Gibson, Victoria

From: Gibson, Victoria
Sent: Thursday, December 13, 2007 3:26 PM
To: Drew, Richard; Bradburn, Rick
Subject: FW: Hydrosphere Report - part1

Attachments: Document.pdf

Document.pdf (332 KB)

Good afternoon.

Trina thought one of you might be expecting this information from Telogia.

Part 2 through 4 will follow in separate e-mails.

Vickie

Victoria Gibson, Administrative Secretary for Trina Vielhauer, Chief Bureau of Air Regulation Department of Air Resource Management victoria.gibson@dep.state.fl.us
850-921-9504 fax 850-921-9533

-----Original Message-----
From: digital sender
Sent: Thursday, December 13, 2007 3:21 PM
To: Gibson, Victoria
Subject: Hydrosphere Report - part1

Please open the attached document. This document was digitally sent to you using an HP Digital Sending device.

Gibson, Victoria

From: Gibson, Victoria
Sent: Thursday, December 13, 2007 3:27 PM
To: Drew, Richard; Bradburn, Rick
Subject: FW: Hydrosphere Report - part 2

Attachments: Document.pdf

Document.pdf (1 MB)

-----Original Message-----
From: digital sender
Sent: Thursday, December 13, 2007 3:22 PM
To: Gibson, Victoria
Subject: Hydrosphere Report - part 2

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Gibson, Victoria

From: Gibson, Victoria
Sent: Thursday, December 13, 2007 3:27 PM
To: Drew, Richard; Bradburn, Rick
Subject: FW: Hydrosphere Report - part 3

Attachments: Document.pdf

Document.pdf (998 KB)

-----Original Message-----
From: digital sender
Sent: Thursday, December 13, 2007 3:23 PM
To: Gibson, Victoria
Subject: Hydrosphere Report - part 3

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Gibson, Victoria

From: Gibson, Victoria
Sent: Thursday, December 13, 2007 3:27 PM
To: Drew, Richard; Bradburn, Rick
Subject: FW: Hydrosphere Report - part 4

Attachments: Document.pdf

Document.pdf (628 KB)

-----Original Message-----
From: digital sender
Sent: Thursday, December 13, 2007 3:23 PM
To: Gibson, Victoria
Subject: Hydrosphere Report - part 4

Please open the attached document. This document was digitally sent to you using an HP Digital Sending device.

Prepared for:
Telogia Power
c/o Severn Trent Laboratories, Inc.
2846 Industrial Plaza Drive
Tallahassee, FL 32301

Prepared by:
Hydrosphere Research

Test Location:
11842 Research Circle
Alachua, FL 32615

Contact information:
Craig Watts, Lab Director
Tel: (386) 462-7889
Fax: (386) 462-7264

Total Number of Pages:
28

Test Number:
STL-TE 07289, 07290, 07291

Toxicity Test Report

FDEP Permit No: FL0039951

Test Type: Additional 96-Hour Acute Static Renewal Definitive Toxicity Tests

Initiated: October 23, 30 & November 13, 2007

nelac

Hydrosphere Research is a NELAC/P Certified Lab

Contents

Synopsis of Bioassays for Telogia Power

To comply with the additional whole effluent biomonitoring requirements in permit number FL0039951, personnel from Telogia Power, Liberty County, Florida collected grab samples on October 21, 22, 29 & November 12, 2007. The aquatic toxicology laboratory of Hydrosphere Research in Alachua, Florida received these samples in good condition. Bioassays were initiated on October 23, 30 & November 13, 2007.

Using these samples, a series of 96-hour acute static renewal definitive bioassays were conducted with the water flea *(Ceriodaphnia dubia)*. Test concentrations were 0 (control), 6.25, 12.5, 25, 50, and 100 percent effluent for the acute static renewal bioassay tests.

The results for the acute static renewal definitive bioassays are summarized in the table below:

		% Survival			
		Grab Sample			
Test Initiated 10/23/07	% Effluent	0600	1200	1800	0150
	Control	100	100	100	100
	6.25	100	100	100	100
	12.5	100	100	100	100
	25	100	100	100	100
	50	100	100	100	100
	100	70	100	95	100
	LC_{50}	**>100%**	**>100%**	**>100%**	**>100%**
Test Initiated 10/30/07	Grab Sample 1100				
	Control	100			
	6.25	100			
	12.5	100			
	25	100			
	50	100			
	100	100			
	LC_{50}	**>100%**			
Test Initiated 11/13/07	Grab Sample 1115				
	Control	100			
	6.25	100			
	12.5	100			
	25	95			
	50	100			
	100	0			
	LC_{50}	**68.3%**			

These bioassays were initiated within 36 hours of the sample's collection time, and were acceptable tests based on control survival and test conditions.

HYDROSPHERE research

NPDES WHOLE EFFLUENT TOXICITY TESTING REPORT FORM

All blanks on this form are to be filled in. Blanks that are not used should be filled in with "N/A" or a line drawn through the blank. Please print.

Attachments: Please attach the following items to this report form and indicate with an "x" in box.

1.	All Chain-of-Custody Forms	X
2.	All Reference Toxicant Data for each Organism used in Test and Current Control Charts for each Organism	X
3.	All Raw Data (Bench Sheets) Pertaining to the Tests (i.e., all physical, chemical, and biological measurements)	X
4.	All Result Calculations	X
5.	Discharge Monitoring Reports (DMR) when Applicable	NA

Facility/industry/client name:	Telogia Power		
Permit number:	FL0039951	County:	Liberty

Consultant company name:	Hydrosphere Research	Telephone:	(386) 462-7889
Dates test(s) conducted--Begin:	10/23/07, 10/30/07, 11/13/07	End:	10/27/07, 11/03/07, 11/17/07
Persons conducting test(s) (print names):	M. Hooper, P. Meyer, F. Moise, D. Onash		

Authorized signature:	J. Ric Watt	Date:	12/4/07

Laboratory report #/project #:	STL-TE 07289, 07290, 07291	Sampler (print name):	G. Coleman, S. Lewis, J. Moon

DMR monitoring period end date on which this test is reported (filled out by the Permittee--mm/dd/yy):					
Routine test:	NA	Additional test:	X	Failed routine test date:	10/02/07

Samples

No.	Date & Time Collected	Lab Sample #	Grab	24-Hour Composite	Arrival Temperature (°C)	Initial Residual Chlorine	Lab Dechlorination	
							Y/N	Chemical Used
1.	10/21/07-0800	07289A	X	NA	0.2	<0.04	N	NA
2.	10/21/07-1415	07289B	X	NA	0.2	<0.04	N	NA
3.	10/21/07-2000	07289C	X	NA	0.2	0.04	N	NA
4.	10/22/07-0200	07289D	X	NA	0.2	0.07	N	NA
5.	10/29/07-1100	07290A	X	NA	0.2	0.04	N	NA
6.	11/12/07-1115	07291A	X	NA	0.8	<0.04	N	NA
7.	NA	NA	NA	NA	NA	NA	NA	NA
8.	NA	NA	NA	NA	NA	NA	NA	NA
9.	NA	NA	NA	NA	NA	NA	NA	NA
10.	NA	NA	NA	NA	NA	NA	NA	NA

	Wet Ice	Blue Ice	Other (describe)	Samples Aerated	
				Yes (describe)	No
Refrigerant used for sample transportation:	X	NA	NA	X, All samples for 5 minutes	NA

	Bus	Hand	Common Carrier	Samples Filtered	
				Yes (describe)	No
Samples delivered by:	NA	NA	X	NA	X

HYDROSPHERE research

SUMMARY OF TEST CONDITIONS

Type of Test[a]	Test Concentrations[b] (% Effluent)	Test Species Used	Age of Test Organism	Amount & Type of Food	How Often Fed	Test Chamber Volume	Volume of Effluent Used	Type of Chamber	# of Organisms/ Chamber	# of Replicates	Temp. Range (°C)
D	6.25, 12.5, 25, 50, 100	CD	< 24 hours	0.1 ml YCT + 0.1 ml S. cap / 20 ml	1/day	30 ml	20 ml	Plastic cup	5	4	25.0 ± 1.0
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

G. "Other" type of test:	NA	Temperature readings:	Single	Multiple	Continuous
			NA	X	NA

Description of control water:	Moderately Hard Reconstituted	Photoperiod during test:	16 hours light / 8 hours dark

Reference Toxicant Data[d]					
Name of Toxicant	Dates of Test		Species[c]	In-House or Commercially Obtained	LC_{50}/NOEC/IC_{25}
	Begin	End			
KCl	11/06/07	11/08/07	CD	In-house	LC_{50} = 0.57 g/L
NA	NA	NA	NA	NA	NA

[a]Please fill the "Type of Test" box with the appropriate letter:

A. 48-Hr/Non-Renewal/Single Concentration (Screen)
B. 48-Hr/Non-Renewal/Multi-Concentration (Definitive)
C. 96-Hr/Renewed Every 48 Hrs/Single Concentration (Screen)
D. 96-Hr/Renewed Every 48 Hrs/Multi-Concentration (Definitive)
E. 7-Day Chronic/Single Concentration (Screen)/Renewed Daily
F. 7-Day Chronic/Multi-Concentration (Definitive)/Renewed Daily
G. Other (described in the "G" box)

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]Write appropriate letters for the following species in this column:

CD - *Ceriodaphnia dubia*
FM - *Pimephales promelas* (fathead minnow)
SS - *Menidia beryllina* (inland silverside)
MS - *Americanmysis bahia* (formerly *Mysidopsis bahia* , mysid shrimp)
CL - *Cyprinella leedsi* (bannerfin shiner)
Other - Please describe:

[d]Attach all reference toxicant raw data & control charts for each organism/reference toxicant used for the test.

