

Effluent Quality Assessment

Paul Calcaterra Farms

Okeechobee County

NPDES #FL0174696

Sampled August 27, 2013

November 2013

Biology Section
Bureau of Laboratories
Division of Environmental Assessment and Restoration
2013 FDEP Bureau of Labs Quality Manual
NELAC Certification No. E31780

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Paul Calcaterra Farms, 33285 U. S. Highway 441 North, Okeechobee, Okeechobee County, Florida, 34972. NPDES #FL0174696.

Facility Overview

Paul Calcaterra Farms is an alligator farm in existence since 1986 under license by the Florida Fish and Wildlife Conservation Commission. 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 and biological and chemical analyses were collected on August 27, 2013. All samples were collected from the EFF-01 NPDES sampling point for Outfall R-001 by Terry Davis and Harold Moesch (FDEP Southeast District) following DEP-SOP-001/01 FS 2400 Wastewater Sampling (see Appendix B).

The 48-hour acute screening 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 B).

Results

Chemistry Results (See Table 1 and Appendix C)

- The total ammonia concentration in the grab sample collected and preserved for chemical analysis was 2 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 dissolved oxygen concentration (4.9 mg/L) was less than the Class III Freshwater Criterion in effect (≥ 5.0 mg/L (62-302.530 (30), F.A.C.), when the sample was collected. However, this was not an exceedance of Criterion since the facility was not discharging at the time of sampling and has not discharged to surface waters in the past year.
- Carbonaceous biochemical oxygen demand (CBOD) and iron were detected in the effluent at levels that comply with Class III Freshwater Quality Criteria (62-302.530, F.A.C.). Arsenic, chromium, copper, lead, selenium and zinc were detected between the laboratory method detection limits (MDL) and practical quantitation limits (PQL).
- Fecal coliforms detected in the effluent sample exceeded the Class III Freshwater Criterion but did not violate permit limits.

Algal Growth Potential (See Table 2 and Appendix C)

- The effluent Algal Growth Potential (AGP) was 83.9 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 C)

- Tests were performed August 28 - 30, 2013.

Ceriodaphnia dubia 48-hour acute screening bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 48 hours
Pimephales promelas 48-hour acute screening bioassay –	LC_{50} > 100%, 0%* mortality in 100% sample at 48 hours

*NOTE: In a 48 hour acute screening test of 100% effluent, mortality of <20% provides confidence that the effluent meets the acute toxicity criterion of Florida's Surface Water Quality Standards (Rule 62-302.500 (1) (a) 4, F.A.C.). Mortality between 20-50% indicates low to moderate levels of toxicity, and further action may be required. Mortality of >50% indicates that the effluent fails to meet the minimum requirement to discharge to waters of the state (Rule 62-4.244(3) (a), F.A.C.).

- The bioassay samples were not acutely toxic to the test organisms.

Conclusion

The effluent sample collected from the EFF-01 NPDES sampling point for this facility on August 27, 2013, was not acutely toxic to either test species during the 48-hour acute screening bioassays. The AGP result is more than an order of magnitude less than the predicted AGP values based on the effluent nutrient concentrations, suggesting that algal growth inhibition may be an issue. Although dissolved oxygen and fecal coliforms exceeded applicable surface water quality criterion, due to the lack of discharge to surface waters, a violation did not occur. The fecal coliform value also did not exceed the permitted limit. Effluent water quality samples collected on August 27, 2013, did not exceed any other applicable water quality standards or violate any permit conditions.

For additional information concerning this sampling event, including bioassay bench sheets and SRT data, please contact Bruce.Alexander@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.

