Instructions

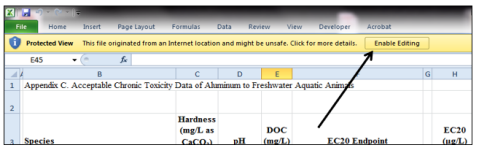
Guidance for use of the Aluminun Criteria Calculator V.2.0.Macro

Introduction

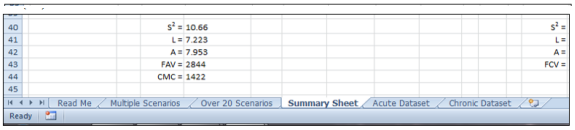
To faciliate adoption of the 2018 aluminum criteria, EPA developed a macro-enabled Excel file that allows users to caclulate multiple criteria values for various water chemistry scenarios. The draft aluminum criteria are dependent on the hardness, pH and dissolved organic carbon (DOC) of the site water. The Excel file also provides the acute and chronic datasets used to calculate the values, the formulas used to normalize the data, and the assumptions made on missing water chemistry parameters for added transparency. This guidance document outlines how users can calculate criteria values for aluminum using this Excel file. Additionaly acute and chronic criteria values for various scenarios are also provided in Appendix K of the aluminum ambient water quality criteria document.

Getting Started – Initial Steps

Download the Excel file from the docket or aluminum criteria website and save on your hard drive. Depending on the security settings on your computer you will need to hit one or both of the, "Enable Editing" and "Enable Content" buttons before use (see figure below).

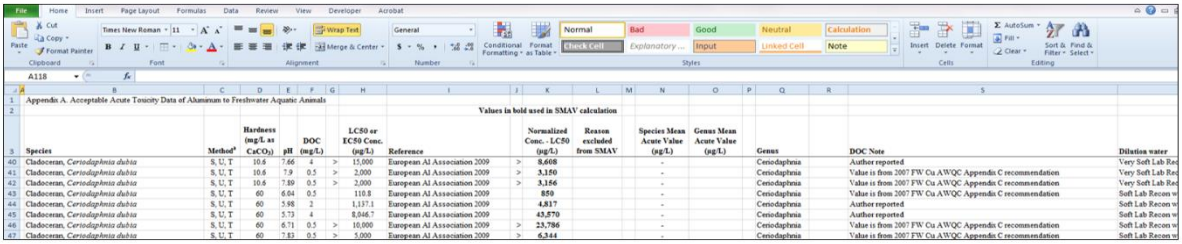


The Excel File consists of six sheets: Read Me, Multiple Scenarios, Over 20 Scenarios, Summary Sheet, Acute Dataset and Chronic Dataset. Only two of these sheets can be edited by the user to enter water chemistry parameters: Multiple Scenarios and Over 20 Scenarios. The other sheets are provided for transparency to see how values (i.e., Genus Mean Acute Values (GMAVs), Genus Mean Chronic Values (GMCVs)) are calculated and how the data are used to construct the sensitivity distribution (SD).



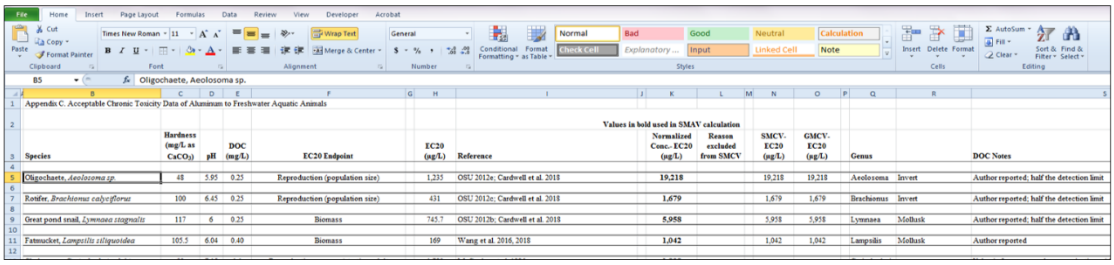
Acute Dataset

This sheet contains all the freshwater acute data used to construct the SD for the aluminum freshwater acute criterion (the Criterion Maximum Concentration or CMC). This spreadsheet has been locked for editing and cannot be manipulated. However, all of the calculations, normalization equations and water chemistry data are still available to be viewed. The values in columns K [Normalized Conc. - LC50 (µg/L)], N [Species Mean Acute Value (µg/L)], and O [Genus Mean Acute Value (µg/L)] are all based on the user supplied water chemistry values.



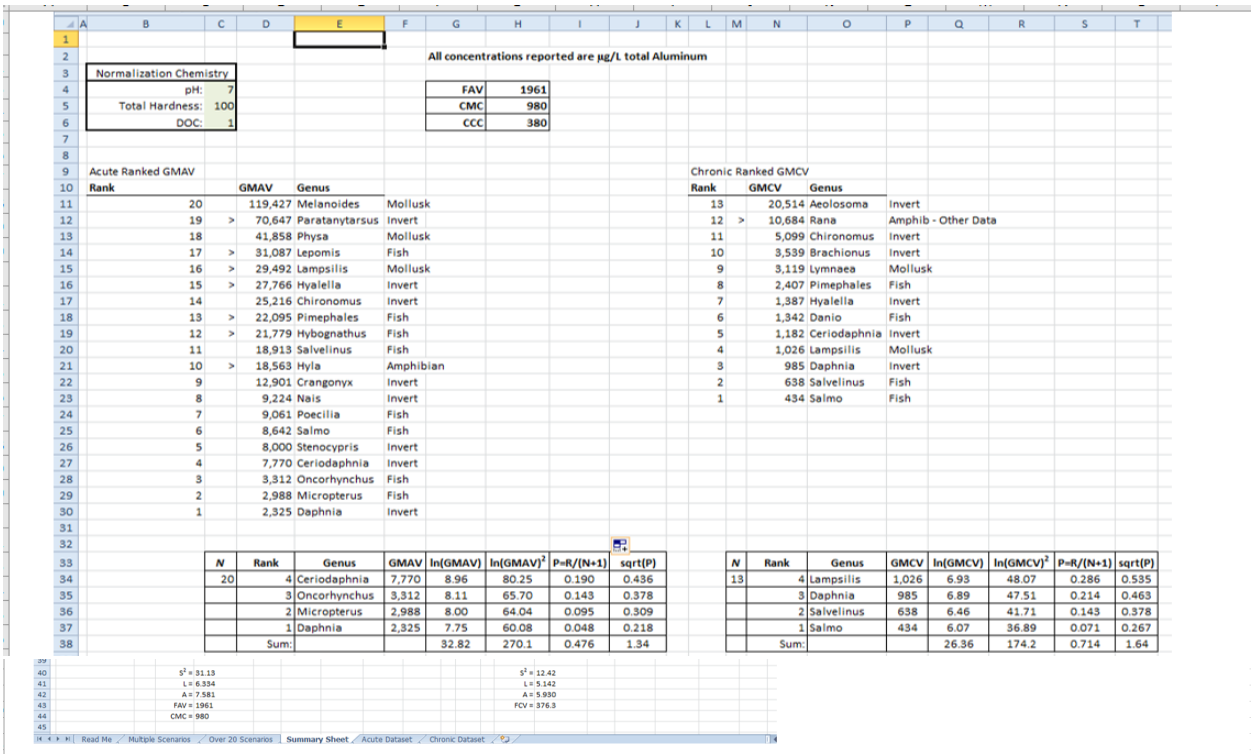
Chronic Dataset

This sheet contains all the freshwater chronic data used to construct the SD for the freshwater aluminum chronic criterion (the Criterion Continuous Concentration or CCC). This spreadsheet has also been locked for editing and cannot be manipulated. However, all of the calculations, normalization equations and water chemistry data are still available to be viewed. The values in columns K [Normalized Conc. - EC20 (µg/L)], N [SMCV-EC20 (µg/L)], and O [GMCV-EC20 (µg/L)] are all based on the user supplied chemistry values in the Summary Sheet (see figure below).



