected in the Control Wetland sample.

Metals (See Table 2 and Appendix F)

- All metals detected in the effluent grab sample were present at levels that complied with effluent permit limits. Additionally, all metals detected in the effluent grab, Test Wetland, and Control Wetland samples were detected at levels that complied with Class III Freshwater Quality Criteria (62-302.530, F.A.C.).
- Effluent metals were collected as a grab sample, but effluent permit limits are for 24-hr composite samples with the exception of mercury.
- Mercury was detected in the field blank at a level twice as high as the level detected in the effluent. No other metals were detected in the field blank.

Algal Growth Potential (See Table 3 and Appendix F)

- Raschke and Shultz (1987) determined that AGP values above 5.0 mg dry weight/L, which represents a "problem" threshold for fresh receiving waters, imply nutrient enrichment. The AGP value in the effluent sample using the freshwater unicellular green alga species, *Pseudokirchneriella subcapitata,* was 79.7 mg dry weight/L, approximately 16 times greater than the problem threshold value. The analytical chemistry suggests that the effluent is nitrogen limited.
- The AGP value of the Test Wetland (3.5 mg dry weight/L) was higher than that of the Control Wetland (0.845 mg dry weight/L, between the MDL and the PQL), and both were below the problem threshold of 5.0 mg dry weight/L as determined by Raschke and Shultz (1987).

Bioassessment

Florida Wetland Condition Index – Vegetation (WCI-V) (See Table 4 and Appendix C)

- WCI-V sampling was conducted September 9 through 10, 2013.
- While the Control Wetland did achieve a higher WCI-V score than the Test Wetland, both sites scored well overall and were more similar to natural wetlands than they were to more disturbed wetlands. This disturbed/natural wetland characterization is based on the WCI-V development wetlands.
- For average Coefficient of Conservatism (C of C) and % native perennials, two of the six WCI-V metrics, the Control Wetland scored similarly to more natural wetlands, while the Test Wetland scored similarly to more disturbed wetlands. Both Control and Test wetlands scored similarly to more natural wetlands for the metrics % tolerant taxa, % exotic, and % wetland status, while both scored similarly to more disturbed wetlands for the metric % sensitive taxa. Even when scoring similarly in relation to natural and disturbed wetlands, the Control Wetland scored higher than the Test Wetland on each metric except % wetland status.
- Samplers noted that the Test and Control Wetlands have water flow and depth differences. The Control Wetland is typical of the area, "saturated, with some inundated areas, with a woody and herbaceous mix, and planted pine" (Ashley O'Neal, DEP). Much of the Test Wetland, specifically constructed by the facility to receive discharged effluent, was under 3-6" of water, and in places was flowing at a velocity of 0.33 m/s—a velocity more typically observed in streams. The submerged and floating plant species which dominated the Test Wetland were not observed at the Control Wetland.

Conclusion

The Test Wetland dissolved oxygen was below the minimum limit for Class III Freshwater Quality Criterion (62-302.530(30), F.A.C.). The pH at the Test Wetland was similar to the effluent and exceeded Class III Freshwater Quality Criterion (62-302.530(51)(c), F.A.C.). The specific conductance of the effluent and the Test Wetland did not comply with the Class III Freshwater Quality Criterion (62-302.530(22), F.A.C.). Both the pH and specific conductance measurements are indicative of effluent impact at the Test Wetland. The nutrient results support possible effluent enrichment of the Test Wetland. The amounts of ortho-phosphate, total phosphorus, total ammonia, and nitrate+nitrite detected in the effluent grab and Test Wetland samples were higher than amounts detected in the Control Wetland samples. AGP values were highest in the effluent and above the problem threshold, lower in the Test Wetland sample, and lowest in the Control Wetland sample, also suggesting effluent enrichment of the Test Wetland. The results of the toxicity test showed chronic toxicity to the fish, *Pimephales promelas*, but not to the water flea, *Ceriodaphnia dubia*.

Both the Control and Test Wetlands achieved a WCI-V score similar to the more natural WCI-V development wetlands, however the final WCI-V score and five of the six WCI-V metric scores of the Control Wetland were higher than that of the Test Wetland. Regardless, both the Test and Control Wetlands scored well overall and the difference in their WCI-V score is likely driven more by the hydrological regime imposed by the effluent (larger volume of water, more frequent inundation, and differences in topography at the Test Wetland) than by impacts from the constituents of the effluent.

Literature Cited

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Table 1. Effluent limits, Class III Freshwater Criteria and chemical, microbiological and toxicological data.

International Paper Company Pensacola Mill	Class III Criteria	Effluent Limits	Effluent (Composite)	Effluent (Grab)	Test Wetland	Control Wetland	Field Blank
Organic Constituents (µg/L)							
1,4-Dioxane	-	-	-	1.4	1.1 Y	0.020 U	1.3
Adsorbable Organic Halides ξ	-	Report	461	-	-	-	6.20 U
Adsorbable Organic Halides (lbs/day) ξ	-	951	86.6 c	-	-	-	-
Diethyl phthalate	-	-	-	1.3 I	1.2 I	0.99 U	0.99 U
1,2,3,4,5,6,7,8-Octachlorodibenzo-*p*-dioxin (OCDD) (pg/L) ר	-	-	-	8.19 I	-	-	4.40 I
Nutrients (mg/L)							
Ortho-phosphate	-	Report ᵖ	-	0.29	0.17	0.004 U	0.004 U
Total Phosphorus	-	Report ᵖ	-	0.90	0.27	0.019	0.002 U
Total Ammonia	-	Report ᵖ	-	2.6	0.050	0.009	0.003 I
Un-ionized Ammonia	≤ 0.02 s	-	-	< 0.02 c	< 0.02 c	< 0.02 c	-
Nitrate and Nitrite	-	Report ᵖ	-	0.13	0.050	0.004 U	0.004 U
Total Kjeldahl Nitrogen	-	Report ᵖ	-	5.8	0.98	1.1	0.080 U
Organic Nitrogen	-	-	-	3.20 c	0.93 c	1.09 c	0.039 c€
Total Nitrogen	-	Report	-	5.93 c	1.03 c	1.10 c	0.042 c€
Total Organic Carbon	-	-	-	35	26	24	0.64 I
General Physical and Chemical Parameters							
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 5.0	-	6.71	4.29	6.54	-
Dissolved Oxygen (% saturation)	≥ 67	-	-	93.5 c	56.0 c	90.9 c	-
pH (SU)	6.0 - 8.5	5.0 - 8.5	-	6.69	7.12	4.27	-
Specific Conductance (µmhos/cm)	≤ 1,275	≤ 2,500	-	1,771	1,515	36	-
Temperature (°C)	-	Report	-	32.81	29.0	32.99	-
Salinity (ppth)	-	-	-	0.88	0.76	0.02	-
Sample Depth (m)	-	-	-	0.15	0.15	0.15	-
Chlorophyll *a* (µg/L) - Corrected	-	-	-	3.4 I	4.0	14	-
Phaeophytin (µg/L)	-	-	-	2.0 U	1.9	5.5	-
Total Suspended Solids (mg/L)	-	Report	32	-	6 I	26	-
Total Suspended Solids (lbs/day) ξ	-	16,000	6,009 c	-	-	-	-
Turbidity (NTU)	< 29 t	< 29 t	-	15	2.3	5.1	0.10 U
Color (true, PCU)	-	Report	180	-	280	180	2.5 U
Alkalinity (mg CaCO3/L)	-	-	-	134	139	0.65 U	0.65 U
Chemical Oxygen Demand (mg/L) ξ	-	Report ᵖ	-	150	6.3 U	-	-
CBOD, 5 day (mg/L), N - inhibited	-	-	7.9	-	1.9 I	3.6 A	-
Oils and Greases (mg/L) ξ	≤ 5.0	≤ 5.0	-	0.99 I	-	-	0.73 U
Chloride (mg/L)	-	-	-	63	68	5.2	0.20 U
Fluoride (mg/L)	≤ 10.0	-	-	0.17	0.26	0.035 U	0.035 U
Sulfate (mg/L)	-	-	-	600	500	0.23 I	0.20 U
Flow (MGD)	-	-	-	22.5	-	-	-
Hardness (mg $CaCO_3$)	-	Report	-	109	89.76 c	3.5 c	0.40 U
Toxicity (Chronic Definitive, IC25, % effluent)							
Bioassay - Water flea *(Ceriodaphnia dubia)*	-	≥ 100	> 100	-	-	-	-
Bioassay - Fish *(Pimephales promelas)*	-	≥ 100	22.3	-	-	-	-
Microbiology (Number of colony forming units/100ml)							
Fecal Coliforms ¥	≤ 400s #	≤ 800	-	4 B	19 B	1 U	-

Table 1. List of qualifiers

A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.

Value exceeds the Class III Water Quality Criteria or permit limits

c - Value is calculated

p - 24-hour flow proportioned composite

t - Shall not exceed 29 NTUs above background

A - Value reported is the mean of two or more determinations

B - Results based on colony counts outside the acceptance range

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

J - Estimated value (Found in Appendix F)

K - Actual value is known to be less than value given (Found in Appendix F)

L - Actual value is known to be greater than value given (Found in Appendix F)

U - Material analyzed for but not detected; value reported is the method detection limit

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.

€ - Value is calculated using half the MDL value of the analyte(s) that were not detected.

Γ - Analysis performed by ALS Environmental, Houston, Texas using EPA Method 1613B.

ξ - Analysis performed by TestAmerica, Tallahassee, Florida using EPA Method 1650 for adsorbable organic halides, EPA Method 1664A for oil and greases, and Standard Method 5220D for chemical oxygen demand.

¥ - Fecal coliform analysis performed by University of West Florida, Pensacola, Florida.

- If 10 or fewer samples are taken within a month, the single sample limit is 800 CFU (62-302.530(6), F.A.C.)

£ - measurement taken in the FDEP laboratory

Table 2. Effluent limits, Class III Freshwater Criteria and metals data - Class III Criteria based on hardness are presented individually for each site based on hardness at that site.

International Paper Company Pensacola Mill	Effluent Class III Criteria	Effluent Limits	Effluent (Grab)	Test Wetland Class III Criteria	Test Wetland	Control Wetland Class III Criteria	Control Wetland	Field Blank
Metals (µg/L unless otherwise noted)								
Aluminum	-	-	670	-	310	-	300	60 U
Arsenic	≤ 50	≤ 50 p	1.70	-	1.30	-	0.25 U	0.25 U
Cadmium	≤ 0.288 b	≤ 0.288 p	0.12 I	≤ 0.250 b	0.078 I	≤ 0.0969 b	0.090 I	0.050 U
Calcium (mg/L)	-	-	-	-	27.7	-	0.62	-
Chromium-III	≤ 92.5 b	≤ 11 p	0.82 I	≤ 78.9 b	0.62 I	≤ 27.7 b	0.33 I	0.30 U
Copper	≤ 10.0 b	≤ 10.0 p	3.30	≤ 8.51 b	0.63 I	≤ 2.85 b	1.75	0.50 U
Iron	≤ 1,000	≤ 1,000 p	290	-	220	-	320	30 U
Lead	≤ 3.55 b	≤ 3.55 p	0.49 I	≤ 2.77b	0.42 I	≤ 0.545 b	0.45 I	0.20 U
Magnesium (mg/L)	-	-	6.15	-	5.00	-	0.48	0.040 U
Mercury	-	≤ 0.012	0.0023	-	-	-	-	0.0054
Nickel	≤ 56.1 b	≤ 56.1 p	1.97	≤ 47.6 b	1.18	≤ 16.1 b	0.43 I	0.25 U
Potassium	-	-	18.8	-	16.6	-	0.30 U	0.30 U
Selenium	≤ 5.0	≤ 5.0 p	0.80	-	0.22 I	-	0.20 U	0.20 U
Silver	≤ 0.07	≤ 0.07 p	0.025 U	-	0.025 U	-	0.025 U	0.025 U
Sodium	-	-	353	-	302	-	3.2	0.50 U
Zinc	≤ 129 b	≤ 129 p	15 I	≤ 109 b	5.0 U	≤ 37.0 b	6.0 I	5.0 U

See Table 1 for calculated hardness.
A dash (-) indicates sample/measurement was not collected or criterion/limit does not exist.
b - Value is calculated based on hardness
p - 24-hour flow proportioned composite
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
U - Material analyzed for but not detected; value reported is the method detection limit
ψ - Class III Freshwater Criterion (62-302.530(19)(a), F.A.C.) for chromium-III

Table 3. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), total nitrogen (TN) and total phosphorus (TP) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus.

International Paper Company Pensacola Mill						
Location	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
Effluent	79.7	103.7 ± 20.7	225.3 ± 45.1	-	9.4	6.6
Test Wetland	3.50	3.8 ± 0.8	39.1 ± 7.8	-	0.6	3.8
Control Wetland	0.845 I	-	-	8.2 ± 1.6	-	-

A dash (-) indicates that the predicted AGP/ratio is not applicable.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit

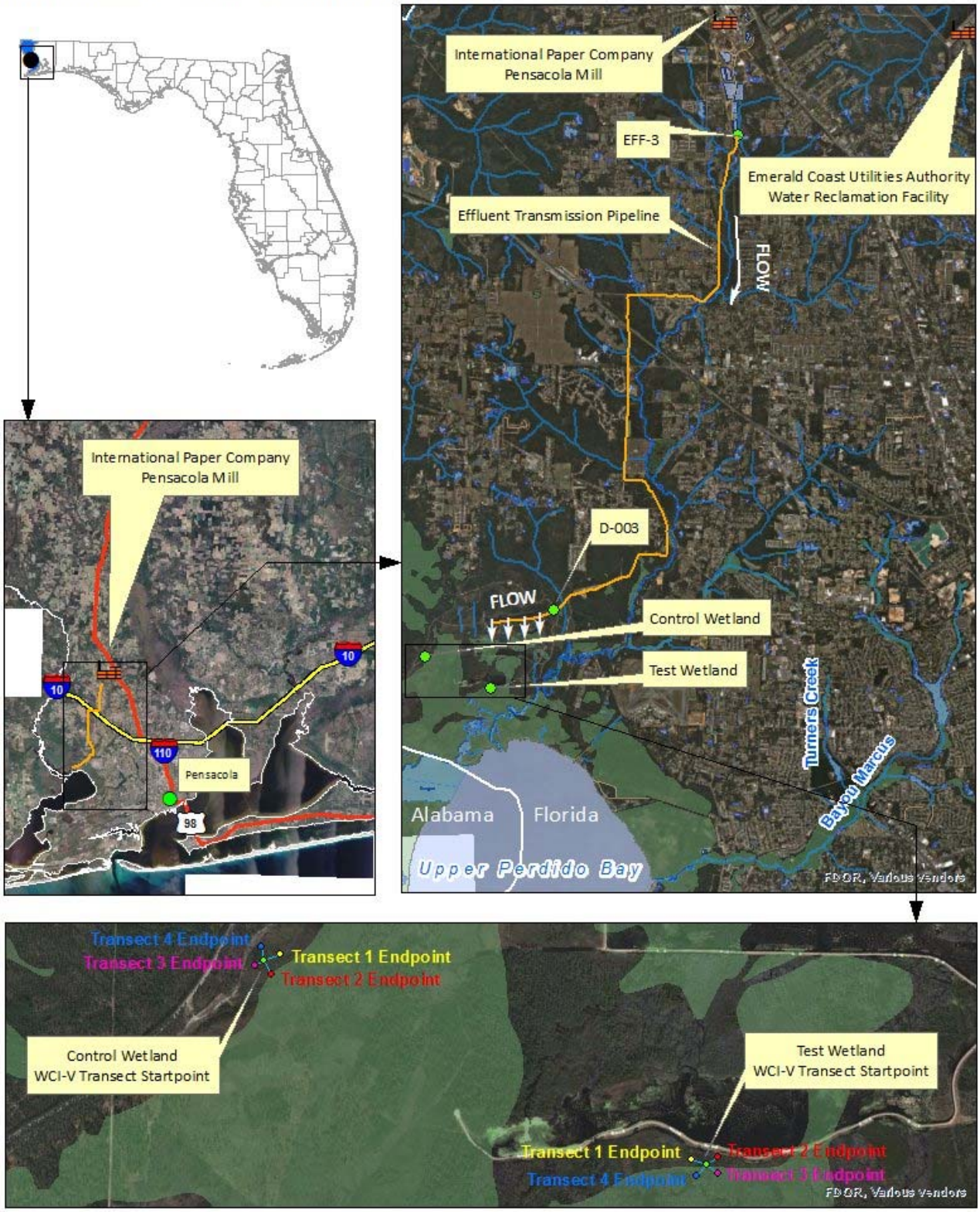
Table 4. Florida Wetland Condition Index (WCI-V) score and metric values. Average WCI development site scores are given for comparison of the Test and Control Wetlands to wetlands that scored low (≤2) and high (>2) on the Landuse Development Index (LDI).

