

Effluent Quality Assessment

Pebble Creek Advanced Wastewater Treatment Facility

Hillsborough County

NPDES #FL0039896

Sampled May 13, 2013

August 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
Quality Manual No. 870346G
NELAC Certification No. E31780

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Pebble Creek Advanced Wastewater Treatment Facility (AWWTF), 10210 Regents Park Drive, Tampa, Hillsborough County, Florida, 33647. NPDES #FL0039896.

Facility Overview

Pebble Creek AWWTF is a Type II "RABCO" process advanced domestic wastewater treatment 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 composite samples for toxicity testing and chemical analysis were collected on May 13, 2013. Effluent grab samples for biological analyses for this facility were collected on May 13, 2013. All samples were collected from the EFD-01 NPDES sampling point for Outfall D-001 by Ramandeep Kaur and Bob Soptei (FDEP Southwest District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix C).

The 96-hour acute definitive toxicity tests and algal growth potential test were performed following internal DEP SOPs TA07_01, TA07_02, and TA08_01 through TA08_09 (see Appendix C).

Results

Chemistry Results (See Table 1 and Appendix D)

- Total residual chlorine and total ammonia were not detected in the bioassay sample in the laboratory. The total ammonia concentration in the composite sample collected and preserved for chemical analysis was 0.014 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.
- Cadmium, copper, nickel, zinc and fluoride were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.). Antimony, chromium-III and iron were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).
- Total phosphorus, total ammonia, and total nitrogen values of the effluent sample complied with permit limits.

Algal Growth Potential (See Table 2 and Appendix D)

- The effluent Algal Growth Potential (AGP) was 108 A 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 represent a "problem" threshold for fresh receiving waters, implying nutrient enrichment. The analytical chemistry suggests that the effluent is nitrogen – limited (Miller et al. 1978).

Toxicity Test Results (See Appendices D- G)

- Tests were performed May 14 - 18, 2013.

Ceriodaphnia dubia 96-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

Pimephales promelas 96-hour acute definitive bioassay – LC_{50} > 100%, 0%* mortality in 100% sample at 96 hours

*NOTE: In a 96-hour acute definitive test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may

be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

- The bioassay samples were not acutely toxic to the test organisms.
- The sample was aerated for 15 minutes at a rate of approximately 100 bubbles per minute to decrease the dissolved oxygen (DO) from 9.6 mg/L to 8.5 mg/L.

Conclusion

The effluent sample collected from the EFD-01 NPDES sampling point for this facility on May 13, 2013, was not acutely toxic to either test species during the 96-hour acute definitive bioassays. The effluent AGP result was greater than the "problem" threshold for fresh receiving waters suggesting that nutrient enrichment may be an issue. Effluent water quality samples collected on May 13, 2013, did not exceed any applicable water quality standards or permit limits.

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.

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

Pebble Creek AWWTF	Class III Criteria	Effluent Limits	Effluent	
Metals (µg/L unless otherwise noted)				
Aluminum	-	-	7.1	I
Antimony	≤ 4300	-	0.33	I
Arsenic	≤ 50	-	0.25	U
Beryllium	≤ 0.13 a	-	0.025	U
Cadmium	≤ 0.5445 b	-	0.23	
Calcium (mg/L)	-	-	85.9	
Chromium-III	≤ 186.6 b	-	0.33	I
Copper	≤ 20.89 b	-	3.81	
Iron	≤ 1,000	-	56	I
Lead	≤ 10.58 b	-	0.20	U
Magnesium (mg/L)	-	-	10.3	
Nickel	≤ 115.9 b	-	3.91	
Potassium (mg/L)	-	-	15	
Selenium	≤ 5.0	-	0.20	U
Silver	≤ 0.07	-	0.025	U
Sodium	-	-	121	
Zinc	≤ 266.5 b	-	35	
Nutrients (mg/L)				
Ortho-phosphate	-	-	1.5	
Total Phosphorus	-	≤ 2.0 p	1.7	
Total Ammonia	-	≤ 1.0 p	0.014	
Un-ionized Ammonia	≤ 0.02 s	-	< 0.02	c
Nitrate and Nitrite	-	-	2.5	
Total Kjeldahl Nitrogen	-	-	0.76	J
Organic Nitrogen	-	-	0.746	c
Total Nitrogen	-	≤ 6.0 p	3.260	c
Total Organic Carbon	-	-	5.4	A

Table 1 (continued). Effluent limits, Class III Freshwater Criteria, chemical and microbiological data, and qualifiers.

Pebble Creek AWWTF	Class III Criteria	Effluent Limits	Effluent	
General Physical and Chemical Parameters				
Dissolved Oxygen (mg/L)	≥ 5.0	≥ 6.5 s	8.13	
pH (SU)	6.0 - 8.5	-	7.63	
Specific Conductance (µmhos/cm)	≤ 1,275	-	1,110	
Temperature (°C)	-	-	27.15	
Salinity	-	-	< 0.53	c
Total Residual Chlorine (mg/L)	≤ 0.01	-	< 0.03	QU£
Chlorophyll *a* (µg/L) - Corrected	-	-	0.76	U
Phaeophytin (µg/L)	-	-	0.55	U
Total Suspended Solids (mg/L)	-	-	2	I
Color (true, PCU)	-	-	17	
CBOD, 5 day (mg/L), N - inhibited	-	-	0.92	IJQ
Chloride (mg/L)	-	-	150	
Fluoride (mg/L)	≤ 10.0	-	0.27	
Sulfate (mg/L)	-	-	200	
Hardness (mg $CaCO_3$)	-	-	256.91	c
Flow (MGD)	-	0.4 a	0.105	a *
Microbiology (Number of colony forming units/100ml)				
Fecal Coliforms ¥	≤ 400s #	-	260	

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

a - Annual average

b - Value is calculated based on hardness

c - Value is calculated

p - 8 hour flow proportioned composite

s - Single sample

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

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

J - Estimated value

Q - Sample held beyond normal holding time

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

¥ - Fecal coliform analysis performed by Advanced Environmental Laboratory

- If 10 or fewer samples are taken within a month, the single sample limit is 400 CFU (62-302.530(6), F.A.C.)

£ - measurement taken in the FDEP laboratory

* Measured from 05/31/2012-4/30/2013

Table 2. Measured and predicted algal growth potential (AGP; mg dry weight/L) for total soluble inorganic nitrogen (TSIN) and total nitrogen (TN) limitation of the freshwater species *Pseudokirchneriella subcapitata* and ratios of nitrogen to phosphorus.

Pebble Creek AWWTF						
Location	Test Species	AGP (measured)	Predicted AGP (TSIN) ± 20%	Predicted AGP (TN) ± 20%	Inorganic N:P ratio	Total N:P ratio
Effluent	Fresh	108 A	95.5 ± 19.1	123.9 ± 24.8	1.7	1.9

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

Appendix A.
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Ramandeep Kaur	Contact Number: (813)-632-7600 ext. 474
Facility Name (as it appears on permit): **Pebble Creek AWWTF**	Former Names:
NPDES Permit Number: **FL0039896**	Permit Expiration Date: **February 12, 2014**
Physical Address: **10210 Regents Park Drive, Tampa FL 33647**	
District: SWD	County: Hillsborough
Function of Facility: WWTP	
Facility Type: Domestic Wastewater	Permitted Capacity (MGD): 0.40
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): 0.095	
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):

Monitoring Location Site Number	Description of Monitoring Location
FLW-01	Flow to discharge outfall D001 measured by 90° v-notch weir and flow meter.
EFA-01	After disinfection and prior to reuse systems, downstream of effluent pumping station and ultraviolet disinfection system.
EFB-01	After filtration and prior to disinfection.
EFD-01	At effluent sampling tap after ultraviolet disinfection prior to discharge outfall D001.

Description of Permitted Outfall(s):
Surface Water Discharge:
An existing 0.40 MGD annual average daily (AADF) permitted discharge to pebble Creek to Trout Creek (Class III Fresh Water Body, WBID No. 1443C) at Discharge Location (D001). The outfall structure is approximately 12 inch diameter PVC pipe through the creek bank with 90 degree elbow and stone riprap with no diffuser, with the pipe outlet approximately three feet above the water level. The point discharge is located approximately at latitude 28 deg 09 05" N, longitude 82 deg 22' 00" W.

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

An existing 0.4 mgd three month average daily flow (3MADF) Type II "RABCO" process advanced domestic wastewater treatment facility nitrification/de-nitrification process consisting of the following units: a headworks with a grit removal chamber, a single coarse bar screen with bypass channel, and an odor scrubbing system of 8,000 gallons, one flow equalization basin of 51,800 gallons total volume, two aeration tanks of 345,800 gallons of total volume, one de-nitrification basin of 21,150 gallons, one re-aeration tank of 13,700 gallons, a first stage clarifier of 108,000 gallons and 1,286 square feet, a second de-nitrification basin of 24,000 gallons, a second re-aeration tank of 24,000 gallons, a second stage clarifier of 101,000 and 1,286 square feet, three de-nitrification filters of 270 square feet total surface area, one mudwell of 21,660 gallons, one clearwell of 3,300 gallons, two chlorine contact tanks of 25,300 gallons total volume and one effluent pumping station of 5,000 gallons. For reclaimed water, sodium hypochlorite liquid system is injected to the inlet of each chlorine contact chamber.