HYDROSPHERE research

TEST RESULTS
ACUTE

Test Species	Test Concentrations[b] (% Effluent)	Grab Sample[c]	Composite Sample[c]	% Mortality[d] (48 Hours)	% Mortality[d] (96 Hours)	LC_{50}[e]
Control[a]	0	NA	NA	NA	0	NA
CD	6.25, 12.5, 25, 50, 100	1	NA	NA	NA	>100%
CD	6.25, 12.5, 25, 50, 100	2	NA	NA	NA	>100%
CD	6.25, 12.5, 25, 50, 100	3	NA	NA	NA	>100%
CD	6.25, 12.5, 25, 50, 100	4	NA	NA	NA	>100%
CD	6.25, 12.5, 25, 50, 100	5	NA	NA	NA	>100%
CD	6.25, 12.5, 25, 50, 100	6	NA	NA	NA	68.3%
NA	NA	NA	NA	NA	NA	NA
Control[a]	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA

[a]List % Control Mortality in appropriate column (48 or 96 hr) for organisms (use abbreviations shown on footnote "c" of page 2) that you list under the word "Control." Control mortality must not exceed 10% for a valid acute test.

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]Record number that corresponds with the number of the sample in the "Date & Time Collected" column in sample section on page 1.

[d]List % Mortality for each organism and control if you are conducting a single concentration (Screen) test.

[e]If multi-concentration (Definitive) tests are conducted on grab or composite samples, record the calculated LC_{50} in this column for each sample. Enter "N/A" in all % Mortality columns and LC_{50} box at bottom of this table.

Species	LC_{50}[f]
CD	NA
NA	NA

[f]If a single concentration (screen) test is conducted and >50% mortality occurs in any one of the four grab or composite samples, record <100% in this column. If ≤50% mortality occurs in all four grabs or composites, record >100% in this column. Draw a line through the LC_{50} column in the above table.

HYDROSPHERE research

TEST RESULTS
CHRONIC

Test Species[a]	Test Concentrations[b] (%-Effluent)	NOEC			
		Survival[c]	Growth[c]	Reproduction[c]	Fecundity[c]
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA

[a]Use abbreviations shown on footnote "c" of page 2.

[b]List all concentrations of effluent used (i.e., 0%, 6.25%, 12.5%, 25%, 50%, 100%).

[c]For single concentration tests (Screen), if there is a significant difference (P = 0.05) between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record <100% in proper column. If there is not a significant difference between survival, growth, reproduction, or fecundity in 100% or IWC, and control, record >100% in proper column.

CD Survival in Control (>80%)	NA
Average Number of Young per Female in CD Control (min 15 young/surviving female)	NA

FM Survival in Control (>80%)	NA
Average FM Dry Weight in Control (min ADW 0.25 mg/FM in surviving controls)	NA

MS Survival in Control (>80%)	NA
Average MS Dry Weight in Control (min ADW 0.20 mg/MS in surviving controls)	NA
Egg Production in MS by 50% of Females (Y/N)	NA

SS Survival in Control (>80%)	NA
Average SS Dry Weight in Control (min immediate ADW 0.50 mg/SS in surviving controls)	NA

Summary of Observations and Deviations from Protocol

A series of additional 96-hour acute static renewal definitive tests were initiated October 23, 30 and November 23, 2007 for Telogia Power, Liberty County, Florida.

During these tests, in all test vessels the dissolved oxygen content remained above 4.0 milligrams per liter, the temperature remained within the limits established in the Comprehensive Quality Assurance Plan, and the pH range was normal. The results of the standard reference toxicant tests, provided in Appendix B, indicate that the organisms were of normal sensitivity for this laboratory.

There were no unusual observations or deviations from standard test protocol. These test results meet all requirements of NELAC.

Notes:

1. Bioassay tests reported herein were conducted in accordance with one or more of the following:
   a. U.S. Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. EPA-821-R-02-012. October 2002.
   b. U.S. Environmental Protection Agency. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms. Fourth Edition. EPA-821-R-02-013. October 2002.
   c. U.S. Environmental Protection Agency. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. Third Edition. EPA-821-R-02-014. October 2002.
2. Chemical and physical parameters reported herein were determined by methods described in "Methods for Chemical Analysis of Water and Waste", EPA 600/4-79-020, March, 1984.
3. The adverse effect measured in acute tests is mortality. Assessment of mortality is described in documents listed above. Chronic test endpoints are mortality and reproduction or growth, and assessment of these test endpoints are also described in the appropriate documents listed above.
4. Bioassay tests were performed at the Hydrosphere Research Aquatic Toxicology Laboratory, 11842 Research Circle, Alachua, FL 32615, telephone number (386) 462-7889. This laboratory is NELAC/P certified by the State of Florida Department of Health and Rehabilitation Services (E82295).
5. *C. dubia* test organisms were cultured in-house.

Appendix A

Raw Data Sheets

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	07289	**ID #:**	1679
Species:	*Ceriodaphnia dubia*	**Code:**	CD	**Test Vessel:**	30-mL plastic cup
ID #:	3913	**Age:**	< 24-hours	**Test Volume:**	20-mLs per replicate

Initiation Date: 10/23/07 **Termination Date:** 10/27/07

Sample Description:

Sample ID	%	REP	Live Counts T 0	W 24	R 48	F 72	S 96	pH 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Dissolved Oxygen (mg/L) 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Conductivity (µmho/cm) 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	5	5	5	5	5	7.7	8.0	8.0	7.9	7.8	7.9	8.1	7.8	7.8	8.3	8.0	8.0	378	371	392	318	358	426
		B	5	5	5	5	5			7.9			7.9			7.8			8.0			396			422
		C	5	5	5	5	5			7.9			7.9			7.8			8.0			395			423
		D	5	5	5	5	5			7.9			7.9			7.8			8.0			398			431
A	6.25	A	5	5	5	5	5	7.7	8.0	8.0	7.8	7.8	7.9	8.1	7.9	7.9	8.3	8.0	8.0	400	422	490	388	444	528
		B	5	5	5	5	5			8.0			7.9			7.9			8.0			493			515
		C	5	5	5	5	5			8.0			7.9			7.9			8.0			494			523
		D	5	5	5	5	5			8.0			7.9			7.9			8.0			496			518
A	12.5	A	5	5	5	5	5	7.7	8.0	8.0	7.8	7.9	7.9	8.1	7.9	7.9	8.3	8.0	8.1	480	503	580	472	553	649
		B	5	5	5	5	5			8.0			7.9			7.9			8.1			585			634
		C	5	5	5	5	5			8.0			7.9			7.9			8.1			588			626
		D	5	5	5	5	5			8.0			7.9			7.9			8.1			594			646
A	25	A	5	5	5	5	5	7.7	8.0	8.0	7.8	7.9	7.9	8.1	7.9	7.9	8.3	8.0	8.1	625	645	761	598	695	788
		B	5	5	5	5	5			8.0			7.9			7.9			8.2			758			816
		C	5	5	5	5	5			8.0			7.9			7.9			8.2			764			835
		D	5	5	5	5	5			8.0			7.9			7.9			8.2			757			822
A	50	A	5	5	5	5	5	7.6	8.0	8.0	7.7	7.9	7.9	8.0	7.9	7.9	8.4	8.0	8.2	900	904	1066	859	998	1118
		B	5	5	5	5	5			8.0			7.9			7.9			8.2			1089			1151
		C	5	5	5	5	5			8.0			7.9			8.0			8.2			1060			1132
		D	5	5	5	5	5			8.0			7.9			8.0			8.2			1081			1179
A	100	A	5	5	4	4	4	7.5	8.0	8.0	7.7	7.9	8.0	7.4	8.0	8.0	8.4	8.0	8.2	1420	1413	1616	1358	1533	1725
		B	5	5	3	3	3			8.0			8.0			8.0			8.2			1647			1806
		C	5	5	3	3	3			8.1			8.0			8.0			8.2			1659			1775
		D	5	5	4	4	4			8.1			8.0			8.0			8.2			1660			1826
Meter ID #:			8	5	5	5	7							7	4	4	4	5		5	4	4	4	4	3
Initials:				7BR	7BR	7h			7BR	7h		7h		7BR	7BR	7h	7h				7h	7h	7h	7h	
Time:			1600	1425	1525	1535	1600 ①																		

NOTES & COMMENTS:

① correction - 1600 @ 10/27/07

[1] Measured at the end of each 24-h exposure period, on one replicate

Sample ID	%
Control	0
A	6.25
A	12.5
A	25
A	50
A	100
Meter ID #:	

Temperature (°C) 0	24	48	72	96
	24.6	24.2	24.2	24.2
	24.6	24.2	24.2	24.2
	24.5	24.2	24.2	24.2
	24.5	24.1	24.2	24.2
	24.4	24.1	24.2	24.2
	24.3	24.1	24.2	24.2
	31	31	31	34

Feeding Type: F-CD and F-SC

Amount: 0.1-mL of each 2-hours prior to test solution renewal

Time: 1000

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	67289
ID #:	1679		
Species:	*Ceriodaphnia dubia*	**Code:**	CD
ID #:	3913	**Age:**	< 24-hours
Test Vessel:	30-mL plastic cup		
Test Volume:	20-mLs per replicate		

Initiaton Date: 10/23/07 **Termination Date:** 10/27/07

Sample Description:

Sample ID	%	REP	Live Counts T 0	W 24	R 48	F 72	S 96	pH 0 new	pH 24 old solution	pH 48 old	pH 48 new	pH 72 old solution	pH 96 old	DO 0 new	DO 24 old solution	DO 48 old	DO 48 new	DO 72 old solution	DO 96 old	Conductivity 0 new	Conductivity 24 old solution	Conductivity 48 old	Conductivity 48 new	Conductivity 72 old solution	Conductivity 96 old
Control	0	A	5	5	5	5	5	7.8	8.0	8.0	7.9	7.9	8.0	8.0	7.8	7.8	8.3	7.9	8.0	320	388	416	333	365	382
		B	5	5	5	5	5			8.0			8.0			7.8			8.0			420			405
		C	5	5	5	5	5			8.0			8.0			7.8			8.0			419			418
		D	5	5	5	5	5			8.0			9.0			7.8			8.1			430			421
B	6.25	A	5	5	5	5	5	7.7	8.0	8.0	7.9	7.9	8.0	8.0	7.8	7.8	8.4	8.0	8.1	385	415	474	380	430	513
		B	5	5	5	5	5			8.0			8.0			7.8			8.1			472			515
		C	5	5	5	5	5			8.0			8.0			7.8			8.1			473			514
		D	5	5	5	5	5			8.0			8.0			7.8			8.1			475			525
B	12.5	A	5	5	5	5	5	7.7	8.0	8.0	7.9	7.9	8.1	8.0	7.8	7.8	8.4	8.0	8.1	450	467	547	430	500	725
		B	5	5	5	5	5			8.0			8.1			7.8			8.1			556			718
		C	5	5	5	5	5			8.0			8.1			7.8			8.1			558			714
		D	5	5	5	5	5			8.0			8.1			7.8			8.1			549			585
B	25	A	5	5	5	5	5	7.7	8.1	8.1	8.0	7.9	8.1	8.0	7.9	7.9	8.4	8.0	8.1	570	582	678	551	626	792
		B	5	5	5	5	5			8.1			8.1			7.9			8.1			690			801
		C	5	5	5	5	5			8.1			8.2			7.9			8.2			687			814
		D	5	5	5	5	5			8.1			8.2			7.9			8.2			691			812
B	50	A	5	5	5	5	5	7.6	8.1	8.1	8.0	8.0	8.2	7.9	7.9	7.9	8.4	8.	8.1	790	801	925	765	852	1008
		B	5	5	5	5	5			8.1			8.2			7.9			8.2			930			1013
		C	5	5	5	5	5			8.1			8.2			7.9			8.2			927			1027
		D	5	5	5	5	5			8.1			8.2			7.9			8.2			934			1010
B	100	A	5	5	5	5	5	7.5	8.2	8.2	8.0	8.0	8.2	7.9	7.9	7.9	8.3	8.1	8.2	1205	1199	1399	1195	1292	1464
		B	5	5	5	5	5			8.2			8.2			7.9			8.2			1402			1504
		C	5	5	5	5	5			8.2			8.2			7.9			8.2			1411			1498
		D	5	5	5	5	5			8.2			8.2			7.9			8.2			1401			1467
Meter ID #:			8	5	5	5	9	7	4	4		4	5	5	4	4		4	3						
Initials:				7h	4h	7h			7h	4h		7h			7h	7h		7h			7h	7h		7h	
Time:			1500	1430	1530	1540	1600																		

[1] correction - @ (1600) 10/27/07

NOTES & COMMENTS:

[1] Measured at the end of each 24-h exposure period, on one replicate

Feeding Type: F-CD and F-SC

Amount: 0.1-mL of each 2-hours prior to test solution renewal

Time: 1000

Sample ID	%	Meter ID #:
Control	0	
B	6.25	
B	12.5	
B	25	
B	50	
B	100	

Temperature (°C) 0	24	48	72	96
	24.6	24.2	24.1	24.2
	24.5	24.2	24.1	24.2
	24.5	24.2	24.1	24.2
	24.4	24.2	24.1	24.2
	24.4	24.2	24.1	24.2
	24.4	24.2	24.1	24.2
	31	31	31	34

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	07289
ID #:	1679		
Species:	*Ceriodaphnia dubia*	**Code:**	CD
ID #:	3913	**Age:**	< 24-hours
Test Vessel:	30-mL plastic cup		
Test Volume:	20-mLs per replicate		
Initiaton Date:	10/23/07	**Termination Date:**	10/27/07
Sample Description:			

Sample ID	%	REP	Live Counts 0	24	48	72	96	pH 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Dissolved Oxygen (mg/L) 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Conductivity (µmho/cm) 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	5	5	5	5	5	7.8	8.0	8.0	7.9	7.9	8.0	7.8	7.8	7.7	8.4	7.8	8.0	320	347	415	320	371	462
		B	5	5	5	5	5			8.0			8.0			7.7			8.0			403			485
		C	5	5	5	5	5			8.0			8.0			7.7			8.0			407			481
		D	5	5	5	5	5			8.0			8.0			7.8			8.0			406			470
C	6.25	A	5	5	5	5	5	7.7	8.0	8.0	7.9	7.9	8.0	7.8	7.8	7.8	8.3	7.9	8.0	371	405	465	371	435	524
		B	5	5	5	5	5			8.0			8.1			7.8			8.0			472			535
		C	5	5	5	5	5			8.0			8.1			7.8			8.0			473			531
		D	5	5	5	5	5			8.0			8.1			7.8			8.0			471			550
C	12.5	A	5	5	5	5	5	7.7	8.0	8.0	8.0	7.9	8.1	7.9	7.9	7.8	8.4	7.9	8.0	426	469	540	426	497	590
		B	5	5	5	5	5			8.0			8.1			7.8			8.0			548			608
		C	5	5	5	5	5			8.0			8.1			7.8			8.0			537			603
		D	5	5	5	5	5			8.0			8.1			7.8			8.0			542			606
C	25	A	5	5	5	5	5	7.6	8.0	8.1	8.1	8.0	8.2	7.9	7.9	7.9	8.4	8.0	8.1	507	583	660	507	610	727
		B	5	5	5	5	5			8.1			8.2			7.9			8.1			672			733
		C	5	5	5	5	5			8.1			8.2			7.9			8.0			680			738
		D	5	5	5	5	5			8.1			8.2			7.9			8.0			676			732
C	50	A	5	5	5	5	5	7.6	8.0	8.2	8.1	8.0	8.3	7.8	7.9	7.9	8.4	8.0	8.1	737	822	920	737	855	971
		B	5	5	5	5	5			8.2			8.3			7.9			8.1			926			987
		C	5	5	5	5	5			8.2			8.2			7.9			8.1			938			1009
		D	5	5	5	5	5			8.2			8.3			7.9			8.1			933			996
C	100	A	5	5	5	5	5	7.5	8.1	8.3	8.1	8.1	8.3	7.1	8.0	8.0	8.4	8.0	8.1	1121	1184	1350	1121	1254	1454
		B	5	5	5	5	5			8.3			8.3			8.0			8.1			1362			1450
		C	5	5	5	5	5			8.3			8.3			8.0			8.1			1384			1480
		D	5	5	5	5	4			8.3			8.3			8.0			8.1			1376			1453
Meter ID #:								8	5	5		5	7	7	4	4		4	5		5	4		4	3
Initials:																									
Time:			1500	1435	1540	1545	1600																		

NOTES & COMMENTS:

① correction - @ 10/27/07

[1] Measured at the end of each 24-h exposure period, on one replicate

Sample ID	%
Control	0
C	6.25
C	12.5
C	25
C	50
C	100
Meter ID #:	

Temperature (°C)[1] 0	24	48	72	96
	24.4	24.2	24.2	24.2
	24.4	24.2	24.2	24.2
	24.5	24.2	24.2	24.2
	24.5	24.2	24.2	24.2
	24.4	24.2	24.2	24.2
	24.4	24.2	24.2	24.2
	31	31	31	31

