

Effluent Quality Assessment of

FP&L – Ft Myers Power Plant

Lee County

NPDES # FL0001490

Sampled May 4, 6 and 8, 2015

October 2015

Biology Section

Bureau of Laboratories

Division of Environmental Assessment and Restoration

2015 FDEP Bureau of Laboratories Quality Manual

NELAC Certification No. E31780

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FP&L – Ft Myers Power Plant, 10650 State Road 80, Fort Myers, Lee County, Florida, 33902. NPDES #FL0001490.

Facility Overview

FP&L – Ft Myers Power Plant is a natural gas powered electric generating facility. See Appendix A for a description of the facility, summary of permit limits, Administrative Order (AO) and Discharge Monitoring Report (DMR) information.

Methods

Effluent grab samples for toxicity testing were collected on May 4, 2015, May 6, 2015, and May 8, 2015. Effluent grab samples for biological and chemical analyses for this facility were collected on May 4, 2015. All samples were collected from the EFF-01 NPDES sampling point for Outfall D-010 by Kirby Wolfe, Diane Loughlin and Thomas Ducato (FDEP South District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 7 day chronic definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_014, TA07_015, and TA08_01 through TA08_09 (see Appendix B).

Results

Chemistry Results (See Table 1, Table 2, Table 3 and Appendix C)

- The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 0.041 mg N/L. Based on the pH, salinity, and temperature of the effluent as collected, the calculated unionized ammonia concentration was < 0.02 mg/L.
- The effluent's total residual chlorine (TRC), as measured by the sampling team, exceeded Class III Freshwater Criterion (62-302.530 (18), F. A. C.) in all three effluent toxicity samples; however, the detected TRC is not due to the facility's activities. The facility is permitted to chlorinate once-through cooling water to reduce biological fouling of equipment but facility representatives confirmed that the chlorine dosing system has not been connected to a chlorine source for many years. FDEP conducted follow-up TRC sampling in conjunction with the facility's contract lab on October 19, 2015. Both FDEP and the contract lab collected two samples at the facility intake, discharge site, and from the reverse osmosis reject water entering the discharge canal. TRC was detected in amounts exceeding the Class III Freshwater Quality Criterion in all samples which indicates that TRC is coming from a source outside of the facility.
- Turbidity, alkalinity, fluoride, arsenic, copper and iron were detected in the effluent at levels that comply with Class III Fresh Water Quality Criteria (62-302.530, F.A.C.). Nickel was detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).

Algal Growth Potential (See Table 4 and Appendix C)

- The effluent Algal Growth Potential (AGP) was 26.4 mg dry wt/L of the unicellular green alga, *Pseudokirchneriella subcapitata*, formerly known as *Selenastrum capricornutum*. Raschke and Schultz (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 analytical chemistry suggests that the effluent is co-limited by both nitrogen and phosphorus (Miller et al. 1978).
- An aliquot of the AGP sample was salinity adjusted from an apparent salinity of approximately 0.22 parts per thousand (ppth) to a salinity of approximately 7.01 ppth by the addition of artificial sea salts to meet the salinity requirements of the test species.
- The salinity adjusted effluent algal growth potential (AGP) was 12.4 mg dry wt/L of the saltwater species *Dunaliella tertiolecta.* Raschke and Schultz determined that AGP values above 10.0 mg dry weight/L, which represents a "problem" threshold for marine receiving waters, imply nutrient enrichment (personal communication, Marshall Faircloth, et. al. FDEP with Ron Raschke USEPA Region 4 1987).

Toxicity Test Results (See Appendix C)

- Tests were performed May 8 - 12, 2015.

Menidia beryllina 7-day chronic definitive bioassay – IC25: > 100%
NOEC: 100%

Americamysis bahia 7-day chronic definitive bioassay – IC25: > 100%
NOEC: 100%

*NOTE: 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 facility permit limits. The bioassay samples were not chronically toxic to the test organisms.

- Aliquots of the bioassay sample were salinity-adjusted from an apparent salinity of approximately 0.22 parts per thousand (ppth) to a salinity of approximately 20.4 ppth for the *Americamysis bahia* test and to a salinity of approximately 4.78 ppth for the *Menidia beryllina test*. Forty Fathoms® marine mix artificial sea salts was used for the salinity adjustments. The salt control used for each test was prepared by salting well water with artificial sea salts to match the salinity of the appropriate test solution. The purpose of the salt controls was to confirm that there was no effect of adding artificial sea salts to the sample. There was no mortality in the salt controls of the *Americamysis bahia* or the *Menidia beryllina* test.

Conclusion

The effluent samples collected from the EFF-01 NPDES sampling point for this facility on May 4, May 6 and May 8, 2015, were not chronically toxic to either test species during the 7-day chronic definitive bioassays. Both the effluent AGP result and the salinity adjusted AGP result were greater than the "problem" thresholds for fresh and marine receiving waters, suggesting that nutrient enrichment may be an issue. The total residual chlorine detected in effluent samples collected on May 4, 6, and 8, 2015, although greater than applicable water quality standards for total residual chlorine, was thought to be artifactual and not due to any activity at the facility. Additional water quality samples did not exceed any applicable permitted limits or water quality criteria.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Diane.Power@dep.state.fl.us and/or Joseph.Faircloth@dep.state.fl.us.