The effluent is transferred through three 12-lamp ultraviolet light pressure vessels for surface water high level disinfection, thence to the surface water discharge location D001 described below.

Residuals are treated by directing waste activated sludge from both clarifiers to an aerated digester basin of 67,800 gallons, from which the residuals are transferred to a sludge holding tank of 9,000 gallons where lime stabilization is accomplished. Stabilized residuals are disposed by means of land application.

Filter backwash is returned to the flow equalization basin. Methanol is injected prior to the de-nitrification filters and ferric sulfate is injected into the plant influent line prior to the headworks for odor control and to aid in phosphorous removal when discharging to D-001. Effluent quality is continuously monitored for turbidity as a measure of TSS and chlorine residual, when going to the slow rate land application system, as a measure of disinfection effectiveness. Chemical feed is available on a standby status as a settling aid. Effluent failing to meet Part III public access quality standards is directed by means of an automatic valve system to a reject storage basin of 191,400 gallons.

Effluent which does meet Part III quality standards is transferred to the Pebble Creek Golf Course for reuse. The storage, discharge, and reject functions are controlled, sequenced and operated during staffed and unstaffed periods according to procedures set forth in the plant Operating Protocol in order to assure maximum reliability and safeguards on the quality of the reclaimed water. Plant alarm systems are remoted by teledial systems to plant operational personnel during non-duty periods. Standby emergency power is provided by a 125 KW autostart generator.

PART I: Continued

Receiving Waters:	**Classification (indicate whether fresh or marine):**
Trout Creek	**Class III Fresh water body**

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

Chronic Whole Effluent Toxicity Testing

The permittee shall comply with the following whole effluent toxicity testing requirements and initiate the series of tests described below within 120 days of permit issuance, unless otherwise directed by the Department in writing, to evaluate chronic whole effluent toxicity of the discharge from outfall D-001.

a. Effluent Limitation
   (1) Whole effluent chronic toxicity shall not exceed a 25 percent inhibition concentration (IC25) of less than 100% effluent in any test and Rules 62-302.530(61) and 62-4.241(1)(b), F.A.C.
   (2) In the chronic toxicity test, the effluent cannot be acutely toxic, in accordance with 62-302.200(1) and 62-302.500(1)(a)(4).

b. Monitoring Frequency
   (1) The "routine" toxicity tests specified shall be conducted *once every six months*.

c. Sampling Requirements

   (1) For each routine test or additional follow-up test conducted, a total of three *flow proportional 24-hour composite* samples of final effluent shall be collected and used in accordance with the sampling protocol discussed in EPA-821-R-02-013, Section 8, or the most current edition.
   (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.
   (4) If the duration of the discharge is less than 24-hours, the duration of discharge shall be documented on the chain of custody. Each sample shall be analyzed for total residual chlorine and pH at the time of sample collection. Should the discharge last less than 24 hours, the bioassay shall be run on the volume collected, however, three samples must be collected.

d. Test Requirements
   (1) Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five test dilutions: **100%, 50%, 25%, 12.5%**, and **6.25%** final effluent.
   (2) The permittee shall conduct a daphnid, **Ceriodaphnia dubia**, Survival and Reproduction Test and a fathead minnow, **Pimephales promelas**, Larval Survival and Growth Test, 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 Freshwater Organisms**, 4th ed., EPA-821-R-02-013 or the most current edition. Any deviation of the bioassay procedures outlined herein shall be submitted in writing to the Department for review and approval prior to use.
   (4) The control water and dilution water shall be moderately hard water as described in EPA-821-R-02-013, Section 7 or the most current edition.

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 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 EPA-821-R-02-013, Section 13.12 (**Ceriodaphnia dubia**) and Section 11.11 (**Pimephales promelas**) or the most current edition. 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 prior to the end of any test and the control mortality is less than 20% at that time, the test (including the control) shall be terminated with the conclusion that the test fails and constitutes non-compliance.
   (4) Additional follow-up tests shall be evaluated for acceptability based on the observed dose-response relationship as required by EPA-821-R-02-013, Section 10.2.6. or the most current edition, 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-02-013, Section 10, Report Preparation and Test Review or the most current edition, 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-02-013, Section 10 or the most current edition, 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:

Department of Environmental Protection
Southwest District Office
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Telephone No.: (813) 632-7600

g. Test Failures
(1) A test fails when the test results do not meet the limits in 9.a.(1).
(2) Additional Follow-up Tests:
(a) If a routine test does not meet the chronic toxicity limitation in 9.a.(1) 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 9.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 statistically analyzed according to the Appendices in EPA-821-R-02-013 or the most current edition.
(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 period of time that the approved plan is ongoing, the permittee shall conduct routine whole effluent toxicity testing at the frequency of once every three months, but shall not be required to perform additional follow-up tests. If a routine test is invalid as established in EPA Methods, EPA-821-R-02-012, EPA-821-R-02-013, or EPA-821-R-02-014, a retest must be started within 21 days for a chronic test or 14 days for an acute test after the last day of the invalid test.
(f) Following completion or termination of the plan, the frequency of monitoring for routine and additional follow-up whole effluent toxicity tests shall return to the schedule established in the facility wastewater permit. The permittee may terminate the plan at any time upon written verification by the Department that the facility has passed at least four consecutive valid routine whole effluent toxicity tests.

[62-4.241, 62-620.620(3)]

*If no discharge occurs at D-001, toxicity testing will not be required. If the discharge ceases before the first additional test sample can be collected, the first additional sample shall be initiated within one business day following the next discharge event; if the discharge again ceases before the second additional test sample can be collected, the second additional sample shall be initiated within one business day following the next discharge event. A routine test must be conducted on the other test species during the discharge used for the additional test it if will be the only discharge during the monitoring period. If another discharge should occur during the same monitoring period, then a routine test will be required only on the species that failed the previous routine test. The additional tests will be used to determine if the toxicity found in the routine test is still present.

7. In accordance with load allocations for Tampa Bay Reasonable Assurance, the Total Maximum Daily Load for Total Nitrogen shall be calculated from the bi-weekly Total Nitrogen concentration. The Total Nitrogen Loading shall be calculated as a twelve-month rolling total and shall not exceed 1.0 tons/year and the five year average of the yearly totals shall not exceed 1.0 ton/year. Pursuant to Rule 62-62-.325, F.A.C., the Department may revise this permit to incorporate the final findings. ([4]Under Report Avg. reporting should begin at the end of the second year as the average of the yearly totals).

8. To support permit renewal, effluent testing information must be collected with a minimum of three samples taken within four and one half years prior to the expiration date of this permit. Values must be representative of the seasonal variation in the discharge from each outfall or represent best engineering estimates for new treatment and disposal systems in accordance with the instructions provided with DEP Form 62-620.910(2). The results must be included in DEP Form 62-620.910(2) (Form 2A application) section 3.A.12, 13, and 14, as appropriate. *[62-620.910(2)]*

Facility Mixing Zone Details (if applicable):

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

Date	Parameter and Units	Limit	Result

Describe previous FYI and WQBEL study:
2007 FYI report submitted as separate email attachment

Describe previous or current Enforcement Actions (including WLs):

Describe any violations or problems noted in previous inspection:

- Odor issues/problems noted in last inspection in April 2013.

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 I: Continued

List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under
(Leave cell blank if not applicable)

			Reclaimed Water Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
Flow (to D-001)	MGD	Maximum	0.40	Report	-	-	5 Days/Week	Meter	FLW-01	See Cond.I.A.3
BOD, Carbonaceous 5 day, 20C	MG/L	Maximum	3.0	3.0	-	4.0	Every Two Weeks	8-hour FPC	EFA-01	
Solids, Total Suspended	MG/L	Maximum	3.0	3.0	-	4.0	Every Two Weeks	8-hour FPC	EFA-01	
Nitrogen, Total (as N)	MG/L	Maximum	3.0	3.75	-	6.0	Every Two Weeks	8-hour FPC	EFD-01	
Phosphorus, Total (as P)	MG/L	Maximum	1.0	1.25	-	2.0	Every Two Weeks	8-hour FPC	EFD-01	
Solids, Total Suspended	MG/L	Maximum	-	-	-	5.0	Every Two Weeks	Grab	EFB-01	
pH	SU	Range	-	-	-	6.0 to 8.5	5 Days/Week	Grab	EFA-01	
Coliform, Fecal, % less than detection	PERCENT	Minimum		75			Monthly	Calculation	EFA-01	See Cond.I.A.4
Coliform, Fecal	#/100ML	Maximum				25	Every Two Weeks	Grab	EFA-01	See Cond.I.A.4
Oxygen, Dissolved (DO)	MG/L	Minimum	-	-	-	6.5	5 Days/Week	Grab	EFD-01	
Ammonia (NH_3)	MG/L	Maximum	-	-	-	1.0	Every Two Weeks	8-hour FPC	EFD-01	
Whole Effluent Toxicity (Chronic)	Percent	Minimum	-	-	-	100	Every Six Months	24-hour FPC	EFD-01	See Cond.I.A.6
Nitrogen, Total (as N)	Tons/Year	Maximum	1.0 (Ann. Total)	Report (Mo Total)	-	-	Monthly	Calculation	EFD-01	See Cond.I.A.7
Nitrogen, Total (as N)	Tons/5 Year	Maximum	1.0 (5Yr Avg.)	Report (Avg.)'	-	-	Annually	Calculation	EFD-01	See Cond.I.A.7

