

NPDES BIOMONITORING REPORT

GENERAL ELECTRIC COMPANY

Pittsfield, MA

NPDES PERMIT MA 0003891

Chronic Survival and Reproduction Toxicity Test with *Ceriodaphnia*
Dubia

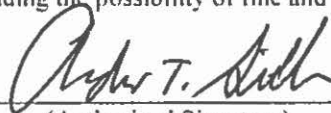
September 2015

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on

10/27/2015
(Date)


(Authorized Signature)

Andrew T. Silfer

General Electric Co. – Pittsfield, MA
Permit MA0003891

Prepared by: Tracy Christ & Matt Calacone

October 6, 2015



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Rochester, NY 14623
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October 6, 2015

Mr. Sean Coyle
Veolia Water North America
1000 East Street
Pittsfield, MA 01201

Re: NPDES Chronic Biomonitoring Report for September 2015
Submission #s: R1507686, R1507762, R1507852

Dear Mr. Coyle:

Enclosed is our report on the Chronic Whole Effluent Toxicity testing conducted in September 2015. The 64G Composite samples were collected on 9/14/15, 9/16/15 and 9/18/15 at 7:00 am. The Housatonic River samples were collected on 9/14/15 at 10:10 am, 9/16/15 at 8:20 am and 9/18/15 at 8:40 am. The 64G Composite and Housatonic River samples were analyzed at ALS Rochester for ammonia, total organic carbon, total solids, total dissolved solids, alkalinity and total metals. Results are presented in Appendix 2. The 64G Composite and Housatonic River samples were sent directly by Veolia to Aquatec Biological Services for the chronic aquatic toxicity testing including the analysis of alkalinity, hardness, specific conductance, and pH. Results are presented in Appendix 1.

Should you have any questions please contact me at (585)672-7473.

Thank you for allowing us to provide this service.

Sincerely,

ALS Environmental

Tracy Christ
Project Manager

enc.

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Table I – Summary of Analytical Test Results

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2. Laboratory Reports from Columbia Analytical Services, Inc. and Veolia, Inc.
3. Chain of Custody Forms

I. Summary

On September 14-18, 2015 sampling of wastewater discharges from the General Electric Company facility in Pittsfield, MA was conducted in accordance with the chronic toxicity testing requirement of the GE NPDES Permit MA0003891. Three composite samples were collected from the GE 64G final effluent (which discharges through the outfall serial number 005 to the Housatonic River) over a 5-day period. Sampling dates were September 14, September 16, and September 18. The 64G effluent composite sample was shipped via courier to Aquatec Biological Sciences in Williston, Vermont for chronic toxicity testing. Grab samples of Housatonic River water, to be used as dilution water in the toxicity test, were collected upstream of the GE discharges on September 14, 16, and June 18 and shipped to Aquatec along with the 64G composite. Veolia, Inc. and ALS Rochester tested the composite effluent sample and the dilution water sample for chemical constituents. The analytical results are summarized in Table I and the detailed laboratory reports are included as Appendices to this report.

The results from Aquatec Biological Sciences for the chronic toxicity test on the 64G final effluent discharge sample indicated a Chronic-No Observed Effect Concentration (C-NOEC) of 100% with an IC₂₅ of >100%. Acute toxicity results were as follows - A-NOEC was 100% and an LC₅₀ of >100%.

Table I – Summary of Analytical results for NPDES Outfall Composite Sample and Housatonic River Dilution Water September 9/14/15 - 9/18/15

Chronic Toxicity Results

C-NOEC = 100%
 IC₂₅ >100%

Acute Toxicity Results

A-NOEC 100%
 LC₅₀ >100%

Chemical Analyses (all results are mg/L unless otherwise indicated)

Parameter Tested	Laboratory	September 14	September 14	September 16	September 16	September 18	September 18
		Effluent	Housatonic	Effluent	Housatonic	Effluent	Housatonic
		Composite	River	Composite	River	Composite	River
Ammonia	ALS	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)	ND (0.05)
Total Alkalinity	ALS	410	92.7	356	102	370	111
Total Organic Carbon	ALS	2.5	5.7	2.2	5.2	2.2	4.3
Total Solids	ALS	691	155	581	132	605	160
Total Dissolved Solids	ALS	681	151	584	138	597	160
Hardness	Aquatec	344	96	304	104	312	116
Spec Conductance (umhos)	Aquatec	1276	258	1116	262	1160	300
pH (SU)	Aquatec	8.1	7.9	8.1	7.8	8.0	7.7
TRC (start of toxicity test)	Aquatec	ND	ND	ND	ND	ND	ND
Aluminum, total	ALS	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)	ND (0.02)
Cadmium, total	ALS	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)
Copper, total	ALS	0.0017	0.0006	0.0013	0.0007	0.0020	0.0007
Lead, total	ALS	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)	ND (0.00003)
Nickel, total	ALS	0.0014	0.0006	0.0014	0.0007	0.0015	0.0006
Zinc, total	ALS	ND (0.0012)	0.0017	ND (0.0012)	0.0020	ND (0.0012)	0.0019
pH (SU)	Veolia	7.51	7.79	7.67	7.64	7.79	7.68

NA – Not analyzed

ND – Not detected (Number in parentheses is detection limit)

II. Review of Toxicity Test Results

The effluent discharge samples collected at Outfall 64G on September 14, September 17 and September 18 were tested for 7-day chronic toxicity using *Ceriodaphnia dubia* organisms. The samples did not require dechlorination with sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) prior to toxicity testing. Aquatec Biological Sciences reported the results of this toxicity testing as follows:

Chronic Reproductive Toxicity

Effluent toxicity as C-NOEC=	100%
Effluent toxicity as IC_{25} =	>100%

No limit is established for N-NOEC in the GE NPDES permit.

Acute Survival Toxicity

Effluent toxicity as A-NOEC	100%
Effluent Toxicity as LC_{50}	>100%

The following table summarizes the results of the control sample analyses performed by Aquatec during the chronic toxicity bioassay:

<u>Control Analysis</u>	<u>Result</u>	<u>Acceptable Limit</u>
Survival in 100% dilution water	100%	$\geq 80\%$
Reproduction in 100% dilution water (average # of offspring/female/day)	30	≥ 15
Reproduction in 100% dilution water (% of females having three broods)	100%	$\geq 60\%$

The survival and reproduction rate of *Ceriodaphnia dubia* in the upstream dilution water control samples was within acceptable limits, indicating that the results of the toxicity test are valid.

III. Review of Wastewater Sampling Procedures

Three composite effluent samples from Outfall 64G were collected over a 24-hour period.

The 24-hour composite sample was collected as follows:

An automatic sampler at outfall 64G was programmed to collect approximately 7 liters of effluent into a 10-liter glass container in a time-proportioned manner over a 24-hour period. The sample container was refrigerated to keep the effluent sample cold during the 24-hour collection period. Flow meter readings were taken at the beginning and end of the 24-hour collection period to determine the total 24-hour flow for the 64G effluent discharge.

At the end of the 24-hour collection period, Veolia personnel packaged this sample for the chronic toxicity test and the chemical analyses. The effluent discharge sample was then split into various containers for toxicity testing and chemical analyses. These containers were shipped by vendor courier to Aquatec for toxicity testing and by FedEx (overnight) to ALS Environmental for chemical analyses. All samples were chilled with ice packs during shipment.

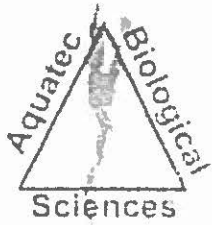
A grab sample of Housatonic River water was collected on the second day of each 24-hour period at the Lyman Road Bridge in Hinsdale, MA, upstream of the GE site. This sample was split for chemical analysis and toxicity testing in a similar manner as the combined effluent sample (see above).

Details of the times and dates of sample collection as well as the names of the individuals collecting and transporting the samples are provided on the chain of custody forms in Appendix 3 of this report.

APPENDIX 1

Chemical and Acute Toxicity Data

Aquatec Biological Sciences



Aquatec Biological Sciences



Ecology



Environmental
Toxicology



Natural Resource
Assessments



Microbiology

September 23, 2015

Ms. Tracy Christ, Project Chemist
ALS Life Sciences Division, Environmental
1565 Jefferson Road, Building 300, Suite 360
Rochester, NY 14623-3190
Tracy.christ@alsglobal.com

Dear Ms. Christ:

Attached please find the electronic copy (PDF) of our report on the results of a whole effluent toxicity test (chronic *Ceriodaphnia dubia* survival and reproduction test, EPA Method 1002.0 with acute data reported) for samples received from GE Pittsfield, Massachusetts during September 2015.

Control reproduction: 100% of the receiving water and laboratory control organisms produced three broods during the test (See also Special Conditions and Qualifiers section of the report). The controls met test acceptability criteria.

If you have any questions regarding the report, please call Dr. Philip C. Downey or me.

Sincerely,

John Williams
Manager, Environmental Toxicology

This report consists of the following numbered pages:

SDG: 14449

Pages: 1 - 37



Aquatec Biological Sciences, Inc.

273 Commerce Street
Williston, VT 05495
Tel: (802) 860 - 1638 Fax: (802) 658 - 3189

SDG: 14449
Project: 15014

Toxicity Summary Report

ALS Environmental
1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623

Tel: (585) 672-7470

Fax:

E-Mail:

Project: GE Pittsfield NPDES

Permit No. MA0003891

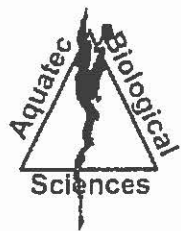
Sample Name: Outfall Composite (64G-3Q-1X-CX)

Sample ID: 47123

Method	Species	ACUTE		CHRONIC	
		A-NOEC	A-LC50	C-NOEC	C-LOEC
1002.0	<i>Ceriodaphnia dubia</i>	100	>100	100	>100

Samples Received

Number	Sample Name	Date Time and Collected	Type
47123	Outfall Composite (64G-3Q-1X-CX)	9/14/2015 7:00:00 AM	Effluent
47124	Housatonic River (HR-3Q1X-GX)	9/14/2015 10:10:00 AM	Receiving
47128	Outfall Composite (64G-3Q-2X-CX)	9/16/2015 7:00:00 AM	Effluent
47129	Housatonic River (HR-3Q-2X-GX)	9/16/2015 8:20:00 AM	Receiving
47135	Outfall Composite (64G-3Q-3X-CX)	9/18/2015 7:00:00 AM	Effluent
47136	Housatonic River (HR-3Q-3X-GX)	9/18/2015 8:40:00 AM	Receiving



Aquatec Biological Sciences, Inc.

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SDG: 14449
 Project: 15014

Toxicity Detail Report

ALS Environmental
 1565 Jefferson Road
 Building 300, Suite 360
 Rochester, NY 14623

Tel: (585) 672-7470
 Fax:
 E-Mail:

Project: **GE Pittsfield NPDES**

Permit No. **MA0003891**

Sample ID: 47123 Outfall Composite (64G-3Q-1X-CX)

Method: **1002.0** *Ceriodaphnia dubia*

Response: Survival (%)

Day	Additional Control	%						
		0	6.25	12.5	25	50	75	100
2	100	100	100	100	100	100	100	100
6	100	100	100	100	100	100	100	100

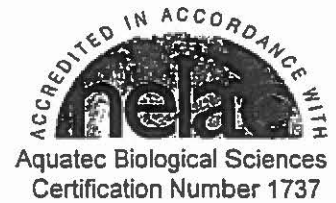
Response: Reproduction (mean neonates per female)

	Additional Control	%						
		0	6.25	12.5	25	50	75	100
6	34.1	29.8	29.4	29.6	31.1	28.7	29.6	27.9



Aquatec Biological Sciences, Inc.

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Toxicity Quality Assurance Report

SDG: 14449
Project: 15014

ALS Environmental
1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623

Tel: (585) 672-7470

Fax:

E-Mail:

Project: **GE Pittsfield NPDES**

Permit No. **MA0003891**

Method: **1002.0**

Ceriodaphnia dubia

Response: Survival (%)

Day	Sample ID	Dilution Control	Additional Control
2	47123	100	100
6	47123	100	100

Response: Reproduction (mean neonates per female)

Day	Sample ID	Dilution Control	Additional Control
6	47123	29.8	34.1

Percent Minimum Significant Difference (PMSD) Sensitivity Determination

PMSD Comparison: PMSD: 14.5% PMSD Criteria Range: 13%-47%

The calculated test PMSD was within the acceptable boundary range indicating test data with acceptable variability and statistical sensitivity. The chronic values (C-NOEC, C-LOEC) were reported as calculated by the statistical program.