Literature Cited

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

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

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

Stevenson, R. J. and L. L. Bahls. 1999. Periphyton protocols. Pp. 6.1-6.22 in: Rapid bioassessment protocols for use in wadeable streams and rivers. 2nd edition. By: M. T. Barbour, J. Gerritsen, B. D. Snyder and J. B. Stribling. EPA 841-B-99-002. U. S. Environmental Protection Agency, Office of Water, Washington, D. C.

USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. 3rd edition. EPA-821-R-02-014.

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

Table 1. Effluent limits, Class III Freshwater Criteria and field parameters

FPL Fort Myers	Units	Class III Criteria	Effluent Permit Limits	FPL Ft Myers Grab 5/4/15	FPL Ft Myers Grab 5/4/15
Sample Depth	m	-	-	0.3	-
Temperature	C	-	-	29.03	29.4
pH	SU	6.0 - 8.5	6.0 - 8.5	8.00	8.26
Specific Conductance	umhos/cm	≤ 1,275	-	598	596
Salinity	ppth	-	-	0.3 c	0.3 c
Dissolved Oxygen	mg/L	≥ 5.0	-	5.65	5.45
Total Residual Chlorine	mg/L	≤ 0.01	-	0.07 e[1]	-

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

c - Value is calculated

e - Value exceeds the Class III Water Quality Criteria or permit limits

1 - See Chemistry Results text

Table 2. Effluent limits, Class III Freshwater Criteria and analytical water chemistry data

FPL Fort Myers	Units	Class III Criteria	Effluent Permit Limits	FPL Ft Myers Grab 5/4/15
Ortho-phosphate	mg P/L	-	Report	0.11
Total Phosphorus	mg P/L	-	Report	0.14
Total Ammonia	mg N/L	-	Report	0.041
Un-ionized Ammonia (calculated salinity)	mg N/L	≤ 0.02 s	Report	< 0.02 c
Nitrate and Nitrite	mg N/L	-	Report	0.29
Total Kjeldahl Nitrogen	mg N/L	-	Report	1.2
Organic Nitrogen	mg N/L	-	-	1.2 c
Total Nitrogen	mg N/L	-	Report	1.5 c
Total Organic Carbon	mg C/L	-	-	18
Chlorophyll *a* - Corrected	ug/L	-	-	2.3
Phaeophytin	ug/L	-	-	2.2
CBOD, 5 day, N - inhibited	mg/L	-	-	0.58 I
Total Suspended Solids	mg/L	-	-	3 I
Turbidity	NTU	< 29 t	-	3.3
Color (true)	PCU	-	-	76
Alkalinity	mg CaCO3/L	≥ 20	-	153
Chloride	mg Cl/L	-	-	62
Fluoride	mg F/L	≤ 10.0	-	0.27
Sulfate	mg SO4/L	-	-	34
Toxicity (Chronic Definitive, IC25)				
Bioassay - Mysid *(Americamysis bahia)*	%	≥ 100	≥ 100 s	> 100
Bioassay - Fish *(Menidia beryllina)*	%	≥ 100	≥ 100 s	> 100

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

c - Value is calculated

s - Single sample

t - Shall not exceed 29 NTUs above background

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

Table 3. Effluent limits, Class III Freshwater Criteria and analytical metals data

FPL Fort Myers	Units	Effluent Permit Limits	FPL Ft Myers Grab 5/4/15 Class III Criteria	FPL Ft Myers Grab 5/4/15
Aluminum	ug/L	-	-	59
Arsenic	ug/L	-	≤ 50	1.70
Cadmium	ug/L	-	≤ 0.488 b	0.050 U
Calcium	mg/L	-	-	69.2
Chromium, Total [2]	ug/L	-	≤ 165 b	0.30 U
Copper	ug/L	-	≤ 18.4 b	1.07
Iron	ug/L	-	≤ 1,000	170
Lead	ug/L	-	≤ 8.77 b	0.20 U
Magnesium	mg/L	-	-	11.9
Nickel	ug/L	-	≤ 102 b	0.56 I
Potassium	mg/L	-	-	9.9
Selenium	ug/L	-	≤ 5.0	0.20 U
Silver	ug/L	-	≤ 0.07	0.025 U
Sodium	mg/L	-	-	37.2
Zinc	ug/L	-	≤ 235 b	5.0 U

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

2 - Class III Freshwater Quality Criterion (62-302.530(19)(a), F.A.C.) is for chromium-III

b - Value is calculated based on hardness, (62-302.530(3))

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

Table 4. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN), ortho-phosphate (OP), total nitrogen (TN) and total phosphorus (TP) limitation and ratios of nitrogen to phosphorus

FPL Fort Myers								
Location	**Test Species**	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (OP) ± 20%**	**Predicted AGP (TN) ± 20%**	**Predicted AGP (TP) ± 20%**	**Inorganic N:P ratio**	**Total N:P ratio**
FPL Ft Myers, Grab, 5/4/15	*Dunaliella tertiolecta*	12.4*	not applicable [3]	not applicable [3]	not applicable [3]	not applicable [3]	3	10.6
FPL Ft Myers, Grab, 5/4/15	*Pseudokirchneriella subcapitata*	26.4	12.6 ± 2.5	47.3 ± 9.5	56.6 ± 11.3	60.2 ± 12	3	10.6