Pebble Creek AWWTF, Permit #: FL0039896; FYI3 PART II: Sampling Event Information	
Date(s) sample collected: 13 May 2013	**Sampler(s):** Ramandeep Kaur, Bob Soptei
Temperature (Deg C): 27.15	**pH (SU):** 7.63
Dissolved Oxygen (mg/L): 8.13	**Conductivity (umhos/cm):** 1110
Total Residual Chlorine (mg/L): N/A	**Total Residual Chlorine - after Disinfection (mg/L):** N/A
Method of Chlorination: 12-lamp ultraviolet light pressure vessels for SW discharge at D001	**Method of De-chlorination:** N/A
Flow During Sample Collection for each outfall(MGD): D001: 0.18MGD	
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): D-001 (01/2012-01/2013): 0.095 MGD	
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:	

Florida Department of Environmental Protection

Central Laboratory Sample Submittal Form

Event ID *

Request Number: RQ-2013-05-13-43
FYI3 Pebble Creek AWWTF Sampling Inspection

Requester: Michelle Fish
Field Report Prepared By: RAMANDEEP KAUR
Collected By: RAMANDEEP KAUR, BOB SOPTEI
Send Final Report To: Joe Squiteri, Ramandeep Kaur, Adam Wood.
Sampling Agency: FDEP - SWD

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

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
40751	D-001	☐ Comp ☑ Grab Eastern Central Date 5/13/13 Time 11:55	Eastern Central Date Time	A
	Field ID: Fresh (Effluent)	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L): 8.13	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): FRESH (EFFLUENT)	Temp (C): 27.15	pH: 7.63	Sample Depth ☑ m ☐ ft: 0.033
		Salinity (PPTh)	Sp Conductance (umho/cm): 1110	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments	

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
40752	D-001	☑ Comp ☐ Grab Eastern Central Date 5/13/13 Time 0700	Eastern Date 5/13/13 Time 0700 Central	B
	Field ID: FRESH EFFLUENT	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)	Composite end	Bottle Group(s)**
40753	FIELD BLANK	☐ Comp ☐ Grab Eastern Central Date 5/13/13 Time 1110	Eastern Date Time Central	C
	Field ID	Tot Res Chlorine (mg/L)	Diss Oxygen (mg/L)	Storet Station Number
	Matrix (include type e.g. Salt, Fresh, etc): DI WATER	Temp (C)	pH	Sample Depth ☐ m ☐ ft
		Salinity (PPTh)	Sp Conductance (umho/cm)	NPDES Number
	Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Comments: Used Facility's Composite Sampler, so no - Equipment Blanks. Only Field Blanks	

Lab ID *	Location	Collection (comp begin or grab)	Composite end	Bottle Group(s)**
		☐ Comp ☐ Grab Eastern Central Date Time	Eastern 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
Ramandeep Kaur	5-13-13/1530	FEDEX	ABB	5/14/13 09:10				

2 bottles noassy CR
5/14/13 1005

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Appendix B.
Chain of Custody

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.floridadep.org/labs/sop/index.htm and/or http://www.floridadep.org/labs/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. Exceedances of Water Quality Criteria may constitute violations of specific provisions of Chapter 62-302 (F.A.C.) and/ or 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 violation of facility permit limits. An inhibition concentration greater than 25% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a 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 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 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.

(7) Chlorophyll *a* Content

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

(8) 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.
Chemical Analyses of Effluent

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 7:00	Effluent	AGP/LN	Algal Growth Potential	108	A	mg DryWt/L	0.3	0.9
5/13/2013 7:00	Effluent	Chlorophyll/Grain Size/BOD	Phaeophytin-a	0.55	U	ug/L	0.55	1.6
5/13/2013 7:00	Effluent	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	0.92	IJQ	mg/L	0.2	2
5/13/2013 7:00	Effluent	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	0.76	U	ug/L	0.76	2.3
5/13/2013 7:00	Effluent	Toxicology	Bioassay-Acute-Def-FW-Fish, LC50	100	L	LC50		
5/13/2013 7:00	Effluent	Toxicology	Bioassay-Acute-Def-FW-C.dubia, LC50	100	L	LC50		
5/13/2013 7:00	Effluent	Metals	Zinc	35		ug/L	5	20
5/13/2013 7:00	Effluent	Metals	Antimony	0.33	I	ug/L	0.25	1
5/13/2013 7:00	Effluent	Metals	Arsenic	0.25	U	ug/L	0.25	1
5/13/2013 7:00	Effluent	Metals	Calcium	85.9		mg/L	0.075	0.3
5/13/2013 7:00	Effluent	Metals	Aluminum	7.1	I	ug/L	5	20
5/13/2013 7:00	Effluent	Metals	Copper	3.81		ug/L	0.5	1
5/13/2013 7:00	Effluent	Metals	Lead	0.20	U	ug/L	0.2	0.8
5/13/2013 7:00	Effluent	Metals	Potassium	15.0		mg/L	0.3	1.2
5/13/2013 7:00	Effluent	Metals	Iron	56	I	ug/L	30	120
5/13/2013 7:00	Effluent	Metals	Magnesium	10.3		mg/L	0.04	0.16
5/13/2013 7:00	Effluent	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/13/2013 7:00	Effluent	Metals	Selenium	0.20	U	ug/L	0.2	0.8
5/13/2013 7:00	Effluent	Metals	Nickel	3.91		ug/L	0.25	1
5/13/2013 7:00	Effluent	Metals	Chromium	0.33	I	ug/L	0.3	1.2
5/13/2013 7:00	Effluent	Metals	Sodium	121		mg/L	0.5	2
5/13/2013 7:00	Effluent	Metals	Cadmium	0.23		ug/L	0.05	0.2
5/13/2013 7:00	Effluent	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
5/13/2013 7:00	Effluent	Nutrients	Fluoride	0.27		mg F/L	0.035	0.1
5/13/2013 7:00	Effluent	Nutrients	Kjeldahl Nitrogen	0.76	J	mg N/L	0.16	0.4
5/13/2013 7:00	Effluent	Nutrients	Organic Carbon	5.4	A	mg C/L	0.5	1
5/13/2013 7:00	Effluent	Nutrients	Color (true)	17		PCU	2.5	6
5/13/2013 7:00	Effluent	Nutrients	Sulfate	200		mg SO4/L	4	10
5/13/2013 7:00	Effluent	Nutrients	TSS	2	I	mg/L	2	10
5/13/2013 7:00	Effluent	Nutrients	Total-P	1.7		mg P/L	0.025	0.25
5/13/2013 7:00	Effluent	Nutrients	O-Phosphate-P	1.5		mg P/L	0.04	0.1
5/13/2013 7:00	Effluent	Nutrients	Chloride	150		mg Cl/L	4	10

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 7:00	Effluent	Nutrients	NO2NO3-N	2.5		mg N/L	0.04	0.1
5/13/2013 7:00	Effluent	Nutrients	Ammonia-N	0.014		mg N/L	0.004	0.01
5/13/2013 7:00	Effluent	Pesticides	Atrazine	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Parathion Methyl	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Naled	0.23	U	ug/L	0.23	0.92
5/13/2013 7:00	Effluent	Pesticides	Bromacil	0.23	U	ug/L	0.23	0.92
5/13/2013 7:00	Effluent	Pesticides	Norflurazon	0.17	UJ	ug/L	0.17	0.69
5/13/2013 7:00	Effluent	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.46
5/13/2013 7:00	Effluent	Pesticides	Diazinon	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Hexazinone	0.17	U	ug/L	0.17	0.69
5/13/2013 7:00	Effluent	Pesticides	Metolachlor	0.34	U	ug/L	0.34	1.4
5/13/2013 7:00	Effluent	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.46
5/13/2013 7:00	Effluent	Pesticides	Chlorpyrifos Methyl	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Fenamiphos	0.17	U	ug/L	0.17	0.69
5/13/2013 7:00	Effluent	Pesticides	Ametryn	0.057	UJ	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Azinphos Methyl	0.11	U	ug/L	0.11	0.46
5/13/2013 7:00	Effluent	Pesticides	Ethoprop	0.029	U	ug/L	0.029	0.11
5/13/2013 7:00	Effluent	Pesticides	Mevinphos	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Phorate	0.029	U	ug/L	0.029	0.11
5/13/2013 7:00	Effluent	Pesticides	Simazine	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Chlorpyrifos Ethyl	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Ethion	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Alachlor	0.34	U	ug/L	0.34	1.4
5/13/2013 7:00	Effluent	Pesticides	Malathion	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Parathion Ethyl	0.11	UJ	ug/L	0.11	0.46
5/13/2013 7:00	Effluent	Pesticides	Butylate	0.11	U	ug/L	0.11	0.46
5/13/2013 7:00	Effluent	Pesticides	Fonofos	0.057	U	ug/L	0.057	0.23
5/13/2013 7:00	Effluent	Pesticides	Metalaxyl	0.23	U	ug/L	0.23	0.92
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Hexachloroethane	3.3	U	ug/L	3.3	13
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Naphthalene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	4-Nitrophenol	17	U	ug/L	17	67
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Anthracene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Hexachlorobutadiene	3.3	U	ug/L	3.3	13