Summary Sheet

This spreadsheet is used to generate all of the criteria values for all of the water chemistry scenarios. Three cells (C4, C5, and C6) are the water chemistry inputs used to generate criteria values, SMAVs, SMCVs, GMAVs, and GMCVs. These cells are highlighted so the user can know what SD is displayed. The value for these cells will come from the "Multiple Scenarios" tab or the "Over 20 Scenarios" tab and will be the last entry Row 29 or Row 509, respectively after the Macro-enable button is clicked.



All concentrations reported are µg/L total Aluminum

Normalization Chemistry	
pH:	7
Total Hardness:	100
DOC:	1

FAV	1961
CMC	980
CCC	380

Acute Ranked GMAV

Rank		GMAV	Genus	
20		119,427	Melanoides	Mollusk
19	>	70,647	Paratanytarsus	Invert
18		41,858	Physa	Mollusk
17	>	31,087	Lepomis	Fish
16	>	29,492	Lampsilis	Mollusk
15	>	27,766	Hyalella	Invert
14		25,216	Chironomus	Invert
13	>	22,095	Pimephales	Fish
12	>	21,779	Hybognathus	Fish
11		18,913	Salvelinus	Fish
10	>	18,563	Hyla	Amphibian
9		12,901	Crangonyx	Invert
8		9,224	Nais	Invert
7		9,061	Poecilia	Fish
6		8,642	Salmo	Fish
5		8,000	Stenocypris	Invert
4		7,770	Ceriodaphnia	Invert
3		3,312	Oncorhynchus	Fish
2		2,988	Micropterus	Fish
1		2,325	Daphnia	Invert

Chronic Ranked GMCV

Rank		GMCV	Genus	
13		20,514	Aeolosoma	Invert
12	>	10,684	Rana	Amphib - Other Data
11		5,099	Chironomus	Invert
10		3,539	Brachionus	Invert
9		3,119	Lymnaea	Mollusk
8		2,407	Pimephales	Fish
7		1,387	Hyalella	Invert
6		1,342	Danio	Fish
5		1,182	Ceriodaphnia	Invert
4		1,026	Lampsilis	Mollusk
3		985	Daphnia	Invert
2		638	Salvelinus	Fish
1		434	Salmo	Fish

N	Rank	Genus	GMAV	ln(GMAV)	ln(GMAV)^2	P=R/(N+1)	sqrt(P)
20	4	Ceriodaphnia	7,770	8.96	80.25	0.190	0.436
	3	Oncorhynchus	3,312	8.11	65.70	0.143	0.378
	2	Micropterus	2,988	8.00	64.04	0.095	0.309
	1	Daphnia	2,325	7.75	60.08	0.048	0.218
	Sum:			32.82	270.1	0.476	1.34

N	Rank	Genus	GMCV	ln(GMCV)	ln(GMCV)^2	P=R/(N+1)	sqrt(P)
13	4	Lampsilis	1,026	6.93	48.07	0.286	0.535
	3	Daphnia	985	6.89	47.51	0.214	0.463
	2	Salvelinus	638	6.46	41.71	0.143	0.378
	1	Salmo	434	6.07	36.89	0.071	0.267
	Sum:			26.36	174.2	0.714	1.64

S^2 = 31.13
L = 6.334
A = 7.581
FAV = 1961
CMC = 980

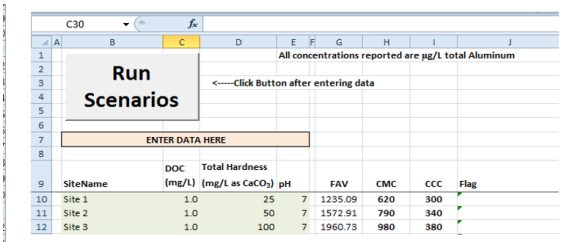
S^2 = 12.42
L = 5.142
A = 5.930
FCV = 576.3

Read Me | Multiple Scenarios | Over 20 Scenarios | Summary Sheet | Acute Dataset | Chronic Dataset

EPA aluminum criteria recommend staying within specific limits for pH (5.0-10.5), total hardness (0.01-430 mg/L as $CaCO_3$) and DOC (0.08-12.0 mg/L) for generating criteria. When water chemistry conditions outside these recommendations are encountered, the Macro-enable buttons will edit values to the maximum and/or minimum recommended value. Additionally it will flag values that are "outside model inputs"; for more information please refer to the aluminum criteria document. As more data become available, these recommendations may change. The summary sheet also provides the SDs for the acute and chronic datasets, the criteria calculations and the Final Acute Value (FAV), CMC and CCC based on the values in C4 (pH), C5 (hardness) and C6 (DOC). The CMC and CCC values in bold (H5 and H6) are rounded to two significant figures.

Multiple Scenarios and Over 20 Scenarios

These sheets have a macro-enabled buttons, "Run Scenarios" that will run the calculations for 20 or 500 different water chemistry inputs to provide a quick way to calculate multiple criteria values. Users first enter water chemistry conditions of interest in the highlighted cells in columns B, C, D, and E, then click the "Run Scenarios" button. The spreadsheet will run the necessary calculations and populate all of the other cells (please note that this step could take a few minutes depending on the computing speed of your computer). The macro-enable button uses the Summary Sheet to generate the values, so that the last entry will now be displayed there.



All concentrations reported are µg/L total Aluminum

Run Scenarios

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ENTER DATA HERE

SiteName	DOC (mg/L)	Total Hardness (mg/L as $CaCO_3$)	pH	FAV	CMC	CCC	Flag
Site 1	1.0	25	7	1235.09	620	300	
Site 2	1.0	50	7	1572.91	790	340	
Site 3	1.0	100	7	1960.73	980	380	

Again, for each set of conditions, the Excel file will default to the recommended maximum/minimum values when the pH, DOC or hardness values of interest are beyond the specified limits. This sheet will also display the lowest four ranked genera, their GMAV/GMCV, the FAV, CMC and CCC for each set of conditions. Again the CMC and CCC are rounded to two significant figures. To calculate more scenarios, just enter new values into columns B, C, D, and E, and hit the "Run Scenarios" button again. There is no need to save the file when closing.