Fresh - freshwater species *Pseudokirchneriella subcapitata*

Marine - saltwater species *Dunaliella tertiolecta*

* - sample salinity adjusted to 7.01 ppth

3 - predictions not applicable to marine matrix

Appendix A

Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Diane Loughlin	**Contact Number:** 239-344-5641
Facility Name (as it appears on permit): FP&L – Ft Myers Power Plant	**Former Names:**
NPDES Permit Number: FL0001490	**Permit Expiration Date:** December 9, 2015
Physical Address: 10650 State Road 80, Fort Myers, FL 33902	
District: South	**County:** Lee
Function of Facility: Power plant with cooling water discharge to Orange River	
Facility Type: Industrial Wastewater	**Permitted Capacity (MGD):** n/a
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): n/a – flow is only reported for internal outfalls.	
If applicable, Mean Flow for previous 12 months for REUSE outfall(s) (list date range including months): n/a	
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):

Monitoring Site Number	Description of Monitoring Site
INT-1	OTCW plant intake
INT-2	Plant intake screens
EFF-1	At the end of the discharge canal prior to the Orange River. Temperature measurements shall be taken at the surface, midpoint, and bottom at the midsection of the canal and averaged.

Description of Permitted Outfall(s):

Surface Water Discharge D-010: An existing permitted combined discharge to the Orange River (WBID 3240K). The Orange River is a tidally influenced estuarine system at the point of discharge. Depending on season and precipitation, the river is either Class III fresh water or estuarine. This combined plant discharge at the end of the 2,500 foot discharge canal is located at approximately at latitude 26° 41' 31" N, longitude 81 o 46' 41" W.

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

The plant consists of six natural gas combined cycle combustion turbines with associated Heat Recovery Steam Generators (HRSGs) and steam turbines with a total generating capacity of 1550 megawatts. There are also twelve gas turbine peaking units that have a combined capacity of 600 megawatts. The gas turbines burn No. 2 fuel oil. There are also two peaker combustion turbines that have a combined capacity of 326 megawatts. The plant has a once-through condenser cooling water system that uses water from the Caloosahatchee River as intake water. The cooling water is routed through the plant condensers and then discharged to the Orange River via the on-site discharge canal. A once-through helper cooling tower is located adjacent to the discharge canal to seasonally reduce the discharge temperature. Boiler blowdown is captured and reused. Reverse osmosis reject is discharged indirectly to the discharge canal via an internal discharge to the cooling tower basin. Metal cleaning wastewater will be disposed of offsite.

Once-through cooling water may be chlorinated to reduce biological fouling in the condensers and intake structures. Dechlorination may be conducted prior to discharge if required. Equipment area storm water and washdown that have the potential to contain oil and grease are routed through an oil/water separator prior to discharge to the storm water basin. The contents of the storm water basin is pumped to the evaporation/percolation basin. In addition, fuel oil storage runoff is routed to an oil/water separator prior to discharge to the evaporation/percolation basin.

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	Limit	Statistical Basis	Monitoring Frequency	Sample Type	Monitoring Site Number	Notes
Temperature, Water	Deg F	Max	Report	Monthly Average	6/Day	Recorder	INT-1	
Temperature Rise (ΔT), Water, MODE I	Deg F	Max	Report	Monthly Average	6/Day	Recorder	EFF-1	See Condition 1.A.3
Temperature Rise (ΔT), Water, MODE II	Deg F	Max	13.0	Monthly Average	6/Day	Recorder	EFF-1	See Condition 1.A.4
Chlorides	mg/L	Max	Report	Daily Maximum	Monthly	Grab	INT-1	
Oxidants, Total Residual	mg/L	Max	0.01	Daily Maximum	Weekly	Grab	EFF-1	See Condition 1.A.10
pH	s.u.	Min Max	6.0 8.5	Daily Minimum Daily Maximum	Weekly	Meter	EFF-1	See I.A.11
Temperature, Water	Deg C	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	See I.A.11
Nitrogen, Ammonia, Total (as N)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	See I.A.11
Ammonia, Total Unionized (as NH_3)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Calculated	EFF-1 INT-1	See I.A.11
Nitrogen, Kjeldahl, Total (as N)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	
Nitrite plus Nitrate, Total 1 det. (as N)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	
Nitrogen, Total	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	
Phosphorus, Total (as P)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	
Phosphate, Ortho (as PO_4)	mg/L	Max Max	Report Report	Single Sample Single Sample	Quarterly	Grab	EFF-1 INT-1	
Chronic Whole Effluent Toxicity, 7-Day IC25 (Americamysis bahia)	percent	Min	100	Single Sample	Semi-annually	24-hr Composite	EFF-1	See I.A.13
Chronic Whole Effluent Toxicity, 7-Day IC25 (Menidia beryllina)	percent	Min	100	Single Sample	Semi-annually	24-hr Composite	EFF-1	See I.A.13

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Orange River	Class III fresh water or estuarine (depending on season and precipitation)

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):
The permittee shall comply with the following requirements to evaluate chronic whole effluent toxicity of the discharge from outfall D-0 10.