Feeding Type: F-CD and F-SC

Amount: 0.1-mL of each 2-hours prior to test solution renewal

Time: 1000

P 1 of 2

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	07289
ID #:	1679		
Species:	*Ceriodaphnia dubia*	**Code:**	CD
ID #:	3973	**Age:**	< 24-hours
Test Vessel:	30-mL plastic cup		
Test Volume:	20-mLs per replicate		

Initiaton Date: 10/23/07 **Termination Date:** 10/27/07

Sample Description:

Sample ID	%	REP	Live Counts 0	24	48	72	96
Control	0	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
D	6.25	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
D	12.5	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
D	25	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
D	50	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
D	100	A	5	5	5	5	5
		B	5	5	5	5	5
		C	5	5	5	5	5
		D	5	5	5	5	5
Meter ID #:							
Initials:			TH	TH	TH	TH	
Time:			1500	1435	1555	1450	1600

Sample ID	%	REP	pH 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	7.7	8.0	8.0			8.0
		B			8.0			8.0
		C			8.0			8.0
		D			8.0	7.9	7.9	8.0
D	6.25	A	7.7	8.0	8.0			8.0
		B			8.0			8.0
		C			8.0			8.1
		D			8.0	7.9	7.9	8.1
D	12.5	A	7.6	8.0	8.0			8.1
		B			8.0			8.1
		C			8.0			8.2
		D			8.0	8.0	7.9	8.1
D	25	A	7.6	8.1	8.1			8.2
		B			8.1			8.2
		C			8.1			8.3
		D			8.1	8.0	7.9	8.2
D	50	A	7.6	8.1	8.1			8.2
		B			8.1			8.2
		C			8.1			8.3
		D			8.1	8.0	7.9	8.2
D	100	A	7.6	8.0	8.2			8.3
		B			8.2			8.3
		C			8.2			8.3
		D			8.2	8.1	8.0	8.3
Meter ID #:			8	5	5		5	7
Initials:				TH	TH		TH	

Sample ID	%	REP	Dissolved Oxygen (mg/L) 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	8.1	8.0	7.9			7.9
		B			7.9			7.9
		C			7.9			7.7
		D			7.9	8.2	7.8	7.7
D	6.25	A	8.0	8.0	7.9			7.9
		B			7.9			7.9
		C			7.9			7.7
		D			7.9	8.3	7.8	8.0
D	12.5	A	8.0	8.0	8.0			8.0
		B			8.0			8.0
		C			8.0			8.0
		D			8.0	8.4	7.9	8.0
D	25	A	8.0	8.0	8.0			8.0
		B			8.0			8.0
		C			8.0			8.0
		D			8.0	8.4	7.9	8.0
D	50	A	7.9	8.0	8.0			8.0
		B			8.0			8.1
		C			8.0			8.1
		D			8.0	8.4	7.9	8.1
D	100	A	7.8	8.0	8.0			8.0
		B			8.0			8.1
		C			8.0			8.1
		D			8.0	8.3	8.0	8.1
Meter ID #:			7	4	4		4	5
Initials:				TH	TH		TH	

Sample ID	%	REP	Conductivity (µmho/cm) 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	320	349	407			470
		B			401			438
		C			404			442
		D			403	320	370	501
D	6.25	A	384	418	491			519
		B			495			528
		C			497			519
		D			502	384	444	532
D	12.5	A	435	489	570			606
		B			583			693
		C			884			721
		D			583	435	513	738
D	25	A	535	683	726			727
		B			749			812
		C			731			801
		D			733	535	611	791
D	50	A	815	863	1009			1114
		B			1004			1101
		C			1017			1116
		D			1012	815	950	1128
D	100	A	1294	1332	1540			1668
		B			1527			1694
		C			1538			1682
		D			1509	1294	1430	1717
Meter ID #:			5	4	4		4	3
Initials:				TH	TH		TH	

Feeding Type: F-CD and F-SC

Amount: 0.1-mL of each 2-hours prior to test solution renewal

Time: 1000

NOTES & COMMENTS:

[1] Measured at the end of each 24-h exposure period, on one replicate

Sample ID	%
Control	0
D	6.25
D	12.5
D	25
D	50
D	100
Meter ID #:	

Temperature (°C)[1] 0	24	48	72	96
	24.3	24.2	24.2	24.2
	24.3	24.2	24.2	24.2
	24.3	24.2	24.2	24.2
	24.3	24.2	24.2	24.2
	24.3	24.2	24.1	24.2
	24.3	24.2	24.1	24.2
	21	21	21	24

HYDROSPHERE research

Client:	Telogia Power		
Code:	STL-TE	Job:	87289

Sample Data

#	Sample Info: Date M/D/Y	Day	Letter Code	Description[a]	Dissolved Oxygen (D.O.): D.O. (mg/L)	D.O. (%)	Aeration (min.)	Post Aeration D.O. (mg/L)	Initials	Total Residual Chlorine: TRC (mg/L)	Dechlor[1]	Post-Dechl. TRC (mg/L)	Initials	Ammonia: T-NH$_3$ (mg/L)	pH	Initials	Conductivity: Conductivity (µmho/cm)	Initials	Salinity: Salinity (ppt)	Adjusted (ppt)	Initials	Alkalinity/Hardness: Alkalinity (mgCaCO$_3$/L)	Hardness (mgCaCO$_3$/L)	Initials
1	10/23/07	T	A	D-001	8.9	110	5	7.9	[illegible]	<0.04	—	—	ME	X	7.2	[illegible]	1470	[illegible]	—		[illegible]	64	1000+	ME
2	/ ↓ /	↓	B	↓	8.3	106	5	7.6	↓	<0.04	—	—	↓	X	7.2	↓	1315	↓	—		↓	110	1000+	↓
3	/ ↓ /	↓	C	↓	7.0	88	X	X	↓	0.04	—	—	↓	X	7.2	↓	1250	↓	—		↓	130	1000+	↓
4	/ ↓ /	↓	D	↓	7.6	98	X	X	↓	0.07	—	—	↓	X	7.4	↓	1465	↓	—		↓	110	1000+	↓
5	10/25/07	R	A	D-001	9.2	110	5	8.3	[illegible]	—	—	—	↓		7.1	[illegible]	1380	[illegible]				—	—	↓
6	/ ↓ /	↓	B	↓	10.2	126	5	8.2	↓	—	—	—	↓		7.3	↓	1235	↓				—	—	↓
7	/ ↓ /	↓	C	↓	9.2	113	5	8.2	↓	—	—	—	↓		7.4	↓	1186	↓		[illegible]		—	—	↓
8	/ ↓ /	↓	D	↓	10.1	123	5	8.3	↓	—	—	—	↓		7.7	↓	1353	↓				—	—	↓
9	/ /																							
10	/ /																							
11	/ /																							
12	/ /																							
13	/ /																							
14	/ /																							
15	/ /																							
16	/ /																							

Comments:

[1] 1-mL Effluent Dechlorinator (8-g/L NaThio) per 1-L Effluent Sample per 1-ppm TRC (EPA-821-R-02-012, Section 9.1.6, pg 41)

[2] **Important:** Organisms from Vendors need to have concurrent SRT's (EPA-821-R-02-012, Section 4.7.3, pg 8)

[3] **Important:** SRT's shall be conducted concurrently or no greater than 30-days before the date of "routine" test (FDEP permits)

SRT [2,3]

Species: Chronic or Acute?	Species	Source*	Needs to be Concurrent? (Check)	SRT Test: Date	</= 30d?
C or (A)	CD	(H) or V	—	/	Y or N
C or (A)		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N

* H = Hydrosphere or AI (monthly, </= 30-days or concurrent)
* V = Outside Vendor (concurrent Only)

Dilution Waters: Code	ID #	Alkalinity/Hardness: Alkalinity (mgCaCO$_3$/L)	Hardness (mgCaCO$_3$/L)	Initials
MHR	1679	64	96	[illegible]

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	07290
Species:	*Ceriodaphnia dubia*	**Code:**	CD
ID #:	3916	**Age:**	< 24-hours
ID #:	1684		
Test Vessel:	30-mL plastic cup		
Test Volume:	20-mLs per replicate		
Initiaton Date:	10/30/07	**Termination Date:**	11/3/07
Sample Description:			