Multiple Scenarios

Run

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All concentrations reported are µg/L total Aluminum

ENTER DATA HERE

								ACUTE								CHRONIC							
								Rank 1		Rank 2		Rank 3		Rank 4		Rank 1		Rank 2		Rank 3		Rank 4	
SiteName	DOC (mg/L)	Total Hardness (mg/L as $CaCO_3$)	pH	FAV	CMC	CCC	Flag	Genus	GMAV	Genus	GMAV	Genus	GMAV	Genus	GMAV	Genus	GMCV	Genus	GMCV	Genus	GMCV	Genus	GMCV
Site 1	1.0	25	7	1235.085	620	300		Daphnia	1,196.8	Micropterus	2,148.0	Oncorhynchus	2,381.3	Ceriodaphnia	4,000.0	Salmo	312.3	Salvelinus	458.8	Daphnia	507.2	Lampsilis	528.2
Site 2	1.0	50	7	1572.911	790	340		Daphnia	1,668.0	Micropterus	2,533.3	Oncorhynchus	2,808.4	Ceriodaphnia	5,575.1	Salmo	368.3	Salvelinus	541.1	Daphnia	706.9	Lampsilis	736.2
Site 3	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 4	1.0	150	7	2210.754	1100	400		Daphnia	2,823.2	Micropterus	3,290.3	Oncorhynchus	3,647.6	Ceriodaphnia	9,436.2	Salmo	478.4	Salvelinus	702.8	Daphnia	1,196.5	Lampsilis	1,246.1
Site 5	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 6	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 7	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 8	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 9	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 10	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 11	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 12	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 13	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 14	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 15	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 16	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 17	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 18	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 19	1.0	100	7	1960.725	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 20	1.0	200	7	2448.752	1200	420		Daphnia	3,240.3	Micropterus	3,523.5	Oncorhynchus	3,906.1	Salmo	10,191.6	Salmo	512.3	Salvelinus	752.6	Daphnia	1,373.2	Lampsilis	1,430.2

Over 20 Scenarios

Run

<-----Click Button after entering data

All concentrations reported are µg/L total Aluminum

ENTER DATA HERE

								ACUTE								CHRONIC							
								Rank 1		Rank 2		Rank 3		Rank 4		Rank 1		Rank 2		Rank 3		Rank 4	
SiteName	DOC (mg/L)	Total Hardness (mg/L as $CaCO_3$)	pH	FAV	CMC	CCC	Flag	Genus	GMAV	Genus	GMAV	Genus	GMAV	Genus	GMAV	Genus	GMCV	Genus	GMCV	Genus	GMCV	Genus	GMCV
Site 1	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 2	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 3	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 4	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 5	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 6	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 7	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 8	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 9	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 10	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 11	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 12	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 13	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 14	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 15	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 16	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 17	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 18	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 19	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 20	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 21	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 22	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 23	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 24	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 25	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 26	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 27	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 28	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 29	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 30	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 31	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 32	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 33	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 34	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 35	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 36	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 37	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 38	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 39	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 40	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 41	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 42	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 43	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 44	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 45	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 46	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 47	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 48	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 49	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 50	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 51	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 52	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 53	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 54	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 55	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 56	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 57	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 58	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 59	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 60	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 61	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 62	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 63	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 64	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 65	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 66	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 67	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 68	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 69	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 70	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 71	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1

Site 72	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 73	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 74	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 75	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 76	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 77	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 78	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 79	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 80	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 81	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 82	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 83	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 84	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 85	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 86	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 87	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 88	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 89	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 90	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 91	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 92	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 93	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 94	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 95	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 96	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 97	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 98	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 99	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 100	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 101	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 102	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 103	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 104	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 105	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 106	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 107	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 108	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 109	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 110	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 111	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 112	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 113	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 114	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 115	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 116	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 117	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 118	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 119	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 120	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 121	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 122	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 123	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 124	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 125	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 126	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 127	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 128	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 129	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 130	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 131	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 132	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 133	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 134	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 135	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 136	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 137	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 138	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 139	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 140	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 141	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 142	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 143	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 144	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 145	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 146	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 147	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 148	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 149	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 150	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 151	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 152	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 153	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 154	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 155	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 156	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 157	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 158	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 159	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 160	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 161	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 162	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 163	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 164	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 165	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 166	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 167	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 168	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 169	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 170	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 171	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 172	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 173	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 174	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 175	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 176	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 177	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 178	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 179	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 180	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 181	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 182	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 183	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 184	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 185	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 186	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 187	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 188	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 189	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 190	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 191	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 192	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 193	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1

Site 194	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 195	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 196	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 197	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 198	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 199	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 200	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 201	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 202	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 203	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 204	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 205	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 206	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 207	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 208	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 209	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 210	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 211	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 212	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 213	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 214	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 215	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 216	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 217	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 218	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 219	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 220	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 221	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 222	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 223	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 224	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 225	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 226	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 227	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 228	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 229	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 230	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 231	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 232	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 233	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 234	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 235	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 236	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 237	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 238	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 239	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 240	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 241	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 242	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 243	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 244	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 245	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 246	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 247	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 248	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 249	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 250	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 251	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 252	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 253	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 254	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 255	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 256	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 257	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 258	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 259	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 260	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 261	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 262	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 263	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 264	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 265	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 266	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 267	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 268	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 269	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 270	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 271	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 272	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 273	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 274	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 275	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 276	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 277	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 278	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 279	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 280	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 281	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 282	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 283	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 284	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 285	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 286	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 287	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 288	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 289	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 290	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 291	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 292	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 293	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 294	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 295	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 296	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 297	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 298	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 299	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 300	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 301	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 302	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 303	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 304	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1

Site 305	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 306	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 307	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 308	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 309	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 310	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 311	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 312	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 313	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 314	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 315	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 316	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 317	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 318	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 319	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 320	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 321	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 322	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 323	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 324	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 325	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 326	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 327	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 328	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 329	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 330	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 331	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 332	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 333	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 334	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 335	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 336	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 337	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 338	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 339	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 340	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 341	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 342	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 343	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 344	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 345	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 346	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 347	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 348	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 349	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 350	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 351	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 352	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 353	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 354	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 355	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 356	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 357	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 358	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 359	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 360	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 361	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 362	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 363	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 364	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 365	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 366	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 367	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 368	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 369	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 370	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 371	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 372	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 373	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 374	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 375	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 376	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 377	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 378	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 378	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 379	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 380	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 381	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 382	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 383	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 384	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 385	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 386	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 387	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 388	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 389	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 390	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 391	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 392	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 393	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 394	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 395	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 396	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 397	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 398	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 399	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 400	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 401	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 402	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 403	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 404	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 405	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 406	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 407	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 408	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 409	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 410	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 411	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 412	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 413	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 414	1	100	7	1,961	980	380		Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1