a. Effluent Limitation

(1) In any routine or additional follow-up test for chronic whole effluent toxicity, the 25 percent inhibition concentration (IC25) shall not be less than 100% effluent. *[Rules 62-302.530(61) and 62-4.241 (l)(b), F.A.C.}*
(2) For acute whole effluent toxicity, the 96-hour LC50 shall not be less than 100% effluent in any test. *[Rules 62-302.500(1)(a)4. and 62-4.241(1)(a), F.A.C.}*

b. Monitoring Frequency

(1) Routine toxicity tests shall be conducted once every three *six* months, the first starting within 60 days of the issuance date of this permit and lasting for the duration of this permit.
(2) Upon completion of four consecutive, valid routine tests that demonstrate compliance with the effluent limitation in 13.a.(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 laboratory 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 in13.a.(l) above.
(3) If a test within the sequence of the four is deemed invalid based on the acceptance criteria in EPA-821-R-02-014, 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.

c. Sampling Requirements

(1) 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 in accordance with the sampling protocol discussed in EPA-821-R-02-014, Section 8.
(2) 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.
(3) Samples for routine and additional follow-up tests shall not be collected on the same day.

d. Test Requirements

(1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: l00%, 50%, 25%, 12.5%, and 6.25% fmal effluent.
(2) The permittee shall conduct 7-day survival and growth chronic toxicity tests with a mysid shrimp, Americamysis (Mysidopsis) bahia, Method 1007.0, and an inland silverside, Menidia beryllina, Method 1006.0, concurrently.
(3) 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 Marine and Estuarine Organisms, 3rd Edition, EPA-821-R-02-014. Any deviation ofthe 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.

(4) The control water and dilution water used shall be artificial sea salts as described in EPA-821-R-02-014, Section 7.2. The test salinity shall be determined as follows:

(a) For the Americamysis bahia bioassays, the effluent shall be adjusted to a salinity of 20 parts per thousand (ppt) with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 20 ppt. If the salinity of the effluent is greater than 20 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.

(b) For the Menidia beryllina bioassays, if the effluent salinity is less than 5ppt, the salinity shall be adjusted to 5 ppt with artificial sea salts. The salinity of the control/dilution water (0% effluent) shall be 5 ppt. If the salinity of the effluent is greater than 5 ppt, no salinity adjustment shall be made to the effluent and the test shall be run at the effluent salinity. The salinity of the control/dilution water shall match the salinity of the effluent.

(c) If the salinity of the effluent requires adjustment, a salinity adjustment control should be prepared and included with each bioassay. The salinity adjustment control is intended to identify toxicity resulting from adjusting the effluent salinity with artificial sea salts. To prepare the salinity adjustment control, dilute the control/dilution water to the salinity of the effluent and adjust the salinity of the salinity adjustment control at the same time and to the same salinity that the salinity of the effluent is adjusted using the same artificial sea salts.

e. Quality Assurance Requirements

(1) A standard reference toxicant (SRT) quality assurance (QA) chronic toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or initiated no more than 30 days before the date of each routine or additional follow-up test conducted. Additionally, the SRT test must be conducted concurrently if the test organisms are obtained from outside the test laboratory unless the test organism supplier provides control chart data from at least the last five monthly chronic toxicity tests using the same reference toxicant and test conditions. If the organism supplier provides the required SRT data, the organism supplier's SRT data and the test laboratory's monthly SRT –QA data shall be included in the reports for each companion routine or additional follow-up test required.

(2) If the mortality in the control (0% effluent) exceeds 20% for either species in any test or any test does not meet "test acceptability criteria", the test for that species (including the control) shall be invalidated and the test repeated. Test acceptability criteria for each species are defined in EP A-821-R -02-0 14, Section 14.12 (Americamysis bahia) and Section 13.12 (Menidia beryllina). The repeat test shall begin within 21 days after the last day of the invalid test.

(3) If 100% mortality occurs in all effluent concentrations for either species prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) for that species shall be terminated with the conclusion that the test fails and constitutes non-compliance.

(4) Routine and additional follow-up tests shall be evaluated for acceptability based on the observed doseresponse relationship as required by EPA-821-R-02-014, Section 10.2.6., and the evaluation shall be included with the bioassay laboratory reports.

f. Reporting Requirements

(1) Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine and Additional Follow-up Test Results: The calculated IC25 for each test species shall be entered on the DMR.

(2) A bioassay laboratory report for each routine test shall be prepared according to EPA-821-R-02-014, Section 10, Report Preparation and Test Review, and mailed to the Department at the address below within 30 days after the last day of the test.

(3) For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-014, Section 10, and mailed within 30 days after the last day of the second valid additional follow-up test.

(4) Data for invalid tests shall be included in the bioassay laboratory report for the repeat test.

(5) The same bioassay data shall not be reported as the results of more than one test.

(6) All bioassay laboratory reports shall be sent to:
Florida Department of Environmental Protection
Tallahassee Office
2600 Blair Stone Road, M.S. 3545
Tallahassee, Florida 32399-2400

g. Test Failures

(1) A test fails when the test results do not meet the limits in 13.a.(l).

(2) Additional Follow-up Tests:

(a) If a routine test does not meet the chronic toxicity limitation in 13.a.(l) above, the permittee shall notify the Department at the address above within 21 days after the last day of the failed routine test and conduct two additional follow-up tests on each species that failed the test in accordance with B.d.

