

City of
BELOIT, Wisconsin

DEPARTMENT OF PUBLIC WORKS

UTILITIES AND ENGINEERING FACILITY

2400 Springbrook Court, Beloit, WI 53511

www.ci.beloit.wi.us

January 22, 2014

Biomonitoring Coordinator
Bureau of Watershed Management
WDNR
101 South Webster Street
PO Box 7921
Madison, WI 53707-7921

RE: City of Beloit WET results

Dear Biomonitoring Coordinator:

Please find the enclosed City of Beloit 2014 WET testing report form for your records.
Please contact me at 608-364-5722 if you have any questions regarding our submission.

Sincerely,

Cheryl Simplot, Environmental Coordinator

Email cc: Harry Mathos
Joe Valerius

WATER RESOURCES DIVISION

608/364-2888

Fax 608/364-2879

ENGINEERING DIVISION

608/364-6690

Fax 608/364-2879

Equal Opportunity Employer

WHOLE EFFLUENT TOXICITY (WET) TEST REPORT FORM

GENERAL INFORMATION

FACILITY: Beloit	WPDES PERMIT NO.: WI-0023370-08-0
OUTFALL NO.: 001	LABORATORY NAME: ECT-Superior, WI
RECEIVING WATER: Rock River	Project #: 1358

SAMPLE INFORMATION

SAMPLE NO.	SAMPLE COLLECTION			SAMPLE TEMP °C		pH at LAB	HAND DELIVER? (If Yes, ≤ 4 hr?)	HOLD TIME ≤ 36 HR?		SAMPLE ACCEPTABLE?	
	SAMPLE TYPE	BEGINNING DATE	END DATE	COLLECTION	AT LAB			Yes	No	Yes	No
1	EFF-24C	1/12/2014	1/13/2014	4.0	1.9	7.50	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
2	EFF-24C	1/14/2014	1/15/2014	4.4	3.0	7.55	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
3	EFF-24C	1/16/2014	1/17/2014	3.9	3.4	7.49	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
4	RW-G	1/13/2014	1/13/2014	0.0	2.3	7.68	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Describe any unusual conditions during sampling that may influence test results. (see Part 6.1.2 of the Methods Manual for examples.)

COMMENTS: Sample EFF3 was delayed and approved for a holding time deviation. EFF1 was used for days 0-1, EFF2 was used for renewal days 2-5 and EFF3 was used for renewal day 6.

TEST INFORMATION

ACUTE				CHRONIC		
Date Test Initiated:	1/14/2014			1/14/2014		
Tests Are For:	WPDES Compliance (Required by Permit)			WPDES Compliance (Required by Permit)		
Date of Initial Test:						
ZID/IWC Info.:	ZID Compliance Concentration = NA			Instream Waste Concentration = 24.00		
Dilution Water:	<i>C. dubia</i>	FHM	Other	<i>C. dubia</i>	FHM	Other
	<input checked="" type="checkbox"/> RW <input type="checkbox"/> LW	<input checked="" type="checkbox"/> RW <input type="checkbox"/> LW	<input type="checkbox"/> RW <input type="checkbox"/> LW	<input checked="" type="checkbox"/> RW <input type="checkbox"/> LW	<input checked="" type="checkbox"/> RW <input type="checkbox"/> LW	<input type="checkbox"/> RW <input type="checkbox"/> LW

QA/QC CONDITIONS

	ACUTE	CHRONIC
Temperatures maintained during test? (20 ± 1°C or 25 ± 1°C)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dissolved oxygen ≥ 4.0 mg/l throughout test?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Effluent pH maintained within 6.0 - 9.0 s.u. throughout test?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Concurrent or monthly reference tests within acceptable limits?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Tests conducted in a carbon dioxide atmosphere throughout test?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were effluent samples modified prior to testing?(ex. filtration, aeration, chem addition)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

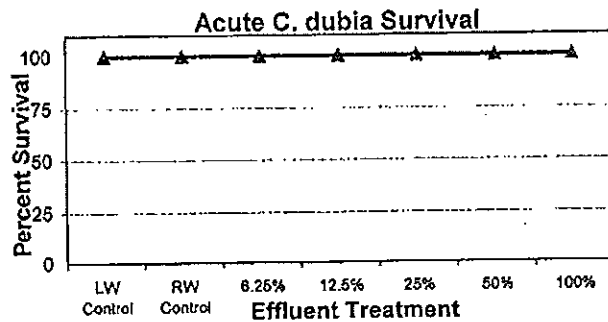
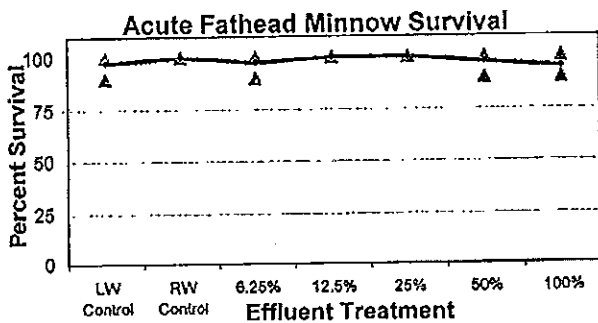
COMMENTS:

WATER CHEMISTRY (All values reported in mg/L, except pH)

SAMPLE TYPE	NO.	HARDNESS	ALKALINITY	TOTAL AMMONIA	pH (s.u.) After Warming	TOTAL RESIDUAL CHLORINE
Receiving Water	NA	388	292	<0.2	7.75	<0.01
Effluent	#1	384	368	<0.2	7.74	<0.01
	#2	400	372	<0.2	7.85	<0.01
	#3	400	388	0.26	7.70	<0.01
Lab Water	MHSW	92	68	NA	8.01	NA

COMMENTS: Receiving water was used as the primary control/dilution water. MHSW was used as the secondary control in the acute and chronic testing.

ACUTE TEST CONTROL PERFORMANCE							
RECEIVING WATER CONTROLS				LAB WATER CONTROLS			
Fathead Minnow		<i>Ceriodaphnia dubia</i>		Fathead Minnow		<i>Ceriodaphnia dubia</i>	
Survival ≥ 90%		Survival ≥ 90%		Survival ≥ 90%		Survival ≥ 90%	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
COMMENTS:							
ACUTE TEST DATA							
SPECIES	EFFLUENT TREATMENT	Percent Survival By Replicate				Mean Percent Survival	
		1	2	3	4		
Fathead Minnow Age of Organism: 7 Days	LW Control	100	100	100	90	97.5	
	RW Control	100	100	100	100	100.0	
	6.25%	90	100	100	100	97.5	
	12.5%	100	100	100	100	100.0	
	25%	100	100	100	100	100.0	
	50%	100	90	100	100	97.5	
	100%	100	90	100	90	95.0	
FATHEAD MINNOW ACUTE RESULTS: LC ₅₀ = >100 C.I.% = NA TU _a = 1.00							
<i>Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)</i>							
COMMENTS:							
SPECIES	EFFLUENT TREATMENT	Percent Survival By Replicate				Mean Percent Survival	
		1	2	3	4		
<i>Ceriodaphnia dubia</i> Age of Organism: < 24 Hours Old	LW Control	100	100	100	100	100.0	
	RW Control	100	100	100	100	100.0	
	6.25%	100	100	100	100	100.0	
	12.5%	100	100	100	100	100.0	
	25%	100	100	100	100	100.0	
	50%	100	100	100	100	100.0	
	100%	100	100	100	100	100.0	
<i>Ceriodaphnia dubia</i> ACUTE RESULTS: LC ₅₀ = >100 C.I.% = NA TU _a = 1.00							
COMMENTS:							



Facility: Beloit
 Permit #: WI-0023370-08-0
 Acute Test Date: 1/14/2014

CHRONIC TEST CONTROL PERFORMANCE

RECEIVING WATER CONTROLS		LAB WATER CONTROLS	
Fathead Minnow	<i>Ceriodaphnia dubia</i>	Fathead Minnow	<i>Ceriodaphnia dubia</i>
Survival ≥ 80%	Survival > 80%	Survival ≥ 80%	Survival > 80%
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
≥ 0.25 mg/fish	> 15 neonates/female	≥ 0.25 mg/fish	> 15 neonates/female
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Dry Weight CV ≤ 40%	Reproduction CV ≤ 40%	Dry Weight CV ≤ 40%	Reproduction CV ≤ 40%
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	> 80% 3rd brood		> 80% 3rd brood
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
	≤ 20% males		≤ 20% males
	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

COMMENTS:

CHRONIC TEST DATA

SPECIES	EFFLUENT TREATMENT	MEAN % SURVIVAL	MEAN DRY BIOMASS PER REPLICATE PAIR (mg)					MEAN BIOMASS	Dry Weight %CV
			1	2	3	4	5		
Fathead Minnow Growth & Survival Test	LW Control	100%	1.110	1.143	1.070	0.950	1.130	1.081	7.2
	RW Control	100%	0.975	0.825	0.922	1.100	0.988	0.962	10.4
	1.0%	95%	0.885	0.620	0.903	0.875	0.993	0.855	
	3%	90%	0.495	1.060	0.875	0.970	0.673	0.815	
	10%	85%	0.993	0.775	0.798	0.738	0.588	0.778	
	30%	80%	0.532	0.825	0.945	0.647	0.883	0.767	
	100%	85%	0.765	0.708	0.670	0.770	0.982	0.779	