International Paper Company Pensacola Mill	Test Wetland	Control Wetland	Low LDI (≤2) "natural"	High LDI (>2) "disturbed"
WCI-V score	39.8	48.6	50.3	20.4
% Tolerant	9.0	10.0	8.1	2.1
% Sensitive	3.1	4.3	8.8	2.5
Average Coefficient of Conservatism (C of C)	3.2	7.4	8.5	3.2
% Exotic	8.1	10.0	9.3	4.0
% Native Perennial	6.5	9.1	8.6	5.2
% Wetland Status	10.0	7.8	7.0	3.3

Appendix A
Map of Facility

International Paper Company Pensacola Mill

Fifth Year Bioassessment Sampling Locations



Appendix B
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Dana Vestal	**Contact Number:** (850) 595-0659
Facility Name (as it appears on permit): International Paper Company, Pensacola Mill	**Former Names:**
NPDES Permit Number: FL0002526	**Permit Expiration Date:** March 14, 2015
Physical Address: 621 Muscogee Road, Cantonment, Florida 32533	
District: Northwest	**County:** Escambia
Function of Facility: Production of unbleached linerboard Kraft paper and 465 (ADBT) of integrated production of bleached Kraft pulp	
Facility Type: IW	**Permitted Capacity (MGD):** 23.8
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): Flow through plant (9/12 – 8/13) 23.14 mgd monthly average	
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**	

Description of Sampling Location(s) - actual permit designation of permitted sampling point(s):

Sample Point	Description of Monitoring Location
EFF-3	Final effluent from IWWTP prior to entering effluent transmission pipeline Approximately at latitude 30° 34' 25" N and longitude 87° 19' 18" W.
EFF-4	Point of discharge at the end of the effluent transmission pipeline after passive aeration structure
SWD-2	Elevenmile Creek at Hwy 90 (USGS gage station #02376115) (http://waterdata.usgs.gov/fl/nwis/uv?02376115)
OTH-1	ECUA's Effluent into Effluent Transmission Pipeline
CAL-01	Adjusted Flow Elevenmile Creek at Hwy 90 = Flow at SWD-2 + Flow at EFF-3

Sample Point	Description of Monitoring Location
OUI-1	Pine Bleach Plant Acid Sewer
OUI-2	Pine Bleach Plant Alkaline Sewer

The facility also has monitoring wells they are required to sample.

Description of Permitted Outfall(s):

Surface Water Discharge Outfalls:

Outfall D-001: A stormwater outfall, which is composed of runoff from the immediate area upstream of the parshall flume and discharging at the parshall flume. The point of discharge is located approximately at latitude 30° 34' 25" N, longitude 87° 19' 18" W.

Outfall D-002: An onsite stormwater detention pond collects and treats stormwater from onsite and offsite areas and discharges at Outfall # D-002. This stormwater discharge is in addition to the stormwater discharge as described above for D-001. The point of discharge is located approximately at latitude 30° 34' 51" N, longitude 87° 19' 13" W.

Discharges from #D-001 and D-002, combine with other stormwater and an unnamed tributary that flow into an on-site impoundment. The on-site impoundment discharges through a 48-inch pipe into Elevenmile Creek south of State Road 186. See Attachment (2) Fig 1.3 Mill Watershed Boundaries attached.

Outfall D-003: Effluent from Permittee's modified treatment system that will be conveyed via an effluent transmission pipeline and discharged to the effluent distribution system to wetlands. The point of discharge at the end of the effluent transmission pipeline and passive aeration structure is located approximately at latitude 30° 29' 06" N, longitude 87° 21' 57" W.

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

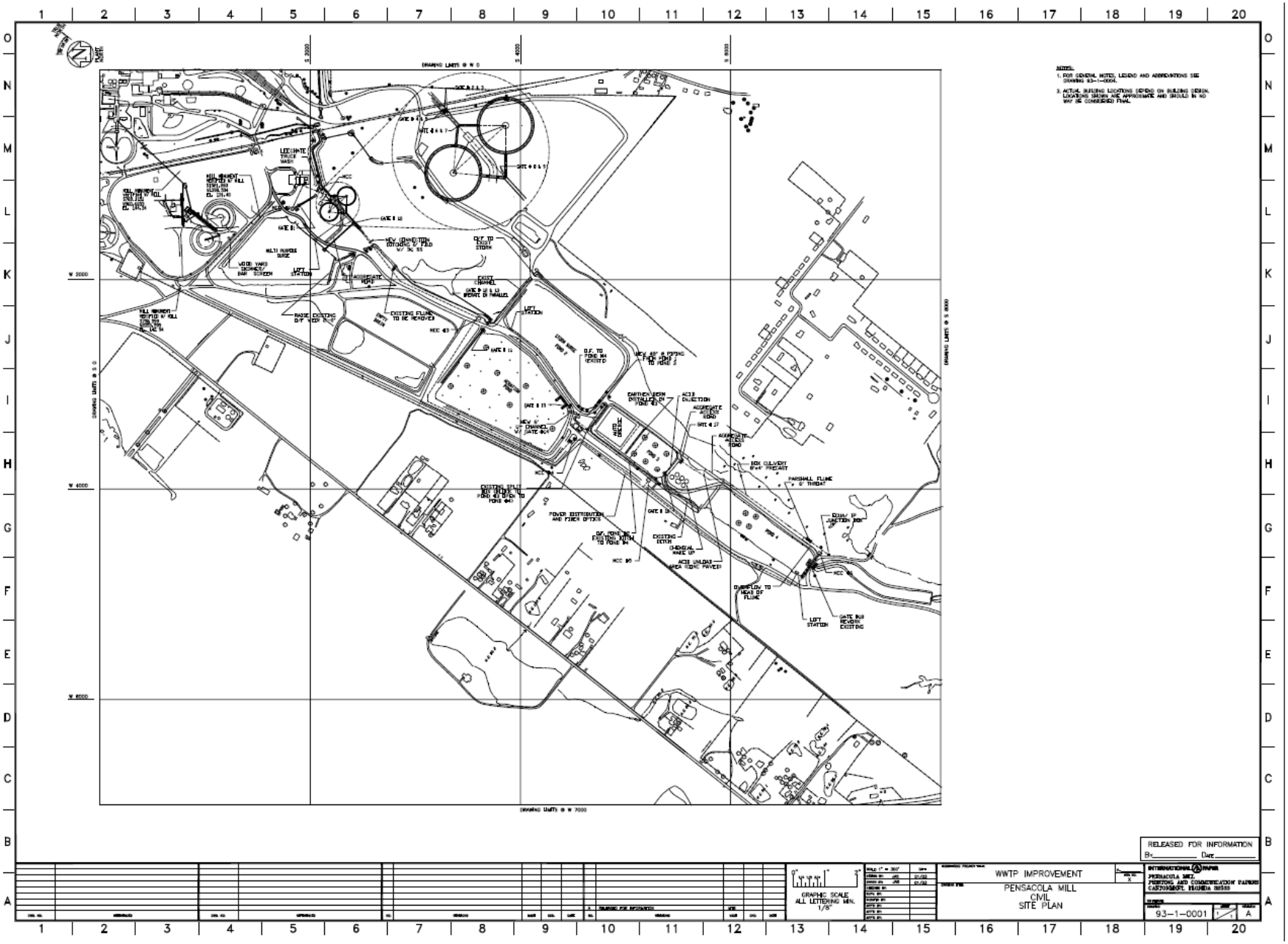
Existing Wastewater Treatment System: The current wastewater treatment plant's multi-pond primary and secondary treatment system, consisting of a primary treatment system (bar screen, dual primary clarifiers, polymer addition, multi-purpose surge basin), and secondary treatment system (four ponds in series; two aerated stabilization basins with approximately 2,200 horsepower (HP) of aeration capacity, a nutrient feed system, two non-aerated polishing ponds and a final riffle section to re-aerate the effluent), will be modified. Primary sludge is treated in a flocculation tank, then gravity flow to rotary screens and the screw press. Sanitary waste is pretreated separately before mixing with process wastewater. A system of lift stations pump sanitary wastewater to a 0.060 MGD package activated sludge plant for biological treatment. Treated effluent from the activated sludge plant is pumped to the bleach plant acid sewer before subsequently combining with other process wastewater before entering the wastewater treatment facility described above for further treatment.

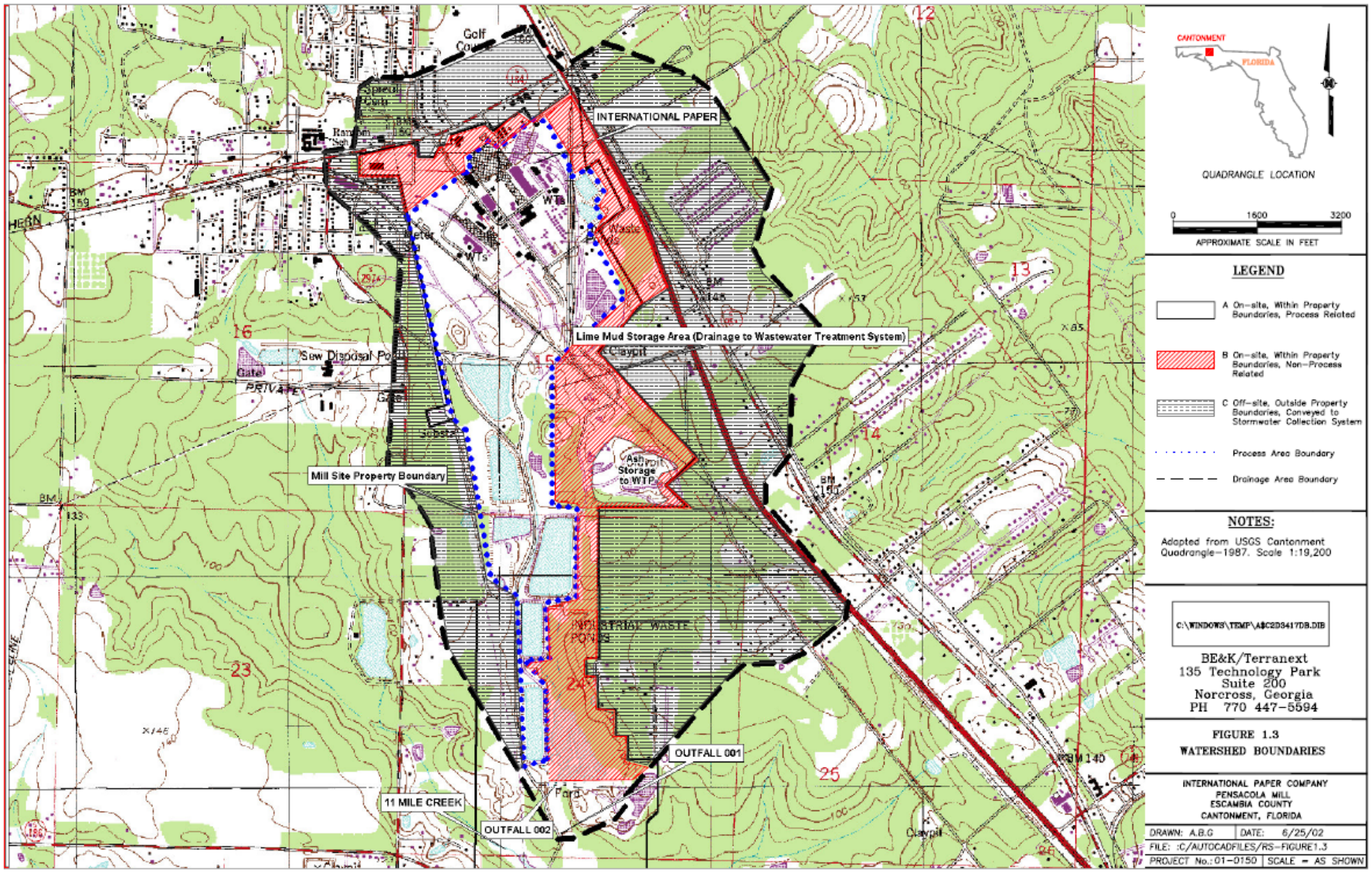
An onsite stormwater detention pond collects and treats stormwater from onsite and offsite areas and discharges at Outfall # D-002 to Elevenmile Creek. This discharge is in addition to activities that generate industrial wastewater as described above.

Modified Wastewater Treatment System: Modifications include conversion to modified activated sludge treatment system with increased aeration capacity (approximately 2,900 HP), storm surge ponds, and effluent pH adjustment equipment for carbon dioxide and/or sulfuric acid. Secondary sludge will be treated with the primary sludge as described in the existing treatment system. Storm surge capacity will accommodate a 25-year, 24-hour (10.8") storm event. See Attachment (1) *IP Mill IWWTP proposed site plan 93-1-00011*.

Effluent Transmission Pipeline: Construction of an approximately 10-mile long gravity pipeline with a nominal capacity between 30 and 37.5 MGD to be determined by International Paper. Effluent from the modified International Paper treatment system and potentially up to 5.0 MGD annual average daily effluent flow from an Emerald Coast Utility Authority (ECUA) Advanced Wastewater Treatment facility will be combined and conveyed by gravity to wetlands on property owned by International Paper bordering lower Elevenmile Creek and Perdido Bay. ECUA's discharge is not authorized by this permit.

Wetland Effluent Distribution System: An effluent distribution system will be constructed to distribute effluent to wetlands that are on the East Rainwater tract owned by International Paper located approximately at latitude 30° 29' 06" N, longitude 87° 21' 57" W. The effluent distribution system is designed to accommodate a peak effluent flow of 37.5 MGD (consisting of 30 MGD from IP and 7.5 MGD from ECUA). The system is designed to distribute effluent into approximately 1,381 acres of the 2,638 acre wetland project area approximately 10 miles south of the mill and bordering lower Elevenmile Creek and Perdido Bay. The waters from the wetlands flow into lower Elevenmile Creek and through Wicker and Tee Lakes to upper Perdido Bay.