Sample ID	%	REP	Live Counts T 0	W 24	R 48	F 72	S 96	pH 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Dissolved Oxygen (mg/L) 0 new	24 old solution	48 old	48 new	72 old solution	96 old	Conductivity (µmho/cm) 0 new	24 old solution	48 old	48 new	72 old solution	96 old
Control	0	A	5	5	5	5	5	8.1	7.8	7.9		7.8	7.8	8.3	7.5	7.9	7.8	8.0	8.0	304	320	357		382	458
		B	5	5	5	5	5			7.9			7.8			7.9			8.0			363			445
		C	5	5	5	5	5			7.9			7.8			7.9			8.0			358			426
		D	5	5	5	5	5			7.9	7.8		7.8			7.9	8.2		8.0			347	304		452
A	6.25	A	5	5	5	5	5	8.0	7.7	7.9		7.8	7.9	8.4	7.6	7.8	7.8	8.1	8.0	400	410	427		465	549
		B	5	5	5	5	5			7.9			7.9			7.8			8.0			463			555
		C	5	5	5	5	5			7.9			7.9			7.8			8.0			487			549
		D	5	5	5	5	5			7.9	7.8		7.9			7.8	8.2		8.0			489	408		562
A	12.5	A	5	5	5	5	5	8.0	7.7	7.9		7.9	7.9	8.4	7.7	7.8	7.8	8.1	8.0	482	520	688		558	650
		B	5	5	5	5	5			7.9			7.9			7.8			8.0			3990			660
		C	5	5	5	5	5			7.9			7.9			7.8			8.0			697			652
		D	5	5	5	5	5			7.9	7.8		7.9			7.8	8.2		8.0			684	486		655
A	25	A	5	5	5	5	5	7.9	7.7	8.0		7.9	8.0	8.4	7.5	7.8	7.8	8.2	8.0	667	690	761		763	898
		B	5	5	5	5	5			8.0			8.0			7.8			8.0			786			899
		C	5	5	5	5	5			8.0			8.0			7.8			8.0			767			894
		D	5	5	5	5	5			8.0	7.8		8.0			7.8	8.2		8.0			754	659		898
A	50	A	5	5	5	5	5	7.9	7.8	8.1		8.0	8.0	8.4	7.6	7.8	8.3	8.2	8.0	1017	1050	1110		1127	1313
		B	5	5	5	5	5			8.1			8.1			7.8			8.0			1101			1346
		C	5	5	5	5	5			8.1			8.0			7.8			8.0			1099			1323
		D	5	5	5	5	5			8.1	7.7		8.0			7.8	8.3		8.0			1107	994		1313
A	100	A	5	5	5	5	5	7.9	7.8	8.2		8.1	8.1	8.3	7.7	7.7	8.2	8.2	8.0	1678	1650	1761		1786	2170
		B	5	5	5	5	5			8.2			8.1			7.7			8.0			1754			2176
		C	5	5	5	5	5			8.2			8.1			7.7			8.0			1708			2280
		D	5	5	5	5	5			8.0	7.7		8.1			7.7	8.2		8.0			1738	1677		2110
Meter ID #:								5	8	5		5	7	4	7	4		4	5	4	5	4		5	3
Initials:			7h	LC	7h	7h	C	7h	LC	7h		7h	C	7h	LC	7h		7h	C	7h	LC	7h		7h	C
Time:			1415	1409	1620	1435	1505																		

NOTES & COMMENTS:

① correction 594 7h 11/1/07

[1] Measured at the end of each 24-h exposure period, on one replicate

Sample ID	%
Control	0
A	6.25
A	12.5
A	25
A	50
A	100
Meter ID #:	→

Temperature (°C) 0	24	48	72	96
	24.4	24.2	24.6	24.4
	24.4	24.2	24.0	24.4
	24.4	24.2	24.0	24.4
	24.4	24.2	24.0	24.4
	24.4	24.2	24.0	24.4
	24.4	24.3	24.0	24.4
	46	31	31	34

Feeding Type: F-CD and F-SC

Amount: 0.1 mL of each 2-hours prior to test solution renewal

Time: 1345

1 of 1

HYDROSPHERE research

Client: Telogia Power

Code: STL-TE Job: 07290

Sample Data

#	Date M/D/Y	Day	Sample Info: Letter Code	Description	Dissolved Oxygen (D.O.): D.O. (mg/L)	D.O. (%)	Aeration (min)	Post Aeration D.O. (mg/L)	Initials	Total Residual Chlorine: TRC (mg/L)	Dechlor	Post-Dechl. TRC (mg/L)	Initials	Ammonia: T-NH3 (mg/L)	pH	Initials	Conductivity: Conductivity (µmho/cm)	Initials	Salinity: Salinity 1 (ppt)	Adjusted (ppt)	Initials	Alkalinity/Hardness: Alkalinity (mgCaCO3/L)	Hardness (mgCaCO3/L)	Initials
1	10/30/07	T	A	D-001	9.1	112	5	8.2	7h	0.04	—	—	ME		7.8	7h	1731	7h	—		7h	130	1000+	ME
2	11/1/07	R	A	D-001	9.1	110	5	8.2	7h	—	—	—	1		7.6	7h	1669	7h	—		7h	—	—	1
3	/ /																							
4	/ /																							
5	/ /																							
6	/ /																							
7	/ /																							
8	/ /																							
9	/ /																							
10	/ /																							
11	/ /																							
12	/ /																							
13	/ /																							
14	/ /																							
15	/ /																							
16	/ /																							

Comments:

1-mL Effluent Dechlorinator (8-g/L NaThio) per 1-L Effluent Sample per 1-ppm TRC (EPA-821-R-02-012, Section 9,1.6, pg 41)

Important: Organisms from Vendors need to have concurrent SRT's (EPA-821-R-02-012, Section 4.7.3, pg 8)

Important: SRT's shall be conducted concurrently or no greater than 30-days before the date of "routine" test (FDEP permits)

SRT [2,3]

Species: Chronic or Acute?	Species	Source*	Needs to be Concurrent? (Check)	SRT Test: Date	</= 30d?
C or (A)	CD	(H) or V		10/2	(Y) or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N

* H = Hydrosphere or Al (monthly, </= 30-days or concurrent)
V = Outside Vendor (concurrent Only)

Dilution Waters: Code	ID #	Alkalinity/Hardness: Alkalinity (mgCaCO3/L)	Hardness (mgCaCO3/L)	Initials
MHR	1684	64	84	7h

Survival

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

Client:	Telogia Power	**Control Water:**	MHR
Code:	STL-TE	**Job:**	07291
		ID #:	1690
Species:	*Ceriodaphnia dubia*	**Code:**	CD
ID #:	3941	**Age:**	< 24-hours
		Test Vessel:	30-mL plastic cup
		Test Volume:	20-mLs per replicate

Initiaton Date: 11/17/07T **Termination Date:** 11/17/07F

Sample Description:

Sample ID	%	REP	Live Counts T 0	T 24	T 48	T 72	T 96	pH 0 new	pH 24 old solution	pH 48 old	pH 48 new	pH 72 old solution	pH 96 old	Dissolved Oxygen (mg/L) 0 new	DO 24 old solution	DO 48 old	DO 48 new	DO 72 old solution	DO 96 old	Conductivity (µmho/cm) 0 new	Cond 24 old solution	Cond 48 old	Cond 48 new	Cond 72 old solution	Cond 96 old
Control	0	A	5	5	5	5	5	8.1	7.8	8.1	8.2	7.9	8.2	8.1	7.8	6.9	7.2	7.4	7.4	300	375	360		418	410
		B	5	5	5	5	5			8.1			8.3			7.3			7.3			390			420
		C	5	5	5	5	5			8.1			8.2			7.3			7.3			420			450
		D	5	5	5	5	5			8.1			8.2			7.3			7.2			420			440
A	6.25	A	5	5	5	5	5	8.1	7.8	8.0	8.2	7.9	8.2	8.3	7.8	7.4	7.8	7.4	7.3	554	545	650		608	610
		B	5	5	5	5	5			8.1			8.2			7.7			7.3			600			630
		C	5	5	5	5	5			8.1			8.3			7.2			7.2			600			690
		D	5	5	5	5	5			8.1			8.3			7.3			7.2			600			690
A	12.5	A	5	5	5	5	5	8.2	7.8	8.0	8.3	7.9	8.2	8.4	7.8	7.3	7.9	7.9	7.6	555	710	750		766	820
		B	5	5	5	5	5			8.1			8.2			7.2			7.7			780			850
		C	5	5	5	5	5			8.1			8.2			7.3			7.3			790			860
		D	5	5	5	5	5			8.1			8.2			7.3			7.2			800			840
A	25	A	5	5	4	4	4	8.1	7.9	8.1	8.5	7.9	8.2	8.5	7.8	7.1	8.1	7.5	7.3	588	1025	1080		1162	1130
		B	5	5	5	5	5			8.1			8.2			7.3			7.3			1190			1210
		C	5	5	5	5	5			8.1			8.2			7.4			7.3			1140			1220
		D	5	5	5	5	5			8.1			8.2			7.4			7.2			1180			1240
A	50	A	5	5	5	5	5	8.1	7.9	8.1	8.8	7.9	8.2	8.6	7.8	7.4	8.4	7.4	7.5	581	1620	1660		1699	1730
		B	5	5	5	5	5			8.1			8.3			7.4			7.7			1710			1880
		C	5	5	5	5	5			8.1			8.2			7.4			7.3			1750			1860
		D	5	5	5	5	5			8.1			8.2			7.4			7.5			1770			1870
A	100	A	5	5	05	—	—	8.1	7.9	8.1	9.9	7.9		8.6	7.8	7.6	8.6	7.4		565	2710	2710		2910	
		B	5	5	05	—	—			8.1						7.5						2913			
		C	5	5	05	—	—			8.1						7.5						2880			
		D	5	5	05	—	—			8.1						7.4						2890			
Meter ID #:								5	7	8	7	8		4	5	7	5	7		4	3	5	3	5	
Initials:																									
Time:			1500	1400	1600	1645	1715																		