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

Paul Calcaterra Farms	Class III Criteria	Effluent Limits	Calcaterra I
Organic Constituents (µg/L)			
None Detected			None Detected
Metals (µg/L unless otherwise noted)			
Aluminum			
Arsenic	≤ 50		0.35 I
Cadmium	≤ 0.363 b		0.050 U
Calcium (mg/L)			33.6
Chromium, Total	≤ 119.2 b ψ		0.83 I
Copper	≤ 13.1 b		0.55 I
Iron	≤ 1,000		130
Lead	≤ 5.27 b		0.27 I
Magnesium (mg/L)			15.7
Mercury	≤ 0.012		
Nickel	≤ 72.9 b		0.25 U
Selenium	≤ 5.0		0.37 I
Silver	≤ 0.07		0.025 U
Sodium			27.9
Zinc	≤ 167.6 b		5.5 I
Nutrients (mg/L)			
Ortho-phosphate			
Total Phosphorus			1.4
Total Ammonia			2
Un-ionized Ammonia	≤ 0.02 s		< 0.02 c
Total Ammonia			1.73 £
Nitrate and Nitrite			0.004 U
Total Kjeldahl Nitrogen			4.7
Organic Nitrogen			2.7 c
Total Nitrogen			4.72 c
Total Organic Carbon			25
General Physical and Chemical Parameters			
Dissolved Oxygen (mg/L)	≥ 5.0		4.92
pH (SU)	6.0 - 8.5 s	6.0 - 8.5 s	6.67
Specific Conductance (µmhos/cm)	≤ 1,275		398
Temperature (°C)			29.5
Salinity			≤ 0.18 c
Sample Depth (m)			0.3
Total Residual Chlorine (mg/L)	≤ 0.01		< 0.03 UQ£
Chlorophyll *a* (µg/L) - Corrected			55
Phaeophytin (µg/L)			28
Total Suspended Solids (mg/L)			15
Color (true, PCU)			140
Alkalinity (mg CaCO3/L)			106
CBOD, 5 day (mg/L), N - inhibited			3.7 AJ
Chloride (mg/L)			44
Fluoride (mg/L)	≤ 10.0		0.22
Sulfate (mg/L)			32
Flow (MGD) Surface Discharge 9/12-8/13		≤ 0.56	0
Hardness (mg $CaCO_3$)			148.5 c
Microbiology (Number of colony forming units/100ml)			
Fecal Coliforms ¥	≤ 400s #	≤ 800 s	480

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

b - Value is calculated based on hardness
c - Value is calculated
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 Flowers Laboratory Port St. Lucie
- 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
ψ - Class III Freshwater Water Quality Criterion (62-302.530(19)(a), F.A.C.) for chromium-III

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.

Paul Calcaterra Farms				
Location	**AGP (measured)**	**Predicted AGP (TSIN) ± 20%**	**Predicted AGP (TN) ± 20%**	**Inorganic N:P ratio ***	**Total N:P ratio**
Discharge Structure	83.9	76.2 ± 15.2	178.8 ± 35.8	-	3.4

* Ortho-phosphate was not measured, therefore, an inorganic nutrient ratio was not determined.

Appendix A
Facility Summary

State of Florida
Department of Environmental Protection
Facility Introduction & Summary

PART I: Information gathered prior to sampling event	
Prepared By: Terry Davis	Contact Number: (772) 467-5557
Facility Name (as it appears on permit): Paul Calcaterra Farms	Former Names:
NPDES Permit Number: FL0174696-002-IW8C	Permit Expiration Date: July 9, 2013
Physical Address: 33285 U.S. Highway 441 North, Okeechobee, FL 34972	
District: Southeast	County: Okeechobee
Function of Facility: Alligator Farm	
Facility Type: Industrial Wastewater	Permitted Capacity (MGD): 0.56 MGD max. water withdrawal allocation by SJWMD
Mean Flow for previous 12 months for all EXTERNAL outfalls listed in permit (list date range including months): All DMR's for last 12 months are "No Discharge" for D-001	
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): EFF-01 at R-001	
Description of Permitted Outfall(s): D-001 (SWD-01) at spreader swale to wetland, EFF-01 at R-001 when not discharging at D-001, .	
Description of Treatment Process (if multiple discharge points, include a detailed map or diagram of facility): D-001 and R-001 Wastewater from raising pens and nurseries is discharged to "a central facultative or aerobic-anaerobic treatment pond, and natural treatment in subsequent aerobic breeding ponds". Discharge from the last breeding pond is authorized after rainfall events exceeding the 10 year/24 hour storm qualifying event. The discharge is conveyed to a swale with multiple discharge points to adjacent wetland before conveyance to a roadside ditch, which discharges to Boggy Creek, a tributary of Fort Drum Creek.	