NOTES:
1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS SEE DRAWING 93-1-0004.
2. ACTUAL BUILDING LOCATIONS DEPEND ON BUILDING DESIGN. LOCATIONS SHOWN ARE APPROXIMATE AND SHOULD IN NO WAY BE CONSIDERED FINAL.
RELEASED FOR INFORMATION
Date
WWTP IMPROVEMENT
PENSACOLA MILL
CIVIL
SITE PLAN
GRAPHIC SCALE
ALL LETTERING MIN. 1/8"
93-1-0001
A


INTERNATIONAL PAPER
Lime Mud Storage Area (Drainage to Wastewater Treatment System)
Mill Site Property Boundary
Saw Disposal Pond
Ash Storage to WTP
Industrial Waste Ponds
OUTFALL 001
OUTFALL 002
11 MILE CREEK
CANTONMENT
FLORIDA
QUADRANGLE LOCATION
0 1600 3200
APPROXIMATE SCALE IN FEET
LEGEND
A On-site, Within Property Boundaries, Process Related
B On-site, Within Property Boundaries, Non-Process Related
C Off-site, Outside Property Boundaries, Conveyed to Stormwater Collection System
Process Area Boundary
Drainage Area Boundary
NOTES:
Adapted from USGS Cantonment Quadrangle-1987. Scale 1:19,200
C:\WINDOWS\TEMP\A$C2D8417DB.DIB
BE&K/Terranext
135 Technology Park
Suite 200
Norcross, Georgia
PH 770 447-5594
FIGURE 1.3
WATERSHED BOUNDARIES
INTERNATIONAL PAPER COMPANY
PENSACOLA MILL
ESCAMBIA COUNTY
CANTONMENT, FLORIDA
DRAWN: A.B.G
DATE: 6/25/02
FILE: :C/AUTOCADFILES/RS-FIGURE1.3
PROJECT No.: 01-0150
SCALE = AS SHOWN

PART I: Continued										
List <u>current</u> 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

I. Effluent Limitations and Monitoring Requirements

I.A. Surface Water Discharges

I.A.1. During the period beginning upon issuance of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge stormwater from areas not associated with industrial process activity located immediately upstream of the parshall flume from existing Outfall D-001.

Such discharge shall be controlled through implementation of Best Management Practices, see permit condition VII.D. and shall not require monitoring by the Permittee.

I.A.2. During the period beginning on the issuance date and lasting through the expiration date of this permit, the Permittee is authorized to discharge from Outfall #D002, stormwater runoff from areas not associated with industrial process activity. Such discharge shall be controlled through implementation of Best Management Practices, see permit condition VII.D. and shall not require monitoring by the Permittee.

I.A.3. During the period beginning upon placing the modified WWTP and the gravity effluent transmission pipeline into operation and lasting through the expiration date of this permit, the permittee is authorized to discharge from Outfall # D-003, process wastewater, treated sanitary wastewater, and stormwater runoff from areas associated with industrial process activity, and leachate from Rock Crossing landfill. Such discharge shall be limited and monitored by the permittee as specified below and per I.E.7.

D-003	Discharge Limitations			Monitoring Requirements		
Parameters (units)	**Monthly Avg.**	**Daily Max.**	**Other - specify**	**Frequency**	**Sample Type**	**Sample Point**
Flow (MGD) (flow through modified WWTP)	Report	Report	NA	Continuous	Recorder	EFF-3
Flow (MGD) (to wetlands)	Report	Report	NA	Daily	Calculated	EFF-4
Stream Flow, mean daily (Elevenmile Creek Hwy 90) (cfs)	Report 14-day avg	Report (min)	NA	Daily	Calculated	SWD-2
Adjusted Stream Flow (Elevenmile Creek Hwy 90) (cfs)	Report 14-day avg	Report (min)	NA	Daily	Calculated	CAL-01
BOD_5 concentration (mg/L)	Report	Report	NA	3/week	24 hour composite	EFF-3

BOD5 loading (lbs/day) Summer (May-October)	4,500	9,000	NA	3/week	24 hour composite	EFF-3
BOD5 loading (lbs/day) Winter (November-April)	5,100	10,200	NA	3/week	24 hour composite	EFF-3
Total Suspended Solids concentration (mg/L)	Report	Report	NA	3/week	24 hour composite	EFF-3
Total Suspended Solids loading (lbs/day)	8,000	16,000	NA	3/week	24 hour composite	EFF-3
Adsorbable Organic Halides (AOX) concentration (mg/L) (EPA Method 1650)	Report	Report	NA	Daily	24 hour composite	EFF-3
Adsorbable Organic Halides (AOX) loading (lbs/day)	623	951	NA	Daily	24 hour composite	EFF-3
pH (standard units)	NA	5.0 - 8.5	NA	Daily	Grab or Instantaneous	EFF-3
Dissolved Oxygen (mg/l)	NA	NA	5.0 minimum	Daily	Instantaneous	EFF-3
Dissolved Oxygen (mg/l)	NA	NA	Report	Daily	Instantaneous	EFF-4
Rainfall (inches)	NA	Report	Monthly total	Daily, 24 hrs	Measured	EFF-3

D-003	Discharge Limitations			Monitoring Requirements		
Parameters (units)	Monthly Avg.	Daily Max.	Other - specify	Frequency	Sample Type	Sample Point
Nitrate-Nitrite concentration (mg/L)	Report	Report	NA	3/week	24 hour composite	EFF-3
Nitrate-Nitrite loading (lbs/day)	See I.A.5	Report	NA	3/week	24 hour composite	EFF-3
TKN concentration (mg/L as N)	Report	Report	NA	3/week	24 hour composite	EFF-3
TKN loading (lbs/day as N)	Report	Report	NA	3/week	24 hour composite	EFF-3
Total Nitrogen concentration (mg/L as N)	Report	Report	NA	3/week	Calculated	EFF-3
Total Nitrogen loading (lbs/day as N)	Report	Report	NA	3/week	Calculated	EFF-3
Ortho-Phosphate concentration (mg/l as P)	80.7	Report	NA	3/week	24 hour composite	EFF-3
Ortho-Phosphate loading (lbs/day as P)	See I.A.6	Report	NA	3/week	24 hour composite	EFF-3
Total Phosphorus concentration (mg/l as P)	184.0	Report	NA	3/week	24 hour composite	EFF-3
Total Phosphorus loading (lbs/day as P)	See I.A.7	Report	NA	3/week	24 hour composite	EFF-3
Total Ammonia concentration (mg/L as N)	Report	Report	NA	3/week	24 hour composite	EFF-3
Total Ammonia loading (lbs/day as N)	See I.A.5	Report	NA	3/week	24 hour composite	EFF-3

Unionized Ammonia concentration (mg/l as NH_3)	NA	0.02 See Cond. I.A.8	NA	3/week	Grab &Calculated	EFF-3
Temperature (°C)	Report	Report See Cond. I.A.8	NA	3/week	Instantaneous	EFF-3
Specific Conductance (µmhos/cm)	NA	2,500	NA	3/week	Instantaneous	EFF-3
Color (Pt-Co Units) (NCASI method)	325	Report	NA	3/week	24 hour composite	EFF-3
Turbidity (NTU)	50	Report	NA	3/week	Calculated Grab	EFF-3
Oil & Grease (mg/l)	NA	5.0	NA	1/month	Grab	EFF-3
Fecal Coliform (#/100ml)	200	800	NA	3/week	Grab	EFF-3
COD concentration (mg/L)	Report	Report	NA	1/month	24 hour composite	EFF-3
COD loading (lbs/day)	Report	Report	NA	1/month	24 hour composite	EFF-3
Chronic Whole Effluent Toxicity	IC25 ≥ 100 % effluent (See Item I F)					EFF-3
Total Mercury (µg/l)	NA	0.012	NA	1/year	Grab	EFF-3
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) (ρg/l)	0.014	0.014	NA	1/quarter	24 hour composite	EFF-3
Total Recoverable Arsenic (µg/l)	NA	50	NA	1/quarter	24 hour composite	EFF-3
Hardness (mg/l as CaCO3)	NA	Report See Cond I.A.10	NA	1/year	24 hour composite	EFF-3
Total Recoverable Cadmium (µg/l)	NA	See Cond I.A.10	NA	1/year	24 hour composite	EFF-3
Total Recoverable Chromium (µg/l)	NA	11	NA	1/year	24 hour composite	EFF-3
Total Recoverable Copper (µg/l)	NA	See Cond I.A.10	NA	1/year	24 hour composite	EFF-3

D-003	Discharge Limitations			Monitoring Requirements		
Parameters (units)	Monthly Avg.	Daily Max.	Other - specify	Frequency	Sample Type	Sample Point
Total Recoverable Iron (mg/l)	NA	1.0	NA	1/year	24 hour composite	EFF-3
Total Recoverable Lead (µg/l)	NA	See Cond I.A.10	NA	1/year	24 hour composite	EFF-3
Total Recoverable Nickel (µg/l)	NA	See Cond I.A.10	NA	1/year	24 hour composite	EFF-3
Total Recoverable Selenium (µg/l)	NA	5.0	NA	1/year	24 hour composite	EFF-3
Total Recoverable Silver (µg/l)	NA	0.07	NA	1/year	24 hour composite	EFF-3
Total Recoverable Zinc (µg/l)	NA	See Cond I.A.10	NA	1/year	24 hour composite	EFF-3

PART I: Continued

Receiving Waters: Wetland (flows to Elevenmile Creek, WBID 489)	Classification (indicate whether fresh or marine): Class 3F Stream (fresh)

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):

August 15, 2011 changed frequency to semiannually.

permit condition I.E.1.

I.F. Whole Effluent Toxicity Testing Requirement

The permittee shall comply with the following and initiate the series of tests described below beginning in the 4th month after placing the modified WWTP and the Wetland Transmission Pipeline into operation, unless otherwise directed by the Department in writing, to evaluate chronic whole effluent toxicity of the discharge from outfall D-0(

I.F.1. Effluent Limitation

(1) Whole effluent chronic toxicity shall not exceed a 25 percent inhibition concentration (IC25) of less than 100% effluent in any test. [Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.]

(2) Whole effluent acute toxicity shall not exceed a 96 hour LC50 of less than 100% effluent in any test. [Rule 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.]

I.F.2. Monitoring Frequency

a. "Routine" toxicity tests shall be conducted once every three months for the duration of this permit.
b. Upon completion of four consecutive, valid "routine" tests that demonstrate compliance with the effluent limitation in I.F.1.above, the permittee may submit a written request to the Department for a reduction in monitoring frequency to once every six months. The request shall include a summary of the data and the complete bioassay reports for each test used to demonstrate compliance. The Department shall act on the request within 45 days of receipt. Reductions in monitoring shall only become effective upon the Department's written confirmation that the facility has completed four consecutive valid routine tests that demonstrate compliance with the effluent limitation in I.F.1. above.
c. If a test within the sequence of the four is deemed invalid based on the acceptance criteria in EPA-821-R-02-013, but is replaced by a repeat valid test initiated within 21 days after the last day of the invalid test, the invalid test will not be counted against the requirement for four consecutive valid tests for the purpose of evaluating the reduction of monitoring frequency.

I.F.3. Sampling Requirements

a. For each routine test or additional follow-up test conducted, a total of three *24-hour composite* samples of final effluent shall be collected and used per the sampling protocol discussed in EPA-821-R-02-013, Section 8.
b. The first sample shall be used to initiate the test. The remaining two samples shall be collected according to the protocol and used as renewal solutions on Day 3 (48 hours) and Day 5 (96 hours) of the test.

I.F.4. Test Requirements

a. Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test concentrations: **100%**, **50%**, **25%**, **12.5%**, and **6.25%** final effluent.
b. The permittee shall conduct a daphnid, **Ceriodaphnia dubia**, Survival and Reproduction Test and a fathead minnow, **Pimephales promelas**, Larval Survival and Growth Test, concurrently.
c. All test species, procedures and quality assurance criteria used shall be in accordance with **Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms**, 4th ed., EPA-821-R-02-013. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use. In the event the above method is revised, the permittee shall conduct chronic toxicity testing in accordance with the revised method.
d. The control water and dilution water used shall be moderately hard water as described in EPA-821-R-02-013, Section 7.

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):

The facility is operating under a Consent Order (OGC File No. 08-0358) effective on March 11, 2010. The facility is in compliance with the requirements and due dates in the Consent Order.

Facility Mixing Zone Details (if applicable):
N/A

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

Date	Parameter and Units	Limit	Result
September 2012	**Toxicity <u>Ceriodaphnia dubia</u> (Reproduction)**	**100% Minimum**	**69.1% Minimum**
September 2012 Follow-up	**Toxicity <u>Ceriodaphnia dubia</u> (Reproduction)**	**100% Minimum**	**73.6% Minimum**
September 2012 Follow-up	**Toxicity <u>Ceriodaphnia dubia</u> (Reproduction)**	**100% Minimum**	**32.4% Minimum**

Describe previous FYI and WQBEL study:

Describe previous or current Enforcement Actions (including WLs):

Consent Order OGC File No. 08-0357 executed on March 15, 2010 supersedes the 1989 Consent Order (OGC File No. 87-1398). The timelines in the Consent Order are listed below.