NOTES & COMMENTS:

[1] Measured at the end of each 24-h exposure period, on one replicate

Feeding Type: F-CD and F-SC

Amount: 0.1-mL of each 2-hours prior to test solution renewal

Time: 1000

Sample ID	%
Control	0
A	6.25
A	12.5
A	25
A	50
A	100
Meter ID #:	

Temperature (°C)[1] 0	24	48	72	96
	25.6	25.4	25.4	25.2
	25.6	25.4	25.4	25.1
	25.6	25.4	25.4	25.2
	25.6	25.4	25.4	25.1
	25.6	25.4	25.4	25.2
	25.6	25.4	25.4	
	48	48	48	48

CT-TOX: BINOMIAL, MOVING AVERAGE, PROBIT, AND SPEARMAN METHODS

SPEARMAN-KARBER

TRIM:	.00%
LC50:	68.302
95% LOWER CONFIDENCE:	63.784
95% UPPER CONFIDENCE:	73.140

CONC. %	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(%)
6.25	20.	0.	.00	.9537D-04
12.50	20.	0.	.00	.9537D-04
25.00	20.	1.	5.00	.2003D-02
50.00	20.	0.	.00	.9537D-04
100.00	20.	20.	100.00	.9537D-04

THE BINOMIAL TEST SHOWS THAT 50.00 AND 100.00 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS 99.9998 PERCENT.
AN APPROXIMATE LC50 FOR THIS DATA SET IS 70.711

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISCALLY SOUND RESULTS.

DATE: 11/13/07 TEST NUMBER: 07291 DURATION: 96 hours
SAMPLE: STL-TE SPECIES: Ceriodaphnia dubia

METHOD	LC50	CONFIDENCE LIMITS LOWER	UPPER	SPAN
BINOMIAL	70.711	50.000	100.000	50.000
MAA	*******	*******	*******	*******
PROBIT	*******	*******	*******	*******
SPEARMAN	68.302	63.784	73.140	9.357

NOTE: MORTALITY PROPORTIONS WERE NOT MONOTONICALLY INCREASING.
ADJUSTMENTS WERE MADE PRIOR TO SPEARMAN-KARBER ESTIMATION.

**** = LIMIT DOES NOT EXIST

HYDROSPHERE research

Client: Telogia Power

Code: STL-TE Job: 07291

Sample Data

#	Date M/D/Y	Day	Sample Info: Letter Code	Description	Dissolved Oxygen (D.O.): D.O. (mg/L)	D.O. (%)	Aeration (min.)	Post Aeration D.O. (mg/L)	Initials	Total Residual Chlorine: TRC (mg/L)	Dechlor	Post-Dechl. TRC (mg/L)	Initials	Ammonia: T-NH3 (mg/L)	pH	Initials	Conductivity: Conductivity (µmho/cm)	Initials	Salinity: Salinity (ppt)	Adjusted (ppt)	Initials	Alkalinity/Hardness: Alkalinity (mgCaCO3/L)	Hardness (mgCaCO3/L)	Initials
1	11/13/07	T	A		93	113	5	5.4	[illegible]	<0.04	—	—	me	X	[illegible]	[illegible]	2410	[illegible]	—	—	[illegible]	74	1000+	CW
2	11/14/07	W	A		89	107	—	—	[illegible]	—	—	—	I	—	9.9	[illegible]	2300	D	—	—	[illegible]	—	—	I
3	/ /																							
4	/ /																							
5	/ /																							
6	/ /																							
7	/ /																							
8	/ /																							
9	/ /																							
10	/ /																							
11	/ /																							
12	/ /																							
13	/ /																							
14	/ /																							
15	/ /																							
16	/ /																							

Comments:

1-mL Effluent Dechlorinator (8-g/L NaThio) per 1-L Effluent Sample per 1-ppm TRC (EPA-821-R-02-012, Section 9.1.6, pg 41)

Important: Organisms from Vendors need to have concurrent SRT's (EPA-821-R-02-012, Section 4.7.3, pg 8).

Important: SRT's shall be conducted concurrently or no greater than 30-days before the date of "routine" test. (FDEP permits)

SRT [2,3]

Species: Chronic or Acute?	Species	Source*	Needs to be Concurrent? (Check)	SRT Test: Date	SRT Test: </= 30d?
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N
C or A		H or V		/	Y or N

* H = Hydrosphere or AI (monthly, </= 30-days or concurrent)
V = Outside Vendor (concurrent Only)

Dilution Waters: Code	ID #	Alkalinity/Hardness: Alkalinity (mgCaCO3/L)	Hardness (mgCaCO3/L)	Initials
MHR	11690	62	92	me

Appendix B

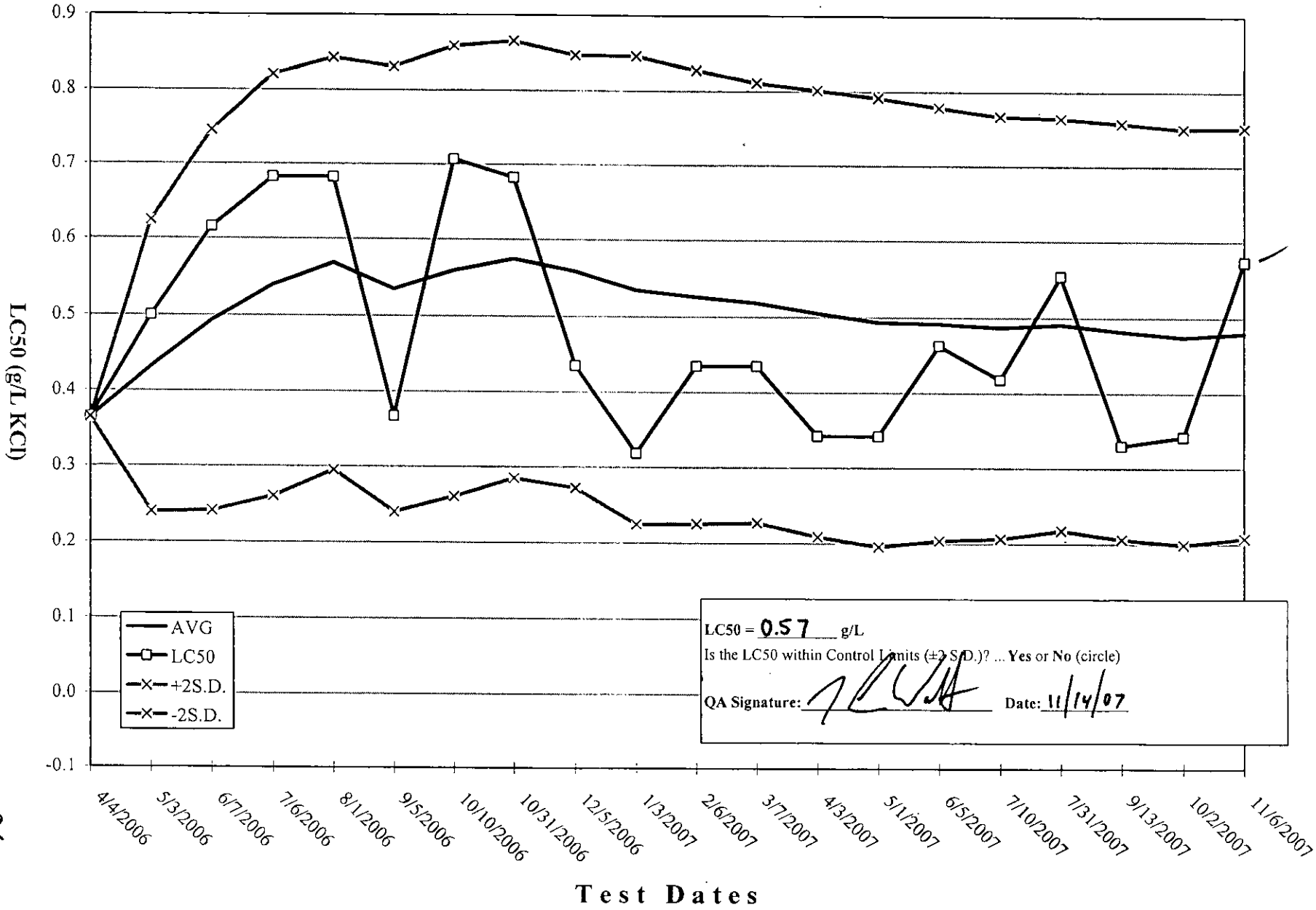
Reference Toxicant Data

HYDROSPHERE research

Control Chart-I

Control Limits for Standard Reference Toxicant Tests

ACUTE ··· *Ceriodaphnia dubia* (cultured at Hydrosphere)