SDG: 14449
Project: 15014

ALS Environmental
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Building 300, Suite 360
Rochester, NY 14623

Tel: (585) 672-7470
Fax:
E-Mail:

Project: GE Pittsfield NPDES

Permit No. MA0003891

Special Conditions and Qualifiers

To the best our knowledge, there were no special conditions or qualifiers relating to the samples in this report.

The test was ended on Day 6, when at least 60% of surviving females had produced a third brood. 100% of the laboratory controls produced three broods during the test. 100% of the receiving water controls (dilution water) produced three broods during the test.

SDG: 14449
Project: 15014

ALS Environmental
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Rochester, NY 14623

Tel: (585) 672-7470
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E-Mail:

Project: GE Pittsfield NPDES

Permit No. MA0003891

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION

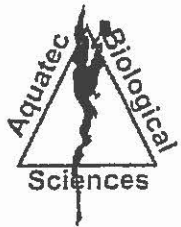
The results reported relate only to the samples submitted as received.

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on: 9/23/15
(Date)


(Authorized signature)

John Williams
Toxicity Laboratory Manager
Aquatec Biological Sciences, Inc.



Aquatec Biological Sciences, Inc.

273 Commerce Street
Williston, VT 05495
Tel: (802) 860 - 1636 Fax: (802) 658 - 3189

SDG: 14449
Project: 15014

Project: GE Pittsfield NPDES

Test Start Date: Tuesday, September 15, 2015

Client ID: ALS Environmental

Permit No. MA0003891

Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

TOXICITY TEST SUMMARY SHEET

Daphnid, *C. dubia*, Survival and Reproduction Test

Test Type	Test Species	Sample Type	Sampling Method
Modified Chronic	<i>Ceriodaphnia dubia</i>	Effluent	Composite

Dilution Water: Housatonic River

Additional Control: 1:1 mix of river or lake water with MHW

Effluent Sampling Dates: September 14, 16, and 18, 2015

Effluent Concentrations Tested (%): 0, 0, 6.25, 12.5, 25, 50, 75, 100

Was Effluent Salinity Adjusted? No If yes, to what value?

With Sea Salts? Hypersaline Brine Solution?

Reference Toxicant Date: July 21-27, 2015

Reference Toxicant Test Acceptable? Yes

Age and Age Range of Test Organisms: < 24h collected within an 8-hour period

Source of Organisms: In-house cultures, Aquatec Biological Sciences, Inc.



Aquatec Biological Sciences, Inc.

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SDG: 14449
 Project: 15014

Project: GE Pittsfield NPDES
 Client ID: ALS Environmental

Test Start Date: Tuesday, September 15, 2015
 Permit No. MA0003891 Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia* Reference: EPA-821-R-02-013 SOP: TOX2-002

TEST RESULTS AND PERMIT LIMITS

Daphnid, *C. dubia*, Survival and Reproduction Test

Test Acceptability Criteria

A. Dilution Water Control: Housatonic River

Mean Control Survival (%): 100 Mean Control Reproduction (neonates): 29.8

B. Additional Control: 1:1 mix of river or lake water with MHW

Mean Control Survival (%): 100 Mean Control Reproduction (neonates): 34.1

C. Lab Control:

See B above

D. Thiosulfate Control:

N / A

Test Variability

Test PMSD Reproduction (%): 14.5

PERMIT LIMITS AND TEST RESULTS

Daphnid, *C. dubia*, Survival and Reproduction Test

LIMITS (%)	RESULTS (%)
48-Hour LC50:	48-Hour LC50: > 100 Upper Value: Lower Value:
	Data Analysis Method(s): Linear interpolation, Fisher Exact/Bonferroni-Holm Test, Steel Many-One Rank Sum Test
A-NOEC:	A-NOEC: 100
C-NOEC:	C-NOEC: 100
	C-LOEC: > 100
IC25:	IC25: > 100
IC50 Limit:	IC50:



Aquatec Biological Sciences, Inc.

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SDG: 14449
Project: 15014

Project: GE Pittsfield NPDES
Client ID: ALS Environmental

Test Start Date: Tuesday, September 15, 2015
Permit No. MA0003891 Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

Reported Test Results Justification, PMSD Comparison Discussion and Concentration-Response Evaluation:

Control Results:

The statistical control (receiving water) met survival and reproduction acceptability criteria. The additional non-statistical control (laboratory water) also met test acceptability requirements.

PMSD Comparison:

The Percent Minimum Significant Difference (PMSD), a measure of statistical sensitivity, was within the boundaries of 13%-47% indicating test data with normal variability and sensitivity. The chronic values (C-NOEC, C-LOEC) were reported as calculated by the statistical program.

Concentration-Response Comparison:

The concentration-response pattern reflected a relationship where significant reductions in *Ceriodaphnia dubia* survival or reproduction were not detected. The chronic values (C-NOEC and C-LOEC) were reported as calculated by the statistical program.

Supportive Documentation

Chain-Of-Custody

Toxicity Test Methods

1002.0 - Daphnid, *C. dubia*, Survival and Reproduction Test

Standard Reference Toxicant Control Charts

Chain-Of-Custody

Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
Williston, VT 05495
TEL: (802) 860-1638
FAX: (802) 658-3189

COMPANY INFORMATION		COMPANY'S PROJECT INFORMATION			SHIPPING INFORMATION		VOLUME/CONTAINER TYPE/ PRESERVATIVE											
Name: <u>General Electric Company</u>		Project Name: <u>GE PITTSFIELD</u>			Carrier: <u>Priority Express</u>		4°C	4°C	4°C	4°C	4°C	4°C						
Address: <u>Veolia Water NA</u> <u>1000 East Street, Gate 64</u>		<u>Outfall Composite – INITIAL SAMPLE</u>			Airbill Number: _____		_____	_____	_____	_____	_____	_____						
City/State/Zip: <u>Pittsfield, MA 01201</u>		Project Number: <u>15014</u>			Date Shipped: <u>9/14/15</u>		Plastic	Plastic	Plastic	Glass	Glass	Plastic						
Telephone: <u>(413) 494-6709</u>		Sampler Name(s): <u>J. MASSIMIANO</u>			Hand Delivered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		_____	_____	_____	_____	_____	_____						
Facsimile: _____		NPDES Permit #: <u>MA0003891</u>					1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L						
Contact Name: <u>Sean Coyle</u>		Ship these samples on Monday																
		Client Code: <u>ALS/Christ</u>																
SAMPLE IDENTIFICATION	SAMPLE COLLECTION		GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS											
	Start date and time	Completion date and time																
<u>Outfall Composite</u> <u>646-3Q-1X-CX</u>	<u>9/13/14</u> <u>700 am</u>	<u>9/14/15</u> <u>700 am</u>		✓	Effluent	<u>Renewal 1 (R1): Ceriodaphnia dubia</u> <u>chronic survival and reproduction</u>	1											
<u>Outfall Composite</u> <u>646-3Q-1X-CX</u> <u>646-3Q-1X-CX (6mm)</u>	<u>9/13/14</u> <u>700 am</u>	<u>9/14/15</u> <u>700 am</u>		✓	Effluent	<u>Total Residual Chlorine</u> <u>(See Note in Comment Box below)</u>							1					
<u>Housatonic River</u> <u>HR-3Q-1X-6X</u>	X	<u>9/14/15</u> <u>10¹⁵ am</u>	✓		Receiving	<u>Receiving (Dilution Water)</u>	1											
Relinquished by: (signature) <u>[Signature]</u>		DATE	TIME	Received by: (signature) <u>Ron Lee</u>		Temperature blank at time of delivery (Aquatec): <u>1.8 °C.</u>												
Relinquished by: (signature)		DATE	TIME	Received by: (signature) <u>Kathy Sweet</u>		WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing?												
Relinquished by: (signature)		DATE	TIME	Received by: (signature)		Please record TRC concentration, mg/L (if available):												

Sample acceptance policy:

Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.

Sample should be received at 0°-6°C and/or within 6 hours of collection.

Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).

Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.

Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
 Williston, VT 05495
 TEL: (802) 860-1638
 FAX: (802) 658-3189

COMPANY INFORMATION	COMPANY'S PROJECT INFORMATION	SHIPPING INFORMATION	VOLUME/CONTAINER TYPE/ PRESERVATIVE					
Name: <u>General Electric Company</u>	Project Name: <u>GE PITTSFIELD</u>	Carrier: <u>Priority Express</u>	4°C	4°C	4°C	4°C	4°C	4°C
Address: <u>Veolia Water NA</u> <u>1000 East Street, Gate 64</u>	Outfall Composite – RENEWAL SAMPLE	Airbill Number: _____	_____	_____	H ₂ SO ₄	H ₂ SO ₄	_____	_____
City/State/Zip: <u>Pittsfield, MA 01201</u>	Project Number: <u>15014</u>	Date Shipped: <u>9/16/15</u>	Plastic	Plastic	Plastic	Glass	Glass	Plastic
Telephone: <u>(413) 494-6709</u>	Sampler Name(s): _____	Hand Delivered: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	_____	_____	_____	_____	_____	_____
Facsimile: _____	NPDES Permit #: <u>MA0003891</u>		1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L
Contact Name: <u>Sean Coyle</u>	Ship these samples on Wednesday							
	Client Code: <u>ALS/Christ</u>							

SAMPLE IDENTIFICATION	SAMPLE COLLECTION			GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS						
	Start date and time	Completion date and time												
Outfall Composite <u>6HG-3Q-2X-CX</u>	<u>9/15/15</u> <u>7:00am</u>	<u>9/16/15</u> <u>7:00am</u>			Effluent	Renewal 1 (R1): <i>Ceriodaphnia dubia</i> chronic survival and reproduction	1							
Outfall Composite <u>6HG-3Q-2X-CX</u>	<u>9/15/15</u> <u>7:00am</u>	<u>9/16/15</u> <u>7:00am</u>			Effluent	Total Residual Chlorine (See Note in Comment Box below)						1		
Housatonic River <u>HR-3Q-2X-EX</u>	<u>9/16/15</u> <u>8:00am</u>	<u>9/16/15</u> <u>8:00am</u>			Receiving	Receiving (Dilution Water)	1							

Relinquished by: (signature)	DATE	TIME	Received by: (signature)	Temperature blank at time of delivery (Aquatec): <u>3.4°C</u>	
	<u>9-16-15</u>	<u>4:40</u>			<u>John Henderson (PE)</u>
	Relinquished by: (signature)	DATE			TIME
Relinquished by: (signature)	<u>9/17/15</u>	<u>8:00</u>	Received by: (signature)	WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing? Please record TRC concentration, mg/L (if available):	

Sample acceptance policy:

- Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.
- Sample should be received at 0°-6°C and/or within 6 hours of collection.
- Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).
- Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.

Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
Williston, VT 05495
TEL: (802) 860-1638
FAX: (802) 658-3189

COMPANY INFORMATION		COMPANY'S PROJECT INFORMATION			SHIPPING INFORMATION		VOLUME/CONTAINER TYPE/ PRESERVATIVE									
Name: <u>General Electric Company</u>		Project Name: <u>GE PITTSFIELD</u>			Carrier: <u>Priority Express</u>		4°C	4°C	4°C	4°C	4°C	4°C				
Address: <u>Veolia Water NA</u> <u>1000 East Street, Gate 64</u>		<u>Outfall Composite -- RENEWAL SAMPLE</u>			Airbill Number: _____		_____	_____	H ₂ SO ₄	H ₂ SO ₄	_____	_____				
City/State/Zip: <u>Pittsfield, MA 01201</u>		Project Number: <u>15014</u>			Date Shipped: <u>9/16/15</u>		Plastic	Plastic	Plastic	Glass	Glass	Plastic				
Telephone: <u>(413) 494-6709</u>		Sampler Name(s): _____			Hand Delivered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		_____	_____	_____	_____	_____	_____				
Facsimile: _____		NPDES Permit #: <u>MA0003891</u>					1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L				
Contact Name: <u>Sean Coyle</u>		Ship these samples on <u>Friday</u> .														
		Client Code: <u>ALS/Christ</u>														
SAMPLE IDENTIFICATION	COLLECTION			GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS								
	Start date and time	Completion date and time														
Outfall Composite <u>04/B-32-3K-CX</u>	<u>9/17/15</u> <u>700 am</u>	<u>9/18/15</u> <u>700 am</u>			X	Effluent	Renewal 2 (R2): <i>Ceriodaphnia dubia</i> chronic survival and reproduction	2								
Outfall Composite <u>04/B-32-3K-CX</u>	<u>9/17/15</u> <u>700 am</u>	<u>9/18/15</u> <u>700 am</u>			X	Effluent	Total Residual Chlorine (See Note in Comment Box below)						1			
Housatonic River <u>HR-323XGX</u>		<u>7/18/15</u> <u>8:40 am</u>			X	Receiving	Receiving (Dilution Water)	2								
Relinquished by: (signature) <u>[Signature]</u>	DATE	TIME	Received by: (signature) <u>[Signature]</u>		Temperature blank at time of delivery (Aquatec): <u>4.9</u> °C.											
Relinquished by: (signature)	DATE	TIME	Received by: (signature) <u>[Signature]</u>		WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing? Please record TRC concentration, mg/L (if available):											
Relinquished by: (signature)	DATE	TIME	Received by: (signature) <u>[Signature]</u>													

Sample acceptance policy:

Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.