Respondent shall implement the following construction schedule:

- **a. 09/11/2011 – Within 18 months shall complete construction of modifications and improvements to the existing Facility authorized by the new permit. 03/11/2012 – Within 24 months shall commence operation of the modified Facility.**
  - **i. 09/25/2011 - Submit written progress report or written notice of compliance/noncompliance in accordance with Paragraph 14.i. If notice of compliance/noncompliance, notice shall include cause of noncompliance, any remedial action taken, and status of progress being toward meeting the next scheduled requirement.**
- **b. 03/11/2012 – Within 24 months undertake and complete construction of the effluent transmission pipeline authorized by the new permit. ECUA may provide written notice to the Respondent or the Department that it no longer desires to use the pipeline which shall allow Respondent to submit a revised construction plan within 120 days of written notice. A revised construction plan will not affect the completion date of 24 months.**
  - **i. 03/25/2012 - Submit written progress report or written notice of compliance/noncompliance in accordance with Paragraph 14.i. If notice of compliance/noncompliance, notice shall include cause of noncompliance, any remedial action taken, and status of progress being toward meeting the next scheduled requirement. According to the 4th Quarter 2011 Report, this item was completed in December 2011.**
- **c. 03/11/2012 – Within 24 months complete construction of effluent distribution system for the effluent discharge through Outfall D-003 authorized in the new permit (D-003 is IP's effluent distribution pipe to the wetlands). 03/11/2012 – Within 24 months, Respondent shall begin phase-in of effluent discharge from Outfall D-001 to Outfall D-003 gradually increasing flow to 100% over a 12 month period (D-001 is IP's stormwater outfall composed of runoff from immediate area upstream of the parshall flume and discharging at the parshall flume). 03/11/2013 – No later than 36 months, Respondent shall cease the discharge of process wastewater through Outfall D-001 and shall be in full compliance with the conditions in the new permit for Outfall D-001.**
  - **i. 03/25/2012 - Submit written progress report or written notice of compliance/noncompliance in accordance with Paragraph 14.i. If notice of compliance/noncompliance, notice shall include cause of noncompliance, any remedial action taken, and status of progress being toward meeting the next scheduled requirement.**
- **d. Respondent shall implement the following monitoring and land management plans to monitor long-term ecological effects within the wetland project area:**
  - i. **Respondent shall perform overall management and monitoring of the wetlands project area in accordance with the documents titled *Assessment of the ECUA/IP Combined Effluent Distribution Project Wetlands, Monitoring and Land Management, August 2007, Revised February 2008* and *Nutter & Associates Technical Memorandum 00-020.17a, February 8, 2008*. Submitted Supplemental Baseline Monitoring Report 2008 – 2011 on 09/30/2011, concludes pre-discharge monitoring, see below. According to the 4th Quarter 2011 Report, prescribed burns resumed this quarter.**
  - **ii. Respondent shall monitor the wetland effluent zone in accordance with the document titled, *Assessment of the ECUA/IP Combined Effluent Distribution Project Wetlands, Monitoring and Land Management, August 2007, Revised February 2008*.**
  - **iii. Respondent shall manage plant communities within the wetland effluent zone in accordance with the plans titled, *Assessment of the ECUA/IP Combined Effluent Distribution Project Wetlands, Monitoring and Land Management, August 2007, Revised February 2008, Appendix B*.**
- **e. Respondent shall record a conservation easement to preserve and manage the conservation area, approximately 1,188 acres. A map is attached and incorporated as Exhibit "B".**

i. **Prior to the discharge of effluent to the wetland effluent distribution system (around 03/11/2012 when Paragraph 14.(c) is completed), Respondent shall record in the official records of Escambia County a conservation easement over the 1,188 acre conservation area in favor of the Department. The acreage subject to the conservation easement is specifically identified in Figure 4 of "Technical Memorandum No. 00-020.17a, Nutter & Associates, Inc., December 20, 2007 (revised February 8, 2008)."**

ii. **Concurrent with recordation of the conservation easement, Respondent shall provide the Department: (a) a title insurance policy updated to the date of conveyance; (b) subordination, release, or joinder agreements for any lien on the property, as identified by the title commitment, unless such lien does not adversely affect the ecological viability; and (c) a legal description and survey of the conservation easement certified by a Florida registered land surveyor. In addition Respondent shall take all reasonable measures necessary to restrict access to the wetlands project area, with the exception of the Tee and Wicker Lake system. The boundary of the area shall be posted with "No Trespassing" signs. These signs shall be maintained for the life of the easement. (This could be a problem enforcing after the CO is closed) 03/30/2011 – According to the 1st Quarter 2011 report, "No Trespassing" signs have been posted around the perimeter of the entire Conservation Easement area.**

iii. **Respondent shall monitor and manage the lands subject to the conservation easement in accordance with the "Nutter & Associates Technical Memorandum 00-020.17a, February 8, 2008, Appendix E."**

iv. **Respondent shall maintain financial responsibility for the resources necessary to implement the land management and monitoring activities described in "Nutter & Assoc. Technical Memorandum 20.17a, February 8, 2008, Appendix E." for the life of the conservation easement. 03/11/2015 – Within 5 years of the effective date of this Order, Respondent shall establish and endow a trust fund for the perpetual management of the conservation area. The trust fund shall meet the requirements for wetland mitigation banks in Rule 62-342.700(8) and (9), F.A.C., and the trust fund agreement for perpetual management shall be worded in substantial conformance with Form 62-342.900(5). The endowment shall be sufficient to continue the monitoring and management requirements in "Nutter & Associates Technical Memorandum 00-020.17a, February 8, 2008, Appendix E" in perpetuity, and the costs shall be estimated from the previous five years of monitoring and maintenance costs with perpetual management.**

v. **The initial reduction of canopy and shrub density by harvesting and mechanical treatment and the initial prescribed burn shall be conducted prior to discharge to the wetland effluent distribution system (around 03/11/2012 when Paragraph 14.(c) is completed). The effluent discharge shall be contingent upon the Department's inspection of the area subject to the conservation easement and written acknowledgement that management activities were conducted such that the site is reasonably expected to result in the target communities.**

f. **04/11/2018 – Within 97 months, Respondent may petition for the establishment of site specific alternative water quality criteria pursuant to Rule 62-302.800, F.A.C. Upon an affirmative demonstration that such criteria meet the requirements of the Rule 62-302.800, F.A.C, the Department shall follow the procedure described in that rule for the adoption of site-specific alternative criteria. Any proposed agency action with respect to any site specific alternative criteria will be subject to review under Chapter 120, F.S.**

i. **04/25/2018 - Submit written progress report or written notice of compliance/noncompliance in accordance with Paragraph 14.i. If notice of compliance/noncompliance, notice shall include cause of noncompliance, any remedial action taken, and status of progress being toward meeting the next scheduled requirement.**

Any proposed change to Florida's Water Quality Standards shall be subject to the EPA's review and approval pursuant to 40 CFR § 131.5. Upon EPA's approval, the Department shall revise the Respondent's NPDES permit to reflect the applicable site specific alternative criteria. Any such revision will be subject to review under Chapter 120, F.S.

g. Nothing in this CO prohibits the Respondent from petitioning for other available relief, waiver, variance or moderating provision provided for under Chapters 120 or 403, F.S., and the rules promulgated thereunder. Any proposed change to Florida's Water Quality Standards shall be subject to the EPA's review and approval, pursuant to 40 CFR § 131.5.

h. **03/11/2019 – Within 108 months, Respondent shall comply with all permit conditions and effluent limitations in the new permit.**

i. 03/25/2019 – Submit written progress report or written notice of compliance/noncompliance in accordance with Paragraph 14.i. If notice of compliance/noncompliance, notice shall include cause of noncompliance, any remedial action taken, and status of progress being toward meeting the next scheduled requirement.

No later than 14 days following each deadline identified above, Respondent shall submit either a report of progress or, in the case of specific actions being required by a deadline, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the status of progress toward meeting the next scheduled requirement.

15. Paragraphs 16, 17 & 18 establish interim discharge limits that apply during the implementation of corrective actions.

16. **03/11/2012 – For 24 months any discharge of wastewater from Outfall #D-001, shall comply with the monitoring requirements and interim discharge limits specified in Table 1.**

17. 03/11/2012 – 03/11/2013 – Beginning 24 months after the effective date (coinciding with the expiration of interim limits in Table 1, above) and continuing for a period of 12 months, any discharge of wastewater from Outfall # D-001 and D-003, shall comply with the following monitoring requirements and interim discharge limits specified in Table 2.

18. 03/11/2013 – 03/11/2019 – Beginning 36 months after the effective date of this CO (coinciding with the expiration of Table 2, above) and continuing up to 108 months of the effective date, any discharge of wastewater from Outfall # D-003, Respondent shall comply with all new permit limits and monitoring requirements and interim discharge limits except as set forth below in Table 3.

19. During the effective period of interim discharge limits of Paragraphs 16, 17, and 18, Respondent shall complete and submit to the Department the applicable Interim Discharge Monitoring Reports (DMRs) issued by the Department. These reports shall be mailed or hand delivered by Respondent, to the Department, as required by the permit.

25. Respondent agrees to pay the Department stipulated penalties in the amount of the stipulated penalty schedule per day for each and every day the Respondent fails to comply with any of the requirements of this Consent Order. A separate penalty shall be assessed for each violation of this CO. Payment due within 30 days of written demand.

Describe any violations or problems noted in previous inspection:

The facility's hand-held turbidimeter was being calibrated quarterly with formazin rather than monthly as required. The facility corrected this timely and started monthly primary calibrations as required.

The facility's flow meter was calibrated 3 months late from the previous calibration date.

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):

PART II: Sampling Event Information	
Date(s) sample collected: 9/9/13	**Sampler(s):** Rick Abad, Frank Butera
Temperature (Deg C): 32.81	**pH (SU):** 6.69
Dissolved Oxygen (mg/L): 6.71	**Conductivity (umhos/cm):** 1771
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): 22.5	
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:	

Appendix C
Explanation of Measurements

(1) Quality Assurance and Quality Control

FDEP's quality assurance requirements for analytical laboratories and field activities are codified in Chapter 62-160, F.A.C., Quality Assurance (QA Rule) and in internal Standard Operating Procedures (FDEP SOPs). Methods for all analyses are on file at the FDEP Central Laboratory in Tallahassee and may be viewed on the web at http://www.dep.state.fl.us/labs/library/lab_sops.htm and/or http://www.dep.state.fl.us/water/sas/qa/index.htm.

(2) Chemical Analyses of the Effluent

The effluent was analyzed for nutrients, metals, organic constituents (base, neutral, and acid extractables) and pesticides following FDEP SOPs. The results from these analyses were compared with Water Quality Criteria (62-302, F.A.C.) and facility permit limits.

(3) Toxicity Bioassays

Greater than 50% mortality in an acute toxicity test may constitute an exceedance of 62-302.500(1)a and/or a potential violation of facility permit limits. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a potential violation of facility permit limits. A no observed effect concentration (NOEC) less than 100% effluent in a chronic test may constitute an exceedance of 62-302.530(61) and/or a potential violation of facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Bacteriological Testing

High levels of fecal coliform bacteria may constitute an exceedance of 62-302.530(6) and/or a potential violation of facility permit limits. Fecal coliform and enterococci results often are based on colony counts outside the acceptable range (B-qualifier). The dilutions performed on the sample did not yield results within the method acceptable range of 20- 60 colony forming units per plate. The B-qualifier does not affect data quality.

(5) Algal Growth Potential (AGP)

The algal growth potential (AGP) value is the peak growth of the alga within that 14-day period, recorded as mg dry weight/L. Raschke and Shultz (1987) found that an AGP above 5.0 mg dry weight/L represents a “problem” threshold for fresh receiving waters, implying nutrient enrichment. High AGP values may constitute exceedances of 62-302.530(46), F.A.C., 62-302.530(47)(a), F.A.C. and/or 62-302.530(47)(b), F.A.C..

The concentration of nutrients in a water sample may be used to calculate the expected yield of AGP under the assumption that other required nutrients (e.g. silicon, micronutrients) are present in excess (Miller *et al*. 1978). The expected amount of production is calculated as 38 times the total soluble inorganic nitrogen (nitrate and nitrite plus ammonia) under nitrogen limitation or 430 times the ortho-phosphate (OP) concentration under phosphorus limitation with an error of $\pm$ 20%. When the ratio of nitrogen to phosphorus (N: P) is less than 10:1, nitrogen limitation of algal production is likely. When the N: P ratio is 20:1 or greater, phosphorus limitation is likely (USEPA 2000). For ratios in-between, co-limitation may occur. Production of lower biomass than expected may be evidence of growth inhibition related to toxic compounds present in the water sample tested and may constitute an exceedance of 62-302.530(61), F.A.C.

(6) Florida Wetland Condition Index-Vegetation

The Florida Wetland Condition Index-Vegetation (WCI-V) for isolated, forested wetlands is a biological assessment of wetland health conducted by sampling vascular plants along transects, identifying them to the species level, and calculating metric values based on attributes of the plant community that change predictably along an independent gradient of human disturbance. The index is calculated based on 6 metrics: percent tolerant indicator species, percent sensitive indicator species, percent exotic macrophyte species, average Coefficient of

Conservatism (CC) score, percent native perennial species, and percent wetland status species. These metrics are calibrated for 4 ecoregions within the state including the Panhandle, North, Central, and South regions. The score is based on a 0-60 scale, with 60 representing high biological integrity. This current index is based on the Florida Wetland Condition Index (WCI-V) developed by Reiss and Brown (2005) to provide a quantitative measure of the biological integrity of a wetland system.

(7) Definition of Qualifiers

A - Value reported is the mean of two or more determinations
B - Results based on colony counts outside the acceptable range.
I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J - Estimated value
K - Actual value is known to be less than value given
L - Actual value is known to be greater than value given
N - Presumptive evidence of presence of material.
O - Sampled, but analysis lost or not performed.
Q - Sample held beyond normal holding time.
T - Value reported is less than the criterion of detection.
U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
V - Analyte was detected in both sample and method blank.
X - Too few individuals to calculate SCI value.
Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate
Z - Colonies were too numerous to count (TNTC)

Appendix D
Chain of Custody

Florida Department of Environmental Protection

Event ID *

Central Laboratory Sample Submittal Form

Request Number: RQ-2013-09-09-24
FYI International Paper Company - Pensacola Mill

Customer: NW-DIST
Project ID: FYI5
PMAS: 1143

Requester: Jennifer G. Weger
Collected By: Rick ABAD, Frank Rivera
Sampling Agency: FL DEP - NWD

Field Report Prepared By: FB
Send Final Report To: Kim Allen

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	Compliance D.O. location blw EFF-3	☐ Comp ☑ Grab Date 9-9-13 Time 10:00 Central	Date 9/9/13 Time [illegible] Central	
	Field ID: TEST OUTFALL	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number: A
	Matrix (include type e.g. Salt, Fresh, etc): FRESH	Temp (C): 32.81	pH: 6.69	Sample Depth ☑ m ☐ ft: 0.15
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (PPTh) ☐ Sp Conductance (umho/cm) ☑: 1771	NPDES Number
			Comments: # 08828 - T1 (mercury BOTTLE)	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	Compliance D.O. location blw EFF-3	☒ Comp ☐ Grab Date 9/8/13 Time 0738 Central	Date 9/9/13 Time 0738 Central	
	Field ID: TEST COMPOSITE	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number: B
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
			Comments	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	TEST WETLAND	☐ Comp ☑ Grab Date 9/9/13 Time 13:10 Central	Date Time	
	Field ID: TEST WETLAND	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 4.29	Storet Station Number: C
	Matrix (include type e.g. Salt, Fresh, etc): FRESH	Temp (C): 29.0	pH: 7.12	Sample Depth ☑ m ☐ ft: 0.15
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (PPTh) ☐ Sp Conductance (umho/cm) ☑: 1515	NPDES Number
			Comments	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	Compliance EFF 3	☐ Comp ☑ Grab Date 9/9/13 Time 1100 Central	Date Time	
	Field ID: Field Blank	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number: D/E
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
			Comments	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Rick Abad	9/9/13 1715	Fedex						9-10-13 9:20

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

2 biocassays @1105 9-10-13 AB

Page 1 of 5

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2013-09-09-24
FYI International Paper Company - Pensacola Mill

Customer: NW-DIST
Project ID: FYI5
PMAS: 1143

Requester: Jennifer G. Weger
Collected By: Rick Abad
Sampling Agency: DEP NWD

Field Report Prepared By: Rick Abad
Send Final Report To: Kim Allen
Nathan Mulkey

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
	International Paper Control Wetland	☐ Comp ☑ Grab Date 9/10/13 Time 1415 (Central)	Date Time	C
	Field ID: Control ~~Wetland~~ Wetland	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 6.54	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): Fresh; Temp (C): 32.99; pH: 4.27	Sample Depth: 0.15 ☑ m ☐ ft	36 ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude: 30.47572 ☑ dd ☐ dms; Longitude: 87.39472 ☑ dd ☐ dms	Comments		

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc); Temp (C); pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms; Longitude ☐ dd ☐ dms	Comments		

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc); Temp (C); pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms; Longitude ☐ dd ☐ dms	Comments		

Lab ID *	Location	Collection (comp begin or grab) Eastern Central	Composite end Eastern Central	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time	Date Time	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc); Temp (C); pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms; Longitude ☐ dd ☐ dms	Comments		