LC50 = 0.57 g/L

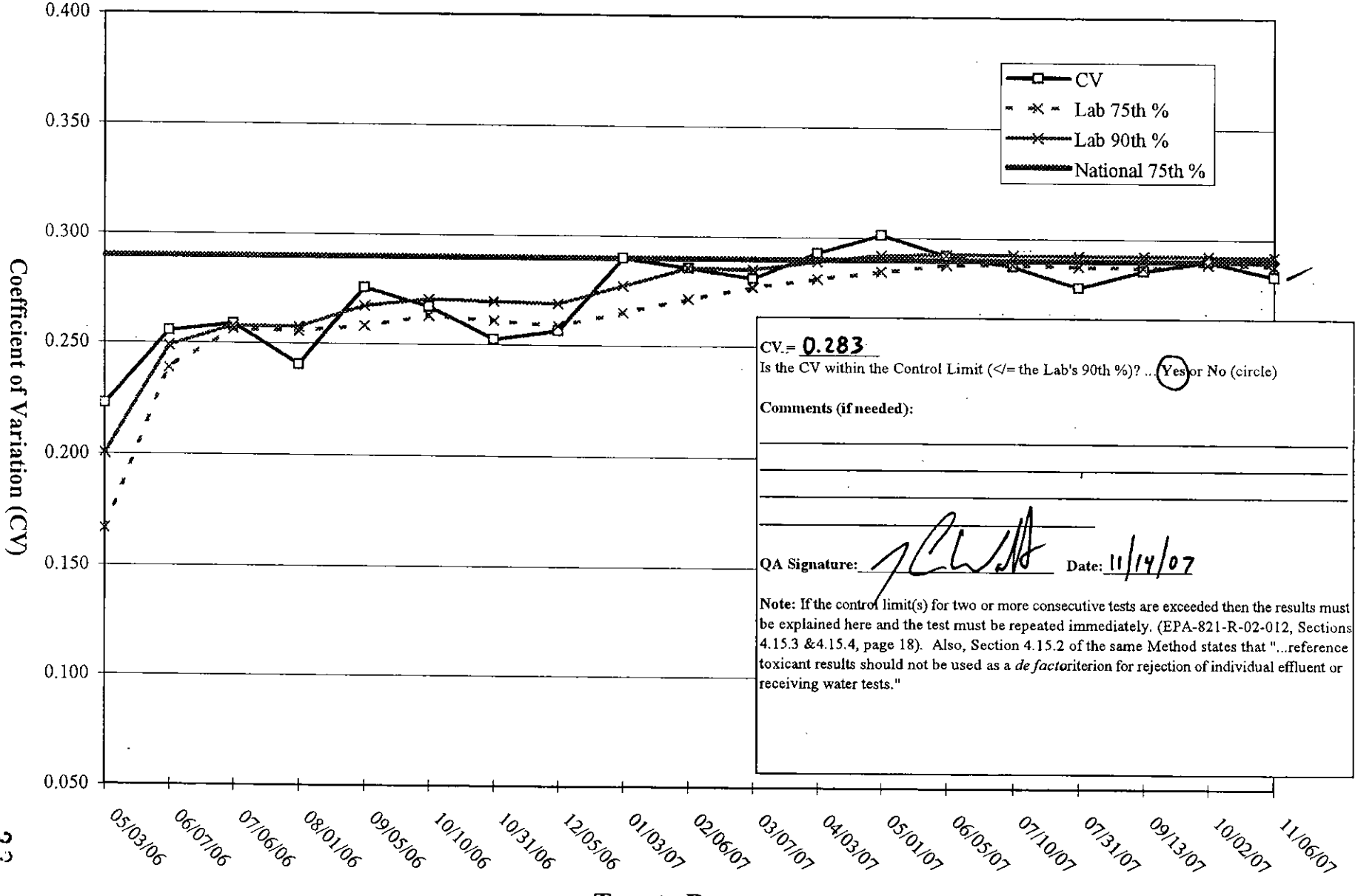
Is the LC50 within Control Limits (±2 S.D.)? ... Yes or No (circle)

QA Signature: _____ Date: 11/14/07

HYDROSPHERE
research

Control Chart - II

Coefficient of Variation for Standard Reference Toxicant Tests
ACUTE ··· *Ceriodaphnia dubia* (cultured at Hydrosphere)



CV.= 0.283

Is the CV within the Control Limit (</= the Lab's 90th %)? ... (Yes) or No (circle)

Comments (if needed):

QA Signature: _____ **Date:** 11/14/07

Note: If the control limit(s) for two or more consecutive tests are exceeded then the results must be explained here and the test must be repeated immediately. (EPA-821-R-02-012, Sections 4.15.3 &4.15.4, page 18). Also, Section 4.15.2 of the same Method states that "...reference toxicant results should not be used as a *de facto* criterion for rejection of individual effluent or receiving water tests."

Standard Reference Toxicant Test (SRT)

Acute Freshwater Method (EPA-821-R-02-012, Method 2002.0)

☑ SRT for the month of:	☐ ccSRT for the Client:
November	
Species: *Ceriodaphnia dubia*	Code: CD
ID #:	Age: < 24-hours
Control Water: MHR	
ID #: 1689	
Test Vessel: 30-mL Plastic Cup	
Test Volume: 20-mL	
Initiaton Date: 11/6/07	Termination Date: 11/8/07
Toxicant: 0705.1 SLN, KCl	
Stock Solution (Concentration): 100-gm KCl / L	
Test Concentration (Units): gm KCl / L	

Vol. of Stock / 100-mLs	g/L	REP	Live Counts T 0h	W 24h	R 48h	pH New 0	pH Old 24	pH Old 48	DO New 0	DO Old 24	DO Old 48
Control	0	A	5	5	5	7.9	8.0	8.0	8.5	7.9	7.9
		B	5	5	5			8.0			7.9
		C	5	5	5			8.1			8.0
		D	5	5	5			8.1			8.0
0.125-mL	0.125	A	5	5	5	7.9	8.1	8.1	8.5	8.0	8.0
		B	5	5	5			8.1			8.0
		C	5	5	5			8.1			8.0
		D	5	5	5			8.1			8.0
0.25-mL	0.25	A	5	5	5	8.0	8.1	8.1	8.5	8.0	8.0
		B	5	5	5			8.1			8.0
		C	5	5	5			8.1			8.0
		D	5	5	5			8.1			8.0
0.5-mL	0.5	A	5	4[1]	3[1]	8.0	8.1	8.1	8.5	8.0	8.0
		B	5	4[1]	4			8.1			8.0
		C	5	5	5			8.1			8.0
		D	5	4[1]	2[2]			8.1			8.0
1-mL	1	A	5	0[5]		8.0	8.2		8.5	8.1	
		B	5	0[5]							
		C	5	0[5]							
		D	5	0[5]							
2-mL	2	A	5	0[5]		8.0	8.2		8.6	8.1	
		B	5	0[5]							
		C	5	0[5]							
		D	5	0[5]							
Meter ID # :						5	5	5	4	4	4
Initials:			Th	Th	Th	Th	Th	Th	Th	Th	Th
Time:			1345	1455	1510						

Feeding Type: None

Amount: NA

Time: NA

NOTES & COMMENTS:

[1] Measured at the end of each 24-h exposure period, on one replicate

Statistical Results

48hr LC50:

95% conf. int.:

Statistical Method: (check one) ☐ Probit ☐ Binomial ☐ Spearman-Karber ☐ Other:

QA Officer: (signature)

g/L	Temperature (°C) 24	48
Control	24.1	24.0
0.125	24.1	24.0
0.25	24.1	24.0
0.5	24.0	24.0
1	24.0	—
2	24.0	—
Meter ID#:	31	31

CT-TOX: BINOMIAL, MOVING AVERAGE, PROBIT, AND SPEARMAN METHODS

SPEARMAN-KARBER

TRIM:	.00%
LC50:	.574
95% LOWER CONFIDENCE:	.498
95% UPPER CONFIDENCE:	.662

CONC. g/L	NUMBER EXPOSED	NUMBER DEAD	PERCENT DEAD	BINOMIAL PROB.(%)
.13	20.	0	.00	.9537D-04
.25	20.	0	.00	.9537D-04
.50	20.	6	30.00	.5766D+01
1.00	20.	20	100.00	.9537D-04
2.00	20.	20	100.00	.9537D-04

THE BINOMIAL TEST SHOWS THAT .25 AND 1.00 CAN BE USED AS STATISTICALLY SOUND CONSERVATIVE 95 PERCENT CONFIDENCE LIMITS SINCE THE ACTUAL CONFIDENCE LEVEL ASSOCIATED WITH THESE LIMITS IS 99.9998 PERCENT.
AN APPROXIMATE LC50 FOR THIS DATA SET IS .584

WHEN THERE ARE LESS THAN TWO CONCENTRATIONS AT WHICH THE PERCENT DEAD IS BETWEEN 0 AND 100, NEITHER THE MOVING AVERAGE NOR THE PROBIT METHOD CAN GIVE ANY STATISCALLY SOUND RESULTS.