Sample should be received at 0°-6°C and/or within 6 hours of collection.

Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).

Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.

Toxicity Test Methods

Method: 1002.0

Daphnid, *C. dubia*, Survival and Reproduction Test

Ceriodaphnia dubia

Associated Protocol: EPA-821-R-02-013

SOP: TOX2-002

GE Pittsfield NPDES

Permit: MA0003891

Pipe 1

Project: 15014

- | | | |
|----|--|---|
| 1 | Test type: | Static renewal |
| 2 | Temperature: | 25 +/- 1C; Test temperatures must not deviate (i.e. maximum minus minimum temperature) by more than 3C during the test |
| 3 | Light quality: | Ambient laboratory illumination |
| 4 | Light intensity: | 10-20uE/m ² /s or 50-100ft-c (ambient laboratory levels) |
| 5 | Photoperiod: | 16h light, 8h dark |
| 6 | Test chamber size: | 30mL |
| 7 | Test solution volume | Nominal 15mL |
| 8 | renewal of test solutions: | Daily |
| 9 | Age of test organisms: | Less than 24h; and all released within a 8h period |
| 10 | No. neonates per test chamber: | 1 |
| 11 | No. replicate test chambers per concentration: | 10 |
| 12 | No. neonates per test concentration: | 10 |
| 13 | Feeding regime: | Feed 0.1mL each of YCT and algal suspension per test chamber |
| 14 | Cleaning: | Use new plastic cups daily |
| 15 | Aeration: | None |
| 16 | Dilution water: | Housatonic River |
| 17 | Test concentrations (%): | 0, 0, 6.25, 12.5, 25, 50, 75, 100 |
| 18 | Additional control: | 1:1 mix of river or lake water with MHW |
| 19 | Test duration: | Until 60% or more of surviving control females have three broods (maximum test duration 8 days) |
| 20 | Endpoints: | Survival and reproduction |
| 21 | Test acceptability criteria: | 80% or greater survival of all control organisms and an average of 15 or more young per surviving female in the control solutions. 60% of surviving control females must produce three broods |
| 22 | Sampling requirements: | For off-site tests, a minimum of three samples (e.g., collected on days one, three, and five) with a maximum holding time of 36h before first use |
| 23 | Sample volume required: | 1L/day |

1002.0 - Daphnid, *C. dubia*, Survival and Reproduction Test

CETIS Summary Report

Report Date: 22 Sep-15 15:30 (p 1 of 3)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

Batch ID: 18-6349-6609	Test Type: Reproduction-Survival (2-8d)	Analyst: John Williams
Start Date: 15 Sep-15 10:55	Protocol: EPA/821/R-02-013 (2002)	Diluent: Receiving Water
Ending Date: 21 Sep-15 09:40	Species: Ceriodaphnia dubia	Brine:
Duration: 5d 23h	Source: In-House Culture	Age: 1
Sample ID: 13-8334-5464	Code: 14449	Client: GE Pittsfield
Sample Date: 14 Sep-15 07:00	Material: Industrial Effluent	Project: WET Quarterly Compliance Test (3Q)
Receipt Date: 15 Sep-15 09:20	Source: NPDES Permit # MA0003891 (GE PITTS)	
Sample Age: 28h	Station: GE Pittsfield	

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	NOEL	LOEL	TOEL	TU	PMSD
00-5698-5576	2d Survival Rate	Fisher Exact/Bonferroni-Holm Test	100	> 100	n/a	1	n/a
16-8214-0700	6d Survival Rate	Fisher Exact/Bonferroni-Holm Test	100	> 100	n/a	1	n/a
21-3075-4580	Reproduction	Steel Many-One Rank Sum Test	100	> 100	n/a	1	14.5%

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	Level	%	95% LCL	95% UCL	TU
10-4381-4759	2d Survival Rate	Linear Interpolation (ICPIN)	EC5	>100	n/a	n/a	<1
			EC10	>100	n/a	n/a	<1 ✓
			EC15	>100	n/a	n/a	<1 ✓
			EC20	>100	n/a	n/a	<1 ✓
			EC25	>100	n/a	n/a	<1 ✓
			EC40	>100	n/a	n/a	<1 ✓
			EC50	>100	n/a	n/a	<1 ✓
00-2078-6848	Reproduction	Linear Interpolation (ICPIN)	IC5	87.59	4.654	n/a	1.142 ✓
			IC10	>100	n/a	n/a	<1 ✓
			IC15	>100	n/a	n/a	<1 ✓
			IC20	>100	n/a	n/a	<1 ✓
			IC25	>100	n/a	n/a	<1 ✓
			IC40	>100	n/a	n/a	<1 ✓
			IC50	>100	n/a	n/a	<1 ✓

CETIS Summary Report

Report Date: 22 Sep-15 15:30 (p 2 of 3)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

2d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0	L	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
75		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

6d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
0	L	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
6.25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
12.5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
25		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
50		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
75		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	29.8	27.7	31.9	26	34	0.9286	2.936	9.85%	0.00%
0	L	10	34.1	32.24	35.96	30	38	0.8226	2.601	7.63%	-14.43%
6.25		10	29.4	25.07	33.73	16	34	1.916	6.059	20.61%	1.34%
12.5		10	29.6	26.75	32.45	22	36	1.258	3.978	13.44%	0.67%
25		10	31.1	29.12	33.08	27	35	0.875	2.767	8.90%	-4.36%
50		10	28.7	25.21	32.19	17	35	1.542	4.877	16.99%	3.69%
75		10	29.6	26.92	32.28	20	34	1.185	3.748	12.66%	0.67%
100		10	27.9	25.32	30.48	22	34	1.14	3.604	12.92%	6.38%

CETIS Summary Report

Report Date: 22 Sep-15 15:30 (p 3 of 3)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

2d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	L	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
75		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

6d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
0	L	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
75		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	D	33	27	34	28	30	26	34	30	28	28
0	L	36	30	35	31	38	33	35	34	32	37
6.25		34	21	32	32	30	16	34	30	31	34
12.5		30	30	33	32	27	36	27	32	22	27
25		31	34	30	31	27	30	35	28	35	30
50		28	17	30	32	26	32	28	35	31	28
75		32	29	28	31	20	34	30	31	31	30
100		29	22	23	31	26	29	34	28	30	27

CETIS Analytical Report

Report Date: 22 Sep-15 15:30 (p 1 of 1)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

Analysis ID: 21-3075-4580 Endpoint: Reproduction CETIS Version: CETISv1.9.0
 Analyzed: 22 Sep-15 15:29 Analysis: Nonparametric-Control vs Treatments Official Results: Yes

Data Transform	Alt Hyp	Trials	Seed	TST b	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	n/a	n/a	n/a	100	> 100	n/a	1	14.5%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	115	74	3	18	Asymp	0.9766	Non-Significant Effect
		12.5	103	74	3	18	Asymp	0.8119	Non-Significant Effect
		25	121	74	5	18	Asymp	0.9945	Non-Significant Effect
		50	103	74	3	18	Asymp	0.8119	Non-Significant Effect
		75	112.5	74	4	18	Asymp	0.9605	Non-Significant Effect
		100	92.5	74	6	18	Asymp	0.4733	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	58.5714	9.7619	6	0.5712	0.7517	Non-Significant Effect
Error	1076.7	17.0905	63			
Total	1135.27		69			

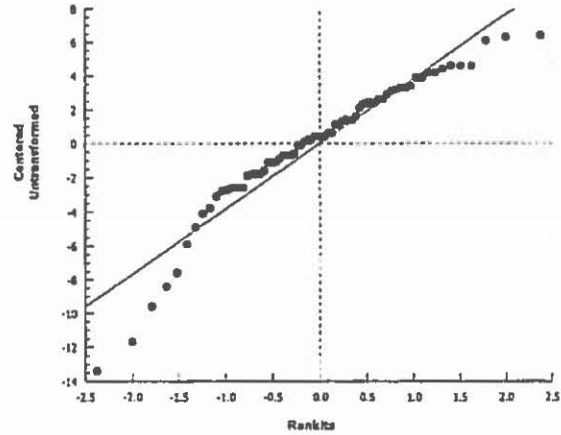
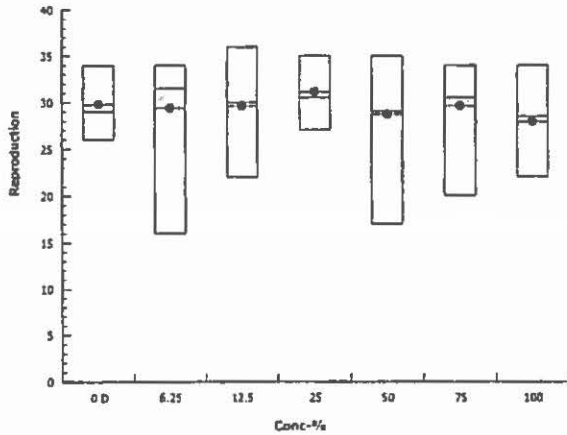
Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Bartlett Equality of Variance Test	8.115	16.81	0.2298	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.9235	0.9526	3.8E-04	Non-Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	10	29.8	27.7	31.9	29	26	34	0.9286	9.85%	0.00%
6.25		10	29.4	25.07	33.73	31.5	16	34	1.916	20.61%	1.34%
12.5		10	29.6	26.75	32.45	30	22	36	1.258	13.44%	0.67%
25		10	31.1	29.12	33.08	30.5	27	35	0.875	8.90%	-4.36%
50		10	28.7	25.21	32.19	29	17	35	1.542	16.99%	3.69%
75		10	29.6	26.92	32.28	30.5	20	34	1.185	12.66%	0.67%
100		10	27.9	25.32	30.48	28.5	22	34	1.14	12.92%	6.38%

Graphics



CETIS Analytical Report

Report Date: 22 Sep-15 15:30 (p 1 of 2)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test Aquatec Biological Sciences, Inc

Analysis ID: 10-4381-4759 Endpoint: 2d Survival Rate CETIS Version: CETISv1.9.0
 Analyzed: 22 Sep-15 15:29 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	1075610	200	Yes	Two-Point Interpolation

Point Estimates

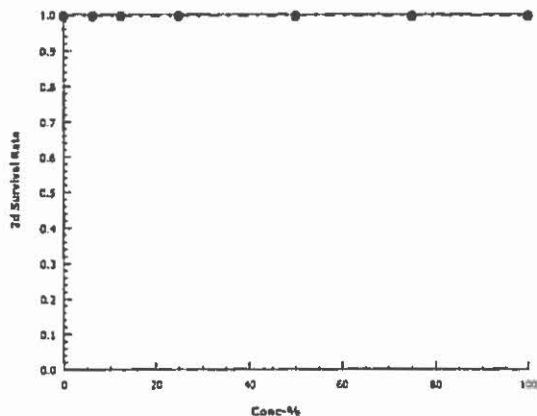
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
EC5	>100	n/a	n/a	<1	n/a	n/a
EC10	>100	n/a	n/a	<1	n/a	n/a
EC15	>100	n/a	n/a	<1	n/a	n/a
EC20	>100	n/a	n/a	<1	n/a	n/a
EC25	>100	n/a	n/a	<1	n/a	n/a
EC40	>100	n/a	n/a	<1	n/a	n/a
EC50	>100	n/a	n/a	<1	n/a	n/a

2d Survival Rate Summary

Calculated Variate(A/B)

Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	D	10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
6.25		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
12.5		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
25		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
50		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
75		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10
100		10	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%	10	10

Graphics



CETIS Analytical Report

Report Date: 22 Sep-15 15:30 (p 2 of 2)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

Analysis ID: 00-2078-6848 Endpoint: Reproduction CETIS Version: CETISv1.9.0
 Analyzed: 22 Sep-15 15:30 Analysis: Linear Interpolation (ICPIN) Official Results: Yes

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X+1)	Linear	1924700	200	Yes	Two-Point Interpolation