FATHEAD MINNOW CHRONIC RESULTS: IC₂₅ = >100 C.I.% = NA rTUC = 1.00

Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)

COMMENTS:

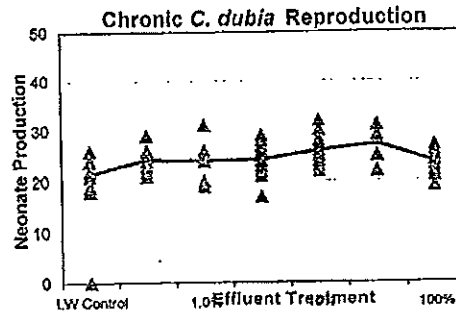
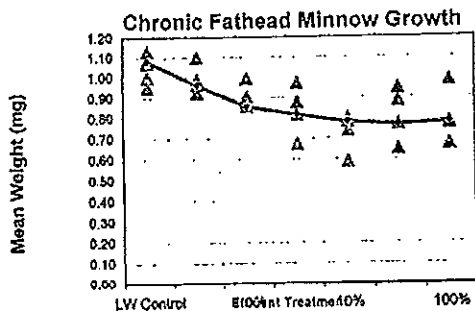
SPECIES	EFFLUENT TREATMENT	NEONATE PRODUCTION BY REPLICATE										MEAN NEONATES	%CV	% ADULT SURVIVAL
		1	2	3	4	5	6	7	8	9	10			
<i>C. dubia</i> Reproduction & Survival Test	LW Control	24	21	21	26	LA	22	22	19	21	18	21.6	11.2	100%
	RW Control	23	26	21	26	29	25	24	24	23	22	24.3	9.5	100%
	1.0%	25	26	19	20	25	26	20	26	24	31	24.2		100%
	3%	28	26	23	27	17	24	22	21	26	29	24.3		100%
	10%	23	24	22	30	25	27	24	26	32	28	26.1		100%
	30%	29	29	28	25	25	28	28	22	28	31	27.3		100%
	100%	22	21	23	27	25	27	26	19	22	24	23.6		100%

Male Production ≤ 20% Over All Treatments? Yes No

C. dubia CHRONIC RESULTS: IC₂₅ = >100 C.I.% = NA rTUC = 1.00

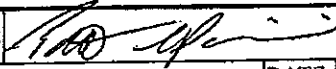
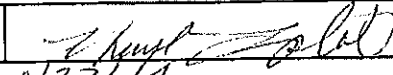
Please describe any unusual behavior and/or appearance of organisms. (see Part 6.1.2 of the Methods Manual for ex.)

COMMENTS:



Facility : Beloit
 Permit # : WI-0023370-08-0
 Chronic Test Date : 1/14/2014

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.

LAB REPRESENTATIVE:	Patrick S. Poirier	SIGNATURE:	
PHONE:	715-392-6635	LAB CERT #:	816079220
		DATE:	1/22/2014
PERMITEE REPRESENTATIVE:	<i>Cheval Simplot</i>	SIGNATURE:	
PHONE:	<i>608 364 5772</i>	DATE:	<i>1/22/14</i>

Send all 4 pages of this form (plus any attachments or additional information which you believe to be relevant to the test) to: Biomonitoring Coordinator, Bureau of Watershed Management, Department of Natural Resources, 101 South Webster St., P.O. Box 7921, Madison, WI 53707-7921; according to the timelines specified in your WPDES permit.

Copies of the State of Wisconsin Aquatic Life Toxicity Testing Methods Manual (Methods Manual) and the WET Guidance Document can be obtained from the Biomonitoring Coordinator at the address given above or at:
<http://dnr.wi.gov/org/water/wm/www/blomon/blomon.htm>

TO BE COMPLETED BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES			
		DID TESTS PASS?	
ACUTE	Fathead Minnow	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<i>Ceriodaphnia dubia</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
CHRONIC	Fathead Minnow	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	<i>Ceriodaphnia dubia</i>	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Retests Required?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Acute / Chronic: Both Species <i>C.dubia</i> only FHM only	
Due To:	<input type="checkbox"/> Failure <input type="checkbox"/> QA Problem		
WET Limit Violation?	<input type="checkbox"/> Yes <input type="checkbox"/> No limit in permit	Results Entered into Database? <input type="checkbox"/> Yes <input type="checkbox"/> No	
COMMENTS:			
REVIEWED BY:		DATE:	
CC:		BASIN ENGINEER	
		PERMIT COORDINATOR	
		PERMIT FILE	

Facility: Beloit
 Permit #: WI-0023370-08-0
 Test Date: 1/14/2014