Site 414	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 415	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 416	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 417	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 418	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 419	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 420	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 421	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 422	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 423	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 424	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 425	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 426	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 427	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 428	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 429	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 430	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 431	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 432	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 433	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 434	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 435	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 436	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 437	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 438	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 439	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 440	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 441	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 442	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 443	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 444	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 445	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 446	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 447	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 448	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 449	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 450	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 451	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 452	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 453	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 454	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 455	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 456	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 457	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 458	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 459	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 460	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 461	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 462	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 463	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 464	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 465	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 466	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 467	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 468	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 469	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 470	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 471	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 472	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 473	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 474	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 475	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 476	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 477	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 478	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 479	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 480	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 481	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 482	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 483	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 484	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 485	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 486	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 487	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 488	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 489	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 490	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 491	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 492	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 493	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 494	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 495	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 496	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 497	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 498	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 499	1	100	7	1,961	980	380	Daphnia	2,324.8	Micropterus	2,987.6	Oncorhynchus	3,312.1	Ceriodaphnia	7,770.5	Salmo	434.4	Salvelinus	638.2	Daphnia	985.3	Lampsilis	1,026.1
Site 500	1	300	7	2,829	1,400	440	Micropterus	3,880.4	Daphnia	3,934.9	Oncorhynchus	4,301.9	Salmo	11,224.7	Salmo	564.2	Salvelinus	828.9	Daphnia	1,667.6	Lampsilis	1,736.7

Summary Sheet

All concentrations reported are µg/L total Aluminum

Normalization Chemistry	
pH:	7
Total Hardness:	300
DOC:	1

FAV	2829
CMC	1400
CCC	440

Acute Ranked GMAV

Rank		GMAV	Genus	
20		202,136	Melanoides	Mollusk
19	>	119,574	Paratanytarsus	Invert
18		70,847	Physa	Mollusk
17	>	49,917	Lampsilis	Mollusk
16	>	46,995	Hyalella	Invert
15		42,680	Chironomus	Invert
14	>	40,377	Lepomis	Fish
13	>	28,698	Pimephales	Fish
12	>	28,287	Hybognathus	Fish
11		24,564	Salvelinus	Fish
10	>	24,110	Hyla	Amphibian
9		21,835	Crangonyx	Invert
8		15,611	Nais	Invert
7		13,540	Stenocypris	Invert
6		13,152	Ceriodaphnia	Invert
5		11,769	Poecilia	Fish
4		11,224	Salmo	Fish
3		4,302	Oncorhynchus	Fish
2		3,935	Daphnia	Invert
1		3,880	Micropterus	Fish

Chronic Ranked GMCV

Rank		GMCV	Genus	
13		34,720	Aeolosoma	Invert
12	>	13,877	Rana	Amphib - Other Data
11		8,630	Chironomus	Invert
10		5,990	Brachionus	Invert
9		5,279	Lymnaea	Mollusk
8		3,126	Pimephales	Fish
7		2,348	Hyalella	Invert
6		2,000	Ceriodaphnia	Invert
5		1,743	Danio	Fish
4		1,737	Lampsilis	Mollusk
3		1,668	Daphnia	Invert
2		829	Salvelinus	Fish
1		564	Salmo	Fish

Acute Dataset

Appendix A. Acceptable Acute Toxicity Data of Aluminum to Freshwater Aquatic Animals