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Richard	9/10/13 1710	fedex		09-11-13 09:25				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Page 1 of 5

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

RQ-2013-9-9-24

Request Number: ~~RQ-2013-08-12-22~~

~~Choctawhatchee Bay Aquatab~~

IP FYI International Paper

Customer: NW-DIST

Project ID: ~~DISCRTNARY~~ FYI-NW-DISTRICT

PMAS: ~~1306~~

Event ID *

Requester: ~~Cheryl Bunch~~ Jennifer Weger

Collected By: Rick Hoad (facility operator)

Sampling Agency: NWD - FDEP

Field Report Prepared By:

Send Final Report To: ~~Cheryl Bunch~~ Kim Allen

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
	International Paper FYI	☑ Comp ☐ Grab Date 9/10/13 Time 0721 Central	Date 9/11/13 Time 0721 Central	B
	Field ID: Final Effluent	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): Fresh	Temp (C)	pH	Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm); NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: Picked up at Gate 5 of Facility	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Central	Date Time Central	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm); NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Central	Date Time Central	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm); NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab) Eastern	Composite end Eastern	Bottle Group(s)**
		☐ Comp ☐ Grab Date Time Central	Date Time Central	
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft; ☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm); NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Rick Hoad	9/11/13 1000	fed ex						9/12/13, 9:35

2 bioassays @ 10:10 9-12-13 AP

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2013-09-09-24 ~~RQ-2013-08-12-22~~

~~Choctawhatchee Bay Aqualab~~

FYI International Paper Company Pensacola Mill Sampling Inspection

Requester: ~~Cheryl Bunch~~ Jennifer Weger

Field Report Prepared By: Rick Abad

Customer: NW-DIST

Collected By: Rick Abad

Send Final Report To: ~~Cheryl Bunch~~ Kim Allen

Project ID: ~~DISCRTNARY~~ NW-DIST FYI

PMAS: ~~1306~~

Sampling Agency: FDEP

Lab ID *	Location: International Paper			☑ Comp ☐ Grab	Collection (comp begin or grab) Eastern Central: Date 9/12/13 Time 7:00	Composite end Eastern Central: Date 9/13/13 Time 7:00		Bottle Group(s)**: B	
	Field ID: TOX 3			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Central: Date Time	Composite end Eastern Central: Date Time		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Central: Date Time	Composite end Eastern Central: Date Time		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					
Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Central: Date Time	Composite end Eastern Central: Date Time		Bottle Group(s)**	
	Field ID			Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number			
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft	☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)	NPDES Number			
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments					

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
Rick Abad	9/13/13 0945	Fed ex	9-14-13 0900 Marshal Faircloth Tenaculum					

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Small Blue 2 Jugs 1.3°C
Small white 1 Jug 0.8°C

Notified by email ABA 09-16-13.

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Request Number: RQ-2013-09-09-24 ~~RQ-2013-08-12-22~~ ~~Choctawhatchee Bay Aqualab~~
FYI International Paper Company Pensacola Mill Sampling Inspection

Customer: NW-DIST

Project ID: ~~DISCRTNARY~~ NWDIST FYI

PMAS: ~~1306~~

Requester: ~~Cheryl Bunch~~ Jennifer Weger

Collected By: Nathan Melka

Sampling Agency: FDEP

Field Report Prepared By: _____

Send Final Report To: ~~Cheryl Bunch~~ Kim Allen ~~Nathan~~

Event ID *

Lab ID *	Location: District (NW) DI Blank			☐ Comp ☑ Grab	Collection (comp begin or grab) Eastern Date: 9/9/13 Time: 1345 Central		Composite end Date Time		Eastern Central	Bottle Group(s)**
	Field ID: Blank T2			Tot Res Chlorine (mg/L)		Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments						

Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date Time Central		Composite end Date Time		Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)		Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments						

Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date Time Central		Composite end Date Time		Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)		Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments						

Lab ID *	Location			☐ Comp ☐ Grab	Collection (comp begin or grab) Eastern Date Time Central		Composite end Date Time		Eastern Central	Bottle Group(s)**
	Field ID			Tot Res Chlorine (mg/L)		Diss Oxygen (mg/L)		Storet Station Number		
	Matrix (include type e.g. Salt, Fresh, etc)	Temp (C)	pH	Sample Depth ☐ m ☐ ft		☐ Salinity (PPTh) ☐ Sp Conductance (umho/cm)		NPDES Number		
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms		Comments						

Relinquished By:	Date/Time	Shipping Method:	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	9/9/13	Fed Ex	[signature]	9-13-13 09:20				

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix E
Physical/Chemical field sheets

24 hr. Avg Flow 20.625 mgd

Department of Environmental Protection
Water Quality Report Form

Nelac Lab ID: E31887	Water Collection Depth: ☑0.15m(0.5') ☐Other:		General Bottles Triple Rinsed ☐
Agency 21FLPNS	**Station**	**Date** 9/9/13	Time of Grab Sample 10:00 ☑ CST ☐ EST

Water (check as appropriate)		**Soils/Sediment**		**Tissue**		**Collection Mode**	
Surface Water ☐	Equip Blank ☐	Terrestrial	☐	Fish	☐	by Foot ☐	☐ by Boat
Ground Water ☐	Field Blank ☐	Freshwater Sed	☐	Shellfish	☐	Wading ☐	☐ Canoe
Waste Water ☑	Trip Blank ☐	Marine Sed	☐	Other	☐	On Shore ☐	☐ Gas Motor
Other:	Duplicate ☐	Sludge	☐				

Parameter Suite	**Parameter(s)/Method**	**Preservation**	**Acid Lot/Exp**	**Check pH**	**# Bottles**
Preserved Nutrients	☐TKN ☐TP ☐NO2NO3 ☐NH3 ☐TOC ☐Other:	☐Ice ☐H2SO4 2ml		☐ <2 pH	
Metals	☐W-ICP ☐W-FIAS ☐W-ICPMS ☐W-ICP-Tr	☐HNO3 1ml		☐ <2 pH	
Filtered Nutrients	☐PO4 ☐Field Filtered .45 um filter	☐Ice			
All Other Samples unless otherwise noted	☐Other:	☐Ice			

Biological Sample Collected: Macroinvertebrates ☐ Phytoplankton ☐ Periphyton ☐ AGP ☐

Meter ID Num: 145390	**Equipmt Used:** Sample Container ☐ Pole ☑ Syringe ☐ Van Dorn ☐ Other ☐	**Equipmt ID Num:**	☐ Field Cleaned

Remarks: 30.58190 87.32106 Module number: 1306 9-8-13 0738 Effluent sample 9-9-13 0738
*Flow - 22.5 MG instantaneous

LOCATION Compliance D.O location below EFF-3 Final water full/drop, before outfall
Lat: N 30.58190 Long: W 87.32106

Parameter	Unit	Code	Field Value	Parameter	Unit	Code	Lab Request
Field Identity	Number	29	Effluent	Conductivity Lab	UMHO	95	
Temp. Water	°C	10	32.81	pH Lab	Std. Unit	403	6.71 Facility meter
Temp. Air	°C	20		Turbidity, HACH	NTU	76	
Precipitation (24hr)	Inches	45		~~Color~~ DO mg/L	PT-CO	80	6.71
Cloud Cover	Percent	32		~~BOD, 5 Day~~ DO %	mg/L	310	97.7
Wind Velocity	MPH	35		NFLT Residue	mg/L	530	
Wind Dir. From	Degrees	36		N-NH3, Total	mg/L	610	
Tide Stage	Code	67		Un-Ionized NH3	mg/L	619	
Water Depth, Max	Meters	82903		N-TKN	mg/L	625	
Secchi	Meters	78		N-NO2 +NO3	mg/L	630	
Meter Sample Depth	Meters	98		Phos-Total	mg/L	665	
Conductivity Field	UMHO	94	1771	Enterococcus	#/100mL	31649	
Salinity	PPTH	480	10.88	Total Coliform	#/100mL	31501	
DO Probe ← Before Final Hrly	mg/L	299	~~2.22~~ FB	Fecal Coliform	#/100mL	31616	
DO % Saturation ← Each Hrly	Percent	301	~~31.0~~ FB	Chlorophyll A	UG/L	32210	
pH Field 6.69	Std. Unit	400	~~6.94~~ FB	Chlorophyll A	Corrected	32211	

Sample Taken By: R. ABAD
Report Verified By: FB
Report Prepared By: F BUTEGA
( ) CHANGE Date Submitted 9-9-13

DEP NWD form, 10-25-2006 version

Department of Environmental Protection

Water Quality Report Form

Nelac Lab ID: E31887	Water Collection Depth: ☑0.15m(0.5') ☐Other:	General Bottles Triple Rinsed ☐
Agency 21FLPNS	Station	Date 9/9/13	Time of Grab Sample 1510	☑ CST ☐ EST

Water (check as appropriate)		Soils/Sediment		Tissue		Collection Mode			
Surface Water	☑	Equip Blank	☐	Terrestrial	☐	Fish	☐	by Foot	☐ ☐ by Boat
Ground Water	☐	Field Blank	☐	Freshwater Sed	☐	Shellfish	☐	Wading	☐ ☐ Canoe
Waste Water	☐	Trip Blank	☐	Marine Sed	☐	Other	☐	On Shore	☐ ☐ Gas Motor
Other:		Duplicate	☐	Sludge	☐				

Parameter Suite	Parameter(s)/Method	Preservation	Acid Lot/Exp	Check pH	# Bottles
Preserved Nutrients	☐TKN ☐TP ☐NO2NO3 ☐NH3 ☐TOC ☐Other:	☐Ice ☐H2SO4 2ml		☐ <2 pH	
Metals	☐W-ICP ☐W-FIAS ☐W-ICPMS ☐W-ICP-Tr	☐HNO3 1ml		☐ <2 pH	
Filtered Nutrients	☐PO4 ☐Field Filtered .45 um filter	☐Ice			
All Other Samples unless otherwise noted	☐Other:	☐Ice			

Biological Sample Collected: Macroinvertebrates ☐ Phytoplankton ☐ Periphyton ☐ AGP ☐

Meter ID Num: 145390	Equipmt Used: Sample Container ☑ Pole ☐ Syringe ☐ Van Dorn ☐ Other ☐	Equipmt ID Num:	☐ Field Cleaned

Remarks: Module number: 1306

Field Test Site

LOCATION

Test Wetland

Lat: N 30.46952 Long: W 87.37920

Parameter	Unit	Code	Field Value	Parameter	Unit	Code	Lab Request
Field Identity	Number	29	Test Wetland	Conductivity Lab	UMHO	95	
Temp. Water	°C	10	29.0	pH Lab	Std. Unit	403	
Temp. Air	°C	20		Turbidity, HACH	NTU	76	
Precipitation (24hr)	Inches	45		Color	PT-CO	80	
Cloud Cover	Percent	32		BOD, 5 Day	mg/L	310	
Wind Velocity	MPH	35		NFLT Residue	mg/L	530	
Wind Dir. From	Degrees	36		N-NH3, Total	mg/L	610	
Tide Stage	Code	67		Un-Ionized NH3	mg/L	619	
Water Depth, Max	Meters	82903	0.4	N-TKN	mg/L	625	
Secchi	Meters	78	VOB	N-NO2 +NO3	mg/L	630	
Meter Sample Depth	Meters	98	0.1G	Phos-Total	mg/L	665	
Conductivity Field	UMHO	94	1515	Enterococcus	#/100mL	31649	
Salinity	PPTH	480	0.76	Total Coliform	#/100mL	31501	
DO Probe	mg/L	299	4.29	Fecal Coliform	#/100mL	31616	
DO % Saturation	Percent	301	53.2	Chlorophyll A	UG/L	32210	
pH Field	Std. Unit	400	7.12	Chlorophyll A	Corrected	32211	

Sample Taken By: F. Butera	Report Verified By:
Report Prepared By: Rick Mond	( ) CHANGE Date Submitted

DEP NWD form, 10-25-2006 version

Fiel

Department of Environmental Protection

Water Quality Report Form

Time of meter reading 1615

Nelac Lab ID: E31887	Water Collection Depth: ☑0.15m(0.5') ☐Other:		General Bottles Triple Rinsed ☐
Agency 21FLPNS	**Station**	**Date** 9/10/13	Time of Grab Sample 1415 ☐ CST ☐ EST

Water (check as appropriate)		**Soils/Sediment**		**Tissue**		**Collection Mode**			
Surface Water	☑	Equip Blank	☐	Terrestrial	☐	Fish	☐	by Foot ☐	☐ by Boat
Ground Water	☐	Field Blank	☐	Freshwater Sed	☐	Shellfish	☐	Wading ☐	☐ Canoe
Waste Water	☐	Trip Blank	☐	Marine Sed	☐	Other	☐	On Shore ☐	☐ Gas Motor
Other:		Duplicate	☐	Sludge	☐				

Parameter Suite	**Parameter(s)/Method**	**Preservation**	**Acid Lot/Exp**	**Check pH**	**# Bottles**
Preserved Nutrients	☐TKN ☐TP ☐NO2NO3 ☐NH3 ☐TOC ☐Other:	☐Ice ☐H2SO4 2ml		☐ <2 pH	
Metals	☐W-ICP ☐W-FIAS ☐W-ICPMS ☐W-ICP-Tr	☐HNO3 1ml		☐ <2 pH	
Filtered Nutrients	☐PO4 ☐Field Filtered .45 um filter	☐Ice			
All Other Samples unless otherwise noted	☐Other:	☐Ice			

Biological Sample Collected: Macroinvertebrates ☐ Phytoplankton ☐ Periphyton ☐ AGP ☐

Meter ID Num: 145390	**Equipmt Used:** Sample Container ☑ Pole ☐ Syringe ☐ Van Dorn ☐ Other ☐	**Equipmt ID Num:**	☐ Field Cleaned

Remarks: Module number: 1306

IP
Field Control site

LOCATION

Wetland Control

Lat: N30.47572 Long: W87.39472

Parameter	Unit	Code	Field Value	Parameter	Unit	Code	Lab Request
Field Identity	Number	29	Control Wetland	Conductivity Lab	UMHO	95	
Temp. Water	°C	10	32.99	pH Lab	Std. Unit	403	
Temp. Air	°C	20		Turbidity, HACH	NTU	76	
Precipitation (24hr)	Inches	45		Color	PT-CO	80	
Cloud Cover	Percent	32		BOD, 5 Day	mg/L	310	
Wind Velocity	MPH	35		NFLT Residue	mg/L	530	
Wind Dir. From	Degrees	36		N-NH3, Total	mg/L	610	
Tide Stage	Code	67		Un-Ionized NH3	mg/L	619	
Water Depth, Max	Meters	82903	0.30	N-TKN	mg/L	625	
Secchi	Meters	78	VOB	N-NO2 +NO3	mg/L	630	
Meter Sample Depth	Meters	98	0.15	Phos-Total	mg/L	665	
Conductivity Field	UMHO	94	36	Enterococcus	#/100mL	31649	
Salinity	PPTH	480	0.02	Total Coliform	#/100mL	31501	
DO Probe	mg/L	299	6.54	Fecal Coliform	#/100mL	31616	
DO % Saturation	Percent	301	91.5	Chlorophyll A	UG/L	32210	
pH Field	Std. Unit	400	4.27	Chlorophyll A	Corrected	32211	