Point Estimates

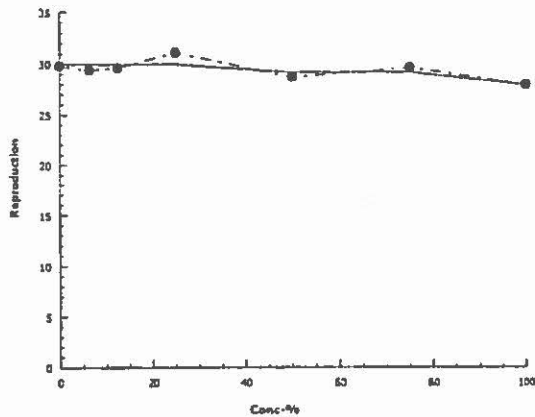
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC5	87.59	4.654	n/a	1.142	n/a	21.48
IC10	>100	n/a	n/a	<1	n/a	n/a
IC15	>100	n/a	n/a	<1	n/a	n/a
IC20	>100	n/a	n/a	<1	n/a	n/a
IC25	>100	n/a	n/a	<1	n/a	n/a
IC40	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Reproduction Summary

Calculated Variate

Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect
0	D	10	29.8	26	34	0.9286	2.936	9.85%	0.00%
6.25		10	29.4	16	34	1.916	6.059	20.61%	1.34%
12.5		10	29.6	22	36	1.258	3.978	13.44%	0.67%
25		10	31.1	27	35	0.875	2.767	8.90%	-4.36%
50		10	28.7	17	35	1.542	4.877	16.99%	3.69%
75		10	29.6	20	34	1.185	3.748	12.66%	0.67%
100		10	27.9	22	34	1.14	3.604	12.92%	6.38%

Graphics



CETIS Analytical Report

Report Date: 22 Sep-15 15:30 (p 1 of 2)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test Aquatec Biological Sciences, Inc

Analysis ID: 00-5698-5576 Endpoint: 2d Survival Rate CETIS Version: CETISv1.9.0
 Analyzed: 22 Sep-15 15:29 Analysis: STP 2x2 Contingency Tables Official Results: Yes

Data Transform	Alt Hyp	Trials	Seed	TST b	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	n/a	n/a	n/a	100	> 100	n/a	1	n/a

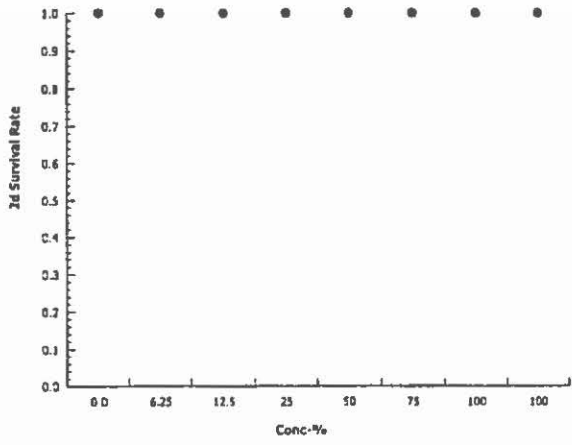
Fisher Exact/Bonferroni-Holm Test

Control	vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		75	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

Data Summary

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	D	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
75		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%

Graphics



CETIS Analytical Report

Report Date: 22 Sep-15 15:30 (p 2 of 2)
 Test Code: 69726 | 14-6996-8901

Ceriodaphnia 7-d Survival and Reproduction Test Aquatec Biological Sciences, Inc

Analysis ID: 16-8214-0700 Endpoint: 6d Survival Rate CETIS Version: CETISv1.9.0
 Analyzed: 22 Sep-15 15:29 Analysis: STP 2x2 Contingency Tables Official Results: Yes

Data Transform	Alt Hyp	Trials	Seed	TST b	NOEL	LOEL	TOEL	TU	PMSD
Untransformed	C > T	n/a	n/a	n/a	100	> 100	n/a	1	n/a

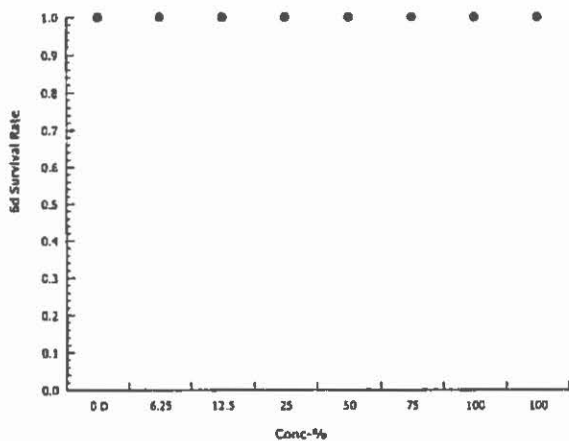
Fisher Exact/Bonferroni-Holm Test

Control	vs	Group	Test Stat	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	1.0000	Exact	1.0000	Non-Significant Effect
		12.5	1.0000	Exact	1.0000	Non-Significant Effect
		25	1.0000	Exact	1.0000	Non-Significant Effect
		50	1.0000	Exact	1.0000	Non-Significant Effect
		75	1.0000	Exact	1.0000	Non-Significant Effect
		100	1.0000	Exact	1.0000	Non-Significant Effect

Data Summary

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	D	10	0	10	1	0	0.0%
6.25		10	0	10	1	0	0.0%
12.5		10	0	10	1	0	0.0%
25		10	0	10	1	0	0.0%
50		10	0	10	1	0	0.0%
75		10	0	10	1	0	0.0%
100		10	0	10	1	0	0.0%

Graphics



CETIS Test Data Worksheet

Report Date: 22 Sep-15 15:28 (p 1 of 3)
 Test Code/ID: 14-6996-8901/69726

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatec Biological Sciences, Inc

Start Date: 15 Sep-15 10:55 Species: Ceriodaphnia dubia Sample Code: 14449
 End Date: 21 Sep-15 09:40 Protocol: EPA/821/R-02-013 (2002) Sample Source: NPDES Permit # MA0003891
 Sample Date: 14 Sep-15 07:00 Material: Industrial Effluent Sample Station: GE Pittsfield

Conc-%	Code	Rep	Pos	# Exposed	1d Surv	2d Surv	3d Surv	4d Surv	5d Surv	6d Surv	7d Surv	8d Surv	2d Neo	3d Neo	4d Neo	5d Neo	6d Neo	7d Neo
0	D	1	62	1		1				1	0			5	0	12	16	
0	D	2	74	1		1				1	0			0	4	11	12	
0	D	3	72	1		1				1	0			6	0	12	16	
0	D	4	39	1		1				1	0			6	0	10	12	
0	D	5	9	1		1				1	0			6	0	11	13	
0	D	6	80	1		1				1	0			6	9	0	11	
0	D	7	30	1		1				1	0			7	0	13	14	
0	D	8	61	1		1				1	0			0	5	11	14	
0	D	9	13	1		1				1	0			6	0	10	12	
0	D	10	58	1		1				1	0			0	6	8	14	
0	L	1	18	1		1				1	0			6	0	12	18	
0	L	2	44	1		1				1	0			0	7	11	12	
0	L	3	69	1		1				1	0			0	7	12	16	
0	L	4	70	1		1				1	0			5	0	10	16	
0	L	5	12	1		1				1	0			6	0	13	19	
0	L	6	15	1		1				1	0			0	6	14	13	
0	L	7	17	1		1				1	0			6	0	10	19	
0	L	8	34	1		1				1	0			4	0	13	17	
0	L	9	64	1		1				1	0			0	5	12	15	
0	L	10	73	1		1				1	0			0	7	14	16	
6.25		1	27	1		1				1	0			6	0	13	15	
6.25		2	52	1		1				1	0			0	5	11	5	
6.25		3	77	1		1				1	0			0	6	12	14	
6.25		4	68	1		1				1	0			6	0	11	15	
6.25		5	19	1		1				1	0			6	0	11	13	
6.25		6	59	1		1				1	0			6	0	0	10	
6.25		7	31	1		1				1	0			7	0	12	15	
6.25		8	75	1		1				1	0			6	0	10	14	
6.25		9	65	1		1				1	0			0	7	12	12	
6.25		10	63	1		1				1	0			6	0	14	14	

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CETIS Test Data Worksheet

Report Date: 22 Sep-15 15:28 (p 2 of 3)
 Test Code/ID: 14-6996-8901/69726

Conc-%	Code	Rep	Pos	# Exposed	1d Surv	2d Surv	3d Surv	4d Surv	5d Surv	6d Surv	7d Surv	8d Surv	2d Neo	3d Neo	4d Neo	5d Neo	6d Neo	7d Neo
12.5		1	21	1		1				1	0			5	0	11	14	
12.5		2	57	1		1				1	0			0	7	10	13	
12.5		3	42	1		1				1	0			0	8	12	13	
12.5		4	10	1		1				1	0			6	0	13	13	
12.5		5	26	1		1				1	0			0	5	10	12	
12.5		6	67	1		1				1	0			7	0	14	15	
12.5		7	1	1		1				1	0			0	0	12	15	
12.5		8	40	1		1				1	0			5	0	11	16	
12.5		9	45	1		1				1	0			0	0	10	12	
12.5		10	28	1		1				1	0			0	0	14	13	
25		1	29	1		1				1	0			6	0	10	15	
25		2	50	1		1				1	0			0	8	10	16	
25		3	23	1		1				1	0			5	0	11	14	
25		4	20	1		1				1	0			6	0	11	14	
25		5	43	1		1				1	0			7	0	10	10	
25		6	79	1		1				1	0			5	0	13	12	
25		7	48	1		1				1	0			6	0	13	16	
25		8	47	1		1				1	0			1	0	13	14	
25		9	22	1		1				1	0			7	0	14	14	
25		10	33	1		1				1	0			6	0	12	12	
50		1	37	1		1				1	0			5	0	10	13	
50		2	46	1		1				1	0			0	7	10	0	
50		3	55	1		1				1	0			0	6	12	12	
50		4	4	1		1				1	0			6	0	13	13	
50		5	41	1		1				1	0			6	0	11	9	
50		6	35	1		1				1	0			0	6	13	13	
50		7	24	1		1				1	0			6	0	9	13	
50		8	76	1		1				1	0			6	0	13	16	
50		9	56	1		1				1	0			7	0	9	15	
50		10	32	1		1				1	0			6	10	0	12	
75		1	53	1		1				1	0			6	0	13	13	
75		2	38	1		1				1	0			0	6	10	13	
75		3	60	1		1				1	0			6	0	11	11	
75		4	54	1		1				1	0			7	0	12	12	

CETIS Test Data Worksheet

Report Date: 22 Sep-15 15:28 (p 3 of 3)

Test Code/ID: 14-6996-8901/69726

Conc-%	Code	Rep	Pos	# Exposed	1d Surv	2d Surv	3d Surv	4d Surv	5d Surv	6d Surv	7d Surv	8d Surv	2d Neo	3d Neo	4d Neo	5d Neo	6d Neo	7d Neo
75		5	5	1		1				1	0			6	0	10	4	
75		6	71	1		1				1	0			6	0	13	15	
75		7	25	1		1				1	0			5	0	11	14	
75		8	51	1		1				1	0			5	0	12	14	
75		9	6	1		1				1	0			0	6	12	13	
75		10	8	1		1				1	0			0	7	11	12	
100		1	36	1		1				1	0			5	0	10	14	
100		2	3	1		1				1	0			0	5	7	10	
100		3	16	1		1				1	0			4	0	6	13	
100		4	14	1		1				1	0			6	0	13	12	
100		5	78	1		1				1	0			6	0	10	10	
100		6	7	1		1				1	0			6	0	9	14	
100		7	2	1		1				1	0			6	0	12	16	
100		8	11	1		1				1	0			6	0	12	10	
100		9	66	1		1				1	0			6	0	11	13	
100		10	49	1		1				1	0			6	0	7	14	

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Project: GE Pittsfield NPDES

Permit No. MA0003891

Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

TOXICITY TEST DATA:

Test ID: 69726

% Effluent	Rep.	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
0 % Lab CTRL	1	0	0	0	6	0	12	18	
	2	0	0	0	0	7	11	12	
	3	0	0	0	0	7	12	16	
	4	0	0	0	5	0	10	16	
	5	0	0	0	6	0	13	19	
	6	0	0	0	0	6	14	13	
	7	0	0	0	6	0	10	19	
	8	0	0	0	4	0	13	17	
	9	0	0	0	0	5	12	15	
	10	0	0	0	0	7	14	16	
0 % Receiving	1	0	0	0	5	0	12	16	
	2	0	0	0	0	4	11	12	
	3	0	0	0	6	0	12	16	
	4	0	0	0	6	0	10	12	
	5	0	0	0	6	0	11	13	
	6	0	0	0	6	9	0	11	
	7	0	0	0	7	0	13	14	
	8	0	0	0	0	5	11	14	
	9	0	0	0	6	0	10	12	
	10	0	0	0	0	6	8	14	
6.25 % Effluent	1	0	0	0	6	0	13	15	
	2	0	0	0	0	5	11	5	
	3	0	0	0	0	6	12	14	
	4	0	0	0	6	0	11	15	
	5	0	0	0	6	0	11	13	
	6	0	0	0	6	0	0	10	
	7	0	0	0	7	0	12	15	
	8	0	0	0	6	0	10	14	
	9	0	0	0	0	7	12	12	
	10	0	0	0	6	0	14	14	
12.5 % Effluent	1	0	0	0	5	0	11	14	
	2	0	0	0	0	7	10	13	
	3	0	0	0	0	8	12	13	
	4	0	0	0	6	0	13	13	
	5	0	0	0	0	5	10	12	
	6	0	0	0	7	0	14	15	
	7	0	0	0	0	0	12	15	
	8	0	0	0	0	0	11	16	
	9	0	0	0	0	0	10	12	
	10	0	0	0	0	0	14	13	
Sample No.	47123	47123	47128	47128	47135	47135	TEST		
Fed:	✓	✓	✓	✓	✓	✓	END		
Renewal (D/T/I)	9/15/15 1055 KP	9/16/15 1900 KP	9/17/15 12:00 SW	9/18/15 13:00 SW	9/19/15 1025 KP	9/20/15 1010 KP	9/21/15 0940 KP		

0 = Original organism surviving, No young; D = Original organism dead; # = Number young released; * = Lab-induced mortality

Aquatec Biological Sciences, Inc.