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 7:00	Effluent	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	8.9
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	440
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Dimethyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.3	U	ug/L	3.3	13
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	8.9
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	3,3'-Dichlorobenzidine	44	U	ug/L	44	180
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Acenaphthene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzo(a)pyrene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.3	U	ug/L	3.3	13
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Fluorene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	44
5/13/2013 7:00	Effluent	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzo(a)anthracene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzo(b)fluoranthene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Benzo(k)fluoranthene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.2	U	ug/L	2.2	8.9
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	8.9
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Pentachlorophenol	3.3	U	ug/L	3.3	13
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Phenanthrene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Acenaphthylene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Chrysene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Di-n-butyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Fluoranthene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.3	U	ug/L	3.3	13

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Pyrene	0.22	U	ug/L	0.22	0.89
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2,4-Dinitrophenol	17	UJ	ug/L	17	67
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3	U	ug/L	3.3	13
5/13/2013 7:00	Effluent	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	8.9
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Butyl benzyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 7:00	Effluent	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:55	Effluent	Overflow	Fecal Coliforms-Membrane Filter	260		cfu/100 mL	10	
5/13/2013 11:55	Effluent	Field Parameter	Dissolved Oxygen	8.13		mg/L		
5/13/2013 11:55	Effluent	Field Parameter	Temperature	27.15		C		
5/13/2013 11:55	Effluent	Field Parameter	pH	7.63				
5/13/2013 11:55	Effluent	Field Parameter	Sample Depth	0.033		m		
5/13/2013 11:55	Effluent	Field Parameter	Specific Conductance	1,110		umhos/cm		
5/13/2013 11:10	Blank	Metals	Sodium	0.50	U	mg/L	0.5	2
5/13/2013 11:10	Blank	Metals	Magnesium	0.040	U	mg/L	0.04	0.16
5/13/2013 11:10	Blank	Metals	Arsenic	0.25	U	ug/L	0.25	1
5/13/2013 11:10	Blank	Metals	Aluminum	5.0	U	ug/L	5	20
5/13/2013 11:10	Blank	Metals	Antimony	0.25	U	ug/L	0.25	1
5/13/2013 11:10	Blank	Metals	Beryllium	0.025	U	ug/L	0.025	0.1
5/13/2013 11:10	Blank	Metals	Zinc	5.0	U	ug/L	5	20
5/13/2013 11:10	Blank	Metals	Chromium	0.30	U	ug/L	0.3	1.2
5/13/2013 11:10	Blank	Metals	Calcium	0.075	U	mg/L	0.075	0.3
5/13/2013 11:10	Blank	Metals	Iron	30	U	ug/L	30	120
5/13/2013 11:10	Blank	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
5/13/2013 11:10	Blank	Metals	Nickel	0.25	U	ug/L	0.25	1
5/13/2013 11:10	Blank	Metals	Silver	0.025	U	ug/L	0.025	0.1
5/13/2013 11:10	Blank	Metals	Lead	0.20	U	ug/L	0.2	0.8
5/13/2013 11:10	Blank	Metals	Selenium	0.20	U	ug/L	0.2	0.8
5/13/2013 11:10	Blank	Metals	Copper	0.50	U	ug/L	0.5	1
5/13/2013 11:10	Blank	Metals	Potassium	0.30	U	mg/L	0.3	1.2
5/13/2013 11:10	Blank	Nutrients	Sulfate	0.20	U	mg SO4/L	0.2	0.5
5/13/2013 11:10	Blank	Nutrients	Kjeldahl Nitrogen	0.080	U	mg N/L	0.08	0.2
5/13/2013 11:10	Blank	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
5/13/2013 11:10	Blank	Nutrients	O-Phosphate-P	0.004	U	mg P/L	0.004	0.01

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 11:10	Blank	Nutrients	TSS	2	U	mg/L	2	10
5/13/2013 11:10	Blank	Nutrients	Total-P	0.002	U	mg P/L	0.002	0.005
5/13/2013 11:10	Blank	Nutrients	Chloride	0.20	U	mg Cl/L	0.2	0.5
5/13/2013 11:10	Blank	Nutrients	Color (true)	2.5	U	PCU	2.5	6
5/13/2013 11:10	Blank	Nutrients	Ammonia-N	0.002	U	mg N/L	0.002	0.005
5/13/2013 11:10	Blank	Nutrients	Fluoride	0.035	U	mg F/L	0.035	0.1
5/13/2013 11:10	Blank	Nutrients	Organic Carbon	0.50	U	mg C/L	0.5	1
5/13/2013 11:10	Blank	Pesticides	Parathion Ethyl	0.11	UJ	ug/L	0.11	0.43
5/13/2013 11:10	Blank	Pesticides	Naled	0.22	U	ug/L	0.22	0.86
5/13/2013 11:10	Blank	Pesticides	Hexazinone	0.16	U	ug/L	0.16	0.65
5/13/2013 11:10	Blank	Pesticides	Ethoprop	0.027	U	ug/L	0.027	0.11
5/13/2013 11:10	Blank	Pesticides	Atrazine	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Metribuzin	0.11	U	ug/L	0.11	0.43
5/13/2013 11:10	Blank	Pesticides	Ethion	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Chlorpyrifos Methyl	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Chlorpyrifos Ethyl	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Phorate	0.027	U	ug/L	0.027	0.11
5/13/2013 11:10	Blank	Pesticides	Parathion Methyl	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Norflurazon	0.16	UJ	ug/L	0.16	0.65
5/13/2013 11:10	Blank	Pesticides	Mevinphos	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Metalaxyl	0.22	U	ug/L	0.22	0.86
5/13/2013 11:10	Blank	Pesticides	Diazinon	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Prometryn	0.11	U	ug/L	0.11	0.43
5/13/2013 11:10	Blank	Pesticides	Metolachlor	0.32	U	ug/L	0.32	1.3
5/13/2013 11:10	Blank	Pesticides	Azinphos Methyl	0.11	U	ug/L	0.11	0.43
5/13/2013 11:10	Blank	Pesticides	Ametryn	0.054	UJ	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Simazine	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Malathion	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Fonofos	0.054	U	ug/L	0.054	0.22
5/13/2013 11:10	Blank	Pesticides	Butylate	0.11	U	ug/L	0.11	0.43
5/13/2013 11:10	Blank	Pesticides	Alachlor	0.32	U	ug/L	0.32	1.3
5/13/2013 11:10	Blank	Pesticides	Fenamiphos	0.16	U	ug/L	0.16	0.65
5/13/2013 11:10	Blank	Pesticides	Bromacil	0.22	U	ug/L	0.22	0.86
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,6-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	4-Nitrophenol	16	U	ug/L	16	66
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzidine	110	U	ug/L	110	440

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 11:10	Blank	Priority Organic Pollutants	Fluorene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Hexachlorobenzene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Isophorone	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	N-Nitrosodimethylamine	2.2	U	ug/L	2.2	8.8
5/13/2013 11:10	Blank	Priority Organic Pollutants	Phenanthrene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	1,2,4-Trichlorobenzene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,4-Dimethylphenol	11	U	ug/L	11	44
5/13/2013 11:10	Blank	Priority Organic Pollutants	2-Chlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	3,3'-Dichlorobenzidine	44	U	ug/L	44	180
5/13/2013 11:10	Blank	Priority Organic Pollutants	Acenaphthene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Bis(2-chloroethyl)ether	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Chrysene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Dimethyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	2.2	U	ug/L	2.2	8.8
5/13/2013 11:10	Blank	Priority Organic Pollutants	Nitrobenzene	2.2	U	ug/L	2.2	8.8
5/13/2013 11:10	Blank	Priority Organic Pollutants	Pentachlorophenol	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,4-Dinitrotoluene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	2-Chloronaphthalene	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzo(a)anthracene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	2.2	U	ug/L	2.2	8.8
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,4,6-Trichlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	2-Nitrophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzo(a)pyrene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	Butyl benzyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Di-n-octyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Fluoranthene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,4-Dichlorophenol	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	2.2	U	ug/L	2.2	8.8
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzo(k)fluoranthene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	2,4-Dinitrophenol	16	UJ	ug/L	16	66
5/13/2013 11:10	Blank	Priority Organic Pollutants	Acenaphthylene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.22	U	ug/L	0.22	0.88