Values in bold used in SMAV calculation

Species	Method	Hardness (mg/L as	pH	DOC (mg/L)		LC50 or EC50 Conc. (µg/L)	Reference		Normalized Conc. - LC50 (µg/L)	Reason excluded from SMAV		Mean Acute Value (µg/L)	Mean Acute Value (µg/L)	Genus		DOC Note	Dilution water
Worm, *Nais elinguis*	R, M, T	17.89	6.5	3.2		3,874	Shuhaimi-Othman et al. 2012a, 2013		**15,611**			15,611	15,611	Nais	Invert	Value is from Shuhaimi-Othman et al. 2013	Tap water (Malaysia)
Snail, *Physa sp.*	S, M, T	47.4	6.6	1.1	>	23,400	Call 1984; Call et al. 1984	>	**89,016**			-		Physa		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Snail, *Physa sp.*	S, M, T	47.4	7.6	1.1		30,600	Call 1984; Call et al. 1984		**45,795**			-		Physa		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Snail, *Physa sp.*	S, M, T	47.4	8.2	1.1	>	24,700	Call 1984; Call et al. 1984	>	32,735	c		-		Physa		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Snail, *Physa sp.*	S, M, T	47.4	7.5	1.1		55,500	Call 1984; Call et al. 1984		**87,232**			70,847	70,847	Physa	Mollusk	Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Snail, *Melanoides tuberculata*	R, M, T	18.72	6.7	3.2		68,230	Shuhaimi-Othman et al. 2012b, 2013		**202,136**			202,136	202,136	Melanoides	Mollusk	Value is from Shuhaimi-Othman et al. 2013	Tap water (Malaysia)
Fatmucket, *Lampsilis siliquoidea*	R, M, T	107	8.2	0.5	>	54,300	Ivey et al. 2014	>	97,719	f		-		Lampsilis		Author reported	Well water/deionized water mix
Fatmucket, *Lampsilis siliquoidea*	F, M, T	106.0	6.12	0.48	>	6,302	Wang et al. 2016, 2018	>	**49,917**		>	49,917	49,917	Lampsilis	Mollusk	Author reported	Well water/deionized water mix
Cladoceran, *Ceriodaphnia dubia*	S, M, A	50.0	7.4	1.1		1,900	McCauley et al. 1986		**2,998**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Cladoceran, *Ceriodaphnia dubia*	S, M, A	50.5	7.9	1.1		1,500	McCauley et al. 1986		**1,980**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	UW-S Lake Superior lab water
Cladoceran, *Ceriodaphnia dubia*	S, M, A	50.0	8.1	1.1		2,560	McCauley et al. 1986		**3,341**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Cladoceran, *Ceriodaphnia dubia*	R, M, T	25	7.5	0.5		720	ENSR 1992d		**2,236**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	R, M, T	49	7.7	0.5		1,880	ENSR 1992d		**4,259**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	95	7.9	0.5		2,450	ENSR 1992d		**4,331**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	R, M, T	193	8.1	0.5	>	89,600	ENSR 1992d	>	**150,524**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, NR	90	7.2	0.5		3,727	Fort and Stover 1995		**8,875**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, NR	90	7.2	0.5		5,673	Fort and Stover 1995		**13,509**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, NR	89	8.2	0.5		2,880	Soucek et al. 2001		**5,398**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	R, U, T	142	8.2	1.6		153,440	Griffitt et al. 2008		**130,613**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Tap water (Gainesville, FL)
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6	0.5		71.12	European Al Association 2009		**3,401**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6.1	2		686.5	European Al Association 2009		**13,068**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6.1	4		1,558.1	European Al Association 2009		**17,887**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6	0.5		68.1	European Al Association 2009		**3,257**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6	0.5		163.0	European Al Association 2009		**7,437**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6	0.5		178.5	European Al Association 2009		**9,387**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	5.9	0.5		141.0	European Al Association 2009		**8,369**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7	0.5	>	1,300	European Al Association 2009	>	**9,888**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7.9	0.5	>	5,000	European Al Association 2009	>	**16,478**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6.8	2	>	10,000	European Al Association 2009	>	**44,110**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7.8	2	>	15,000	European Al Association 2009	>	**21,976**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	6.8	4	>	10,000	European Al Association 2009	>	**30,592**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7.7	4	>	15,000	European Al Association 2009	>	**16,143**			-		Ceriodaphnia		Author reported	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7.9	0.5	>	2,000	European Al Association 2009	>	**6,420**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	10.6	7.9	0.5	>	2,000	European Al Association 2009	>	**6,453**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	6	0.5		110.8	European Al Association 2009		**1,468**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	6	2		1,137.1	European Al Association 2009		**7,407**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	5.7	4		8,046.7	European Al Association 2009		**58,739**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	6.7	0.5	>	10,000	European Al Association 2009	>	**45,368**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	7.8	0.5	>	5,000	European Al Association 2009	>	**10,113**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	6.8	2	>	10,000	European Al Association 2009	>	**17,966**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	7.7	2	>	15,000	European Al Association 2009	>	**13,001**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	6.7	4	>	15,000	European Al Association 2009	>	**20,435**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	60	7.6	4	>	15,000	European Al Association 2009	>	**9,287**			-		Ceriodaphnia		Author reported	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	6.1	2		3,386.8	European Al Association 2009		**11,659**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	5.6	4		10,484.2	European Al Association 2009		**59,213**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	6.9	0.5	>	5,000	European Al Association 2009	>	**12,459**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	7.9	0.5	>	5,000	European Al Association 2009	>	**8,287**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	6.8	2	>	15,000	European Al Association 2009	>	**19,296**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	7.7	2	>	15,000	European Al Association 2009	>	**10,953**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	6.6	4	>	15,000	European Al Association 2009	>	**15,312**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, U, T	120	7.6	4	>	15,000	European Al Association 2009	>	**7,389**			-		Ceriodaphnia		Author reported	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6	0.5		119.71	European Al Association 2010		**5,462**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6	0.5		274.78	European Al Association 2010		**12,537**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6	0.5		119.98	European Al Association 2010		**5,474**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6.1	0.5		82.495	European Al Association 2010		**3,847**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6.1	0.5		313.37	European Al Association 2010		12,449	g		-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	6.1	0.5		332.35	European Al Association 2010		12,906	g		-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	7.1	0.5	>	886.4	European Al Association 2010	>	**5,970**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	7.8	0.5	>	4,278.3	European Al Association 2010	>	**14,598**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	10.6	7.5	0.5		132.04	European Al Association 2010		**546**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	60.0	6	0.5		463.26	European Al Association 2010		**6,507**			-		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	S, M, T	60.0	6	0.5	>	959.0	European Al Association 2010	>	**12,551**			9,923		Ceriodaphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia reticulata*	S, U, T	45.1	7.3	1.1		2,800	Shephard 1983		5,197	f		-		Ceriodaphnia		Value is from personal communication with R. Erickson who works at the Lake Superior water (most likely raw)	
Cladoceran, *Ceriodaphnia reticulata*	F, M, T	45.1	6.9	1.1		304	Shephard 1983		**3,330**			-		Ceriodaphnia		Value is from personal communication with R. Erickson who works at the Lake Superior water (most likely raw)	
Cladoceran, *Ceriodaphnia reticulata*	F, M, T	4.0	5.5	1.1		362	Shephard 1983		**91,245**			17,431	13,152	Ceriodaphnia	Invert	Value is from personal communication with R. Erickson who works at the Lake Superior water/deionized water mix	
Cladoceran, *Daphnia magna*	S, U, NR	48.5	7.8	1.1		3,900	Biesinger and Christensen 1972		**5,275**			-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lake Superior water (most likely raw)
Cladoceran, *Daphnia magna*	S, M, T	220	7.6	1.6		38,200	Kimball 1978		**26,446**			-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water
Cladoceran, *Daphnia magna*	S, U, T	45.1	7.3	1.1		2,800	Shephard 1983		**5,197**			-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lake Superior water (most likely raw)
Cladoceran, *Daphnia magna*	S, U, T	168	6	0.5	>	500.0	European Al Association 2009	>	**3,512**			-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7	0.5	>	500.0	European Al Association 2009	>	1,014	c		-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	0.5	>	500.0	European Al Association 2009	>	760	c		-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	0.5		795.0	European Al Association 2009		**1,207**			-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	8	2	>	1,200	European Al Association 2009	>	800	c		-		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	3	>	1,200	European Al Association 2009	>	626	c		4,983		Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia pulex*	R, U, T	142	8.2	1.6		3,650	Griffitt et al. 2008		**3,107**			3,107	3,935	Daphnia	Invert	Value is from 2007 FW Cu AWQC Appendix C recommendation	Tap water (Gainesville, FL)