SDG: 14449

Reviewed by: SW 28 Date: 9/22/15

Project: 15014

Project: GE Pittsfield NPDES

Permit No. MA0003891

Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

TOXICITY TEST DATA CONTINUED:

Test ID: 69726

% Effluent	Rep.	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
25 % Effluent	1	0	0	0	6	0	10	15	
	2	0	0	0	0	8	10	16	
	3	0	0	0	5	0	11	14	
	4	0	0	0	6	0	11	14	
	5	0	0	0	7	0	10	10	
	6	0	0	0	5	0	13	12	
	7	0	0	0	6	0	13	16	
	8	0	0	0	1	0	13	14	
	9	0	0	0	7	0	14	14	
	10	0	0	0	6	0	12	12	
50 % Effluent	1	0	0	0	5	0	10	13	
	2	0	0	0	0	7	10	0	
	3	0	0	0	0	6	12	12	
	4	0	0	0	6	0	13	13	
	5	0	0	0	6	0	11	9	
	6	0	0	0	0	6	13	13	
	7	0	0	0	6	0	9	13	
	8	0	0	0	6	0	13	16	
	9	0	0	0	7	0	9	15	
	10	0	0	0	6	10	0	12	
75 % Effluent	1	0	0	0	6	0	13	13	
	2	0	0	0	0	6	10	13	
	3	0	0	0	6	0	11	11	
	4	0	0	0	7	0	12	12	
	5	0	0	0	6	0	10	4	
	6	0	0	0	6	0	13	15	
	7	0	0	0	5	0	11	14	
	8	0	0	0	5	0	12	14	
	9	0	0	0	0	6	12	13	
	10	0	0	0	0	7	11	12	
100 % Effluent	1	0	0	0	5	0	10	14	
	2	0	0	0	0	5	7	10	
	3	0	0	0	4	0	6	13	
	4	0	0	0	6	0	13	12	
	5	0	0	0	6	0	10	10	
	6	0	0	0	6	0	9	14	
	7	0	0	0	6	0	12	16	
	8	0	0	0	6	0	12	10	
	9	0	0	0	6	0	11	13	
	10	0	0	0	6	0	7	14	
Sample No.	47123	47123	47128	47128	47135	47135	TEST		
Fed:	✓	✓	✓	✓	✓	✓	END		
Renewal (D/T/I)	9/15/15 1155 KP	9/16/15 1900 KP	9/17/15 12.00	9/18/15 13.00	9/19/15 1025 KP	9/20/15 1010 KP	9/21/15 0940 KP		

YCT Lot Number: 091015 YCT

Selenastrum Lot Number: 091015 Sel

0 = Original organism surviving, No young; D = Original organism dead; # = Number young released; * = Lab-induced mortality

Aquatec Biological Sciences, Inc.
Reviewed by: [Signature] Date: 9/23/15

SDG: 14449
Project: 15014

Documentation of Collection of Ceriodaphnia dubia

Culture ID	Date / Time / Init Cleared of Neonates	Date / Time / Init Neonate Collection	Number of Cups Collected	Fed YC / Selenastrum (Lot #'s)
090815A	09/14/15 / 1:15 / CMA	9/14/15 1830 KP	4	091015
090815B	09/14/15 / 12:45 / CMA	9/14/15 1835 KP	3	
090815A	9/14/15 1830 KP	9/14/15 2255 KP	3	
090815B	9/14/15 1835 KP	9/14/15 2300 KP	6	
090815A	9/14/15 2255 KP	9/15/15 0650 JW	5	
090815B	9/14/15 2300 KP	9/15/15 07:00 JW	4	
090815A	9/15/15 06:50 JW			
090815B	9/15/15 07:00 JW			

Project Description / Test Use: GE Pittsfield

Neonates collected must number at least eight per cup, and be from a healthy adult female.

Project: GE Pittsfield NPDES

Permit No. MA0003891

Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

INITIAL CHEMISTRY DATA:

Test ID: 69726

% Effluent	Analysis	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
0 % Lab CTRL (1)	pH	8.0	8.0	7.9	7.8	7.8	7.9	
	DO	8.3	8.3	7.9	8.6	8.2	7.9	
	Temp.	24.1	25.4	25.1	24.4	25.0	25.0	
	Cond.	250	255	250	252	256	258	
0 % Receiving D.L.W	pH	7.9	8.0	7.8	8.1	7.7	8.2	
	DO	7.8	8.3	8.2	7.8	9.2	7.9	
	Temp.	25.5	25.0	24.9	25.1	25.4	25.9	
	Cond.	258	259	262	262	300	297	
6.25 % Effluent	pH	8.0	8.1	7.9	8.2	7.8	8.3	
	DO	7.8	8.7	8.2	7.8	9.2	7.8	
	Temp.	25.5	25.0	24.6	24.9	25.4	25.9	
	Cond.	326	325	318	318	361	353	
12.5 % Effluent	pH	8.1	8.2	8.0	8.2	7.9	8.3	
	DO	7.8	8.6	8.1	7.8	9.1	7.8	
	Temp.	25.4	24.9	24.7	24.9	25.4	25.8	
	Cond.	392	392	375	373	412	407	
25 % Effluent	pH	8.1	8.2	8.0	8.2	7.9	8.3	
	DO	7.7	8.7	8.1	7.8	8.9	7.9	
	Temp.	25.3	24.8	24.8	24.9	25.4	25.8	
	Cond.	523	521	481	480	523	516	
50 % Effluent	pH	8.2	8.3	8.1	8.3	8.0	8.3	
	DO	7.6	8.7	8.0	7.9	8.8	7.8	
	Temp.	25.1	24.8	24.8	24.9	25.5	25.8	
	Cond.	780	776	693	691	739	725	
75 % Effluent	pH	8.2	8.3	8.1	8.3	8.0	8.3	
	DO	7.6	8.7	7.9	7.9	8.7	7.9	
	Temp.	25.0	24.8	24.9	24.8	25.5	25.8	
	Cond.	1024	1022	898	895	954	929	
100 % Effluent	pH	8.1	8.1	8.1	8.3	8.0	8.3	
	DO	7.5	8.7	7.7	8.0	8.7	8.0	
	Temp.	25.0	24.9	25.0	24.8	25.6	25.7	
	Cond.	1276	1244	1116	1099	1160	1135	
	Sample #	47123	47123	47128	47128	47135	47135	
	Date	9/15/15	9/16/15	9/17/15	9/18/15	9/19/15	9/20/15	
	Initials	KP	OW	OW	OW	KP	KP	

NOTES:

Project: GE Pittsfield NPDES

Permit No. MA0003891

Pipe No. 1

1002.0 Daphnid, *C. dubia*, Survival and Reproduction Test

Species: *Ceriodaphnia dubia*

Reference: EPA-821-R-02-013

SOP: TOX2-002

FINAL CHEMISTRY DATA:

Test ID: 69726

% Effluent	Analysis	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
0 % Lab CTRL 1:1	pH	8.2	7.9	7.9	7.9	7.9	7.9	
	DO	7.8	7.9	7.7	7.9	7.7	8.1	
	Temp.	25.4	25.6	25.1	24.9	25.1	25.0	
	Cond.	259	262	263	267	267	266	
0 % Receiving DILW	pH	8.2	7.9	8.1	8.1	8.2	8.3	
	DO	7.9	7.8	7.7	7.8	7.7	8.1	
	Temp.	25.2	25.5	24.9	24.8	24.9	24.4	
	Cond.	266	267	275	271	305	305	
6.25 % Effluent	pH	8.4	8.1	8.2	8.2	8.3	8.4	
	DO	7.8	7.7	7.6	7.8	7.7	8.2	
	Temp.	25.3	25.5	25.2	25.0	25.0	24.5	
	Cond.	331	330	324	325	364	363	
12.5 % Effluent	pH	8.5	8.3	8.3	8.3	8.4	8.5	
	DO	7.8	7.7	7.7	7.8	7.8	8.2	
	Temp.	25.4	25.7	25.3	25.0	25.0	24.6	
	Cond.	398	396	381	379	416	416	
25 % Effluent	pH	8.6	8.4	8.4	8.4	8.5	8.6	
	DO	7.9	7.7	7.7	7.7	7.8	8.2	
	Temp.	25.5	25.6	25.3	25.0	25.0	24.6	
	Cond.	526	526	489	485	518	523	
50 % Effluent	pH	8.7	8.6	8.5	8.6	8.6	8.7	
	DO	7.9	7.8	7.8	7.8	7.8	8.2	
	Temp.	25.5	25.6	25.3	25.1	25.0	24.7	
	Cond.	769	773	699	691	730	727	
75 % Effluent	pH	8.5	8.6	8.6	8.7	8.7	8.7	
	DO	8.0	7.8	7.8	7.8	7.8	8.2	
	Temp.	25.4	25.6	25.1	25.1	24.9	24.7	
	Cond.	926	1002	898	886	928	921	
100 % Effluent	pH	8.5	8.6	8.4	8.6	8.7	8.5	
	DO	8.0	7.8	7.8	7.9	7.9	8.3	
	Temp.	25.3	25.6	25.1	25.0	24.9	24.6	
	Cond.	1073	1196	1024	1033	1108	1052	
	Sample #	47123	47123	47128	47128	47135	47135	
	Date	9/16/15	9/17/15	9/18/15	9/19/15	9/20/15	9/21/15	
	Initials	JP	JP	JP	JP	JP	JP	

NOTES:



Aquatec Biological Sciences, Inc.

273 Commerce Street
Williston, VT 05495

Tel: (802) 860 - 1638 Fax: (802) 658 - 3189

SDG: 14449
Project: 15014

ALS Environmental
1565 Jefferson Road
Building 300, Suite 360
Rochester, NY 14623

Tel: (585) 672-7470

Fax:

E-Mail:

ALKALINITY AND HARDNESS ANALYSIS

Sample ID:	Analysis Date:	Alkalinity: (mg/L)	Hardness: (mg/L)
47123 Outfall Composite (64G-3Q-1X-CX)	9/15/2015	368.0	344.0
47124 Housatonic River (HR-3Q1X-GX)	9/15/2015	80.0	96.0
47128 Outfall Composite (64G-3Q-2X-CX)	9/17/2015	332.0	304.0
47129 Housatonic River (HR-3Q-2X-GX)	9/17/2015	88.0	104.0
47135 Outfall Composite (64G-3Q-3X-CX)	9/19/158	328.0	312.0
47136 Housatonic River (HR-3Q-3X-GX)	9/19/158	100.0	116.0

TOTAL RESIDUAL CHLORINE (TRC) ANALYSIS

Sample ID:	Analysis Date:	TRC: (mg/L)	Dechlorinated (Y/N)
47123 Outfall Composite (64G-3Q-1X-CX)	9/15/2015	0.02	N
47128 Outfall Composite (64G-3Q-2X-CX)	9/17/2015	0.05	N
47135 Outfall Composite (64G-3Q-3X-CX)	9/19/2015	0.08	N

NOTES:

Y = The sample(s) was dechlorinated with sodium thiosulfate before use in toxicity tests.

N = Dechlorination was not necessary.



Aquatec Biological Sciences, Inc.