Date Sampled	Field ID	Analysis Group	Components	Result	Remark	Units	MDL	PQL
5/13/2013 11:10	Blank	Priority Organic Pollutants	Diethyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Hexachlorobutadiene	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	Hexachlorocyclopentadiene	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	4-Bromophenyl phenyl ether	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Di-n-butyl phthalate	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Hexachloroethane	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	Pyrene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	4-Chloro-3-methylphenol	1.1	U	ug/L	1.1	4.4
5/13/2013 11:10	Blank	Priority Organic Pollutants	Anthracene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Benzo(b)fluoranthene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	3.3	U	ug/L	3.3	13
5/13/2013 11:10	Blank	Priority Organic Pollutants	Naphthalene	0.22	U	ug/L	0.22	0.88
5/13/2013 11:10	Blank	Priority Organic Pollutants	Phenol	1.1	U	ug/L	1.1	4.4

FDEP Biology Laboratory - Acute Bioassay Bench Sheets

Facility: Pebble Creek Village WWTF

Address: 10210 Regents Park Drive

City: Tampa County: Hillsborough

Contact/District: Ramandeep Kaur / Southwest

NPDES Permit #: FL 0039896

LIMS Job #: TLH-2013-05-14-15 LIMS Sample #: 1503613

Lims Data Entry: 5-23-13-MF Data Entry Verification: 5/23/13

Sample Collection: Date: 5-13-13 Time: 0700

Hold Time Start: Date: 5-13-13 Time: 0700

Comments:

Initial sample handling:

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

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

Aeration: ☑ yes ☐ no Initial DO: 9.6 mg/L Final DO: 8.5 mg/L Duration: 15 minutes Rate: ~ 100 bubbles/min

Salinity adjusted (Test 1): ☑ yes ☑ no Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

Salinity adjusted (Test 2): ☑ yes ☑ no Initial Salinity: ____ Final Salinity: ____ Salts Hypersaline brine

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

Sample Validation:

Instructions: Check yes or no. Fill in temperatures.

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

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

Investigators' Signatures:	Initials:
Marshall Faircloth	MF
Bruce Neher	BN
Adrienne Pennington	AP
Cassidy Reichert	CR
REVIEWER: Liz Miller	

Diluent/Control Batch#:	5-8-13		5-7-13						
Water Quality Parameters	~~MHW +D 20% DMW~~ MF	Well Water	Moderately Hard Water	Salt Water ASW NSW Test 1	Salt Water ASW NSW Test 2	Other:	Original Sample	Measured by	Verified by
Field Total Residual Cl_2 (mg/L):	N/A	N/A	N/A	N/A	N/A	N/A			
Lab Total Residual Cl_2 (mg/L):	<0.03		<0.03				<0.03	CR	AP
Alkalinity (mg/L as $CaCO_3$):	67		63				104	CR	AP
Hardness (mg/L as $CaCO_3$):	79		87				244	CR	AP
Total Ammonia (mg/L as N):	<0.017		<0.017				<0.017	MF	CR
Conductivity: ☑ µmhos ☐ mmhos	390		399				1140	BA/MF	CR
Salinity (ppth):									

V 1.8 1/13/10

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FDEP Biology Laboratory - Acute Bioassay Survival Bench Sheet

LIMS Sample # 1503613 **SOP#: TA 07** 01 **Test #** 1 **of** 2

Test Species:
Batch #: 5-14-13 Age: < 24h
- [x] *Ceriodaphnia dubia*
- [ ] *Cyprinella leedsi*
- [ ] *Pimephales promelas*
- [ ] *Menidia beryllina*
- [ ] *Americamysis bahia*
- [ ] Other:_____

Test Validation
Control Survival ≥ 90%: [x] Yes [ ] No
Temperature Range ≤ 3° C: [x] Yes [ ] No

Diluent (Batch # 5.8.13**)**
[ ] ASW [x] MHWCD
[ ] MHW [ ] Well

Test Type: [ ] Screen [x] Definitive
[ ] Static [x] Static Renewal [ ] Flow-Through

Test Duration:
[ ] 48 hr
[x] 96 hr
[ ] ___hr

Test Started: Date 5-14-13 Time 1225

Test Ended: Date 5-18-13 Time 0920

Chamber Size 30 ml
Test Volume: 20 ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
CTL	A	1	5	5	5	5	5	4 1D
	B	2	5	5	5	5	5	4 1D
	C	3	5	5	5	5	5	5
	D	4	5	5	5	5	5	5
6.25%	A	5	5	5	5	5	5	5
	B	6	5	5	5	5	5	5
	C	7	5	5	5	5	5	5
	D	8	5	5	5	5	5	4 1D
12.5%	A	9	5	5	5	5	5	4 1D
	B	10	5	5	5	5	5	4 1D
	C	11	5	5	5	5	5	4 1D
	D	12	5	5	5	5	5	4 1D
25%	A	13	5	5	5	5	5	5
	B	14	5	5	5	5	5	5
	C	15	5	5	5	5	5	3 2D
	D	16	5	5	5	5	5	5
50%	A	17	5	5	5	5	5	5
	B	18	5	5	5	5	5	5
	C	19	5	5	5	5	5	5
	D	20	5	5	5	5	5	5
100%	A	21	5	5	5	5	5	5
	B	22	5	5	5	5	5	5
	C	23	5	5	5	5	5	5
	D	24	5	5	5	5	5	5
Checked or Verified by:			MF	MF	MF	MF	MF	MF

Food
- [x] YCT Batch# 5-3-13
- [x] P. subcapitata Batch# 1-18-13
- [ ] Artemia Lot#_____

Feeding and Artemia Batch #
- [x] 0 hr____ [x] Prior to Test
- [ ] 24 hr____
- [x] 48 hr____ [x] Prior to Renewal
- [ ] 72 hr____

Temperature Range (°C)
Incubator # 3
min. 25.6 max. 27.6 mean ___

Incubator # 3
min. 25.6 max. 27.6 mean ___

Waterbath #___
min.____ max.____ mean____

Room B246
min. 24.7 max. 25.4 mean ___

Light intensity (ft. candles): 50-100

Photoperiod (hours): 16 light, 8 dark

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

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

Comments:

V. 2.6 2-15-13

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

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Acute Bioassay Survival Bench Sheet

LIMS Sample # 1503613 SOP#: TA 07 02 Test # 2 of 2

Test Species:
Batch #: 5.14.13 Age: 7days
- ☐ Ceriodaphnia dubia
- ☐ Cyprinella leedsi
- ☑ Pimephales promelas
- ☐ Menidia beryllina
- ☐ Americamysis bahia
- ☐ Other:

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

Diluent (Batch # 5.7.13)
☐ ASW ☐ MHWCD ☑ MHW ☐ Well

Test Type: ☐ Screen ☑ Definitive ☐ Static ☑ Static Renewal ☐ Flow-Through

Test Duration: ☐ 48 hr ☑ 96 hr ☐ ___hr

Test Started: AP Date ~~5-14-13~~ 5-14-13 Time 12:30

Test Ended: Date 5-18-13 Time 0905

Chamber Size 1000ml
Test Volume: 500ml

Concentration	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
(control)	A	D1	10	10	10	10	10	10
	B	D2	10	10	10	10	10	10
6.25%	A	D3	10	10	10	10	10	10
	B	D4	10	10	10	10	10	10
12.5%	A	D5	10	10	10	10	10	9[10]
	B	D6	10	10	10	10	10	10
25%	A	D7	10	10	10	10	10	10
	B	D8	10	10	10	10	10	10
50%	A	D9	10	10	9[10]	9	9	9
	B	D10	10	10	10	10	10	10
100%	A	D11	10	10	10	10	10	10
	B	D12	10	10	10	10	10	10
Checked or Verified by:			MF	AP	AP	AP	AP	MF

Food
- ☐ YCT Batch#_____
- ☐ P. subcapitata Batch#_____
- ☑ Artemia Lot# 0882

Feeding and Artemia Batch #
- ☑ 0 hr 95.13 ☑ Prior to Test
- ☐ 24 hr____
- ☑ 48 hr 97.13 ☑ Prior to Renewal
- ☐ 72 hr____

Temperature Range (°C)
Incubator # 2
min. 25.1 max. 26.5 mean ___
Incubator # 2
min. 25.1 max. 26.5 mean ___
Waterbath #___
min.____ max.____ mean____
Room B246
min. 24.7 max. 25.4 mean ___
Light intensity (ft. candles): 50-100
Photoperiod (hours): 16 light, 8 dark

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

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

Comments:

V. 2.6 2-15-13

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

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LIMS Sample # 1503613 Test # 1 of 2

Test Species:

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

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

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☑ µmhos ☐ mmhos	Salinity* (ppth)
CTL	M	0 hr	8.1	24.3	7.8	290	
		24 hr					
	A	48 hr BR	8.1	24.2	8.0	345	
	M	48 hr AR	8.0	24.8	7.6	284	
		72 hr					
	A	96 hr	8.2	25.7	7.5	313	
6.25%	M	0 hr	8.0	24.3	7.9	349	
		24 hr					
	A	48 hr BR	8.1	24.1	8.1	399	
	M	48 hr AR	8.0	25.0	7.7	339	
		72 hr					
	A	96 hr	8.2	25.7	7.6	375	
12.5%	M	0 hr	8.0	24.3	7.9	400	
		24 hr					
	A	48 hr BR	8.1	24.2	8.1	444	
	M	48 hr AR	7.9	25.0	7.8	393	
		72 hr					
	A	96 hr	8.1	25.6	7.5	427	
25%	M	0 hr	7.9	24.3	7.9	503	
		24 hr					
	A	48 hr BR	8.0	24.4	8.1	531	
	M	48 hr AR	7.9	24.9	7.8	496	
		72 hr					
	A	96 hr	8.1	25.4	7.6	534	
50%	M	0 hr	7.8	24.5	8.0	702	
		24 hr					
	A	48 hr BR	8.0	24.5	8.7	734	
	M	48 hr AR	7.9	24.8	7.9	708	
		72 hr					
	A	96 hr	8.0	25.4	7.6	735	
100%	M	0 hr	7.8	24.1	8.2	1108	
		24 hr					
	A	48 hr BR	8.0	24.7	8.3	1160	
	M	48 hr AR	7.8	24.7	7.9	1113	
		72 hr					
	A	96 hr	7.8	25.2	7.6	1159	
_____		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
_____		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: MK
24 hr:
48 hr BR: MK
48 hr AR: MK
72 hr:
96 hr: MF

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V. 2.3 1-13-10

FDEP Biology Laboratory - Bioassay Parameter Sheet

LIMS Sample # 1503613 Test # 2 of 2

Test Species:

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

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

Concentration	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☑ µmhos ☐ mmhos	Salinity* (ppth)
Control	A	0 hr	7.5	24.0	7.2	299	
	B	24 hr	8.0	25.0	7.4	304	
	A	48 hr BR	8.1	25.3	7.6	300	
	A	48 hr AR	8.1	24.1	7.6	291	
	B	72 hr	7.9	25.3	6.2	306	
	A	96 hr	8.0	25.3	7.3	316	
6.25%	A	0 hr	7.5	24.0	7.2	367	
	B	24 hr	7.9	25.1	7.4	365	
	A	48 hr BR	8.0	25.4	7.6	372	
	A	48 hr AR	8.0	24.1	7.6	349	
	B	72 hr	7.8	25.3	6.3	361	
	A	96 hr	7.9	25.1	7.7	373	
12.5%	A	0 hr	7.5	24.0	7.3	415	
	B	24 hr	7.9	25.0	7.3	418	
	A	48 hr BR	8.0	25.6	7.7	420	
	A	48 hr AR	8.0	24.2	7.7	400	
	B	72 hr	7.7	25.5	6.4	431	
	A	96 hr	7.8	25.1	7.0	437	
25%	A	0 hr	7.5	24.0	7.2	498	
	B	24 hr	7.9	24.9	7.3	501	
	A	48 hr BR	7.9	25.6	7.7	509	
	A	48 hr AR	7.9	24.2	7.7	497	
	B	72 hr	7.7	25.4	6.4	519	
	A	96 hr	7.8	25.0	6.9	532	
50%	A	0 hr	7.4	24.0	7.2	717	
	B	24 hr	7.8	24.9	7.3	711	
	A	48 hr BR	7.9	25.4	7.6	712	
	A	48 hr AR	7.9	24.3	7.6	698	
	B	72 hr	7.7	25.2	6.5	721	
	A	96 hr	7.7	24.9	7.0	746	
100%	A	0 hr	7.4	24.0	7.5	1140	
	B	24 hr	7.9	25.0	7.3	1114	
	A	48 hr BR	7.9	25.3	7.6	1124	
	A	48 hr AR	8.1	24.5	7.6	1102	
	B	72 hr	7.7	25.6	6.7	1147	
	A	96 hr	7.7	25.0	7.0	1155	
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
		0 hr					
		24 hr					
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

*Measure/ record salinity for marine tests

Comments:

Measured By:
0 hr: BA
24 hr: AP
48 hr BR: AP/CR
48 hr AR: CR/AP
72 hr: AP/CR
96 hr: mf

Test ID: Pebble Creek Village WWTF Dates: 5.14.13 - 5.18.13

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: 5-20-13 AP

V 1.3 2/15/13 MF

PAGE

Appendix F.
Standard Reference Toxicant Data

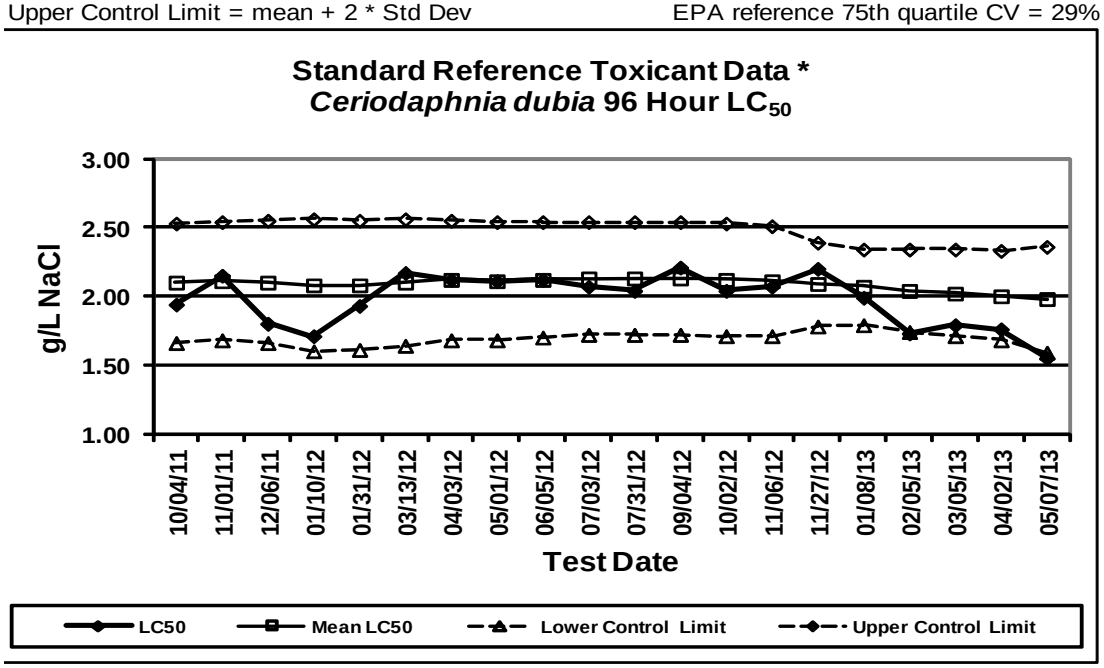
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Ceriodaphnia dubia (water flea) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
10/04/11	1.94	2.10	0.22	1.66	2.53
11/01/11	2.15	2.11	0.22	1.68	2.54
12/06/11	1.80	2.10	0.22	1.66	2.55
01/10/12	1.71	2.08	0.24	1.60	2.56
01/31/12	1.93	2.08	0.24	1.61	2.55
03/13/12	2.17	2.10	0.23	1.64	2.56
04/03/12	2.12	2.12	0.22	1.68	2.55
05/01/12	2.11	2.11	0.22	1.68	2.54
06/05/12	2.12	2.12	0.21	1.70	2.54
07/03/12	2.07	2.13	0.21	1.72	2.54
07/31/12	2.04	2.13	0.20	1.72	2.54
09/04/12	2.21	2.13	0.21	1.72	2.54
10/02/12	2.04	2.12	0.20	1.71	2.53
11/06/12	2.07	2.11	0.20	1.71	2.51
11/27/12	2.20	2.09	0.15	1.78	2.39
01/08/13	1.99	2.07	0.14	1.79	2.34
02/05/13	1.73	2.04	0.15	1.74	2.34
03/05/13	1.79	2.02	0.16	1.71	2.34
04/02/13	1.76	2.00	0.16	1.68	2.33
05/07/13	1.55	1.98	0.19	1.59	2.36

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

CV = 9.63
EPA reference 75th quartile CV = 29%



FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☒ renewal

Test Page 1 of 2

Diluent/ Batch #: MHWCD 14-22-13 **Organism Batch:** 5-7-13 **Test Beginning:** Date: 5-7-13 Time: 1000

Toxicant/ Batch#: NaCl 4/45-7-13 Age: <24hr **Test Ending:** Date: 5-11-13 Time: 0950

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	ITW
Alkalinity (mg/L as $CaCO_3$):	76	TA06_08	ITW
Hardness (mg.L as $CaCO_3$):	95	TA06_09	ITW
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos (mmhos)	0.317	TA06_25	MF
Salinity (ppth):		TA06_25	