Cladoceran, *Daphnia magna*	S, U, NR	48.5	7.8	1.1		3,900	Biesinger and Christensen 1972	**5,275**		-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lake Superior water (most likely raw)
Cladoceran, *Daphnia magna*	S, M, T	220	7.6	1.6		36,200	Kimball 1978	**26,446**		-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water
Cladoceran, *Daphnia magna*	S, U, T	45.1	7.3	1.1		2,800	Shephard 1983	**5,197**		-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lake Superior water (most likely raw)
Cladoceran, *Daphnia magna*	S, U, T	168	6	0.5	>	500.0	European Al Association 2009	> **3,512**		-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7	0.5	>	500.0	European Al Association 2009	> 1,014	c	-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	0.5	>	500.0	European Al Association 2009	> 760	c	-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	0.5		795.0	European Al Association 2009	**1,207**		-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	8	2	>	1,200	European Al Association 2009	> 800	c	-			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia magna*	S, U, T	168	7.9	3	>	1,200	European Al Association 2009	> 526	c	4,983			Daphnia		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Daphnia pulex*	R, U, T	142	8.2	1.6		3,650	Griffitt et al. 2008	**3,107**		3,107	3,935		Daphnia	Invert	Value is from 2007 FW Cu AWQC Appendix C recommendation	Tap water (Gainesville, FL)
Ostracod, *Stenocypris major*	R, M, T	15.63	6.5	3.2		3,102	Shuhaimi-Othman et al. 2011a	**13,540**		13,540	13,540		Stenocypris	Invert	Value is from Shuhaimi-Othman et al. 2013	Tap water (Malaysia)
Amphipod, *Crangonyx pseudogracilis*	R, U, T	50	6.8	1.6		9,190	Martin and Holdich 1986	**21,835**		21,835	21,835		Crangonyx	Invert	Value is from 2007 FW Cu AWQC Appendix C recommendation	Tap water (UK)
Amphipod, *Hyalella azteca*	F, M, T	105	6.1	0.48	>	5,937	Wang et al. 2016, 2017	> **46,995**	>	46,995	46,995	>	Hyalella	Invert	Author reported	Well water/deionized water mix
Midge, *Chironomus plumosus*	S, U, T	80	7.0	1.6		30,000	Fargasova 2001, 2003	**42,680**		42,680	42,680		Chironomus	Invert	Value is from 2007 FW Cu AWQC Appendix C recommendation	Tap water (Slovakia)
Midge, *Paratanytarsus dissimilis*	S, M, T	17.43	7.3	2.8	>	77,700	Lamb and Bailey 1981, 1983	> **119,574**	>	119,574	119,574	>	Paratanytars	Invert	Value is from 2007 FW Cu AWQC Appendix C recommendation	Liberty Lake, Washington (0.45 um filtered)
Rainbow trout, *Oncorhynchus mykiss*	S, U, T	14.3	5	0.4		160	Holtze 1983	13,036	F	-			Oncorhynch		Author reported	Tap water (Lake Ontario)
Rainbow trout, *Oncorhynchus mykiss*	S, U, T	14.3	5.5	0.4		310	Holtze 1983	10,997	F	-			Oncorhynch		Author reported	Tap water (Lake Ontario)
Rainbow trout, *Oncorhynchus mykiss*	S, M, T	47.4	6.6	1.1		7,400	Call et al. 1984	17,529	F	-			Oncorhynch		Value is from personal communication with R. Erickson who works at the	Raw Lake Superior water
Rainbow trout, *Oncorhynchus mykiss*	S, M, T	47.4	7.3	1.1		14,600	Call et al. 1984	15,429	F	-			Oncorhynch		Value is from personal communication with R. Erickson who works at the	Raw Lake Superior water
Rainbow trout, *Oncorhynchus mykiss*	S, M, T	47.4	8.2	1.1	>	24,700	Call et al. 1984	> 9,955	F	-			Oncorhynch		Value is from personal communication with R. Erickson who works at the	Raw Lake Superior water
Rainbow trout, *Oncorhynchus mykiss*	S, M, T	47.4	7.5	1.1		8,600	Call et al. 1984	7,682	F	-			Oncorhynch		Value is from personal communication with R. Erickson who works at the	Raw Lake Superior water
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	26.35	7.6	0.5	>	9,840	Gundersen et al. 1994	> **9,372**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	45.5	7.6	0.5	>	8,070	Gundersen et al. 1994	> **7,489**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	88.05	7.6	0.5	>	8,160	Gundersen et al. 1994	> **7,880**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	127.6	7.6	0.5	>	8,200	Gundersen et al. 1994	> **6,708**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	23.25	8.3	0.5		6,170	Gundersen et al. 1994	**2,189**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	35.4	8.3	0.5		6,170	Gundersen et al. 1994	**2,182**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	83.6	8.3	0.5		7,670	Gundersen et al. 1994	**2,831**		-			Oncorhynch		Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Rainbow trout, *Oncorhynchus mykiss*	F, M, T	128.5	8.31	0.5		6,930	Gundersen et al. 1994	**2,631**		4,302	4,302		Oncorhynch	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Reverse Osmosis treated well water, then added salts
Atlantic salmon, *Salmo salar*	S, U, T	6.8	5.5	0.5		584	Hamilton and Haines 1995	**26,950**		-			Salmo		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Atlantic salmon, *Salmo salar*	S, U, T	6.8	6.5	0.5		599	Hamilton and Haines 1995	**4,675**		11,224	11,224		Salmo	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Brook trout, *Salvelinus fontinalis*	F, M, T	-	6.5	-		3,600	Decker and Menendez 1974	NA*		-			Salvelinus		-	Tap water (Elkins, WV)
Brook trout, *Salvelinus fontinalis*	F, M, T	-	6	-		4,400	Decker and Menendez 1974	NA*		-			Salvelinus		-	Tap water (Elkins, WV)
Brook trout, *Salvelinus fontinalis*	F, M, T	-	5.5	-		4,000	Decker and Menendez 1974	NA*		-			Salvelinus		-	Tap water (Elkins, WV)
Brook trout, *Salvelinus fontinalis*	S, U, T	40	5.6	1.6		5,530	Tandjung 1982	**39,014**		-			Salvelinus		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/distilled water mix
Brook trout, *Salvelinus fontinalis*	S, U, T	18	5.6	1.6		3,400	Tandjung 1982	**31,839**		-			Salvelinus		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/distilled water mix
Brook trout, *Salvelinus fontinalis*	S, U, T	2	5.6	1.6		370	Tandjung 1982	**11,932**		24,564	24,564		Salvelinus	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/distilled water mix
Green sunfish, *Lepomis cyanellus*	S, M, T	47.4	7.6	1.1	>	50,000	Call et al. 1984	> **48,377**	>	48,377	48,377	>	Lepomis	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Guppy, *Poecilia reticulata*	R, M, T	18.72	6.7	3.2		6,760	Shuhaimi-Othman et al. 2013	**11,769**		11,769	11,769		Poecilia	Fish	Author reported	Tap water (Malaysia)
Rio Grande silvery minnow, *Hybognathus amarus*	R, M, T	140	8.1	0.5	>	59,100	Buhl 2002	> **28,287**	>	28,287	28,287	>	Hybognathus	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Lab Recon water (recipe different from EPA)
Fathead minnow, *Pimephales promelas*	S, U, NR	-	7.6	-	>	18,900	Boyd 1979	NA*		-			Pimephales		-	
Fathead minnow, *Pimephales promelas*	S, M, T	47.4	7.6	1.1	>	48,200	Call et al. 1984	> **36,391**		-			Pimephales		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Fathead minnow, *Pimephales promelas*	S, M, T	47.4	8.1	1.1	>	49,800	Call et al. 1984	> **22,961**		-			Pimephales		Value is from 2007 FW Cu AWQC Appendix C recommendation	Raw Lake Superior water
Fathead minnow, *Pimephales promelas*	F, U, T	21.6	6.5	0.9	>	400	Palmer et al. 1989	> 1,534	c	-			Pimephales		Author reported	Well water/deionized water mix
Fathead minnow, *Pimephales promelas*	F, U, T	21.6	7.5	0.9	>	400	Palmer et al. 1989	> 395	c	-			Pimephales		Author reported	Well water/deionized water mix
Fathead minnow, *Pimephales promelas*	F, U, T	21.6	7.5	0.9	>	400	Palmer et al. 1989	> 395	c	-			Pimephales		Author reported	Well water/deionized water mix
Fathead minnow, *Pimephales promelas*	F, U, T	21.6	6.5	0.9	>	400	Palmer et al. 1989	> 1,534	c	-			Pimephales		Author reported	Well water/deionized water mix
Fathead minnow, *Pimephales promelas*	F, U, T	21.6	7.5	0.9	>	400	Palmer et al. 1989	> 395	c	-			Pimephales		Author reported	Well water/deionized water mix
Fathead minnow, *Pimephales promelas*	R, M, T	140	8.1	0.5	>	59,100	Buhl 2002	> **28,287**	>	28,698	28,698	>	Pimephales	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Lab Recon water (recipe different from EPA)
Smallmouth bass, *Micropterus*	S, M, T	12.15	5.1	1.6		130	Kane 1984; Kane and Rabeni 1987	**3,172**		-			Micropterus		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/deionized water mix
Smallmouth bass, *Micropterus*	S, M, T	12.4	6.3	1.6	>	978	Kane 1984; Kane and Rabeni 1987	> **4,747**		-			Micropterus		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/deionized water mix
Smallmouth bass, *Micropterus*	S, M, T	12	7.5	1.6	>	217	Kane 1984; Kane and Rabeni 1987	> 599.3	c	3,880	3,880		Micropterus	Fish	Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water/deionized water mix
Green tree frog, *Hyla cinerea*	R, M, T	4.55	5.5	0.5	>	405.2	Jung and Jagoe 1995	> **24,110**	>	24,110	24,110	>	Hyla	Amphibi	Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Recon Lab water (recipe different from EPA)

* S=static, F=flow-through, U=unmeasured, M=measured, A=acid exchangeable aluminum, T=total aluminum, D=dissolved aluminum, NR=not reported.