(b) The first test shall be initiated within 28 days after the last day of the failed routine test. The remaining additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

(c) The first additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5%, and 6.25% effluent. The permittee may modify the dilution series in the second additional follow-up test to more accurately bracket the toxicity such that at least two dilutions above and two dilutions below the target concentration and a control (0% effluent) are run. All test results shall be analyzed according to the procedures in EPA-821-R-02-014.

(3) In the event of three valid test failures (whether routine or additional follow-up tests) within a 12-month period, the permittee shall notify the Department within 21 days after the last day of the third test failure.

(a) The permittee shall submit a plan for correction of the effluent toxicity within 60 days after the last day of the third test failure.

(b) The Department shall review and approve the plan before initiation.

(c) The plan shall be initiated within 30 days following the Department's written approval of the plan.

(d) Progress reports shall be submitted quarterly to the Department at the address above.

(e) During the implementation of the plan, the permittee shall conduct quarterly routine whole effluent toxicity tests in accordance withl3.d. Additional follow-up tests are not required while the plan is in progress. Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up tests shall return to the schedule established in 13.b.(l). If a routine test is invalid according to the acceptance criteria in EPA-821-R-02-014, a repeat test shall be initiated within 21 days after the last day of the invalid routine test.

(f) Upon completion of four consecutive quarterly valid routine tests that demonstrate compliance with the effluent limitation in 13.a.(l) above, the permittee may submit a written request to the Department to terminate the plan. The plan shall be terminated upon written verification by the Department that the facility has passed at least four consecutive quarterly valid routine whole effluent toxicity tests. If a test within the sequence of the four is deemed invalid, 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 quarterly valid routine tests for the purpose of terminating the plan.

(4) If chronic toxicity test results indicate greater than 50% mortality within 96 hours in an effluent concentration equal to or less than the effluent concentration specified as the acute toxicity limit in13.(a)(2), the Department may revise this permit to require acute definitive whole effluent toxicity testing.

(5) The additional follow-up testing and the plan do not preclude the Department taking enforcement action for acute or chronic whole effluent toxicity failures.

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

n/a

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: A review of the DMRs revealed that no permit violations or plant upsets have occurred within the last year.
Describe previous FYI and WQBEL study: The previous FYI3 was conducted in July 2008.
Describe previous or current Enforcement Actions (including WLs): n/a
Describe any violations or problems noted in previous inspection: A CEI was conducted at the facility on April 12, 2013. The facility was found to be in compliance. No violations or problems were noted.
Discuss whether DMR trends within previous five years are improving or declining: A review of the DMRs revealed that no effluent violations have occurred within the last 5 years.
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:	**Sampler(s):**
Temperature (Deg C):	**pH (SU):**
Dissolved Oxygen (mg/L):	**Conductivity (umhos/cm):**
Total Residual Chlorine (mg/L):	**Total Residual Chlorine - after Disinfection (mg/L):**
Method of Chlorination:	**Method of De-chlorination:**
Flow During Sample Collection for each outfall(MGD):	
Mean Flow for each outfall for previous 12 months based on sampling date (If samples are taken on more than one day, indicate Mean Flow for each day):	
Describe Discharge during Sampling Event: ☐ **Continuous** ☐ **Intermittent** ☐ **Seasonal** ☐ **Rainfall Dependent** ☐ **Other, please specify**	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here:	

Appendix B
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/sop/sops.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 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 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 facility permit limits. Standard reference toxicant (SRT) tests are conducted monthly to ensure quality in toxicity testing.

(4) Chlorophyll *a* Content

Chlorophyll *a* content is an estimate algal biomass. High algal biomass implies nutrient stress (Stevenson and Bahls 1999) and 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..

(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 10.0 mg dry weight/L represents a "problem" threshold for marine 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 in a low salinity sample 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 (EPA-822-B-00-002). 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. Expected AGP is not calculated for marine samples incubated with *Dunaliella*.