Food:	Batch
☑ YCT	4-3-13
☑ *P. subcapitata*	1-18-13
☐ Artemia Lot #	

Artemia Batch:

0 hr:	
24 hr:	
48 hr:	
72 hr:	

Chamber size: 30 mL

Test volume: 20 mL per replicate

Concentrations prepared by: MF

Test Incubated in: Incubator # 3 Waterbath # ____ Temperature Range °C:(if used)

Incubator # 3 min 25.6 max 27.5 mean —

Light Intensity: 50-100 Ft. candles

Waterbath # ___ min.____ max.____ mean____

Photoperiod: 16 hours Light / 8 hours dark

Room B246 min. 24.9 max 25.3 mean —

Feeding: √ as needed

☑	Before test
☐	24 hr
☑	48 hr
☐	72 hr

all species 2 hrs prior to test

mysids daily

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

H. azteca 0 hr and 48 hr

Concentration µg/L mg/L (g/L)	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	1	5	5	5	5	5	5
	B	2	5	5	5	5	5	5
	C	3	5	5	5	5	5	5
	D	4	5	5	5	5	5	5
1.5	A	5	5	5	5	5	5	4 1D
	B	6	5	5	5	5	5	2 3D
	C	7	5	5	5	5	5	3 2D
	D	8	5	5	5	5	5	2 3D
2.0	A	9	5	5	MF 5 4D	4	4	0 4D
	B	10	5	5	5	5	5	2 3D
	C	11	5	5	5	5	5	1 4D
	D	12	5	5	5 4D	4	4	0 4D
2.5	A	13	5	3 2D	2 1D	MF 2	0 2D	
	B	14	5	2 3D	0 2D	—	—	
	C	15	5	2 3D	2	MF 2	0 2D	
	D	16	5	1 4D	0 1D	—	MF	
3.0	A	17	5	0 5D				
	B	18	5	0 5D				
	C	19	5	0 5D				
	D	20	5	0 5D				
4.0	A	21	5	0 5D				
	B	22	5	0 5D				
	C	23	5	0 5D				
	D	24	5	0 5D				
Organisms loaded by: MF	Checked by:	MF	MF	MF	MF	MF	MF	

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

Loading Verified by: CR AR = after renewal

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

Comments: Number 25 means difference from 5 is dead or missing, presumed dead MF 5-8-13

Investigators' Signatures

Marshall Faircloth

Cassidy Reichert

Thomas Watt

Tiffanie Pennington

Reviewer: Kristy Nelson

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: —	—	—
96 hour: 1.55	1.35	1.79

Revised 7/15/2008 mf

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

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

Test Page 2 of 2

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

Test Beginning: Date: 5-7-13 Time: 1000
Test Ending: Date: 5-11-13 Time: 0950

Test Type: ☐ non-renewal ☐ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L (g/L)	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	M	0 hr	7.8	24.7	7.8	0.317	
		24 hr					
	A	48 hr BR	7.7	24.3	7.9	0.331	
	M	48 hr AR	7.9	25.1	8.2	0.316	
		72 hr					
	A	96 hr	8.2	24.9	8.2	0.320	
1.5	M	0 hr	7.9	24.6	8.3	3.12	
		24 hr					
	A	48 hr BR	7.7	24.2	7.7	3.20	
	M	48 hr AR	7.8	25.5	8.2	3.11	
		72 hr					
	A	96 hr	8.0	24.9	8.1	3.15	
2.0	M	0 hr	7.9	24.6	8.2	4.03	
		24 hr					
	A	48 hr BR	7.7	24.8	7.8	4.04	
	M	48 hr AR	7.8	25.8	8.1	4.12	
		72 hr					
	A	96 hr	8.1	24.8	8.0	4.13	
2.5	M	0 hr	7.9	24.6	8.2	4.88	
		24 hr					
	A	48 hr BR	7.7	25.0	7.8	4.89	
	M	48 hr AR	7.8	25.7	8.0	4.78	
	A	72 hr	7.6	24.6	7.7	4.60	
		96 hr					
3.0	M	0 hr	7.9	24.5	8.2	5.68	
	A	24 hr	8.1	24.4	7.7	5.54	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					
4.0	M	0 hr	7.9	24.3	8.1	7.38	
	A	24 hr	8.1	24.3	7.7	7.22	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Marshall Faircloth
Cassidy Reichert
Alan Pennington
Reviewed By:

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

Measure/record salinity for marine tests

Comments:

00030

PAGE

Revised 07/15/2008 MF

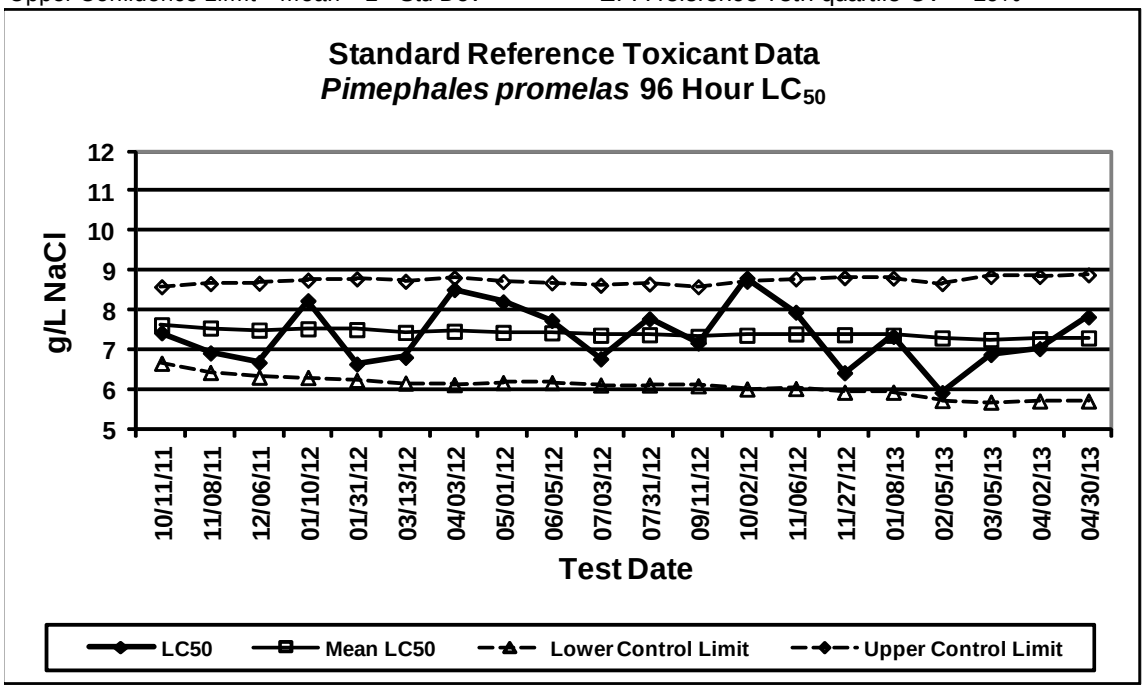
Florida Department of Environmental Protection
Bureau of Laboratories

Standard Reference Toxicant (SRT) Test Data - 96-hour Acute Toxicity
Pimephales promelas (fathead minnow) - Sodium Chloride (NaCl)

Date	LC50	Mean LC50	Std Dev	Lower Control Limit	Upper Control Limit
10/11/11	7.42	7.62	0.48	6.65	8.58
11/08/11	6.91	7.54	0.56	6.42	8.66
12/06/11	6.67	7.49	0.59	6.3	8.67
01/10/12	8.23	7.52	0.61	6.29	8.75
01/31/12	6.63	7.5	0.64	6.22	8.78
03/13/12	6.80	7.43	0.64	6.15	8.72
04/03/12	8.51	7.46	0.68	6.11	8.81
05/01/12	8.20	7.43	0.64	6.16	8.71
06/05/12	7.73	7.42	0.63	6.16	8.68
07/03/12	6.76	7.36	0.63	6.1	8.62
07/31/12	7.77	7.37	0.64	6.1	8.65
09/11/12	7.16	7.33	0.62	6.08	8.58
10/02/12	8.80	7.36	0.68	6	8.72
11/06/12	7.94	7.39	0.69	6.01	8.78
11/27/12	6.41	7.37	0.72	5.92	8.81
01/08/13	7.33	7.36	0.72	5.92	8.8
02/05/13	5.91	7.29	0.79	5.71	8.66
03/05/13	6.87	7.25	0.79	5.67	8.84
04/02/13	7.02	7.27	0.78	5.7	8.84
04/30/13	7.82	7.29	0.79	5.7	8.88

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

CV = 10.87
EPA reference 75th quartile CV = 19%



FDEP Biology Laboratory - Acute SRT Bench Sheet

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

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

Test Type: ☐ non-renewal ☑ renewal

Test Page 1 of 2

Diluent/ Batch #: MHW 14.25.13 **Organism Batch:** 430.13 **Test Beginning:** Date: 4.30.13 Time: 1430
Toxicant/ Batch#: 100 g/L NaCl 4.30.13 Age: 7 days **Test Ending:** Date: 5.4.13 Time: 1115