PART I: Continued										
List current Effluent Limits of Outfall(s) to be Sampled: This should include any AO or CO limits the facility may be under (Leave cell blank if not applicable)										
			Effluent Limitations				Monitoring Requirements			
Parameter	Units	Max/Min	Annual Average	Monthly Average	Weekly Average	Single Sample	Monitoring Frequency	Sample Type	Monitoring Location Site Number	Notes
pH	s.u.	8.5/6.5					Monthly when discharging	Grab	D-001, SWD-01	
Coliform, fecal -	#/100 ML			800 Day Max			Monthly when discharging	Grab	D-001, SWD-01	
Flow	MGD	.56 max					Daily	Pump logs	R-001, INW-01	

PART I: Continued

Receiving Waters:	Classification (indicate whether fresh or marine):
See above	D-001 Class III Fresh, R-001 Class G-II groundwater

Toxicity Test Requirements (routine and/or additional test language, test species, salinity adjustment, etc.):
None

Administrative or Consent Orders (date executed, specific requirements, interim limit dates-if applicable, etc.):
None

Facility Mixing Zone Details (if applicable): None

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

Date	Parameter and Units	Limit	Result
None			

Describe previous FYI and WQBEL study:
FYI – August, 2008

Describe previous or current Enforcement Actions (including WLs):
None

Describe any violations or problems noted in previous inspection:
Flow meters not calibrated annually

Discuss whether DMR trends within previous five years are improving or declining:
No trends – only discharge in 2004

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: August 27, 2013	Sampler(s): Terry Davis & Harold Moesch
Temperature (Deg C):29.51	pH (SU):6.67
Dissolved Oxygen (% Sat):4.92	Conductivity (umhos/cm): 398
Total Residual Chlorine (mg/L): N/A	Total Residual Chlorine - after Disinfection (mg/L): N/A
Method of Chlorination: Not chlorinated	Method of De-chlorination:
Flow During Sample Collection for each outfall(MGD): No flow	
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): No flow	
Describe Discharge during Sampling Event: ☐ Continuous ☐ Intermittent ☐ Seasonal x Rainfall Dependent Other, please specify No discharge	
Describe any conditions, difficulties or abnormal events that occurred during the sample collection and any other additional comments here: Sampled by "direct deposit" method from discharge structure.	

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.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. A 25% inhibition concentration (IC25) is the effluent concentration causing a 25% reduction in a biological response such as biomass or reproduction when compared to a control population. An IC25 of less than 100% in a chronic test may constitute exceedances of 62-302.530(20), 62-302.530(61) and/or a 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 C
Chemical Analyses of Effluent