Sample Taken By: Rick Aboard	Report Verified By:
Report Prepared By: Rick Aboard	( ) CHANGE Date Submitted

DEP NWD form, 10-25-2006 version

Appendix F

Chemical analysis of effluent and receiving water

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 8:38	Effluent	TEST COMPOSITE	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	7.9	mg/L		0.2	2
9/9/2013 8:38	Effluent	TEST COMPOSITE	Nutrients	TSS	32	mg/L		3.6	18
9/9/2013 8:38	Effluent	TEST COMPOSITE	Nutrients	Color (true)	180	PCU		7.5	18
9/9/2013 8:38	Effluent	TEST COMPOSITE	Overflow	Adsorbable Organic Halides	461	ug/L		6.2	20
9/9/2013 8:38	Effluent	TEST COMPOSITE	Toxicology	Bioassay-Chron-Def-FW-C.dubia, IC25	100	IC25	L		
9/9/2013 8:38	Effluent	TEST COMPOSITE	Toxicology	Bioassay-Chron-Def-FW-Fish, NOEC	6.25	NOEC	K		
9/9/2013 8:38	Effluent	TEST COMPOSITE	Toxicology	Bioassay-Chron-Def-FW-Fish, IC25	22.3	IC25			
9/9/2013 8:38	Effluent	TEST COMPOSITE	Toxicology	Bioassay-Chron-Def-FW-C.dubia, NOEC	100	NOEC			
9/9/2013 11:00	Effluent	TEST OUTFALL	AGP/LN	Algal Growth Potential	79.7	mg DryWt/L		0.3	0.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	3.4	ug/L	I	2.8	8.5
9/9/2013 11:00	Effluent	TEST OUTFALL	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.0	ug/L	U	2	6
9/9/2013 11:00	Effluent	TEST OUTFALL	Field Parameter	Specific Conductance	1,771	umhos/cm			
9/9/2013 11:00	Effluent	TEST OUTFALL	Field Parameter	Temperature	32.81	C			
9/9/2013 11:00	Effluent	TEST OUTFALL	Field Parameter	Sample Depth	0.15	m			
9/9/2013 11:00	Effluent	TEST OUTFALL	Field Parameter	pH	6.69				
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Sodium	353	mg/L		2.5	10
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Zinc	15	ug/L	I	5	20
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Silver	0.025	ug/L	U	0.025	0.1
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Nickel	1.97	ug/L		0.25	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Aluminum	670	ug/L		60	240
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Iron	290	ug/L		30	120
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Hardness	109	mg/L		0.4	1.6
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Magnesium	6.15	mg/L		0.04	0.16
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Potassium	18.8	mg/L		0.3	1.2
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Arsenic	1.70	ug/L		0.25	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Lead	0.49	ug/L	I	0.2	0.8
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Mercury	2.3	ng/L		0.1	0.4
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Copper	3.30	ug/L		0.5	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Chromium	0.82	ug/L	I	0.3	1.2
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Selenium	0.80	ug/L		0.2	0.8
9/9/2013 11:00	Effluent	TEST OUTFALL	Metals	Cadmium	0.12	ug/L	I	0.05	0.2
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Chloride	63	mg Cl/L		2	5
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Total-P	0.90	mg P/L		0.005	0.05
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Fluoride	0.17	mg F/L		0.035	0.1

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Ammonia-N	2.6	mg N/L		0.1	0.25
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	O-Phosphate-P	0.29	mg P/L		0.02	0.05
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	NO2NO3-N	0.13	mg N/L		0.004	0.01
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Alkalinity	134	mg CaCO3/L		0.65	2.5
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Sulfate	600	mg SO4/L		2	5
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Kjeldahl Nitrogen	5.8	mg N/L		0.4	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Organic Carbon	35	mg C/L		0.5	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Nutrients	Turbidity	15	NTU		0.1	0.1
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Fecal Coliforms-Membrane Filter	4	cfu/100 mL	B	1	1
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,4,7,8,9-HpCDF	1.56	pg/L	U	1.56	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	2,3,7,8-TCDD	2.00	pg/L	U	2	4.99
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,4,7,8-HxCDF	0.826	pg/L	U	0.826	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,7,8,9-HxCDD	1.19	pg/L	U	1.19	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	OCDD	8.19	pg/L	I	3.55	49.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Chemical Oxygen Demand	150	mg/L		6.3	20
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,4,6,7,8-HpCDD	1.73	pg/L	U	1.73	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,7,8,9-HxCDF	1.32	pg/L	U	1.32	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Penta-Furans	0.853	pg/L	U	0.853	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Oil and Grease	0.99	mg/L	I	0.77	2.7
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,4,7,8-HxCDD	1.29	pg/L	U	1.29	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Hepta-Furans	1.28	pg/L	U	1.28	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Tetra-Dioxins	2.00	pg/L	U	2	4.99
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,4,6,7,8-HpCDF	1.05	pg/L	U	1.05	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,6,7,8-HxCDD	1.24	pg/L	U	1.24	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	2,3,7,8-TCDF	0.776	pg/L	U	0.776	4.99
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Tetra-Furans	0.776	pg/L	U	0.776	4.99
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,6,7,8-HxCDF	0.684	pg/L	U	0.684	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,7,8-PeCDF	0.862	pg/L	U	0.862	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	2,3,4,7,8-PeCDF	0.844	pg/L	U	0.844	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Hexa-Furans	0.858	pg/L	U	0.858	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Penta-Dioxins	1.41	pg/L	U	1.41	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	1,2,3,7,8-PeCDD	1.41	pg/L	U	1.41	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	2,3,4,6,7,8-HxCDF	0.773	pg/L	U	0.773	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Hepta-Dioxins	1.73	pg/L	U	1.73	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	Total Hexa-Dioxins	1.24	pg/L	U	1.24	25
9/9/2013 11:00	Effluent	TEST OUTFALL	Overflow	OCDF	2.76	pg/L	U	2.76	49.9

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Prometryn	0.020	ug/L	U	0.02	0.08
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Butylate	0.020	ug/L	U	0.02	0.08
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Chlorpyrifos Methyl	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Hexazinone	0.030	ug/L	U	0.03	0.12
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Mevinphos	0.010	ug/L	UJ	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Diazinon	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Parathion Ethyl	0.020	ug/L	U	0.02	0.08
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Ethoprop	0.0050	ug/L	U	0.005	0.02
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Fenamiphos	0.030	ug/L	U	0.03	0.12
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Malathion	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Metribuzin	0.020	ug/L	U	0.02	0.08
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Alachlor	0.060	ug/L	U	0.06	0.24
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Ametryn	0.010	ug/L	UJ	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Chlorpyrifos Ethyl	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Fonofos	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Norflurazon	0.030	ug/L	U	0.03	0.12
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Parathion Methyl	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Phorate	0.0050	ug/L	U	0.005	0.02
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Simazine	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Atrazine	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Ethion	0.010	ug/L	U	0.01	0.04
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Azinphos Methyl	0.020	ug/L	U	0.02	0.08
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Bromacil	0.040	ug/L	U	0.04	0.16
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Metalaxyl	0.040	ug/L	U	0.04	0.16
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Metolachlor	0.060	ug/L	U	0.06	0.24
9/9/2013 11:00	Effluent	TEST OUTFALL	Pesticides	Naled	0.040	ug/L	U	0.04	0.16
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,4-Dinitrophenol	15	ug/L	UJ	15	59
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Dimethyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	4-Nitrophenol	15	ug/L	U	15	59
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Acenaphthylene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Hexachloroethane	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Naphthalene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Phenanthrene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	ug/L	U	0.99	4

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2-Chlorophenol	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzidine	99	ug/L	U	99	400
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Butyl benzyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Isophorone	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	ug/L	U	9.9	40
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Hexachlorobenzene	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Pentachlorophenol	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Acenaphthene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzo(a)pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	ug/L	U	2	7.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	ug/L	U	2	7.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Hexachlorobutadiene	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	ug/L	U	2	7.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Phenol	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2-Chloronaphthalene	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	ug/L	U	2	7.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Di-n-butyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Fluorene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Nitrobenzene	2.0	ug/L	U	2	7.9
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	ug/L	U	3	12
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	ug/L	U	3	12

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Chrysene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	1,4-Dioxane	1.4	ug/L		0.02	0.1
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzo(a)anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	ug/L	U	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	Diethyl phthalate	1.3	ug/L	I	0.99	4
9/9/2013 11:00	Effluent	TEST OUTFALL	Priority Organic Pollutants	2-Nitrophenol	0.99	ug/L	U	0.99	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	AGP/LN	Algal Growth Potential	3.50	mg DryWt/L		0.3	0.9
9/9/2013 14:10	Test Wetland	TEST WETLAND	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	1.9	mg/L	I	0.2	2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	4.0	ug/L		0.55	1.7
9/9/2013 14:10	Test Wetland	TEST WETLAND	Chlorophyll/Grain Size/BOD	Phaeophytin-a	1.9	ug/L		0.4	1.2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Field Parameter	Dissolved Oxygen	4.29	mg/L			
9/9/2013 14:10	Test Wetland	TEST WETLAND	Field Parameter	Specific Conductance	1,515	umhos/cm			
9/9/2013 14:10	Test Wetland	TEST WETLAND	Field Parameter	Temperature	29.0	C			
9/9/2013 14:10	Test Wetland	TEST WETLAND	Field Parameter	Sample Depth	0.15	m			
9/9/2013 14:10	Test Wetland	TEST WETLAND	Field Parameter	pH	7.12				
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Nickel	1.18	ug/L		0.25	1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Arsenic	1.30	ug/L		0.25	1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Lead	0.42	ug/L	I	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Potassium	16.6	mg/L		0.3	1.2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Cadmium	0.078	ug/L	I	0.05	0.2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Chromium	0.62	ug/L	I	0.3	1.2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Magnesium	5.00	mg/L		0.04	0.16
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Aluminum	310	ug/L		60	240
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Calcium	27.7	mg/L		0.075	0.3
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Iron	220	ug/L		30	120
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Copper	0.63	ug/L	I	0.5	1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Selenium	0.22	ug/L	I	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Silver	0.025	ug/L	U	0.025	0.1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Zinc	5.0	ug/L	U	5	20
9/9/2013 14:10	Test Wetland	TEST WETLAND	Metals	Sodium	302	mg/L		2.5	10
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Chloride	68	mg Cl/L		0.2	0.5
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	NO2NO3-N	0.050	mg N/L		0.004	0.01
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Ammonia-N	0.050	mg N/L		0.002	0.005
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Total-P	0.27	mg P/L		0.005	0.05

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	O-Phosphate-P	0.17	mg P/L		0.008	0.02
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Color (true)	280	PCU		12	30
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Turbidity	2.3	NTU		0.1	0.1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Alkalinity	139	mg CaCO3/L		0.65	2.5
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	TSS	6	mg/L	I	2	10
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Organic Carbon	26	mg C/L		0.5	1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Fluoride	0.26	mg F/L		0.035	0.1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Kjeldahl Nitrogen	0.98	mg N/L		0.08	0.2
9/9/2013 14:10	Test Wetland	TEST WETLAND	Nutrients	Sulfate	500	mg SO4/L		4	10
9/9/2013 14:10	Test Wetland	TEST WETLAND	Overflow	Fecal Coliforms-Membrane Filter	19	cfu/100 mL	B	1	1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Azinphos Methyl	0.020	ug/L	U	0.02	0.079
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Simazine	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Phorate	0.0049	ug/L	U	0.0049	0.02
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Atrazine	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Ethion	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Fonofos	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Chlorpyrifos Methyl	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Diazinon	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Ethoprop	0.0049	ug/L	U	0.0049	0.02
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Parathion Ethyl	0.020	ug/L	U	0.02	0.079
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Butylate	0.020	ug/L	U	0.02	0.079
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Malathion	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Metalaxyl	0.039	ug/L	U	0.039	0.16
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Metolachlor	0.059	ug/L	U	0.059	0.24
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Mevinphos	0.0098	ug/L	UJ	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Metribuzin	0.020	ug/L	U	0.02	0.079
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Parathion Methyl	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Prometryn	0.020	ug/L	U	0.02	0.079
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Naled	0.039	ug/L	U	0.039	0.16
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Norflurazon	0.029	ug/L	U	0.029	0.12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Alachlor	0.059	ug/L	U	0.059	0.24
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Bromacil	0.039	ug/L	U	0.039	0.16
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Chlorpyrifos Ethyl	0.0098	ug/L	U	0.0098	0.039
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Fenamiphos	0.029	ug/L	U	0.029	0.12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Hexazinone	0.029	ug/L	U	0.029	0.12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Pesticides	Ametryn	0.0098	ug/L	UJ	0.0098	0.039

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Isophorone	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	ug/L	U	2	8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Nitrobenzene	2.0	ug/L	U	2	8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Acenaphthene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Di-n-butyl phthalate	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Diethyl phthalate	1.2	ug/L	I	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Hexachloroethane	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Naphthalene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	1,4-Dioxane	1.1	ug/L	Y	0.02	0.1
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Chrysene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Fluorene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	ug/L	U	2	8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Pyrene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2-Chloronaphthalene	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Acenaphthylene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,4-Dimethylphenol	10	ug/L	U	10	40
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	ug/L	U	2	8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Anthracene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Dimethyl phthalate	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2-Nitrophenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	4-Nitrophenol	15	ug/L	U	15	60
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	ug/L	U	2	8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Di-n-octyl phthalate	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Hexachlorobutadiene	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	ug/L	U	3	12

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Pentachlorophenol	3.0	ug/L	U	3	12
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Phenanthrene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Phenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2-Chlorophenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzidine	100	ug/L	U	100	400
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzo(a)pyrene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,4-Dichlorophenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,4-Dinitrophenol	15	ug/L	UJ	15	60
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Benzo(a)anthracene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Butyl benzyl phthalate	1.0	ug/L	U	1	4
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Fluoranthene	0.20	ug/L	U	0.2	0.8
9/9/2013 14:10	Test Wetland	TEST WETLAND	Priority Organic Pollutants	Hexachlorobenzene	1.0	ug/L	U	1	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	AGP/LN	Algal Growth Potential	0.845	mg DryWt/L	I	0.3	0.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.6	mg/L	A	0.2	2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Chlorophyll/Grain Size/BOD	Phaeophytin-a	5.5	ug/L		1.3	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	14	ug/L		1.8	5.7
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Field Parameter	Sample Depth	0.15	m			
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Field Parameter	pH	4.27				
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Field Parameter	Specific Conductance	36	umhos/cm			
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Field Parameter	Temperature	32.99	C			
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Field Parameter	Dissolved Oxygen	6.54	mg/L			
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Magnesium	0.48	mg/L		0.04	0.16
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Arsenic	0.25	ug/L	U	0.25	1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Calcium	0.62	mg/L		0.075	0.3
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Potassium	0.30	mg/L	U	0.3	1.2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Chromium	0.33	ug/L	I	0.3	1.2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Nickel	0.43	ug/L	I	0.25	1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Silver	0.025	ug/L	U	0.025	0.1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Cadmium	0.090	ug/L	I	0.05	0.2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Lead	0.45	ug/L	I	0.2	0.8

