

**Appendix A**  
Tutorial for Using the *Secondary Value Calculator* for  
Wastewater Additive Reviews

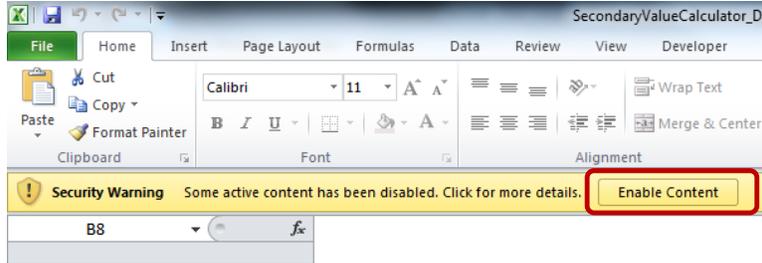
**GENERAL TIPS**

- **Save Before Changing-** Save the additive review spreadsheet under a new name before making edits to the spreadsheet.
- **Locked Cells-** This spreadsheet has locked cells to avoid editing the wrong features, unlocked cells to be edited by the WDNR staff are highlighted in blue.
- **Copy and Paste-** To copy and paste text into highlighted cells double click the appropriate cell first, so the text cursor appears in the cell. You cannot simply click the cell and paste text without being in the “text” mode.
- **Watch for “red flags”-** Red flags are comment features in excel, and provide additional information for the person filling out the spreadsheet.
- **Deleting Selection -** To delete dropdown information, click the incorrect cell and press the backspace or delete key.

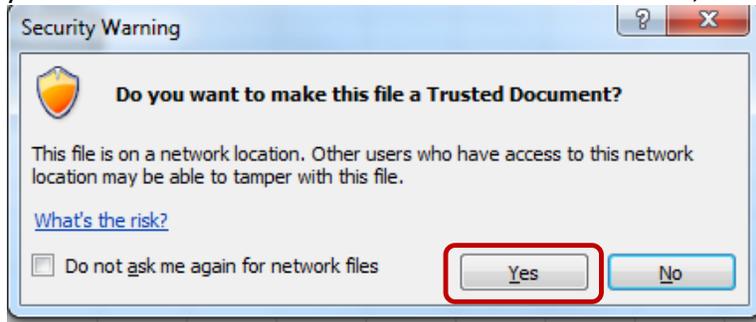
**SECONDARY VALUES REPORT**

This is the first sheet that should come up when you open the spreadsheet.

**Step 1:** In the “Macros has been disabled” box, select “Enable Content”.



**Step 2:** In the “Do you want to make this file a Trusted Document?” box, select “Yes”.

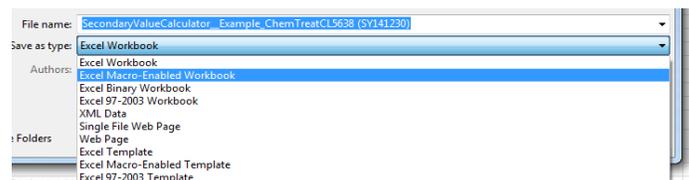
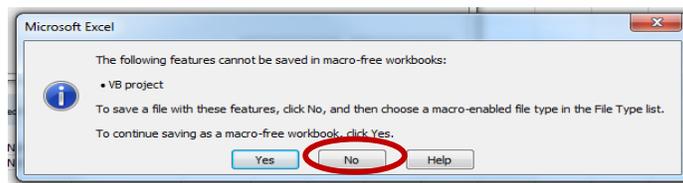


**Step 3:** Save the document in the appropriate subfolder in the “Approved Reviews” folder on the Water drive under a new name using the format: Year\_Product Name\_Initials.

[\water\WQWT PROJECTS\WY CP Additives\Approved reviews\Wastewater](#)

*Tip: A separate folder can be created to store additional files (product information, safety data sheets, etc)*

*Tip: If you get an error when trying to save (see box below), click “No” and select “Excel Macro-Enabled Workbook” under “Save as Type”.*



**Step 4:** In the “General Information” section, fill in all highlighted cells for which you have data. You will likely need to refer to previous permit documents, SWAMP data, and MSDS sheets to complete this tab.

**Step 5:** For “Designated Use Classification”, select the appropriate box(es).

*NOTE: The applicable secondary acute and chronic value rows (Rows 19 and 20) will automatically fill-in with the correct data once you fill out the rest of the spreadsheet.*

**Step 6:** In the “Product Application” section, fill in all highlighted cells for which you have data. You will likely need to refer to previous permit documents, SWAMP data, and MSDS sheets to complete this tab.