(6) 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 C

Chemical analysis of effluent

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:30	D-010	AGP/LN	Algal Growth Potential	26.4	mg DryWt/L	0.3	0.9
5/4/2015 9:30	D-010	AGP/LN	Algal Growth Potential-Salinity Adjusted	12.4	mg DryWt/L	3	3
5/4/2015 9:30	D-010	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	2.3	ug/L	0.55	1.7
5/4/2015 9:30	D-010	Chlorophyll/Grain Size/BOD	Phaeophytin-a	2.2	ug/L	0.4	1.2
5/4/2015 9:30	D-010	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.58 I	mg/L	0.2	2
5/4/2015 9:30	D-010	Toxicology	Bioassay-Chron-Def-SW-Mysid, IC25	100 L	IC25		
5/4/2015 9:30	D-010	Toxicology	Bioassay-Chron-Def-SW-Fish, IC25	100 L	IC25		
5/4/2015 9:30	D-010	Toxicology	Bioassay-Chron-Def-SW-Mysid, NOEC	100	NOEC		
5/4/2015 9:30	D-010	Toxicology	Bioassay-Chron-Def-SW-Fish, NOEC	100	NOEC		
5/4/2015 9:30	D-010	Metals	Copper	1.07	ug/L	0.5	1
5/4/2015 9:30	D-010	Metals	Iron	170	ug/L	30	120
5/4/2015 9:30	D-010	Metals	Arsenic	1.70	ug/L	0.25	1
5/4/2015 9:30	D-010	Metals	Lead	0.20 U	ug/L	0.2	0.8
5/4/2015 9:30	D-010	Metals	Aluminum	59	ug/L	5	20
5/4/2015 9:30	D-010	Metals	Potassium	9.9	mg/L	0.3	1.2
5/4/2015 9:30	D-010	Metals	Magnesium	11.9	mg/L	0.04	0.16
5/4/2015 9:30	D-010	Metals	Zinc	5.0 U	ug/L	5	20
5/4/2015 9:30	D-010	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
5/4/2015 9:30	D-010	Metals	Nickel	0.56 I	ug/L	0.25	1
5/4/2015 9:30	D-010	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/4/2015 9:30	D-010	Metals	Calcium	69.2	mg/L	0.075	0.3
5/4/2015 9:30	D-010	Metals	Silver	0.025 U	ug/L	0.025	0.1
5/4/2015 9:30	D-010	Metals	Sodium	37.2	mg/L	0.5	2
5/4/2015 9:30	D-010	Metals	Chromium	0.30 U	ug/L	0.3	1.2
5/4/2015 9:30	D-010	Nutrients	Fluoride	0.27	mg F/L	0.035	0.1
5/4/2015 9:30	D-010	Nutrients	TSS	3 I	mg/L	2	10
5/4/2015 9:30	D-010	Nutrients	Ammonia-N	0.041	mg N/L	0.002	0.005
5/4/2015 9:30	D-010	Nutrients	NO2NO3-N	0.29	mg N/L	0.004	0.01
5/4/2015 9:30	D-010	Nutrients	Chloride	62	mg Cl/L	0.4	1
5/4/2015 9:30	D-010	Nutrients	O-Phosphate-P	0.11	mg P/L	0.008	0.02
5/4/2015 9:30	D-010	Nutrients	Sulfate	34	mg SO4/L	0.4	1
5/4/2015 9:30	D-010	Nutrients	Color (true)	76	PCU	2.5	6

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:30	D-010	Nutrients	Total-P	0.14	mg P/L	0.005	0.05
5/4/2015 9:30	D-010	Nutrients	Kjeldahl Nitrogen	1.2	mg N/L	0.08	0.2
5/4/2015 9:30	D-010	Nutrients	Organic Carbon	18	mg C/L	0.5	1
5/4/2015 9:30	D-010	Nutrients	Turbidity	3.3	NTU	0.1	0.1
5/4/2015 9:30	D-010	Nutrients	Alkalinity	153	mg CaCO3/L	0.65	2.5
5/4/2015 9:30	D-010	Pesticides	Ethion	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Metribuzin	0.054 I	ug/L	0.019	0.077
5/4/2015 9:30	D-010	Pesticides	Demeton	0.023 U	ug/L	0.023	0.093
5/4/2015 9:30	D-010	Pesticides	Disulfoton	0.0048 U	ug/L	0.0048	0.019
5/4/2015 9:30	D-010	Pesticides	Malathion	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Alachlor	0.058 U	ug/L	0.058	0.23
5/4/2015 9:30	D-010	Pesticides	Metolachlor	0.058 U	ug/L	0.058	0.23
5/4/2015 9:30	D-010	Pesticides	Naled	0.039 U	ug/L	0.039	0.15
5/4/2015 9:30	D-010	Pesticides	Sucralose	0.055	ug/L	0.01	0.05
5/4/2015 9:30	D-010	Pesticides	Metalaxyl	0.039 UJ	ug/L	0.039	0.15
5/4/2015 9:30	D-010	Pesticides	Parathion Ethyl	0.019 U	ug/L	0.019	0.077
5/4/2015 9:30	D-010	Pesticides	Parathion Methyl	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Prometon	0.019 U	ug/L	0.019	0.077
5/4/2015 9:30	D-010	Pesticides	Prometryn	0.019 U	ug/L	0.019	0.077
5/4/2015 9:30	D-010	Pesticides	Chlorpyrifos Methyl	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Ethoprop	0.0048 U	ug/L	0.0048	0.019
5/4/2015 9:30	D-010	Pesticides	Fenamiphos	0.029 U	ug/L	0.029	0.12
5/4/2015 9:30	D-010	Pesticides	Norflurazon	0.11 I	ug/L	0.029	0.12
5/4/2015 9:30	D-010	Pesticides	Phorate	0.0048 U	ug/L	0.0048	0.019
5/4/2015 9:30	D-010	Pesticides	Ametryn	0.038 IJ	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Atrazine Desethyl	0.20	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Butylate	0.019 U	ug/L	0.019	0.077
5/4/2015 9:30	D-010	Pesticides	Hexazinone	0.029 UJ	ug/L	0.029	0.12
5/4/2015 9:30	D-010	Pesticides	Atrazine	2.3	ug/L	0.097	0.39
5/4/2015 9:30	D-010	Pesticides	Mevinphos	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Bromacil	0.15 I	ug/L	0.039	0.15
5/4/2015 9:30	D-010	Pesticides	Fonofos	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Simazine	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Atrazine Desisopropyl	0.031 UJ	ug/L	0.031	0.12
5/4/2015 9:30	D-010	Pesticides	Azinphos Methyl	0.019 U	ug/L	0.019	0.077