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Sodium	3.2	mg/L		0.5	2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Copper	1.75	ug/L		0.5	1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Iron	320	ug/L		30	120
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Aluminum	300	ug/L		60	240
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Selenium	0.20	ug/L	U	0.2	0.8
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Metals	Zinc	6.0	ug/L	I	5	20
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	TSS	26	mg/L		2	10
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Color (true)	180	PCU		7.5	18
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Turbidity	5.1	NTU		0.1	0.1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Sulfate	0.23	mg SO4/L	I	0.2	0.5
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Ammonia-N	0.009	mg N/L		0.002	0.005
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Alkalinity	0.65	mg CaCO3/L	U	0.65	2.5
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Chloride	5.2	mg Cl/L		0.2	0.5
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Fluoride	0.035	mg F/L	U	0.035	0.1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Organic Carbon	24	mg C/L		0.5	1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Total-P	0.019	mg P/L		0.002	0.005
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Nutrients	Kjeldahl Nitrogen	1.1	mg N/L		0.08	0.2
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Overflow	Fecal Coliforms-Membrane Filter	1	cfu/100 mL	U	1	1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Naled	0.038	ug/L	U	0.038	0.15
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Metolachlor	0.057	ug/L	U	0.057	0.23
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Fenamiphos	0.028	ug/L	U	0.028	0.11
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Simazine	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Metalaxyl	0.038	ug/L	U	0.038	0.15
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Bromacil	0.038	ug/L	U	0.038	0.15
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Atrazine	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Norflurazon	0.028	ug/L	UJ	0.028	0.11
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Malathion	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Fonofos	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Ethoprop	0.0047	ug/L	U	0.0047	0.019
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Ethion	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Butylate	0.019	ug/L	U	0.019	0.076
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Parathion Ethyl	0.019	ug/L	U	0.019	0.076
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Prometryn	0.019	ug/L	U	0.019	0.076
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Chlorpyrifos Ethyl	0.0095	ug/L	U	0.0095	0.038

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Chlorpyrifos Methyl	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Azinphos Methyl	0.019	ug/L	U	0.019	0.076
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Mevinphos	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Hexazinone	0.028	ug/L	U	0.028	0.11
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Diazinon	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Alachlor	0.057	ug/L	UJ	0.057	0.23
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Phorate	0.0047	ug/L	U	0.0047	0.019
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Parathion Methyl	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Ametryn	0.0095	ug/L	U	0.0095	0.038
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Pesticides	Metribuzin	0.019	ug/L	U	0.019	0.076
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	4-Nitrophenol	15	ug/L	U	15	59
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Chrysene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Dimethyl phthalate	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Fluorene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Naphthalene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2-Chloronaphthalene	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Anthracene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzo(a)anthracene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzo(a)pyrene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Nitrobenzene	2.0	ug/L	U	2	7.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzidine	99	ug/L	U	99	400
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Butyl benzyl phthalate	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Diethyl phthalate	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Hexachloroethane	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Phenanthrene	0.20	ug/L	U	0.2	0.79

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Acenaphthene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Fluoranthene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	ug/L	U	2	7.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	ug/L	U	9.9	40
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Acenaphthylene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Isophorone	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2,4-Dinitrophenol	15	ug/L	UJ	15	59
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2-Chlorophenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	2-Nitrophenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	ug/L	U	2	7.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	ug/L	U	2	7.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Hexachlorobenzene	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Hexachlorobutadiene	3.0	ug/L	U	3	12
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	ug/L	U	2	7.9
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Phenol	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Pyrene	0.20	ug/L	U	0.2	0.79
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	1,4-Dioxane	0.020	ug/L	U	0.02	0.1
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Di-n-butyl phthalate	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	ug/L	U	0.99	4
9/10/2013 15:15	Control Wetland	CONTROL WETLAND	Priority Organic Pollutants	Pentachlorophenol	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Aluminum	60	ug/L	U	60	240
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Nickel	0.25	ug/L	U	0.25	1
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Sodium	0.50	mg/L	U	0.5	2
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Cadmium	0.050	ug/L	U	0.05	0.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Hardness	0.40	mg/L	U	0.4	1.6
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Potassium	0.30	mg/L	U	0.3	1.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Copper	0.50	ug/L	U	0.5	1
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Silver	0.025	ug/L	U	0.025	0.1

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Chromium	0.30	ug/L	U	0.3	1.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Lead	0.20	ug/L	U	0.2	0.8
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Zinc	5.0	ug/L	U	5	20
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Arsenic	0.25	ug/L	U	0.25	1
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Iron	30	ug/L	U	30	120
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Selenium	0.20	ug/L	U	0.2	0.8
9/9/2013 12:00	Field Blank	FIELD BLANK	Metals	Magnesium	0.040	mg/L	U	0.04	0.16
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	O-Phosphate-P	0.004	mg P/L	U	0.004	0.01
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Chloride	0.20	mg Cl/L	U	0.2	0.5
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	NO2NO3-N	0.004	mg N/L	U	0.004	0.01
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Organic Carbon	0.64	mg C/L	I	0.5	1
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Ammonia-N	0.003	mg N/L	I	0.002	0.005
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Alkalinity	0.65	mg CaCO3/L	U	0.65	2.5
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Sulfate	0.20	mg SO4/L	U	0.2	0.5
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Kjeldahl Nitrogen	0.080	mg N/L	U	0.08	0.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Turbidity	0.10	NTU	U	0.1	0.1
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Color (true)	2.5	PCU	U	2.5	6
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Total-P	0.002	mg P/L	U	0.002	0.005
9/9/2013 12:00	Field Blank	FIELD BLANK	Nutrients	Fluoride	0.035	mg F/L	U	0.035	0.1
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Oil and Grease	0.73	mg/L	U	0.73	2.6
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Tetra-Furans	0.693	pg/L	U	0.693	5.03
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,4,6,7,8-HpCDD	1.27	pg/L	U	1.27	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,4,6,7,8-HpCDF	0.749	pg/L	U	0.749	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,4,7,8-HxCDF	0.595	pg/L	U	0.595	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,6,7,8-HxCDF	0.482	pg/L	U	0.482	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	2,3,7,8-TCDD	1.16	pg/L	U	1.16	5.03
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,7,8,9-HxCDD	0.824	pg/L	U	0.824	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,7,8-PeCDF	0.582	pg/L	U	0.582	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Penta-Dioxins	0.683	pg/L	U	0.683	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Hexa-Furans	0.630	pg/L	U	0.63	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Penta-Furans	0.570	pg/L	U	0.57	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,4,7,8-HxCDD	0.912	pg/L	U	0.912	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,6,7,8-HxCDD	0.842	pg/L	U	0.842	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,7,8,9-HxCDF	1.09	pg/L	U	1.09	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	2,3,4,7,8-PeCDF	0.557	pg/L	U	0.557	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	2,3,7,8-TCDF	0.693	pg/L	U	0.693	5.03

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	OCDF	1.96	pg/L	U	1.96	50.3
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Hepta-Furans	0.894	pg/L	U	0.894	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Adsorbable Organic Halides	6.20	ug/L	U	6.2	20
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	2,3,4,6,7,8-HxCDF	0.545	pg/L	U	0.545	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,4,7,8,9-HpCDF	1.08	pg/L	U	1.08	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	OCDD	4.40	pg/L	I	2.8	50.3
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Hexa-Dioxins	0.856	pg/L	U	0.856	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	1,2,3,7,8-PeCDD	0.683	pg/L	U	0.683	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Hepta-Dioxins	1.27	pg/L	U	1.27	25.2
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Total Tetra-Dioxins	1.16	pg/L	U	1.16	5.03
9/9/2013 12:00	Field Blank	FIELD BLANK	Overflow	Chemical Oxygen Demand	6.3	mg/L	U	6.3	20
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Metribuzin	0.020	ug/L	U	0.02	0.08
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Norflurazon	0.030	ug/L	U	0.03	0.12
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Phorate	0.0050	ug/L	U	0.005	0.02
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Prometryn	0.020	ug/L	U	0.02	0.08
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Atrazine	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Azinphos Methyl	0.020	ug/L	U	0.02	0.08
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Mevinphos	0.010	ug/L	UJ	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Parathion Ethyl	0.020	ug/L	U	0.02	0.08
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Parathion Methyl	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Naled	0.040	ug/L	U	0.04	0.16
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Simazine	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Chlorpyrifos Methyl	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Chlorpyrifos Ethyl	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Ethoprop	0.0050	ug/L	U	0.005	0.02
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Fonofos	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Metolachlor	0.060	ug/L	U	0.06	0.24
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Diazinon	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Fenamiphos	0.030	ug/L	U	0.03	0.12
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Metalaxyl	0.040	ug/L	U	0.04	0.16
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Alachlor	0.060	ug/L	U	0.06	0.24
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Hexazinone	0.030	ug/L	U	0.03	0.12
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Ametryn	0.010	ug/L	UJ	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Bromacil	0.040	ug/L	U	0.04	0.16
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Butylate	0.020	ug/L	U	0.02	0.08
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Ethion	0.010	ug/L	U	0.01	0.04

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 12:00	Field Blank	FIELD BLANK	Pesticides	Malathion	0.010	ug/L	U	0.01	0.04
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2-Chlorophenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Nitrobenzene	2.0	ug/L	U	2	7.9
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Fluorene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Hexachlorobutadiene	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0	ug/L	U	2	7.9
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Phenanthrene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,4-Dimethylphenol	9.9	ug/L	U	9.9	40
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzidine	99	ug/L	U	99	400
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0	ug/L	U	2	7.9
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrophenol	15	ug/L	UJ	15	59
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Hexachlorobenzene	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Naphthalene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Pentachlorophenol	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40	ug/L	U	40	160
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Acenaphthene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Butyl benzyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0	ug/L	U	2	7.9
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	1,4-Dioxane	1.3	ug/L		0.02	0.1
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2-Chloronaphthalene	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2-Nitrophenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzo(a)anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Chrysene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Phenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99	ug/L	U	0.99	4

Date_Sampled	UDL	Field_Sample_ID	SCH_Group	Component	Value	Units	Qualifier	MDL	PQL
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	4-Nitrophenol	15	ug/L	U	15	59
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzo(a)pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Di-n-butyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Di-n-octyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0	ug/L	UJ	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Hexachloroethane	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Isophorone	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Pyrene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0	ug/L	U	3	12
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Acenaphthylene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Diethyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,4-Dichlorophenol	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20	ug/L	U	0.2	0.79
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	Dimethyl phthalate	0.99	ug/L	U	0.99	4
9/9/2013 12:00	Field Blank	FIELD BLANK	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0	ug/L	U	2	7.9

Appendix G
Toxicological results

FDEP Biology Laboratory - Chronic Bioassay Bench Sheet
Pimphales promelas or Menidia beryllina

Facility: International Paper
Address: 375 Muscogee Rd Cantonment 32533
County: Escambia
NPDES Permit #: FL 0002526
Contact/District: Nathan Mulkey Northwest

Test Species (circle one)
~~P. promelas~~ SOP#: TA07_09 EPA-821-R-02-013 Method 1000.0
M. beryllina SOP#: TA07_14 EPA-821-R-02-014 Method 1006.0

Start Date: 9.10.13 Time: 12:45
End Date: 9.17.13 Time: 1045

Diluent/ Batch:
MHW / 9.6.13 Test Days Used: 0-2
MHW / 9.12.13 Test Days Used: 3-6
ASW / Test Days Used:
ASW / Test Days Used:

Organism age : <24 hrs days
Feeding Prior to Test and Daily
Artemia Lot # : 23013
Chamber size : 1000 ml
Test volume : 500 ml

Organism Batch #: 23013 AP 9.10.13

Artemia Batch #			
Day 0	174.13	Day 4	178.13
Day 1	175.13	Day 5	179.13
Day 2	176.13	Day 6	180.13
Day 3	177.13		

LIMS entry: 9-23-13 MF Entry verification: 9-23-13 AP

Sample Received	Lab Sample #	LIMS Job #	LIMS Sample #	Collection Date/Time	Received Date/Time
Test Day 0	1	TLH-2013-09-10-13	1533423	9-9-13/08:38	9-10-13/11:05
Test Day 2	2	TLH-2013-09-12-69	1534793	9-11-13/0831	9-12-13/1010
Test Day 4	3	TLH-2013-09-16-16	1535241	9-13-13/0800	9-14-13/0900

Water Quality Parameters	Batch # 9.6.13 (MHW/ASW)	9.12.13 (MHW/ASW)	NA Sample 1	NA Sample 2	NA Sample 3	Other:	Measured By:	Verified by:
Field Total Residual Cl_2 (mg/L):	NA	NA	Not measured					MF
Lab Total Residual Cl_2 (mg/L):	<0.03	<0.03	0.07*	0.08*	0.09*		AP	CR
Alkalinity (mg/L as $CaCO_3$):	66	72	148	132	148		JS/HW/CR	CR/AP
Hardness (mg/L as $CaCO_3$):	84	81	104	107	104		JS/HW/CR	CR/AP
Total Ammonia (mg/L as N):	<0.017	<0.017	2.53	2.18	2.13		MF	CR
Conductivity: (µmhos) mmhos:	302	390	1772	1843	1813		AP/CR	CR/AP
Salinity (ppth):								

* Likely interference within the sample MF 12-18-13

Light Intensity : 50 - 100 ft. candles
Photoperiod : 16 light 8 dark
Temperature Range °C:
Incubator # 2 min 24.1 max 25.3
Test min 24.0 max 25.6
Room B246 min 24.8 max 25.7

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)

Statistics	
Growth NOEC:	<6.25%
Growth LOEC:	6.25%
Growth IC_{20}:	13.2%
Growth IC_{25}:	22.3%
Ctrl % CV:	8.23%
Dunnetts PMSD:	17.1%
Survival NOEC:	12.5%
Survival LOEC:	25%

Investigators' signatures

	Initials:
Marshall Faircloth (MF)	
Bruce Applegate	BA
Adrienne Pennington	AP
Cassidy Reichert	CR
Hunter Walker	HW
Jackie Savage	JS

REVIEWER Liz Miller

Comments:

PAGE 000022

revised 07/23/13 AP

Chronic Bioassay Survival Benchsheet

Facility: International Paper

LIMS Sample Number: 1533423
(for Lab Sample # 1)

Department of Environmental Protection
Biology Laboratory Chronic Screening Bioassay
***P. promelas* SOP TA07_09 *M. beryllina* SOP TA07_14**

Organism: (P. promelas) M.beryllina (circle one)

		TEST DAY							
Concentration	Replicate	0	1	2	3	4	5	6	7
Control	A	10	10	10	10	10	10	10	10
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	10	10	10
	D	10	10	10	10	10	10	10	10
Sample 6.25 %	A	10	10	10	10	10	10	9^{1D}	9
	B	10	10	10	10	10	10	~~9 1P 0~~	10
	C	10	10	10	10	10	10	9^{1D}	9
	D	10	10	10	10	10	10	10	10
Sample 12.5 %	A	10	10	10	10	10	10	9^{1D}	8^{1D}
	B	10	10	10	10	10	10	10	10
	C	10	10	10	10	10	9^{1D}	9	9
	D	10	10	10	10	~~9 10 0~~	10	10	10
Sample 25 %	A	10	8^{2D}	8	8	8	8	6^{2D}	6
	B	10	10	10	10	9^{1D}	9	9	9
	C	10	9^{1D}	9	9	9	9	9	9
	D	10	9^{1D}	9	9	9	9	9	9
Sample 50 %	A	10	10	10	10	10	10	10	9^{1D}
	B	10	9^{1D}	7^{2D}	7	6^{1D}	5^{1P}	4^{1D}	4
	C	10	10	9^{1D}	9	9	8^{1D}	8	8
	D	10	10	10	10	9^{1D}	7^{2D}	6^{1D}	6
Sample 100 %	A	10	8^{2D}	8	8	8	8	8	8
	B	10	10	10	10	10	10	9^{1D}	9
	C	10	10	10	10	10	10	10	10
	D	10	9^{1D}	9	7^{2D}	7	6^{1D}	6	6
Sample %	A	10							
	B	10							
	C	10							
	D	10							
Loaded by: BA	Checked by:		AP	AP	CR	AP	BA	CR	AP
Verified by: AP									