[b] Normalized to pH 7, hardness of 100 mg/L as $CaCO_3$ and DOC of 1 mg/L (see **Section 2.7.1**). Values in bold are used in SMAV calculation.

[c] Not used to calculate SMAV because either a more definitive value is available or value is considered an outlier.

[d] When definitive DOC values were not reported by the authors: a DOC value of 0.5 mg/L was used when dilution water was reconstituted, 1.1 mg/L when dilution water was Lake Superior, MN water, 2.8 mg/L when dilution water was Liberty Lake, WA water, 1.6 mg/L when dilution water was tap or well water, or half the detection limit when the reported value

[e] Missing water quality parameters and/or dilution water type needed to estimate water quality parameters, so values cannot be normalized.

[f] Not used to calculate SMAV because flow-through measure test(s) available.

[g] Phosphate in exposure media is providing an ameliorating effect against aluminum.

Chronic Dataset

Appendix C. Acceptable Chronic Toxicity Data of Aluminum to Freshwater Aquatic Animals

Species	Hardness (mg/L as $CaCO_3$)	pH	DOC (mg/L)	EC20 Endpoint	EC20 (µg/L)	Reference	Values in bold used in SMAV calculation: Normalized Conc.[b] – EC20 (µg/L)	Reason excluded from SMCV	SMCV – EC20 (µg/L)	GMCV – EC20 (µg/L)	Genus		DOC Notes	Dilution water
Oligochaete, *Aeolosoma sp.*	48	5.95	0.25	Reproduction (population size)	1,235	OSU 2012c; Cardinell et al. 2018	**34,720**		34,720	34,720	Aeolosoma	Invert	Author reported; half the detection limit	Soft Lab Recon water
Rotifer, *Brachionus calyciflorus*	100	6.45	0.25	Reproduction (population size)	431	OSU 2012c; Cardinell et al. 2018	**3,122**				Brachionus		Author reported; half the detection limit	Mod Hard Lab Recon water
Rotifer, *Brachionus calyciflorus*	63	6.3	1.39	Reproduction (population size)	1751	OSU 2018e	**7,647**				Brachionus		Author reported	Recon Lab water
Rotifer, *Brachionus calyciflorus*	105	6.3	1.39	Reproduction (population size)	2066	OSU 2018e	**6,506**				Brachionus		Author reported	Recon Lab water
Rotifer, *Brachionus calyciflorus*	114	6.2	2.63	Reproduction (population size)	3061	OSU 2018e	**7,316**				Brachionus		Author reported	Recon Lab water
Rotifer, *Brachionus calyciflorus*	105	6.1	3.77	Reproduction (population size)	4670	OSU 2018e	**11,260**				Brachionus		Author reported	Recon Lab water
Rotifer, *Brachionus calyciflorus*	185	6.3	1.33	Reproduction (population size)	1604	OSU 2018e	**3,609**		5,990	5,990	Brachionus	Invert	Author reported	Recon Lab water
Great pond snail, *Lymnaea stagnalis*	117	6	0.25	Biomass	745.7	OSU 2012b; Cardinell et al. 2018	**10,064**				Lymnaea		Author reported; half the detection limit	Recon Lab water (between mod hard and hard)
Great pond snail, *Lymnaea stagnalis*	121	6.15	1.37	Biomass	833.4	OSU 2018f	**3,067**				Lymnaea		Author reported	Recon Lab water
Great pond snail, *Lymnaea stagnalis*	124	6.17	1.45	Biomass	1,951	OSU 2018f	**6,605**				Lymnaea		Author reported	Recon Lab water
Great pond snail, *Lymnaea stagnalis*	117	5.98	3.85	Biomass	1,332	OSU 2018f	**3,809**		5,279	5,279	Lymnaea	Mollusk	Author reported	Recon Lab water
Fatmucker, *Lampsilis siliquoidea*	105.5	6.04	0.40	Biomass	169	Wang et al. 2016, 2018	**1,737**		1,737	1,737	Lampsilis	Mollusk	Author reported	Well water/deionized water mix
Cladoceran, *Ceriodaphnia dubia*	50	7.15	1.1	Reproduction – young/starting adult	1,780	McCauley et al. 1986	**3,437**				Ceriodaphni		Value is from personal communication with R. Erickson who works at the Lab	Raw Lake Superior water
Cladoceran, *Ceriodaphnia dubia*	50.5	7.61	1.1	MATC: reproduction – young/starting adult	1,100	McCauley et al. 1986	< 1,566	f			Ceriodaphni		Value is from personal communication with R. Erickson who works at the Lab	UW-SI Lake Superior lab water
Cladoceran, *Ceriodaphnia dubia*	25	7.65	0.5	Reproduction – young/female	1,557	ENSR 1992b	**4,403**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Very Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	47	7.7	0.5	Reproduction – young/female	808.7	ENSR 1992b	**1,823**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Soft Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	94	8.2	0.5	Reproduction – young/female	651.9	ENSR 1992b	**1,208**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Mod Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	196	8.45	0.5	Reproduction – young/female	663.6	ENSR 1992b	**1,264**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Hard Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	25	6.34	0.5	Reproduction	36.6	European Al Association 2010; Gensemer et al. 2018	**434**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	60	6.4	0.5	Reproduction	160.3	European Al Association 2010; Gensemer et al. 2018	**1,130**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lab Recon water (between soft and mod hard)
Cladoceran, *Ceriodaphnia dubia*	120	6.38	0.5	Reproduction	221.6	European Al Association 2010; Gensemer et al. 2018	**1,048**				Ceriodaphni		Value is from 2007 FW Cu AWQC Appendix C recommendation	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	25	6.34	2	Reproduction	377.4	European Al Association 2010; Gensemer et al. 2018	**2,225**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	60	6.38	2	Reproduction	631.3	European Al Association 2010; Gensemer et al. 2018	**2,008**				Ceriodaphni		Author reported	Lab Recon water (between soft and mod hard)
Cladoceran, *Ceriodaphnia dubia*	120	6.37	2	Reproduction	1,016	European Al Association 2010; Gensemer et al. 2018	**2,122**				Ceriodaphni		Author reported	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	25	6.33	4	Reproduction	622.6	European Al Association 2010; Gensemer et al. 2018	**2,472**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	60	6.3	4	Reproduction	892.9	European Al Association 2010; Gensemer et al. 2018	**1,661**				Ceriodaphni		Author reported	Lab Recon water (between soft and mod hard)