DATE: 11/06/07 TEST NUMBER: 07NovCD DURATION: 48 hours
SAMPLE: KCl SPECIES: Ceriodaphnia dubia

METHOD	LC50	CONFIDENCE LIMITS LOWER	UPPER	SPAN
BINOMIAL	.584	.250	1.000	.750
MAA	*******	*******	*******	*******
PROBIT	*******	*******	*******	*******
SPEARMAN	.574	.498	.662	.164

Appendix C

Chain of Custody

HYDROSPHERE research

CHAIN OF CUSTODY

Please complete ALL fields other than grey areas (grey areas are to be completed by lab personnel)

Client Name
Telogia Power

Client Shipping Address
Highway 65 South Telogia, FL 32360

Sample Kit Tracking Information
Cooler 1 of 1
Container Type: X ☐ ½ Gallon Jug ☐ 5 Gallon Cubitainer™ ☐ Other
# of Containers 8

Method of Shipment
☑ Fed Ex Ground
☐ Fed Ex Overnight
☐ Client Pickup
☐ UPS
☐ Greyhound
☐ Other

Prepared and Shipped By
[illegible]
Date 10/18/07

Sample Kit Received By (Print Clearly and Sign)
[illegible] 10/22/07
Date _____ Time _____

Condition of Seal Upon Receipt (Check One)
☐ Intact
☐ Other (describe) _____

Ship Sample Priority Overnight To
Hydrosphere Research
11842 Research Circle
Alachua, FL 32615
(386) 462-7889
Be sure to mark for Saturday delivery if appropriate.

Refrigerant Used for Shipping
☑ Wet Ice
☐ Other _____
Samples must arrive at the lab at 6.0° C or less but never frozen. Pack cooler completely with ice before shipping.

Composite Sample Information
Samples/ Hour _____ Volume/Sample _____
Total Hours _____ Total Volume _____
Initiated Date 10/22/07 Time _____
Ended Date _____ Time _____
Chilled During Collection ☐ Yes ☐ No

Sampling Location

Permit # FL0039951-001-IW7C

County Samples Collected In LIBERTY

Sample(s) Shipped Via
☐ Fed Ex ☐ Greyhound
☑ Client ☐ UPS
☐ Other _____

Outfall Number	Date	Time (24 Hour Format)	Sample Type: Comp.	Sample Type: Grab	# of Containers	Sampled By (Print Clearly and Sign)	For Lab Use: Arrival Temp (°C)	For Lab Use: Sample Id No.
D001	10-21-07	8:00 AM		✓	2	Gene Coleman Gene Coleman	0.2	07283 A
D001	10-21-07	2:15 PM		✓	2	Jordy MOON Jordy Moon		B
D001	10-21-07	8:00 PM		✓	2	Stacey Lewis Stacey Lewis		C
D001	10-22-07	2:00 AM		✓	2	Stacey Lewis Stacey Lewis	✓	D

Relinquished By (Print Clearly and Sign)	Date	Time	Shipped Via		
Gene Coleman	10-22-07	7:43 AM	CLIENT		
Received By (Print Clearly and Sign)	**Date**	**Time**	**Relinquished By** (Print Clearly and Sign)	**Date**	**Time**
Jay Moon	10-22-07	7:43	Jay Moon	10/22/07	1203
Received By Lab (Print Clearly and Sign)	**Date**	**Time**	**Shippers Tracking Numbers**		
[illegible] RECEIVER	10/22/07	1203	NONE		

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Distribution White (Original) – Lab, Yellow – Lab, Pink – Client

See Provisions on back

HYDROSPHERE research

CHAIN OF CUSTODY

Please complete ALL fields other than grey areas (grey areas are to be completed by lab personnel)

Client Name	Client Shipping Address
Telogia Power	Highway 65 South Telogia, FL 32360

Sample Kit Tracking Information
Cooler 1 of 1
Container Type: ☒ ½ Gallon Jug ☐ 5 Gallon Cubitainer™ ☐ Other
# of Containers: 8 2 2

Method of Shipment
☐ Fed Ex Ground
☐ Fed Ex Overnight
☐ Client Pickup
☐ UPS
☐ Greyhound
☐ Other

Prepared and Shipped By
Date: 10-18-07

Sample Kit Received By (Print Clearly and Sign)
Jay Moon
Date 10-29-07 Time 10:45
Condition of Seal Upon Receipt (Check One)
☑ Intact
☐ Other (describe)

Ship Sample Priority Overnight To
Hydrosphere Research
11842 Research Circle
Alachua, FL 32615
(386) 462-7889
Be sure to mark for Saturday delivery if appropriate.

Refrigerant Used for Shipping
☑ Wet Ice
☐ Other
Samples must arrive at the lab at 6.0° C or less but never frozen. Pack cooler completely with ice before shipping.

Composite Sample Information
Samples/ Hour 1 Volume/Sample 1gal.
Total Hours ____ Total Volume ____
Initiated Date 10-29-07 Time 1100
Ended Date 10-29-07 Time 1100
Chilled During Collection ☐ Yes ☐ No

Sampling Location

Permit #

County Samples Collected In

Sample(s) Shipped Via
☐ Fed Ex ☐ Greyhound
☑ Client ☐ UPS
☐ Other

Outfall Number	Date	Time (24 Hour Format)	Sample Type: Comp.	Sample Type: Grab	# of Containers	Sampled By (Print Clearly and Sign)	For Lab Use: Arrival Temp. (°C)	For Lab Use: Sample Id. No.
0001	10-29-07	1100		✓		Jay Moon Jay Moon	0.2	07290-1

Relinquished By (Print Clearly and Sign)	Date	Time	Shipped Via
Jay Moon Jay Moon	10-30-07	0905	CLIENT

Received By (Print Clearly and Sign)	Date	Time	Relinquished By (Print Clearly and Sign)	Date	Time
				10/30/07	

Received By Lab (Print Clearly and Sign)	Date	Time	Shippers Tracking Numbers
Mikayla Edwards Mikayla Edwards	10/30/07	9:09	NONE

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Distribution White (Original) – Lab, Yellow – Lab, Pink – Client

See Provisions on back

HYDROSPHERE research

CHAIN OF CUSTODY

Please complete ALL fields other than grey areas (grey areas are to be completed by lab personnel)

Client Name	Client Shipping Address		
Telogia Power	Highway 65 South Telogia, FL 32360		
Sample Kit Tracking Information	**Method of Shipment**	**Prepared and Shipped By**	**Sample Kit Received By** (Print Clearly and Sign)
Cooler 1 of 1	☑ Fed Ex Ground	[signature]	JAY MOON [signature]
Container Type ☑ ½ Gallon Jug	☐ Fed Ex Overnight		Date 11-12-07 Time 10:00
☐ 5 Gallon Cubitainer™	☐ Client Pickup	Date 10/18/07	**Condition of Seal Upon Receipt** (Check One)
☐ Other	☐ UPS		☑ Intact
# of Containers 2	☐ Greyhound		☐ Other (describe)
	☐ Other		

Ship Sample Priority Overnight To	Refrigerant Used for Shipping	Composite Sample Information
Hydrosphere Research 11842 Research Circle Alachua, FL 32615 (386) 462-7889 *Be sure to mark for Saturday delivery if appropriate.*	☑ Wet Ice ☐ Other *Samples must arrive at the lab at 6.0°C or less but never frozen. Pack cooler completely with ice before shipping.*	Samples/ Hour ____ Volume/Sample ____ Total Hours ____ Total Volume 1gal. Initiated Date 11-12-07 Time 1115 Ended Date 11-12-07 Time 1115 Chilled During Collection ☐ Yes ☑ No
Sampling Location	**Sample(s) Shipped Via**	
Permit #	☐ Fed Ex ☐ Greyhound ☐ Client ☐ UPS	
County Samples Collected In	☐ Other	

Outfall Number	Date	Time (24 Hour Format)	Sample Type: Comp.	Sample Type: Grab	# of Containers	Sampled By (Print Clearly and Sign)	For Lab Use: Arrival Temp (°C)	For Lab Use: Sample Id No.
D001	11-12-07	1115		✓	2	JAY MOON [signature]	6.8	0729-1A

Relinquished By (Print Clearly and Sign)	Date	Time	Shipped Via		
JAY MOON [signature]	11-13-07		[initials] 11/13		
Received By (Print Clearly and Sign)	**Date**	**Time**	**Relinquished By** (Print Clearly and Sign)	**Date**	**Time**
			[initials]	11/13	
Received By Lab (Print Clearly and Sign)	**Date**	**Time**	**Shippers Tracking Numbers**		
[signature] / [illegible]	11/13/07	1530	Absent 11/13		

Distribution White (Original) – Lab, Yellow – Lab, Pink – Client

See Provisions on back

Telogia Power LLC
. Box 189 Hwy. 65 South
Telogia, Florida 32360

FIRST CLASS

UNITED STATES POSTAGE

02 4P $ 001.
0004173607 DEC 12
MAILED FROM ZIP CODE

FDEP
AIR
2600 Blair Stone Road
Tallahass, Florida 32399-2400