Date Sampled	Field ID	Analysis	Component	Results	Qualifier	Units	MDL	PQL
8/27/2013 11:00	CALCATERRA 1	AGP/LN	Algal Growth Potential	83.9		mg DryWt/L	0.3	0.9
8/27/2013 11:00	CALCATERRA 1	Chlorophyll/Grain Size/BOD	Biochemical Oxygen Demand-5 Day,N-Inhib	3.7	AJ	mg/L	0.2	2
8/27/2013 11:00	CALCATERRA 1	Chlorophyll/Grain Size/BOD	Phaeophytin-a	28		ug/L	0.96	2.9
8/27/2013 11:00	CALCATERRA 1	Chlorophyll/Grain Size/BOD	Chlorophyll-a, Corrected	55		ug/L	1.3	4.1
8/27/2013 11:00	CALCATERRA 1	Overflow	Fecal Coliforms-Membrane Filter	480		cfu/100 mL	10	
8/27/2013 11:00	CALCATERRA 1	Toxicology	Bioassay-Acute-Screen-FW-C.dubia, LC50	100	L	LC50		
8/27/2013 11:00	CALCATERRA 1	Toxicology	Bioassay-Acute-Screen-FW-Fish, LC50	100	L	LC50		
8/27/2013 11:00	CALCATERRA 1	Metals	Sodium	27.9		mg/L	0.5	2
8/27/2013 11:00	CALCATERRA 1	Metals	Cadmium	0.050	U	ug/L	0.05	0.2
8/27/2013 11:00	CALCATERRA 1	Metals	Arsenic	0.35	I	ug/L	0.25	1
8/27/2013 11:00	CALCATERRA 1	Metals	Magnesium	15.7		mg/L	0.04	0.16
8/27/2013 11:00	CALCATERRA 1	Metals	Silver	0.025	U	ug/L	0.025	0.1
8/27/2013 11:00	CALCATERRA 1	Metals	Copper	0.55	I	ug/L	0.5	1
8/27/2013 11:00	CALCATERRA 1	Metals	Selenium	0.37	I	ug/L	0.2	0.8
8/27/2013 11:00	CALCATERRA 1	Metals	Nickel	0.25	U	ug/L	0.25	1
8/27/2013 11:00	CALCATERRA 1	Metals	Iron	130		ug/L	30	120
8/27/2013 11:00	CALCATERRA 1	Metals	Calcium	33.6		mg/L	0.075	0.3
8/27/2013 11:00	CALCATERRA 1	Metals	Zinc	5.5	I	ug/L	5	20
8/27/2013 11:00	CALCATERRA 1	Metals	Lead	0.27	I	ug/L	0.2	0.8
8/27/2013 11:00	CALCATERRA 1	Metals	Potassium	4.6		mg/L	0.3	1.2
8/27/2013 11:00	CALCATERRA 1	Metals	Chromium	0.83	I	ug/L	0.3	1.2
8/27/2013 11:00	CALCATERRA 1	Nutrients	Sulfate	32		mg SO4/L	0.2	0.5
8/27/2013 11:00	CALCATERRA 1	Nutrients	Chloride	44		mg Cl/L	0.2	0.5
8/27/2013 11:00	CALCATERRA 1	Nutrients	NO2NO3-N	0.004	U	mg N/L	0.004	0.01
8/27/2013 11:00	CALCATERRA 1	Nutrients	Color (true)	140		PCU	2.5	6
8/27/2013 11:00	CALCATERRA 1	Nutrients	Fluoride	0.22		mg F/L	0.035	0.1
8/27/2013 11:00	CALCATERRA 1	Nutrients	TSS	15		mg/L	2	10
8/27/2013 11:00	CALCATERRA 1	Nutrients	Total-P	1.4		mg P/L	0.025	0.25
8/27/2013 11:00	CALCATERRA 1	Nutrients	Kjeldahl Nitrogen	4.7		mg N/L	0.16	0.4
8/27/2013 11:00	CALCATERRA 1	Nutrients	Organic Carbon	25		mg C/L	0.5	1
8/27/2013 11:00	CALCATERRA 1	Nutrients	Alkalinity	106		mg CaCO3/L	0.65	2.5
8/27/2013 11:00	CALCATERRA 1	Nutrients	Ammonia-N	2		mg N/L	0.1	0.25
8/27/2013 11:00	CALCATERRA 1	Pesticides	Butylate	0.020	U	ug/L	0.02	0.079
8/27/2013 11:00	CALCATERRA 1	Pesticides	Prometryn	0.020	U	ug/L	0.02	0.079

Date Sampled	Field ID	Analysis	Component	Results	Qualifier	Units	MDL	PQL
8/27/2013 11:00	CALCATERRA 1	Pesticides	Chlorpyrifos Ethyl	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Bromacil	0.039	UJ	ug/L	0.039	0.16
8/27/2013 11:00	CALCATERRA 1	Pesticides	Simazine	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Metolachlor	0.059	U	ug/L	0.059	0.24
8/27/2013 11:00	CALCATERRA 1	Pesticides	Malathion	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Ethion	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Phorate	0.0049	U	ug/L	0.0049	0.02
8/27/2013 11:00	CALCATERRA 1	Pesticides	Metalaxyl	0.039	U	ug/L	0.039	0.16
8/27/2013 11:00	CALCATERRA 1	Pesticides	Fonofos	0.0098	UJ	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Parathion Ethyl	0.020	UJ	ug/L	0.02	0.079
8/27/2013 11:00	CALCATERRA 1	Pesticides	Hexazinone	0.029	U	ug/L	0.029	0.12
8/27/2013 11:00	CALCATERRA 1	Pesticides	Ethoprop	0.0049	U	ug/L	0.0049	0.02
8/27/2013 11:00	CALCATERRA 1	Pesticides	Chlorpyrifos Methyl	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Parathion Methyl	0.0098	UJ	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Norflurazon	0.029	U	ug/L	0.029	0.12
8/27/2013 11:00	CALCATERRA 1	Pesticides	Azinphos Methyl	0.020	U	ug/L	0.02	0.079
8/27/2013 11:00	CALCATERRA 1	Pesticides	Naled	0.039	UJ	ug/L	0.039	0.16
8/27/2013 11:00	CALCATERRA 1	Pesticides	Mevinphos	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Metribuzin	0.020	U	ug/L	0.02	0.079
8/27/2013 11:00	CALCATERRA 1	Pesticides	Atrazine	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Alachlor	0.059	U	ug/L	0.059	0.24
8/27/2013 11:00	CALCATERRA 1	Pesticides	Diazinon	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Ametryn	0.0098	U	ug/L	0.0098	0.039
8/27/2013 11:00	CALCATERRA 1	Pesticides	Fenamiphos	0.029	U	ug/L	0.029	0.12
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,4,6-Trichlorophenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	4-Chlorophenyl phenyl ether	1.9	U	ug/L	1.9	7.5
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzo(b)fluoranthene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Chrysene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Hexachloroethane	2.8	U	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	N-Nitrosodimethylamine	1.9	U	ug/L	1.9	7.5
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,4-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2-Nitrophenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzo(k)fluoranthene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Butyl benzyl phthalate	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Di-n-octyl phthalate	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Phenanthrene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2-Methyl-4,6-dinitrophenol	2.8	U	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Hexachlorobutadiene	2.8	U	ug/L	2.8	11