Cladoceran, *Ceriodaphnia dubia*	120	6.38	4	Reproduction	840.5	European Al Association 2010; Gensemer et al. 2018	**1,149**				Ceriodaphni		Author reported	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	25	6.37	2	Reproduction	353.0	Gensemer et al. 2018	**1,970**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	25	6.34	2	Reproduction	452.4	Gensemer et al. 2018	**2,667**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	25	6.35	2	Reproduction	439.7	Gensemer et al. 2018	**2,545**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	25	7.04	0.5	Reproduction (young/female)	250	CECM 2014; Gensemer et al. 2018	**1,197**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	120	7.14	0.5	Reproduction (young/female)	860	CECM 2014; Gensemer et al. 2018	**1,814**				Ceriodaphni		Author reported	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	25	7.98	0.5	Reproduction (young/female)	700	CECM 2014; Gensemer et al. 2018	**1,742**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
Cladoceran, *Ceriodaphnia dubia*	60	8.03	0.5	Reproduction (young/female)	1,010	CECM 2014; Gensemer et al. 2018	**2,013**				Ceriodaphni		Author reported	Lab Recon water (between soft and mod hard)
Cladoceran, *Ceriodaphnia dubia*	120	8.10	0.5	Reproduction (young/female)	870	CECM 2014; Gensemer et al. 2018	**1,489**				Ceriodaphni		Author reported	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	25	6.34	0.5	Reproduction (young/female)	260	CECM 2014; Gensemer et al. 2018	**3,507**				Ceriodaphni		Author reported	Lab Recon water (between very soft and soft)
[illegible]														
Cladoceran, *Ceriodaphnia dubia*	120	6.36	0.5	Reproduction (young/female)	390	CECM 2014; Gensemer et al. 2018	**1,899**				Ceriodaphni		Author reported	Lab Recon water (between mod hard and hard)
Cladoceran, *Ceriodaphnia dubia*	64	6.42	1.87	Reproduction (young/female)	829	OSU 2018a	**2,477**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	133	6.33	8.71	Reproduction (young/female)	3,829	OSU 2018a	**3,340**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	138	6.4	12.3	Reproduction (young/female)	6,224	OSU 2018a	**3,907**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	428	6.3	1.64	Reproduction (young/female)	2,011	OSU 2018a	**2,349**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	125	7.21	6.57	Reproduction (young/female)	6,401	OSU 2018a	**2,732**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	127	7.19	12.01	Reproduction (young/female)	6,612	OSU 2018a	**1,980**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	263	8.17	1.3	Reproduction (young/female)	3,749	OSU 2018a	**3,138**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	425	8.21	1.2	Reproduction (young/female)	2,852	OSU 2018a	**2,322**				Ceriodaphni		Author reported	Lab Recon water
Cladoceran, *Ceriodaphnia dubia*	125	8.7	1.04	Reproduction (young/female)	1,693	OSU 2018a	**2,589**		2,000	2,000	Ceriodaphni	Invert	Author reported	Lab Recon water
Cladoceran, *Daphnia magna*	140	6.3	2	Reproduction (young/female)	791.0	European Al Association 2010; Gensemer et al. 2018	**1,668**		1,668	1,668	Daphnia	Invert	Author reported	Hard Lab Recon water
Amphipod, *Hyalella azteca*	95	6.35	0.51	Biomass (28 d)	199.3	OSU 2012h; Cardinell et al. 2018	**1,127**				Hyalella		Author reported	Well water/reverse osmosis water mix
Amphipod, *Hyalella azteca*	106	6.04	0.33	Biomass (28 d)	425	Wang et al. 2016, 2018	**4,891**		2,348	2,348	Hyalella	Invert	Author reported	Well water/deionized water mix
Midge, *Chironomus riparius*	11.8	5.58	1.8	Adult midge emergence	23.55	Palavskiiet al. 1993	**1,820**				Chironomus		Based on Cleveland et al. 1989 reported values at a similar pH	Well water/reverse osmosis water mix
Midge, *Chironomus riparius*	11.9	5.05	1.8	Adult midge emergence	94.42	Palavskiiet al. 1993	**25,504**				Chironomus		Based on Cleveland et al. 1989 reported values at a similar pH	Well water/reverse osmosis water mix
Midge, *Chironomus riparius*	51	6.6	0.51	Reproduction (# of eggs/case)	3,387	OSU 2012i; Cardinell et al. 2018	**13,847**		8,630	8,630	Chironomus	Invert	Author reported	Well water/reverse osmosis water mix
Atlantic salmon, *Salmo salar*	12.7	5.7	1.8	Biomass	61.56	McKee et al. 1993	**564.2**				Salmo		Based on Cleveland et al. 1989 reported values at a similar pH	Well water/reverse osmosis water mix
Atlantic salmon, *Salmo salar*	12.7	5.7	1.8	Survival	154.2	Buckler et al. 1995	1,413	d	564.2	564.2	Salmo	Fish	Based on Cleveland et al. 1989 reported values at a similar pH	Well water/reverse osmosis water mix
Brook trout, *Salvelinus fontinalis*	12.3	6.55	1.9	Biomass	164.4	Cleveland et al. 1989	**432**				Salvelinus		Author reported	Well water/reverse osmosis water mix
Brook trout, *Salvelinus fontinalis*	12.8	5.65	1.8	Biomass	143.5	Cleveland et al. 1989	**1,397**		828.9	828.9	Salvelinus	Fish	Author reported	Well water/reverse osmosis water mix
Fathead minnow, *Pimephales*	220	7.70	1.6	Biomass	6,194	Kimball 1978	**3,493**				Pimephales		Value is from 2007 FW Cu AWQC Appendix C recommendation	Well water
Fathead minnow, *Pimephales*	96	6.20	0.25	Fry survival	428.6	OSU 2012g; Cardinell et al. 2018	**2,797**		3,126	3,126	Pimephales	Fish	Author reported; half the detection limit	Well water/reverse osmosis water mix
Zebrafish, *Danio rerio*	83	6.15	0.25	Biomass	234.4	OSU 2013; Cardinell et al. 2018	**1,743**		1,743	1,743	Danio	Fish	Author reported; half the detection limit	Well water/reverse osmosis water mix
Wood frog, *Rana sylvatica*	115	4.69	1.6	MATC–survival	2,000	Peles 2013	> **13,877**		> 13,877	13,877	> Rana	Amphib – Other Dana	Value is from 2007 FW Cu AWQC Appendix C recommendation	Aged aerated tap water (McKeesport, PA)

[a] LC=Life cycle, ELS=Early life-stage.

[b] Normalized to pH 7, hardness of 100 mg/L as $CaCO_3$ and DOC of 1 mg/L (see **Section 2.7.1**). Values in bold are used in SMCV calculation.

[c] When definitive DOC values were not reported by the authors: a DOC value of 0.5 mg/L was used when dilution water was reconstituted, 1.1 mg/L when dilution water was Lake Superior water, 1.6 mg/L when dilution water was tap or well water, or half the detection limit when the reported value was less than the detection limit, based on recommendations in the 2007 Freshwater Copper AWQC (U.S. EPA 2007)

[d] Buckler et al. (1995) appears to be a republication of McKee et al. (1993), but does not report the most sensitive endpoint and therefore only the most sensitive endpoint used for calculation of the SMCV.

[e] DOC was taken from reported values in Cleveland et al. (1989) for a similar pH; all studies are from the same lab and used the same procedures to make the dilution water (well water plus reverse osmosis water mixture).

[f] Value is an MATC, poor dose response prevented an EC_{20} from being calculated; not used in SMCV calculation.