Water Quality Parameters:	Diluent	SOP	Initials
Total Residual Cl_2 (mg/L):	<0.03	TA06_22	CR
Alkalinity (mg/L as $CaCO_3$):	73	TA06_08	AP
Hardness (mg.L as $CaCO_3$):	79	TA06_09	AP
Total Ammonia (mg/L as N):	<0.017	TA06_17	MF
Conductivity: µmhos mmhos	0.290	TA06_25	BA
Salinity (ppth):		TA06_25	

Food:	Batch
☐ YCT	
☐ *P. subcapitata*	
☑ Artemia Lot #	03817

Artemia Batch:
0 hr: 30.13
24 hr:
48 hr: 37.13
72 hr:

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

Concentrations prepared by: BA
Test Incubated in: Incubator # 2 Waterbath # ____
Temperature Range °C:(if used)
Incubator # 2 min 25.1 max 26.1 mean —
Waterbath # ___ min ____ max ____ mean ____
Light Intensity: 50-100 Ft. candles
Photoperiod: 16 hours Light / 8 hours dark
Room B246 min 24.6 max 25.5 mean —

Feeding: √ as needed

☑	Before test
☐	24 hr
☑	48 hr
☐	72 hr

all species 2 hrs prior to test
mysids daily
all species except *H. azteca* 2 hr prior to renewal
H. azteca 0 hr and 48 hr

Concentration µg/L mg/L g/L	Replicate	Chamber #	Test Hour 0 hr	24 hr	48 hr BR	48 hr AR	72 hr	96 hr
Control	A	H2	10	10	10	10	10	10
	B	H1	10	10	10	10	10	10
H	A	H4	10	10	10	10	10	10
	B	H3	10	10	9 ID	9	9	9
5	A	H6	10	10	9 ID	9	8 ID	8
	B	H5	10	10	10	10	10	10
6	A	H8	10	10	9 ID	9	9	9
	B	H7	10	10	10	10	8 2D	8
7	A	~~AP H9~~ H10	10	9 ID	9	9	9	9
	B	H9	10	10	9 ID	9	8 ID	8
10	A	H12	10	0 10D				
	B	H11	10	0 10D				
Organisms loaded by: CR	Checked by:		AP	AP	CR	CR	CR	AP

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

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

Investigators' Signatures
Bruce Neyland
Adrienne Pennington
Cassidy Peacock
Mark Faircloth

Reviewer: Liz Mehler

Comments:

Method: TSK

Statistics: LC50	95% confidence intervals Lower	Upper
48 hour: —	—	—
96 hour: 7.82	7.34	8.33

00025

PAGE

Revised 7/15/2008 mf

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

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

Test Page 2 of 2

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

Test Beginning: Date: 4.30.13 Time: 1430
Test Ending: Date: 5.4.13 Time: 1115

Test Type: ☐ non-renewal ☑ renewal

hr = hour AR = after renewal BR = before renewal

Concentration µg/L mg/L %	Replicate	Test Hour	pH (SU)	Temperature (°C)	Dissolved Oxygen (mg/L)	Conductivity ☐ µmhos ☑ mmhos	Salinity (ppth)
Control	A	0 hr	7.6	24.6	7.2	0.290	
	B	24 hr	7.4	25.2	7.2	0.289	
	A	48 hr BR	7.8	25.2	8.1	0.307	
	A	48 hr AR	7.7	24.5	7.4	0.307	
	B	72 hr	7.4	24.8	7.4	0.306	
	A	96 hr	7.7	24.7	7.9	0.307	
4	A	0 hr	7.6	24.9	7.4	7.59	
	B	24 hr	7.5	24.8	7.1	7.32	
	A	48 hr BR	7.9	25.7	8.1	7.77	
	A	48 hr AR	7.7	25.4	7.5	7.57	
	B	72 hr	7.4	25.1	7.2	7.41	
	A	96 hr	7.8	24.8	7.8	7.56	
5	A	0 hr	7.6	24.8	7.2	9.53	
	B	24 hr	7.5	24.7	7.1	9.36	
	A	48 hr BR	7.9	26.1	8.2	9.89	
	A	48 hr AR	7.8	24.4	7.5	9.52	
	B	72 hr	7.5	24.9	7.2	9.37	
	A	96 hr	7.7	24.7	7.7	9.71	
6	A	0 hr	7.6	24.8	7.1	11.1	
	B	24 hr	7.5	24.6	7.1	11.0	
	A	48 hr BR	7.9	25.5	8.2	11.3	
	A	48 hr AR	7.8	24.4	7.3	11.1	
	B	72 hr	7.6	24.7	7.4	11.0	
	A	96 hr	7.7	24.7	7.4	11.5	
7	A	0 hr	7.6	24.8	7.3	12.7	
	B	24 hr	7.6	24.8	7.1	12.6	
	A	48 hr BR	7.9	26.0	8.2	12.9	
	A	48 hr AR	7.8	24.5	7.3	12.8	
	B	72 hr	7.5	24.8	7.7	12.5	
	A	96 hr	7.7	24.8	7.5	13.0	
10	A	0 hr	7.7	24.9	7.2	17.9	
	B	24 hr	7.6	24.8	7.0	17.8	
		48 hr BR					
		48 hr AR					
		72 hr					
		96 hr					

Investigators Signatures
Bec Abshire
Adrienne Bennington
Cassidy Kerchner
Mary Kelly Findley

Reviewed By: Liz Miller

Measured by:
0 hr: BA
24 hr: AP/CR
48 hr BR: AP/CR
48 hr AR: AP/CR
72 hr: AP/CR
96 hr: AP

Measure/record salinity for marine tests

Comments:

00026

PAGE

Revised 07/15/2008 MF

Appendix G.
Organism Receipts

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: ~~FDEP~~ 4/29/13

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi	150 Ac	12 DAYS	CL FM130417	25	7.8	80
Pimephales promelas	250 Ac	7 DAYS	FM130422	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: PM

Shipped Via: Fed Ex

Notes: _____

Thank you for your order.

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

MARINCO BIOASSAY LABORATORY
The Aquatic Toxicology Specialists

NELAP Certification # E84191

Shipment Record

State of Florida Aquaculture Certificate Number AQ0668007

Shipping Date: 5/13/13

Ship to: FDEP

P.O. No: _____

Species	Quantity	Age	Brood/Lot Number	Temp. (°C)	pH (S.U.)	Salinity (‰)
Mysidopsis bahia						
Menidia beryllina						
						Hardness mg/L
Cyprinella leedsi						
Pimephales promelas	150 ac	7 DAYS	FM 130506	25	7.8	80
Ceriodaphnia dubia						
Daphnia magna						
YCT						
P. subcapitata						

Packed by: JM

Shipped Via: Fed Ex

Notes: _____

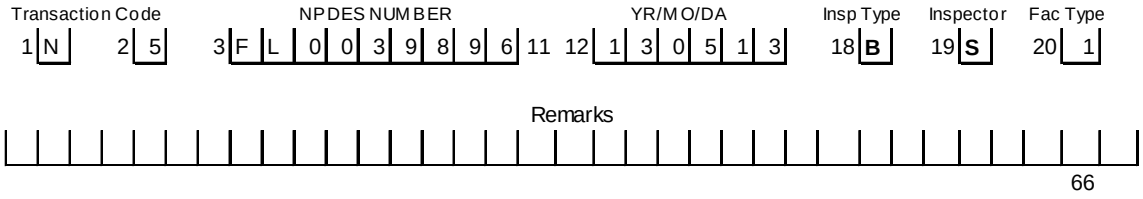
Thank you for your order.

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EPA End Sheet

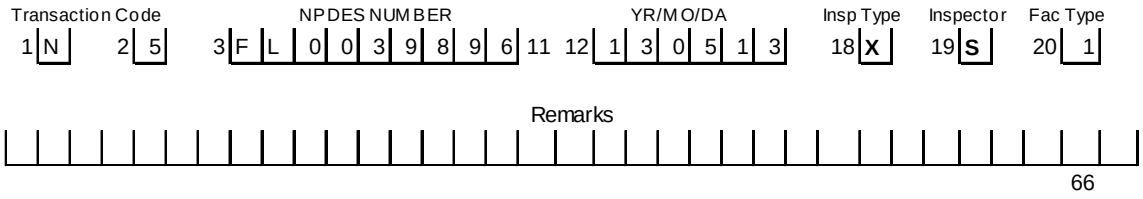
The Bioassay of Pebble Creek AWWTF effluent sampled on May 13, 2013. NPDES #FL0039896.

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



The Priority Pollutants Analysis of Pebble Creek AWWTF effluent sampled on May 13, 2013. NPDES #FL0039896.

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



Biological Analyses of Pebble Creek AWWTF effluent sampled on May 13, 2013. NPDES #FL0039896.

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