Comments:

Page 000023

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14 parameter pg 1

Sample Source: International Paper
LIMS Sample #: 1533423 (for Lab sample #1)

Start Date: 9.10.13 End Date: 9.17.13
Start Time: 12:45 End Time: 1045

conc = concentration rep = replicate circle umhos or mmhos

Test Day			Before Renewal						After Renewal					
		Conc.	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (umhos) mmhos	Salinity ppth	Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity (umhos) mmhos	Salinity ppth
Day 0	sample:	Control	A	7.6	24.5	8.3	302							
	1	6.25%	A	7.8	24.6	8.3	397							
	1	12.5%	A	7.8	24.6	8.3	492							
	1	25%	A	7.8	24.7	8.3	678							
	1	50%	A	7.7	24.7	8.3	1012							
	1	100%	A	7.5	25.0	9.0	1772							
	1		A											
	Measured by:			AP	AP	AP	AP							
	Recorded by:			AP	AP	AP	AP							
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 1	sample:	Control	B	7.7	25.0	7.6	300		B	7.7	25.0	7.5	303	
	1	6.25%	B	7.8	25.5	7.5	397		B	7.8	24.9	7.4	401	
	1	12.5%	B	7.8	25.5	7.4	492		B	7.9	24.9	7.3	499	
	1	25%	B	7.9	25.5	7.3	676		B	7.9	25.0	7.2	690	
	1	50%	B	7.9	24.5	7.2	989		B	7.9	25.0	7.0	1044	
	1	100%	B	7.9	25.4	6.6	1735		B	7.9	25.3	7.1	1771	
	1		B						B					
	Measured by:			CR	AP	CR	CR			CR	CR	CR	CR	
	Recorded by:			CR	CR	CR	CR			CR	AP	CR	CR	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 2	sample:	Control	C	7.8	25.2	7.4	312		C	7.8	24.2	7.7	336	
	2	6.25%	C	7.8	25.1	7.2	418		C	7.7	24.1	7.7	413	
	2	12.5%	C	7.8	24.9	7.0	517		C	7.7	24.1	7.6	511	
	2	25%	C	7.8	24.9	6.9	705		C	7.8	24.1	7.6	713	
	2	50%	C	7.8	25.0	6.5	1054		C	7.8	24.2	7.6	1092	
	2	100%	C	7.8	25.0	6.1	1796		C	7.9	24.3	7.0	1843	
	2		C						C					
	Measured by:			CR	AP	CR	CR			AP	CR	AP	AP	
	Recorded by:			AP	CR	AP	CR			CR	AP	CR	CR	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 3	sample:	Control	D	7.9	24.4	7.7	310		D	7.8	24.3	7.9	390	
	2	6.25%	D	7.8	24.9	6.8	417		D	7.8	24.2	7.4	398	
	2	12.5%	D	7.8	24.9	6.3	519		D	7.8	24.2	7.3	500	
	2	25%	D	7.7	24.9	6.6	728		D	7.8	24.3	7.1	700	
	2	50%	D	7.7	25.0	6.4	1103		D	7.8	24.5	7.2	1081	
	2	100%	D	7.7	24.8	6.1	1869		D	7.8	24.9	7.1	1830	
	2		D						D					
	Measured by:			CR	CR	CR	CR			AP	AP	AP	AP	
	Recorded by:			CR	AP	CR	CR			AP	CR	AP	AP	

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

Page 000024

Chronic Bioassay Parameters Benchsheet

P. promelas and M. beryllina SOP TA07_09 and TA-07_14 parameter pg 2

Sample Source: International Paper Start Date: 9.10.13 End Date: 9.17.13

LIMS Sample #: 1533423 (for Lab sample #1) Start Time: 12:45 End Time: 1045

conc = concentration rep = replicate

Test Day		Conc.	Before Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth	After Renewal: Test Rep.	pH (su)	Temp (°C)	DO (mg/L)	Conductivity umhos mmhos	Salinity ppth
Day 4	sample:	Control	A	7.8	25.4	7.9	353		A	7.7	24.5	8.0	340	
	3	6.25%	A	7.7	25.3	7.0	403		A	7.7	24.3	8.0	393	
	3	12.5%	A	7.7	24.9	6.6	507		A	7.7	24.3	7.9	488	
	3	25%	A	7.7	25.0	6.7	712		A	7.7	24.3	7.9	692	
	3	50%	A	7.7	25.2	6.5	1094		A	7.8	24.4	7.7	1079	
	3	100%	A	7.7	25.0	5.1	1814		A	7.8	24.2	6.8	1813	
	3		A						A					
	Measured by:			AP	AP	AP	AP			AP	AP	AP	AP	
	Recorded by:			AP	AP	AP	AP			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 5	sample:	Control	B	7.5	24.8	6.9	304		B	7.7	24.0	6.2	356	
	3	6.25%	B	7.5	25.2	6.7	406		B	7.8	24.0	6.4	390	
	3	12.5%	B	7.5	25.2	6.5	510		B	7.7	24.0	6.3	497	
	3	25%	B	7.5	25.2	6.4	714		B	7.8	24.0	6.4	692	
	3	50%	B	7.6	25.0	5.2	1086		B	7.7	24.0	6.4	1064	
	3	100%	B	7.6	24.9	4.9	1856		B	7.8	24.0	6.3	1817	
	3		B						B					
	Measured by:			BA	BA	BA	BA			BA	BA	BA	BA	
	Recorded by:			BA	BA	BA	BA			BA	BA	BA	BA	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 6	sample:	Control	C	7.9	24.9	8.2	CR~~403~~ 310		C	7.9	24.2	8.0	292	
	3	6.25%	C	7.9	24.2	8.0	403		C	7.9	24.2	8.0	380	
	3	12.5%	C	7.8	24.9	7.9	504		C	7.9	24.2	7.8	478	
	3	25%	C	7.8	24.4	7.7	702		C	7.9	24.2	7.7	671	
	3	50%	C	7.8	25.6	7.2	1096		C	7.9	24.3	7.3	1054	
	3	100%	C	7.7	24.9	6.2	1833		C	7.9	24.5	6.8	1821	
	3		C						C					
	Measured by:			CR	CR	CR	CR			AP	CR	AP	AP	
	Recorded by:			CR	CR	CR	CR			AP	AP	AP	AP	
			Rep	pH	Temp	DO	Conductivity	Salinity	Rep	pH	Temp	DO	Conductivity	Salinity
Day 7	sample:	Control	D	CR 8.0	25.1	7.3	395		D					
	3	6.25%	D	7.9	25.1	6.8	399		D					
	3	12.5%	D	7.9	25.2	6.8	504		D					
	3	25%	D	7.9	25.0	5.9	695		D					
	3	50%	D	7.9	25.1	5.5	1108		D					
	3	100%	D	7.9	25.0	5.6	1849		D					
	3								D					
	Measured by:			CR	AP	CR	CR							
	Recorded by:			CR	CR	CR	CR							

Comments:

For salinity <1 ppth insert <1. For salinity > 1 ppth, conductivity measurement is not required if salinity probe is functional.

Chronic Bioassay Weighing Benchsheet

Facility: International Paper

LIMS Sample Number: 1533423
(for Lab Sample # 1)

***P. promelas* and *M. beryllina* Bench Sheet**
SOP TA06_21

			mean wt = fish wt divided by 10 convert g to mg: move decimal 3 places to right					
Concentration	Replicate	Pan #	Pan wt. g	Pan + Fish g	Fish wt. g	Original # Fish	Mean wt. mg	Avg:
Control	A	25	0.02221	0.02911	0.00690	10	0.690	
	B	26	0.02170	0.02745	0.00575	10	0.575	
	C	27	0.02175	0.02798	0.00623	10	0.623	0.620
	D	28	0.02093	0.02683	0.00590	10	0.590	
sample 6.25 %	A	29	0.02177	0.02712	0.00535	10	0.535	
	B	30	0.02219	0.02716	0.00497	10	0.497	
	C	31	0.02186	0.02670	0.00484	10	0.484	0.511
	D	32	0.02257	0.02785	0.00528	10	0.528	
sample 12.5 %	A	33	0.02130	0.02615	0.00485	10	0.485	
	B	34	0.02184	0.02697	0.00513	10	0.513	
	C	35	0.02207	0.02728	0.00521	10	0.520	0.498
	D	36	0.02197	0.02670	0.00473	10	0.473	
sample 25 %	A	37	0.02150	0.02627	0.00477	10	0.477	
	B	38	0.02101	0.02599	0.00498	10	0.498	
	C	39	0.02235	0.02653	0.00418	10	0.418	0.455
	D	40	0.02110	0.02538	0.00428	10	0.428	
sample 50 %	A	41	0.02261	0.02720	0.00459	10	0.459	
	B	42	0.02164	0.02487	0.00323	10	0.323	
	C	43	0.02106	0.02553	0.00447	10	0.447	0.392
	D	44	0.02130	0.02467	0.00337	10	0.337	
sample 100 %	A	45	0.02139	0.02641	0.00502	10	0.502	
	B	46	0.02134	0.02513	0.00379	10	0.379	
	C	47	0.02057	0.02497	0.00440	10	0.440	0.390
	D	48	0.02168	0.02406	0.00238	10	0.238	
sample %	A					10		
	B					10		
	C					10		
	D					10		
	Weighed by initials:		CR	CR		revised 7/16/08 mf		

Comments:

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

Note: Pan number (#) refers to actual Pan number.

Page 000026

Chronic Bioassay Weighing Benchsheet

Quality Control

Facility: International Paper

LIMS Sample Number: 1533423
(for Lab Sample # 1)

***P. promelas and M. beryllina* Bench sheet**
SOPs TA07_09, TA07_14 and TA06_21

Drying Oven ID:	ER034000
Temperature °C:	100
Hours:	8

Tare weighed by: CR
Final weighed by: CR

Tare Weighing Date: 9.16.13 | Final Weighing Date: 9.18.13

			Measured Value (g)		S-weight Value (g)
Tare Pan 1 after Pan 5 (g)	0.02221	@ 0.02221	S-weights	@	
Tare Pan 1 after Pan 10 (g)	0.02221	@ 0.02221	at tare	@	
Tare Pan 1 after Pan 15 (g)	0.02219	@ 0.02221	S-weights	@	
Tare Pan 1 after Pan 20 (g)	0.02219	@ 0.02221	at final	@	
Tare Pan 1 after Pan 25 (g)	0.02219	@ 0.02221			
Tare Pan 1 after Pan 30 (g)		@			
Tare Pan 1 after Pan 35 (g)		@			
Tare Pan 1 after Pan 40 (g)		@			
Tare Pan 1 after Pan 45 (g)		@			
Tare Pan 1 after Pan 48 (g)		@			
Final Pan 1 after Pan 5 (g)	0.02910	@ 0.02911			
Final Pan 1 after Pan 10 (g)	0.02911	@ 0.02911			
Final Pan 1 after Pan 15 (g)	0.02911	@ 0.02911			
Final Pan 1 after Pan 20 (g)	0.02912	@ 0.02911			
Final Pan 1 after Pan 25 (g)	0.02912	@ 0.02911			
Final Pan 1 after Pan 30 (g)		@			
Final Pan 1 after Pan 35 (g)		@			
Final Pan 1 after Pan 40 (g)		@			
Final Pan 1 after Pan 45 (g)		@			
Final Pan 1 after Pan 48 (g)		@			

S-weights at tare	0.00999	@	0.01		
	0.03002	@	0.03		
S-weights at final	0.00999	@	0.01		
	0.05003	@	0.05		

Balance: Ohaus 250D Ser# 1125481084
S-Weights: BIO-S-Weights-01

Note: Pan numbers (5, 10, etc.) for Tare and Final refers to sequence of weighing as actual Pan #s may differ.

Comments:

revised 7/16/08 MF

Test ID: International Paper Dates: 9.10.13 - 9.17.13

METER / DEVICE	ID	SOP	Parameter	Method	√ used
YSI Model 58 Dissolved Oxygen Meter	90H018262	TA06_04	Dissolved Oxygen	SM 4500 O G	✓
YSI DO Probe	5905	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 Salinity	SM 2510 B SM 2520 B	✓
Denver Model 225 ISE with ammonia probe	SN K01377	TA06_17	Ammonia	SM 4500 NH3 F	✓
Traceable Thermometer	#1-SN101686412 #2-SN221295527 #3-SN240116020 #4-SN80361795 #5 SN61990624	TA06_05	Temperature	SM-2530B modified DEP SOP-001/01 FT1400	✓ #4
Hach Pocket Colorimeter II #1	05110C042029	TA06_22	Total Residual Chlorine	EPA 330.5 SM 4500 CL G	
Hach Pocket Colorimeter II #2	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)

Entered By: CR 9.20.13

V 1.3 2/15/13 MF

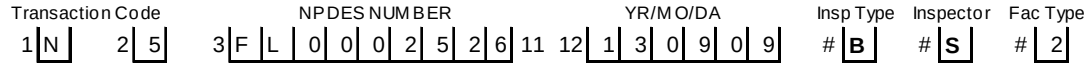
PAGE

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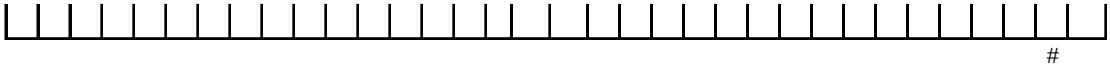
EPA Endsheet

The Bioassay of the International Paper Company Pensacola Mill effluent sampled on September 9, 2013, NPDES #FL0002526

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

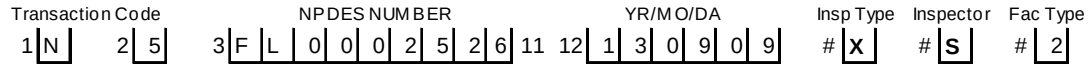


Remarks

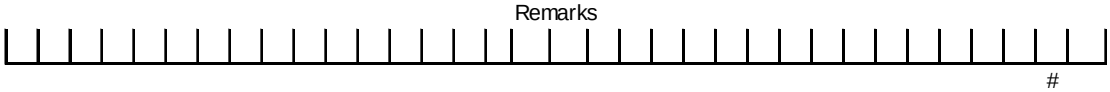


The Priority Pollutants Analysis for the International Paper Company Pensacola Mill effluent sampled on September 9, 2013, NPDES #FL0002526

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

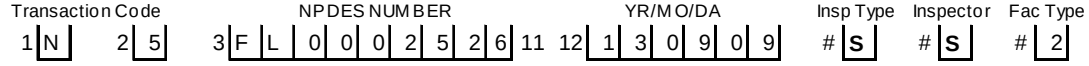


Remarks



Biological Analyses of the International Paper Company Pensacola Mill effluent sampled on September 9, 2013, NPDES #FL0002526

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



Remarks