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:30	D-010	Pesticides	Chlorpyrifos Ethyl	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Pesticides	Diazinon	0.0097 U	ug/L	0.0097	0.039
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	7.9
5/4/2015 9:30	D-010	Priority Organic Pollutants	2-Chloronaphthalene	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,6-Dinitrotoluene	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Butyl benzyl phthalate	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Di-n-octyl phthalate	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Phenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzidine	99 UJ	ug/L	99	400
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	7.9
5/4/2015 9:30	D-010	Priority Organic Pollutants	Diethyl phthalate	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Hexachlorobenzene	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Isophorone	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
5/4/2015 9:30	D-010	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Di-n-butyl phthalate	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Dimethyl phthalate	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,4-Dichlorophenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	2-Nitrophenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.79

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:30	D-010	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	7.9
5/4/2015 9:30	D-010	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	Pentachlorophenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	7.9
5/4/2015 9:30	D-010	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	59
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,4-Dinitrotoluene	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	2-Chlorophenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	59
5/4/2015 9:30	D-010	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	7.9
5/4/2015 9:30	D-010	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
5/4/2015 9:30	D-010	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.99 U	ug/L	0.99	4
5/4/2015 9:30	D-010	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.79
5/4/2015 9:30	D-010	Priority Organic Pollutants	2,4-Dimethylphenol	9.9 U	ug/L	9.9	40
5/4/2015 10:40	D-010	Nutrients	Dissolved Oxygen	5.45	mg/L		
5/4/2015 9:30	D-010	Nutrients	Temperature	29.03	C		
5/4/2015 10:40	D-010	Nutrients	pH	8.26			
5/4/2015 9:30	D-010	Nutrients	pH	8.00			
5/4/2015 10:40	D-010	Nutrients	Specific Conductance	596	umhos/cm		
5/4/2015 10:40	D-010	Nutrients	Temperature	29.4	C		
5/4/2015 9:30	D-010	Nutrients	Sample Depth	0.3	m		
5/4/2015 9:30	D-010	Nutrients	Total Residual Chlorine	0.07	mg/L		
5/4/2015 9:30	D-010	Nutrients	Dissolved Oxygen	5.65	mg/L		
5/4/2015 9:30	D-010	Nutrients	Specific Conductance	598	umhos/cm		
5/4/2015 9:10	BLANKS	Metals	Zinc	5.0 U	ug/L	5	20
5/4/2015 9:10	BLANKS	Metals	Iron	30 U	ug/L	30	120
5/4/2015 9:10	BLANKS	Metals	Silver	0.025 U	ug/L	0.025	0.1
5/4/2015 9:10	BLANKS	Metals	Cadmium	0.050 U	ug/L	0.05	0.2
5/4/2015 9:10	BLANKS	Metals	Magnesium	0.040 U	mg/L	0.04	0.16

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:10	BLANKS	Metals	Selenium	0.20 U	ug/L	0.2	0.8
5/4/2015 9:10	BLANKS	Metals	Lead	0.20 U	ug/L	0.2	0.8
5/4/2015 9:10	BLANKS	Metals	Chromium	0.30 U	ug/L	0.3	1.2
5/4/2015 9:10	BLANKS	Metals	Sodium	0.50 U	mg/L	0.5	2
5/4/2015 9:10	BLANKS	Metals	Calcium	0.075 U	mg/L	0.075	0.3
5/4/2015 9:10	BLANKS	Metals	Nickel	0.25 U	ug/L	0.25	1
5/4/2015 9:10	BLANKS	Metals	Copper	0.50 U	ug/L	0.5	1
5/4/2015 9:10	BLANKS	Metals	Potassium	0.30 U	mg/L	0.3	1.2
5/4/2015 9:10	BLANKS	Metals	Aluminum	5.0 U	ug/L	5	20
5/4/2015 9:10	BLANKS	Metals	Arsenic	0.25 U	ug/L	0.25	1
5/4/2015 9:10	BLANKS	Nutrients	Sulfate	0.20 U	mg SO4/L	0.2	0.5
5/4/2015 9:10	BLANKS	Nutrients	Chloride	0.20 U	mg Cl/L	0.2	0.5
5/4/2015 9:10	BLANKS	Nutrients	O-Phosphate-P	0.004 U	mg P/L	0.004	0.01
5/4/2015 9:10	BLANKS	Nutrients	Fluoride	0.035 U	mg F/L	0.035	0.1
5/4/2015 9:10	BLANKS	Nutrients	Kjeldahl Nitrogen	0.080 U	mg N/L	0.08	0.2
5/4/2015 9:10	BLANKS	Nutrients	Alkalinity	0.65 U	mg CaCO3/L	0.65	2.5
5/4/2015 9:10	BLANKS	Nutrients	Total-P	0.002 U	mg P/L	0.002	0.005
5/4/2015 9:10	BLANKS	Nutrients	Color (true)	2.5 U	PCU	2.5	6
5/4/2015 9:10	BLANKS	Nutrients	Turbidity	0.10 U	NTU	0.1	0.1
5/4/2015 9:10	BLANKS	Nutrients	Organic Carbon	0.50 U	mg C/L	0.5	1
5/4/2015 9:10	BLANKS	Nutrients	Ammonia-N	0.002 U	mg N/L	0.002	0.005
5/4/2015 9:10	BLANKS	Nutrients	NO2NO3-N	0.004 U	mg N/L	0.004	0.01
5/4/2015 9:10	BLANKS	Pesticides	Diazinon	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Ethoprop	0.0050 U	ug/L	0.005	0.02
5/4/2015 9:10	BLANKS	Pesticides	Prometryn	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Ametryn	0.010 UJ	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Alachlor	0.060 U	ug/L	0.06	0.24
5/4/2015 9:10	BLANKS	Pesticides	Butylate	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Chlorpyrifos Ethyl	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Sucralose	0.010 U	ug/L	0.01	0.05
5/4/2015 9:10	BLANKS	Pesticides	Simazine	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Prometon	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Parathion Ethyl	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Norflurazon	0.030 U	ug/L	0.03	0.12
5/4/2015 9:10	BLANKS	Pesticides	Metolachlor	0.060 U	ug/L	0.06	0.24