273 Commerce Street
 Williston, VT 05495
 Tel: (802) 860 - 1638 Fax: (802) 658 - 3189

ALS Environmental
 1565 Jefferson Road
 Building 300, Suite 360
 Rochester, NY 14623

Tel: (585) 672-7470
 Fax:
 E-Mail:

Project: GE Pittsfield NPDES

Permit No. MA0003891

Pipe No. 1

SAMPLE PREPARATION:

	Initial Sample		Second Sample		Third Sample		LAB CONTROL
	EFFLUENT	RECEIVING	EFFLUENT	RECEIVING	EFFLUENT	RECEIVING	
Sample No.	47123	47124	47128	47129	47135	47136	
Filtration	60 Micron ✓	60 Micron ✓	60 Micron ✓	60 Micron ✓	60 Micron ✓	60 Micron ✓	N/A
Chlorine (1)	ND	/	ND	/	ND	—	N/A
Chlorine (2)	/	/	/	/	—	—	N/A
NaThio Lot No.	/	/	/	/	—	—	N/A
Original/Final Salinity:	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FF Lot No	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Date / Initials:	JW 9/15/15				9/19/15 VP		

- (1) Record vol. 0.025 N sodium thiosulfate to dechlorinate 100mL sample or record "ND" (Not Detected)
- (2) Dechlorination required if detected. Record vol. 0.25 N sodium thiosulfate added per gallon effluent.

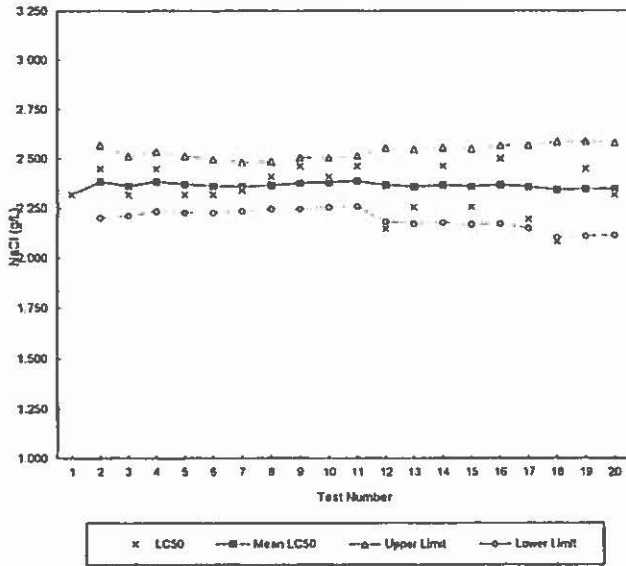
Standard Reference Toxicant Control Charts

Ceriodaphnia dubia
Reference Control Chart for NaCl Acute Toxicity

Test Number	Test Date	LC50 (g/L)	Mean LC50	Calculated limits	
				Upper	Lower
1	9/24/13-9/26/13	2.319	2.32		
2	10/22/13-10/24/13	2.449	2.38	2.57	2.20
3	11/5/13-11/7/13	2.319	2.36	2.51	2.21
4	12/4/13-12/6/13	2.449	2.38	2.53	2.23
5	1/7/14-1/9/14	2.319	2.37	2.51	2.23
6	2/4/14-2/6/14	2.319	2.36	2.50	2.23
7	3/11/14-3/13/14	2.342	2.36	2.48	2.24
8	4/8/14-4/10/14	2.409	2.37	2.49	2.25
9	5/28/14-5/30/14	2.464	2.38	2.51	2.25
10	7/15/14-7/17/14	2.409	2.38	2.50	2.26
11	8/19/14-8/21/14	2.464	2.39	2.52	2.26
12	9/9/14-9/11/14	2.147	2.37	2.55	2.18
13	10/7/14-10/9/14	2.257	2.36	2.55	2.17
14	11/11/14-11/13/14	2.464	2.37	2.55	2.18
15	12/16/14-12/18/14	2.257	2.36	2.55	2.17
16	1/6/15-1/8/15	2.500	2.37	2.58	2.17
17	4/21/15-4/23/15	2.195	2.36	2.57	2.15
18	5/19/15-5/21/15	2.083	2.34	2.58	2.10
19	6/9/15-6/11/15	2.450	2.35	2.50	2.11
20	7/21/15-7/23/15	2.319	2.35	2.58	2.11

Organisms Source: Aquatic Biological Sciences, Inc. In-house cultures

Reference Control Chart
Ceriodaphnia dubia Acute LC50

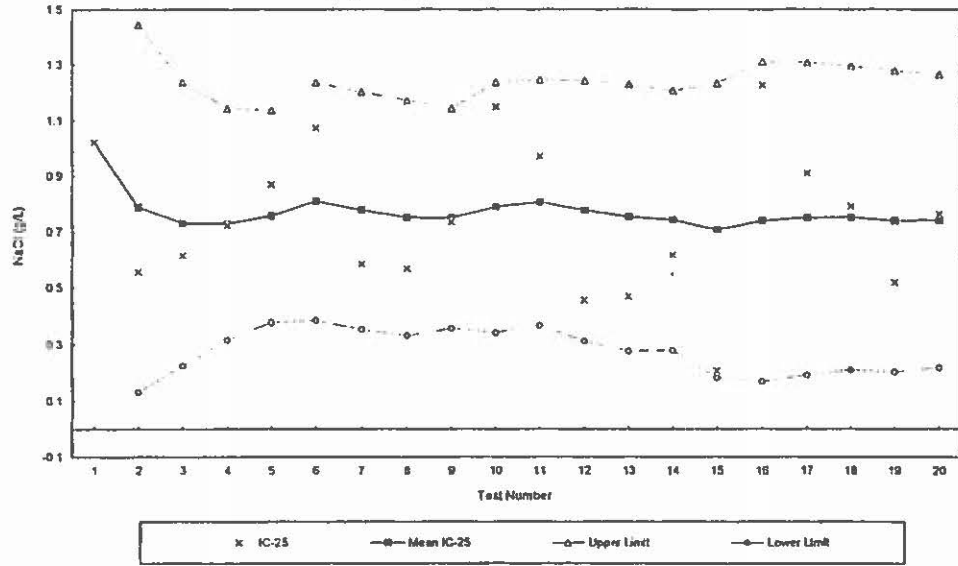


Ceriodaphnia dubia
Reference Control Chart for NaCl Chronic Toxicity based on reproduction

Test Number	Test Date	IC-25 (g/L)	Mean IC-25	Calculated limits		CV of per test IC25	Avg. CV	Repro. PMSD (%)	Avg. PMSD (%)
				Upper	Lower				
1	9/24/13-9/30/13	1.021	1.02					11	
2	10/22/13-10/28/13	0.557	0.79	1.45	0.13	0.59	0.59	22.8	11.0
3	11/5/13-11/12/13	0.615	0.73	1.24	0.23	0.41	0.50	15.1	10.9
4	12/4/13-12/10/13	0.724	0.73	1.14	0.32	0.29	0.43	10.2	16.3
5	1/7/14-1/13/14	0.87	0.76	1.14	0.38	0.22	0.38	14.5	14.8
6	2/4/14-2/10/14	1.072	0.81	1.24	0.38	0.20	0.34	9.74	14.7
7	3/11/14-3/18/14	0.585	0.78	1.20	0.35	0.36	0.34	12.7	13.9
8	4/8/14-4/15/14	0.569	0.75	1.17	0.33	0.37	0.35	14.5	13.7
9	5/28/14-6/3/14	0.736	0.75	1.14	0.36	0.27	0.34	9.18	13.8
10	7/15/14-7/21/14	1.148	0.79	1.24	0.34	0.19	0.32	12.5	13.3
11	8/19/14-8/25/14	0.97	0.81	1.24	0.37	0.23	0.31	18.1	13.2
12	9/9/14-9/16/14	0.456	0.78	1.24	0.31	0.51	0.33	24.1	13.7
13	10/7/14-10/13/14	0.469	0.75	1.23	0.28	0.51	0.34	40.2	14.5
14	11/11/14-11/17/14	0.617	0.74	1.21	0.28	0.38	0.35	22.2	16.5
15	12/16/14-12/22/14	0.208	0.71	1.23	0.18	1.26	0.41	48.9	16.9
16	1/6/15-1/13/15	1.227	0.74	1.31	0.17	0.23	0.40	60.1	18.9
17	4/21/15-4/28/15	0.91	0.75	1.31	0.19	0.31	0.39	23.9	21.5
18	5/19/15-5/25/15	0.7931	0.75	1.29	0.21	0.34	0.39	40.7	21.8
19	6/9/15-6/16/15	0.52	0.74	1.28	0.20	0.52	0.40	18.9	22.7
20	7/21/15-7/27/15	0.765	0.74	1.26	0.22	0.34	0.40	8.02	21.8

Organisms Source: Aquatic Biological Sciences, Inc. In-house cultures

Reference Control Chart
Ceriodaphnia dubia Chronic IC25



Assessment of test precision and sensitivity: The average CV of per-test IC25 values was near the 75th Quartile (0.41 presented in Table 3-2 of EPA 833-R-00-003) indicating some variability of IC25 values reported for these tests. The per-test PMSD values were less than the EPA upper limit of 47% indicating acceptable variability of test data. The cumulative average PMSD values were near the EPA lower boundary (13%), indicating high-to-moderate statistical sensitivity for this test method when averaged for the most recent 20 tests.

APPENDIX 2

Laboratory Reports

ALS-Rochester
Veolia, Inc.

GE Pittsfield
Toxicity pH

Date: 9/14/15

Chronic Day 1

Effluent Composite

Sample # 64G-3Q-1X-CX

Date 9/14/15

Time 7⁰⁰ am

pH 7.51 su temp. 15°C

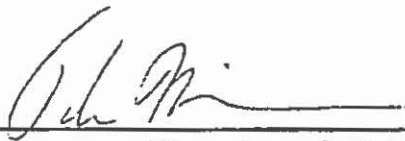
River/Dilution Water

Sample # HR-3Q-1X-GX

Date 9/14/15

Time 10¹⁰ am

pH 7.79 su temp. 15.9°C



9/14/15

Signature & Date

Signature & Date

GE Pittsfield
Toxicity pH

Date: 9/16/15

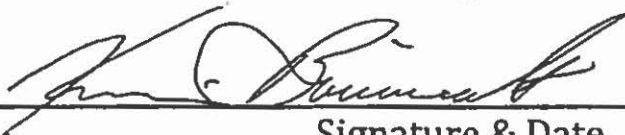
Chronic Day 1

Effluent Composite

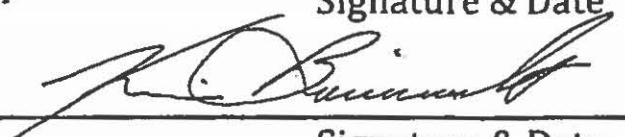
Sample # 64G-3Q-2X-CX
Date 9/16/15
Time 7:15am
pH 7.67 su temp. 7.2°C

River/Dilution Water

Sample # HR-3Q-2X-GX
Date 9/16/15
Time 8:20am
pH 7.64 su temp. 16.8°C



Signature & Date



Signature & Date

GE Pittsfield
Toxicity pH

Date: 9/18/15

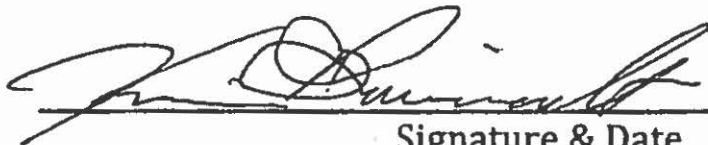
Chronic Day 3

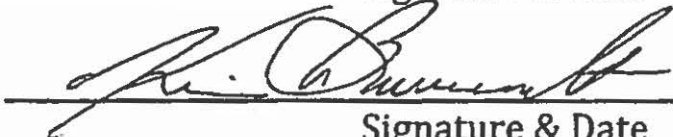
Effluent Composite

Sample # 64G-30-3X-CX
Date 9/18/15
Time ~~7:15~~ 7:15 am
pH 7.19 su temp. 7.4

River/Dilution Water

Sample # HR-30-3X-GX
Date 9/18/15
Time 8:40 am
pH 7.68 su temp. 16.4 °C

 9/18/15
Signature & Date

 9/18/15
Signature & Date

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-1X-CX
 Lab Code: R1507686-001

Service Request: R1507686
 Date Collected: 9/14/15 0700
 Date Received: 9/16/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/18/15	9/23/15 12:46	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/25/15	10/1/15 21:39	
Copper, Total	200.8	0.0017		mg/L	0.0010	0.0002	1	9/25/15	10/1/15 21:39	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/25/15	10/1/15 21:39	
Nickel, Total	200.8	0.0014	B	mg/L	0.0010	0.00006	1	9/25/15	10/1/15 21:39	
Zinc, Total	200.8	0.0050	U	mg/L	0.0050	0.0012	1	9/25/15	10/1/15 21:39	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-1X-GX
 Lab Code: R1507686-002