General Information					
WDNR Staff Completing Review Name:	Amanda Minks				
WDNR Staff Email:	Amanda.Minks@Wisconsin.Gov				
Facility Name (Wastewater staff):	Minkstopia				
WPDES Permit Number (if applicable):	WI-	0000916			
Product Trade Name:	Biomate MCB2881				
Product Manufacturer:	GE Water & Process Technologies				
Active Ingredients:	Ingredient Name*	CAS Number*	%wt or %vol*		
	DBNPA	10222-01-02	15-40		
	SODIUM BROMIDE	7647-15-6	3-7		
	DIBROMOACETONITRILE	3252-43-5	1-5		
	* Copy from MSDS sheet, if available				
	<input type="checkbox"/>				
Product Secondary Values					
Select Designated Use Classification:	<input type="checkbox"/> Cold Water/Runoff Application <input type="checkbox"/> Warm Water <input type="checkbox"/> Limited Forage Fish <input type="checkbox"/> Limited Aquatic Life				
Applicable Secondary Acute Value:	N/A	N/A	N/A	N/A	mg/L
	N/A	N/A	N/A	N/A	µg/L
Applicable Secondary Chronic Value:	N/A	N/A	N/A	N/A	mg/L
	N/A	N/A	N/A	N/A	µg/L
Product Application Information					
Purpose of Additive:	Biocide				
Does WPDES permit currently have a limit for this additive?	No				
Effective concentration:					mg/L
Average dosage rate:					lbs/day
					mg/L
Estimated maximum discharge					lbs/day
					mg/L

From MSDS Sheet (Step 4)

Select appropriate classification(s) (Step 5)

Will be populated once you complete other tabs

From permittee (Step 6)

Don't forget to save!

**A (ACUTE)**

**Step 7:** Use the dropdown menus to fill in the toxicity information provided from the MSDS sheet(s) and/or lab sheet(s). This should also include test method data provided by the lab.

*Tip: Test method data may be available via lab reports or through lab correspondence.*

*Work with the permittee to ascertain these data.*

*Tip: Contact the Water Evaluation Toxicologist if toxicity data are provided for species other than those listed in A (Acute) tab.*

*Tip: Only 48-hour and 96-hour toxicity endpoints should be used in this tab.*

**Step 8:** Review the spreadsheet, in particular the “Acceptable?” column (Column L), to determine if data can be used to calculate secondary values. Column L will automatically be labeled “Yes” if data are acceptable. In some cases, data is not flagged as acceptable because “Other” was selected as the “Test Method” (Column H). If this is the case, go to Step 9 in B (Acute-Optional) tab to determine if this data can be used in the calculation.

Taxa Category	Genus	Species	Common Name	Test Duration & Endpoint	Toxicity Test Result Value	Units	Test Method	Exposure Format	Control Response	Acceptable?	
Planktonic Crustacean	Ceriodaphnia	dubia	Cladoceran (water flea)							N/A	
		reticulata	Water flea							N/A	
		serrulatus	Water flea							N/A	
	Daphnia	magna	Water flea	48-hr LC50	3.30	mg/L (ppm)	EPA 2021.0	Static-renewal	≥ 90% survival	Yes	
		pulex	Water flea							N/A	
		serrulatus	Water flea							N/A	
	Simocephalus	vetulus	Water flea							N/A	
										N/A	
	Non-Salmonid Fish	Pimephales	promelas	Fathead minnow	96-hr LC50	8.70	mg/L (ppm)	EPA 2000.0	Static-renewal	≥ 90% survival	Yes
		Lepomis	Macrochirus	Bluegill	96-hr LC50	6.50	mg/L (ppm)	Wt certified	Static-renewal	≥ 90% survival	Yes
Salmonid Fish	Oncorhynchus	mykiss	Rainbow trout	96-hr LC50	2.30	mg/L (ppm)	Other	Static non-	≥ 90% survival	No	
	Salvelinus	fontinalis	Brook trout							N/A	
										N/A	
Other*									N/A		
Other*									N/A		
Other*									N/A		
Other*									N/A		
Other*									N/A		
Other*									N/A		
Other*									N/A		
Other*									N/A		

Only data from rows labeled “Yes” is included in the calculation

If Test Method is “Other”, go to Tab B (Acute-Optional).