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:10	BLANKS	Pesticides	Hexazinone	0.030 UJ	ug/L	0.03	0.12
5/4/2015 9:10	BLANKS	Pesticides	Bromacil	0.040 U	ug/L	0.04	0.16
5/4/2015 9:10	BLANKS	Pesticides	Atrazine Desethyl	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Mevinphos	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Fenamiphos	0.030 U	ug/L	0.03	0.12
5/4/2015 9:10	BLANKS	Pesticides	Disulfoton	0.0050 U	ug/L	0.005	0.02
5/4/2015 9:10	BLANKS	Pesticides	Azinphos Methyl	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Parathion Methyl	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Naled	0.040 U	ug/L	0.04	0.16
5/4/2015 9:10	BLANKS	Pesticides	Metalaxyl	0.040 UJ	ug/L	0.04	0.16
5/4/2015 9:10	BLANKS	Pesticides	Malathion	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Fonofos	0.011 U	ug/L	0.011	0.044
5/4/2015 9:10	BLANKS	Pesticides	Demeton	0.024 U	ug/L	0.024	0.096
5/4/2015 9:10	BLANKS	Pesticides	Chlorpyrifos Methyl	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Atrazine Desisopropyl	0.010 UJ	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Phorate	0.0050 U	ug/L	0.005	0.02
5/4/2015 9:10	BLANKS	Pesticides	Ethion	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Pesticides	Metribuzin	0.020 U	ug/L	0.02	0.08
5/4/2015 9:10	BLANKS	Pesticides	Atrazine	0.010 U	ug/L	0.01	0.04
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,4-Dimethylphenol	10 U	ug/L	10	40
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzo(a)anthracene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzo(a)pyrene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Chrysene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Isophorone	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Acenaphthene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Acenaphthylene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Anthracene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.0 U	ug/L	3	12
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Nitrobenzene	2.0 U	ug/L	2	8.1
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Pentachlorophenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,6-Dinitrotoluene	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzo(b)fluoranthene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Hexachlorobutadiene	3.0 U	ug/L	3	12
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Hexachloroethane	3.0 U	ug/L	3	12

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	N-Nitrosodimethylamine	2.0 U	ug/L	2	8.1
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2-Chloronaphthalene	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.0 U	ug/L	3	12
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.0 U	ug/L	2	8.1
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	4-Nitrophenol	15 U	ug/L	15	61
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Hexachlorobenzene	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.0 U	ug/L	2	8.1
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,4-Dichlorophenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,4-Dinitrotoluene	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	3,3'-Dichlorobenzidine	40 U	ug/L	40	160
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Diethyl phthalate	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Fluoranthene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.0 U	ug/L	3	12
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzo(k)fluoranthene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.0 U	ug/L	2	8.1
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Di-n-octyl phthalate	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Dimethyl phthalate	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Fluorene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Naphthalene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Pyrene	0.20 U	ug/L	0.2	0.81
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2-Chlorophenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Benzidine	100 U	ug/L	100	400
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.0 U	ug/L	3	12
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Di-n-butyl phthalate	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Phenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2,4-Dinitrophenol	15 U	ug/L	15	61
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	2-Nitrophenol	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.0 U	ug/L	1	4

Date Sampled	Field ID	Analysis Group	Component	Result	Units	MDL	PQL
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Butyl benzyl phthalate	1.0 U	ug/L	1	4
5/4/2015 9:10	BLANKS	Priority Organic Pollutants	Phenanthrene	0.20 U	ug/L	0.2	0.81

EPA End Sheet

The Bioassay of FP&L - Ft Myers Power Plant effluent sampled on May 4, May 6, and May 8, 2015. NPDES #FL0001490.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0001490	11 12 150504	18 B	19 S	20 2

Remarks

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The Priority Pollutants Analysis of FP&L - Ft Myers Power Plant effluent sampled on May 4, 2015. NPDES #FL0001490.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0001490	11 12 150504	18 X	19 S	20 2

Remarks

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Biological Analyses of FP&L - Ft Myers Power Plant effluent sampled on May 4, 2015. NPDES #FL0001490.

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

Transaction Code	NPDES NUMBER	YR/MO/DA	Insp Type	Inspector	Fac Type
1 N 2 5	3 FL0001490	11 12 150504	18 S	19 S	20 2

Remarks

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