Service Request: R1507686
 Date Collected: 9/14/15 1010
 Date Received: 9/16/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/18/15	9/23/15 12:53	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/25/15	10/1/15 21:45	
Copper, Total	200.8	0.0006	J	mg/L	0.0010	0.0002	1	9/25/15	10/1/15 21:45	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/25/15	10/1/15 21:45	
Nickel, Total	200.8	0.0006	BJ	mg/L	0.0010	0.00006	1	9/25/15	10/1/15 21:45	
Zinc, Total	200.8	0.0017	J	mg/L	0.0050	0.0012	1	9/25/15	10/1/15 21:45	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-1X-CX
 Lab Code: R1507686-003

Service Request: R1507686
 Date Collected: 9/14/15 0700
 Date Received: 9/16/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	410		mg/L	2.0	1	NA	9/16/15 14:03	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	1	NA	9/16/15 14:28	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	2.5		mg/L	1.0	1	NA	9/17/15 12:22	
Solids, Total	SM 2540 B-1997(2011)	691		mg/L	10	1	NA	9/16/15 08:40	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	681		mg/L	10	1	NA	9/16/15 12:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-1X-GX
 Lab Code: R1507686-004

Service Request: R1507686
 Date Collected: 9/14/15 1010
 Date Received: 9/16/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	92.7		mg/L	2.0	1	NA	9/16/15 14:03	
Ammonia as Nitrogen, undistilled	350.1	0.050	U	mg/L	0.050	1	NA	9/16/15 14:29	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	5.7		mg/L	1.0	1	NA	9/17/15 13:25	
Solids, Total	SM 2540 B-1997(2011)	155		mg/L	10	1	NA	9/16/15 08:40	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	151		mg/L	10	1	NA	9/16/15 12:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-2X-CX
 Lab Code: R1507762-001

Service Request: R1507762
 Date Collected: 9/16/15 0700
 Date Received: 9/17/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/18/15	9/23/15 15:21	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/25/15	10/1/15 21:51	
Copper, Total	200.8	0.0013		mg/L	0.0010	0.0002	1	9/25/15	10/1/15 21:51	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/25/15	10/1/15 21:51	
Nickel, Total	200.8	0.0014	B	mg/L	0.0010	0.00006	1	9/25/15	10/1/15 21:51	
Zinc, Total	200.8	0.0012	J	mg/L	0.0050	0.0012	1	9/25/15	10/1/15 21:51	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-2X-GX
 Lab Code: R1507762-002

Service Request: R1507762
 Date Collected: 9/16/15 0820
 Date Received: 9/17/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/18/15	9/23/15 15:30	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/25/15	10/1/15 21:57	
Copper, Total	200.8	0.0007	J	mg/L	0.0010	0.0002	1	9/25/15	10/1/15 21:57	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/25/15	10/1/15 21:57	
Nickel, Total	200.8	0.0007	BJ	mg/L	0.0010	0.00006	1	9/25/15	10/1/15 21:57	
Zinc, Total	200.8	0.0020	J	mg/L	0.0050	0.0012	1	9/25/15	10/1/15 21:57	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-2X-CX
 Lab Code: R1507762-003

Service Request: R1507762
 Date Collected: 9/16/15 0700
 Date Received: 9/17/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	356	mg/L	2.0	1	NA	9/17/15 20:00	
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.050 U	mg/L	0.050	10	NA	9/23/15 12:50	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	2.2	mg/L	1.0	1	NA	9/18/15 12:19	
Solids, Total	SM 2540 B-1997(2011)	581	mg/L	10	1	NA	9/18/15 18:24	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	584	mg/L	10	1	NA	9/18/15 12:30	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-2X-GX
 Lab Code: R1507762-004

Service Request: R1507762
 Date Collected: 9/16/15 0820
 Date Received: 9/17/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	102	mg/L	2.0	1	NA	9/17/15 20:00	
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.050 U	mg/L	0.050	10	NA	9/23/15 16:15	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	5.2	mg/L	1.0	1	NA	9/18/15 12:40	
Solids, Total	SM 2540 B-1997(2011)	132	mg/L	10	1	NA	9/18/15 18:24	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	138	mg/L	10	1	NA	9/21/15 11:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-3X-CX
 Lab Code: R1507852-001

Service Request: R1507852
 Date Collected: 9/18/15 0700
 Date Received: 9/19/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/22/15	9/25/15 15:20	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/23/15	9/29/15 10:37	
Copper, Total	200.8	0.0020		mg/L	0.0010	0.0002	1	9/23/15	9/29/15 10:37	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/23/15	9/29/15 10:37	
Nickel, Total	200.8	0.0015		mg/L	0.0010	0.00006	1	9/23/15	10/2/15 13:31	
Zinc, Total	200.8	0.0050	U	mg/L	0.0050	0.0012	1	9/23/15	9/29/15 10:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-3X-GX
 Lab Code: R1507852-002

Service Request: R1507852
 Date Collected: 9/18/15 0840
 Date Received: 9/19/15

Basis: NA

Inorganic Parameters

Analyte Name	Method	Result	Q	Units	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Note
Aluminum, Total	200.7	0.10	U	mg/L	0.10	0.02	1	9/22/15	9/25/15 15:26	
Cadmium, Total	200.8	0.0010	U	mg/L	0.0010	0.00003	1	9/23/15	9/29/15 10:43	
Copper, Total	200.8	0.0007	J	mg/L	0.0010	0.0002	1	9/23/15	9/29/15 10:43	
Lead, Total	200.8	0.0010	U	mg/L	0.0010	0.0003	1	9/23/15	9/29/15 10:43	
Nickel, Total	200.8	0.0006	BJ	mg/L	0.0010	0.00006	1	9/23/15	10/2/15 13:37	
Zinc, Total	200.8	0.0019	J	mg/L	0.0050	0.0012	1	9/23/15	9/29/15 10:43	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: 64G-3Q-3X-CX
 Lab Code: R1507852-003

Service Request: R1507852
 Date Collected: 9/18/15 0700
 Date Received: 9/19/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	370		mg/L	2.0	1	NA	9/21/15 13:27	
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.050	U	mg/L	0.050	10	NA	9/23/15 13:41	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	2.2		mg/L	1.0	1	NA	9/21/15 23:44	
Solids, Total	SM 2540 B-1997(2011)	605		mg/L	10	1	NA	9/21/15 10:37	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	597		mg/L	10	1	NA	9/21/15 11:37	

ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Client: General Electric Company
 Project: GE-Pittsfield NPDES Chronic Biomonitoring
 Sample Matrix: Water
 Sample Name: HR-3Q-3X-GX
 Lab Code: R1507852-004

Service Request: R1507852
 Date Collected: 9/18/15 0840
 Date Received: 9/19/15

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
Alkalinity, Total as CaCO3	SM 2320 B-1997(2011)	111		mg/L	2.0	1	NA	9/21/15 13:27	
Ammonia as Nitrogen, undistilled	ASTM D6919-09	0.050	U	mg/L	0.050	10	NA	9/23/15 13:58	
Carbon, Total Organic (TOC)	SM 5310 C-2000(2011)	4.3		mg/L	1.0	1	NA	9/22/15 00:05	
Solids, Total	SM 2540 B-1997(2011)	160		mg/L	10	1	NA	9/21/15 10:37	
Solids, Total Dissolved (TDS)	SM 2540 C-1997(2011)	160		mg/L	10	1	NA	9/21/15 11:37	

APPENDIX 3

Chain of Custody Forms



Cooler Receipt and Preservation Check Form

Project/Client AG Pcts. Folder Number R15-7686

Cooler received on 9/16/15 by: e COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y <input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y <input checked="" type="radio"/> N NA
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<input checked="" type="radio"/> NA

8. Temperature Readings Date: 9/16/15 Time: 0912 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>4.5</u>							
Correction Factor (°C)	<u>-</u>							
Corrected Temp (°C)	<u>4.5</u>							
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> N	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Pootly Packed Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by e on 9/16/15 at 0915
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: [Signature]

Cooler Breakdown: Date: 9/16/15 Time: 113 by: MDS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tcdlar® Bags inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	
≥12	NaOH									Yes=All samples OK
≤2	HNO ₃	X		<u>BDB326145E</u>	<u>7/16</u>					No=Samples were preserved at The lab as listed
≤2	H ₂ SO ₄	X		<u>83071</u>	<u>8/16</u>					
<4	NaHSO ₄									
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).						The lab as listed
	Na ₂ S ₂ O ₃	-	-							PM OK to Adjust:
	ZnAcclate	-	-							
	HCl	**	**							

**Not to be tested before analysis - pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 060805-1B4K, 060515-2A2G
Other Comments:

PC Secondary Review: [Signature]

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

29738

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 2 OF 2

Project Name NPDES Permit		Project Number		ANALYSIS REQUESTED (Include Method Number and Container Preservative)																	
Project Manager Sean Coyle		Report CC		PRESERVATIVE																	
Company/Address Veolia Water (GE CEP)		NUMBER OF CONTAINERS	DATE	TIME	MATRIX	1	GC/MS VOCs • 8200 • 821 • CLP	GC/MS SVOCs • 8270 • 823	GC VOCs • 8021 • 801/802	PESTICIDES • 8091 • 803	PCBs • 8002 • 808	METALS TOTAL (List in comments below)	METALS DISSOLVED (List in comments below)	Total Preservative Solids 500mg	0	Preservative Key					
1000 East St.																0. NONE					
Pittsfield MA 01201																1. HCL					
Phone # 413-494-6709																2. HNO ₃					
Email 413-494-7052		3. H ₂ SO ₄																			
Sample Site/Address		4. NaOH																			
Sample Collected Name		5. Zn Acetate																			
		6. MeOH																			
		7. NaHSO ₄																			
		8. Other _____																			
		REMARKS/ ALTERNATE DESCRIPTION																			
CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	DATE	TIME	MATRIX																	
64G-3Q-2X-CX		9/16/15	7:00am	H ₂ O	1													X			
HR-3Q-2X-GX		9/16/15	8:20am	H ₂ O	1													X			
SPECIAL INSTRUCTIONS/COMMENTS						TURNAROUND REQUIREMENTS			REPORT REQUIREMENTS			INVOICE INFORMATION									
Metals						RUSH (SURCHARGES APPLY)			I. Results Only			PO #									
Samples packed in ice						1 day 2 day 3 day 4 day <input checked="" type="checkbox"/> day			II. Results + OC Summaries (LCS, DUP, MS/MSD as required)			BILL TO:									
See OAPP <input type="checkbox"/>						REQUESTED REPORT DATE			III. Results + OC and Calibration Summaries												
									IV. Data Validation Report with Raw Data <input checked="" type="checkbox"/>												
STATE WHERE SAMPLES WERE COLLECTED						Edata Yes No															
RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY		RELINQUISHED BY		RECEIVED BY							
Signature <i>[Signature]</i>		Signature <i>[Signature]</i>		Signature		Signature		Signature		Signature		Signature		Signature							
Printed Name Kevin Boissonault		Printed Name Scott Seavy		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name		Printed Name							
Firm ALS		Firm ALS		Firm		Firm		Firm		Firm		Firm		Firm							
Date/Time 9/17/15 2:00pm		Date/Time 9/17/15 0950		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time							



Cooler Receipt and Preservation Check Form

Project/Client GE Pittsfield Folder Number MS-7762

Cooler received on 9/17/15 by: SAS COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y <input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y <input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y <input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y <input type="radio"/> N

5a	Perchlorate samples have required headspace?	Y <input type="radio"/> N <input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	Y <input type="radio"/> N <input checked="" type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROC</u> CLIENT
7	Soil VOA received as: Bulk Encore 5035set	<input checked="" type="radio"/> NA

8. Temperature Readings Date: 9/17/15 Time: 1010 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>3.0</u>						
Correction Factor (°C)	<u>-.4</u>						
Corrected Temp (°C)	<u>2.6</u>						
Within 0-6°C?	<input checked="" type="radio"/> Y <input type="radio"/> N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule
& Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by SAS on 9/17/15 at 1010
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: [Signature]

Cooler Breakdown: Date: 9/17/15 Time: 1301 by: Jro

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH	Yes=All samples OK
≥12	NaOH									No=Samples were preserved at The lab as listed
≤2	HNO ₃	<input checked="" type="checkbox"/>		<u>check</u>						
≤2	H ₂ SO ₄	<input checked="" type="checkbox"/>		<u>check</u>						
<4	NaHSO ₄									PM OK to Adjust:
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).						
	Na ₂ S ₂ O ₃	-	-							
	Zn Acetate	-	-							
	HCl	**	**							