Date Sampled	Field ID	Analysis	Component	Results	Qualifier	Units	MDL	PQL
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Isophorone	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,4-Dichlorophenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Acenaphthene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzidine	94	U	ug/L	94	380
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Dibenzo(a,h)anthracene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Hexachlorocyclopentadiene	2.8	UJ	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,4-Dinitrophenol	14	UJ	ug/L	14	57
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2-Chlorophenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	4-Nitrophenol	14	U	ug/L	14	57
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Acenaphthylene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzo(a)anthracene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzo(g,h,i)perylene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Bis(2-chloroethyl)ether	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	N-Nitrosodiphenylamine/ Diphenylamine	2.8	U	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Pentachlorophenol	2.8	U	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Phenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	1,2,4-Trichlorobenzene	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,4-Dimethylphenol	9.4	U	ug/L	9.4	38
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	3,3'-Dichlorobenzidine	38	U	ug/L	38	150
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	4-Chloro-3-methylphenol	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Anthracene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Bis(2-chloroethoxy)methane	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Fluorene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Hexachlorobenzene	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	N-Nitrosodi-n-propylamine	1.9	U	ug/L	1.9	7.5
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Naphthalene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Nitrobenzene	1.9	U	ug/L	1.9	7.5
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2-Chloronaphthalene	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Benzo(a)pyrene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Bis(2-ethylhexyl)phthalate	1.9	U	ug/L	1.9	7.5
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	2,6-Dinitrotoluene	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	4-Bromophenyl phenyl ether	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Bis(2-chloroisopropyl)ether	2.8	U	ug/L	2.8	11
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Di-n-butyl phthalate	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Diethyl phthalate	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Dimethyl phthalate	0.94	U	ug/L	0.94	3.8
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Fluoranthene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Indeno(1,2,3-cd)pyrene	0.19	U	ug/L	0.19	0.75

Date Sampled	Field ID	Analysis	Component	Results	Qualifier	Units	MDL	PQL
8/27/2013 11:00	CALCATERRA 1	Priority Organic Pollutants	Pyrene	0.19	U	ug/L	0.19	0.75
8/27/2013 11:00	CALCATERRA 1	Field Parameter	Sample Depth	0.3		m		
8/27/2013 11:00	CALCATERRA 1	Field Parameter	Dissolved Oxygen	4.92		mg/L		
8/27/2013 11:00	CALCATERRA 1	Field Parameter	Specific Conductance	398		umhos/cm		
8/27/2013 11:00	CALCATERRA 1	Field Parameter	Temperature	29.5		C		
8/27/2013 11:00	CALCATERRA 1	Field Parameter	pH	6.67				
8/27/2013 11:00	BOTTLE GRP A	Overflow	Fecal Coliforms-Membrane Filter	420		cfu/100 mL	10	

EPA End Sheet

The Bioassay of Paul Calcaterra Farms effluent sampled on August 27, 2013. NPDES #FL0174696.

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 F L 0 1 7 4 6 9 6 11	12 1 3 0 8 2 7	18 **B**	19 **S**	20 2

Remarks

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The Priority Pollutants Analysis of Paul Calcaterra Farms effluent sampled on August 27, 2013. NPDES #FL0174696.

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 F L 0 1 7 4 6 9 6 11	12 1 3 0 8 2 7	18 **X**	19 **S**	20 2

Remarks

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Biological Analyses Paul Calcaterra Farms effluent sampled on August 27, 2013. NPDES #FL0174696.

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 F L 0 1 7 4 6 9 6 11	12 1 3 0 8 2 7	18 **S**	19 **S**	20 2

Remarks

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