**Not to be tested before analysis - pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: check
Other Comments:

PC Secondary Review: [Signature]

*significant air bubbles: VOA > 5-6 mm : WC 0.0037 in. diameter



Cooler Receipt and Preservation Check Form

Project/Client GE-Pittsfield Folder Number A15-7852

Cooler received on 9-19-15 by: KZ

COURIER: ALS UPS FEDEX VELOCITY CLIENT

1	Were Custody seals on outside of cooler?	<input checked="" type="radio"/> Y	<input type="radio"/> N
2	Custody papers properly completed (ink, signed)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
3	Did all bottles arrive in good condition (unbroken)?	<input checked="" type="radio"/> Y	<input type="radio"/> N
4	Circle: <u>Wet Ice</u> Dry Ice Gel packs present?	<input checked="" type="radio"/> Y	<input type="radio"/> N

5a	Perchlorate samples have required headspace?	<input type="radio"/> Y	<input type="radio"/> N	<input checked="" type="radio"/> NA
5b	Did VOA vials, Alk, or Sulfide have sig* bubbles?	<input type="radio"/> Y	<input type="radio"/> N	<input checked="" type="radio"/> NA
6	Where did the bottles originate?	<u>ALS/ROX</u>	CLIENT	
7	Soil VOA received as:	Bulk	Encore	5035set <u>NA</u>

8. Temperature Readings Date: 9-19-15 Time: 09:12 ID: IR#3 IR#5 From: Temp Blank Sample Bottle

Observed Temp (°C)	<u>2.6</u>							
Correction Factor (°C)	<u>-0.4</u>							
Corrected Temp (°C)	<u>2.2</u>							
Within 0-6°C?	<input checked="" type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N	<input type="radio"/> Y	<input type="radio"/> N

If out of Temperature, note packing/ice condition: _____ Ice melted _____ Poorly Packed _____ Same Day Rule _____
& Client Approval to Run Samples: _____ Standing Approval _____ Client aware at drop-off _____ Client notified by: _____

All samples held in storage location: R-002 by KZ on 09-19-15 at 09:15
5035 samples placed in storage location: _____ by _____ on _____ at _____

PC Secondary Review: [Signature]

Cooler Breakdown: Date: 9/21/15 Time: 08:34 by: MDS

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact _____ Canisters Pressurized _____ Tedlar® Bags Inflated N/A

Explain any discrepancies:

pH	Reagent	Yes	No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO ₃	<input checked="" type="checkbox"/>		<u>805261402</u>	<u>12/15</u>				
≤2	H ₂ SO ₄	<input checked="" type="checkbox"/>		<u>83071</u>	<u>8/16</u>				
<4	NaHSO ₄								
Residual Chlorine (-)	For CN Phenol and 522			If +, contact PM to add Na ₂ S ₂ O ₃ (CN), ascorbic (phenol).					
	Na ₂ S ₂ O ₃	-	-						
	Zn Acetate	-	-						
	HCl	**	**						

Yes=All samples OK
No=Samples were preserved at The lab as listed
PM OK to Adjust: _____

**Not to be tested before analysis -- pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: 661515-2A10 060615-1B1L
Other Comments: _____

PC Secondary Review: [Signature]

*significant air bubbles: VOA > 5-6 mm : WCD 0.1m diameter

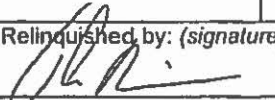
Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
 Williston, VT 05495
 TEL: (802) 860-1638
 FAX: (802) 658-3189

COMPANY INFORMATION	COMPANY'S PROJECT INFORMATION	SHIPPING INFORMATION	VOLUME/CONTAINER TYPE/ PRESERVATIVE					
Name: <u>General Electric Company</u>	Project Name: <u>GE PITTSFIELD</u>	Carrier: <u>Priority Express</u>	4°C	4°C	4°C	4°C	4°C	4°C
Address: <u>Veolia Water NA</u>	<u>Outfall Composite – INITIAL SAMPLE</u>	Airbill Number: _____	_____	_____	H ₂ SO ₄	H ₂ SO ₄	_____	_____
<u>1000 East Street, Gate 64</u>	Project Number: <u>15014</u>	Date Shipped: <u>9/14/15</u>	Plastic	Plastic	Plastic	Glass	Glass	Plastic
City/State/Zip: <u>Pittsfield, MA 01201</u>	Sampler Name(s): <u>G. MASSIMIANO</u>	Hand Delivered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____	_____	_____	_____	_____	_____
Telephone: <u>(413) 494-6709</u>	NPDES Permit #: <u>MA0003891</u>		1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L
Facsimile: _____	Ship these samples on <u>Monday</u>							
Contact Name: <u>Sean Coyle</u>	Client Code: <u>ALS/Christ</u>							

SAMPLE IDENTIFICATION	SAMPLE COLLECTION			GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS					
	Start date and time	Completion date and time											
Outfall Composite <u>64G-3Q-1X-CX</u>	<u>9/13/14</u> <u>700am</u>	<u>9/14/15</u> <u>700am</u>		✓	Effluent	Renewal 1 (R1): <i>Ceriodaphnia dubia</i> chronic survival and reproduction	1						
Outfall Composite <u>64G-3Q-1X-CX</u> <u>64G-3Q-1X-CX</u> (5mm)	<u>9/13/14</u> <u>700am</u>	<u>9/14/15</u> <u>700am</u>		✓	Effluent	Total Residual Chlorine (See Note in Comment Box below)					1		
Housatonic River <u>HR-3Q-1X-6X</u>	X	<u>9/14/15</u> <u>10¹⁰am</u>	✓		Receiving	Receiving (Dilution Water)	1						

Relinquished by: (signature) 	DATE <u>9/14/15</u>	TIME <u>2⁰⁰ PM</u>	Received by: (signature) <u>Ron Lee</u>	Temperature blank at time of delivery (Aquatec): <u>1.8 °C</u> WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing? Please record TRC concentration, mg/L (if available):
Relinquished by: (signature)	DATE <u>9/15/15</u>	TIME <u>0920</u>	Received by: (signature) <u>Kathy Sweet</u>	
Relinquished by: (signature)	DATE	TIME	Received by: (signature)	

Sample acceptance policy:

- Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.
- Sample should be received at 0°-6°C and/or within 6 hours of collection.
- Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).
- Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.

Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
 Williston, VT 05495
 TEL: (802) 860-1638
 FAX: (802) 658-3189

COMPANY INFORMATION		COMPANY'S PROJECT INFORMATION			SHIPPING INFORMATION		VOLUME/CONTAINER TYPE/ PRESERVATIVE							
Name: <u>General Electric Company</u>		Project Name: <u>GE PITTSFIELD</u>			Carrier: <u>Priority Express</u>		4°C	4°C	4°C	4°C	4°C	4°C		
Address: <u>Veolia Water NA</u> <u>1000 East Street, Gate 64</u>		<u>Outfall Composite – RENEWAL SAMPLE</u>			Airbill Number: _____		_____	_____	<u>H₂SO₄</u>	<u>H₂SO₄</u>	_____	_____	_____	_____
City/State/Zip: <u>Pittsfield, MA 01201</u>		Project Number: <u>15014</u>			Date Shipped: <u>9/16/15</u>		Plastic	Plastic	Plastic	Glass	Glass	Plastic		
Telephone: <u>(413) 494-6709</u>		Sampler Name(s): _____			Hand Delivered: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		_____	_____	_____	_____	_____	_____		
Facsimile: _____		NPDES Permit #: <u>MA0003891</u>					_____	_____	_____	_____	_____	_____		
Contact Name: <u>Sean Coyle</u>		Ship these samples on <u>Wednesday</u>					1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L		
		Client Code: <u>ALS/Christ</u>												

SAMPLE IDENTIFICATION	SAMPLE COLLECTION		GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS						
	Start date and time	Completion date and time					4°C	4°C	4°C	4°C	4°C	4°C	
<u>Outfall Composite</u> <u>646-3Q-2X-CX</u>	<u>9/15/15</u> <u>7:00am</u>	<u>9/16/15</u> <u>7:00am</u>			<u>Effluent</u>	<u>Renewal 1 (R1): Ceriodaphnia dubia chronic survival and reproduction</u>	1						
<u>Outfall Composite</u> <u>646-3Q-2X-CX</u> <u>5</u>	<u>9/15/15</u> <u>7:00am</u>	<u>9/16/15</u> <u>7:00am</u>			<u>Effluent</u>	<u>Total Residual Chlorine</u> <u>(See Note in Comment Box below)</u>					1		
<u>Housatonic River</u> <u>HR-3Q-2X-GX</u>	<u>9/16/15</u> <u>8:00am</u>				<u>Receiving</u>	<u>Receiving (Dilution Water)</u>	1						

Relinquished by: (signature)	DATE	TIME	Received by: (signature)	Temperature blank at time of delivery (Aquatec): <u>3.4°C</u> WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing? Please record TRC concentration, mg/L (if available):
Relinquished by: (signature)	<u>9-16-15</u>	<u>4:40</u>	Received by: (signature)	
Relinquished by: (signature)	<u>9/17/15</u>	<u>09:00</u>	Received by: (signature)	

Sample acceptance policy:

- Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.
- Sample should be received at 0°-6°C and/or within 6 hours of collection.
- Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).
- Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.

Aquatec Biological Sciences

Chain-of-Custody Record

273 Commerce Street
 Williston, VT 05495
 TEL: (802) 860-1638
 FAX: (802) 658-3189

COMPANY INFORMATION	COMPANY'S PROJECT INFORMATION	SHIPPING INFORMATION	VOLUME/CONTAINER TYPE/ PRESERVATIVE					
Name: <u>General Electric Company</u>	Project Name: <u>GE PITTSFIELD</u>	Carrier: <u>Priority Express</u>	4°C	4°C	4°C	4°C	4°C	4°C
Address: <u>Veolia Water NA</u> <u>1000 East Street, Gate 64</u>	Outfall Composite – RENEWAL SAMPLE	Airbill Number: _____	_____	_____	_____	_____	_____	_____
City/State/Zip: <u>Pittsfield, MA 01201</u>	Project Number: <u>15014</u>	Date Shipped: <u>9/18/15</u>	Plastic	Plastic	Plastic	Glass	Glass	Plastic
Telephone: <u>(413) 494-6709</u>	Sampler Name(s): _____	Hand Delivered: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____	_____	_____	_____	_____	_____
Facsimile: _____	NPDES Permit #: <u>MA0003891</u>		1 gal	1/2 gal	1 L	40 ml	40 mL	0.5 L
Contact Name: <u>Sean Coyle</u>	Ship these samples on Friday.							
	Client Code: <u>ALS/Christ</u>							

SAMPLE IDENTIFICATION	COLLECTION			GRAB	COMPOSITE	MATRIX	ANALYSIS	NUMBER OF CONTAINERS						
	Start date and time	Completion date and time												
Outfall Composite <u>6416-3Q-3K-CX</u>	<u>9/17/15 7:00 am</u>	<u>9/18/15 7:00 am</u>			X	Effluent	Renewal 2 (R2): <i>Ceriodaphnia dubia</i> chronic survival and reproduction	2						
Outfall Composite <u>6416-3Q-3K-CX</u>	<u>9/17/15 7:00 am</u>	<u>9/18/15 7:00 am</u>			X	Effluent	Total Residual Chlorine (See Note in Comment Box below)					1		
Housatonic River <u>HR-305X-6X</u>		<u>7/8/15 8:10 am</u>			X	Receiving	Receiving (Dilution Water)	2						

Relinquished by: (signature) <u>[Signature]</u>	DATE <u>9/18/15</u>	TIME <u>1440</u>	Received by: (signature) <u>[Signature]</u>	Temperature blank at time of delivery (Aquatec): <u>4.9</u> °C.
Relinquished by: (signature)	DATE <u>9/19/15</u>	TIME <u>0845</u>	Received by: (signature) <u>[Signature]</u>	WWTP Operators: Is your final effluent chlorinated? If so, is it dechlorinated prior to shipment for toxicity testing?
Relinquished by: (signature)	DATE	TIME	Received by: (signature)	Please record TRC concentration, mg/L (If available):

Sample acceptance policy:

- Chain-of-Custody completed. Sample bottle labels should be completed and covered with waterproof tape.
- Sample should be received at 0°-6°C and/or within 6 hours of collection.
- Samples should be received with in specified holding times based on controlling regulations (e.g., less than 36 hours for effluent samples under NPDES regulation).
- Samples not meeting the above conditions (per applicable regulatory protocols) will be qualified in the report.