**B (ACUTE-OPTIONAL)**

Note: This tab is used for data that for which “Other” was selected as the “Test Method” (see step 8).

**Step 9 (optional):** Use the dropdown menus to select the test parameters used to generate the toxicity endpoint. All fields must be filled in before the data can be considered acceptable. Contact the Water Evaluation Toxicologist with questions. Once completed, go to C (Acute) tab.

Toxicity Test Parameters	Water flea		Fathead Minnow	Bluegill	Rainbow Trout
	(Ceriodaphnia spp.)	(Daphnia spp.)	(Pimephales promelas)	(Lepomis macrochirus)	(Oncorhynchus mykiss)
Temperature:		25±1 °C			
Dilution water:		20±1 °C 25±1 °C Other			
Number of test concentrations:		≥ 5 + control			
Dilution series setup:		≥0.5 dilution series			
Age of test organisms:		< 24 h			
Number of organisms/test chamber:		≥ 5			
Number of replicate chambers per concentration:		≥ 4			
Number of organisms per concentration:		≥ 20			
<b>Data acceptable?</b>	No	Yes	No	No	No

Don't forget to save!

**C (ACUTE)**

**Step 10:** *No action is necessary in this tab.* DNR staff may wish to review to verify findings. All information is automatically entered into tab and a SAV is calculated. The final SAVs are highlighted in orange.

Taxa Category	Genus	Species	Common Name	Test Result mg/L	SMAV mg/L	GMAV mg/L	Designated Use Classification			
							CW	WW	LFF	LAL
Planktonic Crustacean	Ceriodaphnia	dubia	Water flea		N/A					
		reticulata	Water flea		N/A	N/A	X	X	X	X
		serrulatus	Water flea		N/A					
	Daphnia	magna	Water flea	3.30	3.30					
		pulex	Water flea		N/A	3.30	X	X	X	X
		serrulatus	Water flea		N/A					
	Simocephalus	vetulus	Water flea		N/A	N/A	X	X	X	
Non-Salmonid Fish	Pimephales	promelas	Fathead minnow	8.70	8.70	8.70	X	X	X	
	Lepomis	Macrochirus	Bluegill	6.50	6.50	6.50	X	X	X	
Salmonid Fish	Oncorhynchus	mykiss	Rainbow trout	2.30	2.30	2.30	X			
	Salvelinus	fontinalis	Brook trout		N/A	N/A	X			
SAF:							8			
Lowest GMAV:							2.30	3.30	3.30	3.30
Calculated SAV:							0.29	0.41	0.41	0.41
Selected SAV:							0.288	0.413	0.413	0.413 mg/L
							287.5	412.5	412.5	412.5 µg/L

**D (CHRONIC)**

**Step 11:** Determine whether chronic data have been submitted to DNR for review. If chronic data have been submitted, proceed to Step 12. If no chronic data is submitted, go to Step 16 (“Secondary Values Report” Tab). A secondary chronic value will be calculated using default parameters.

**Step 12:** Use the dropdown menus to fill in the toxicity information provided from the MSDS sheet(s) and/or lab sheet(s). This should also include test method data provided by the lab.

*Tip: Test method data may be available via lab reports or through lab correspondence. Work with the permittee to ascertain these data.*

*Tip: Contact the Water Evaluation Toxicologist if toxicity data are provided for species other than those listed in D (Chronic) tab.*

*Tip: Only long-term toxicity endpoints (e.g., NOAEL, LOAEL) should be used in this tab.*

**Step 13:** Review the spreadsheet, in particular the “Acceptable?” column (Column M), to determine if data can be used to calculate secondary values. Column M will automatically be labeled “Yes” if data are acceptable. In some cases, data is not flagged as acceptable because “Other” was selected as the “Test Method” (Column I). If this is the case, go to Step 14 in E (Chronic-Optional) tab to determine if this data can be used in the calculation.

Taxa Category	Genus	Species	Common Name	Test Type	Test Endpoint	Toxicity Test Result Value	Units	Test Method	Exposure Format	Control Response	Acceptable?
Invertebrate	Ceriodaphnia	dubia	Water flea								N/A
	Ceriodaphnia	reticulata	Water flea								N/A
	Ceriodaphnia	serrulatus	Water flea								N/A
	Daphnia	magna	Water flea	Reproduction	NOEL/NOAEL	0.35	mg/L (ppm)	EPA 1002.0	Flow-through	≥80% survival	Yes
	Daphnia	pulex	Water flea								N/A
	Simocephalus	serrulatus	Water flea	Survival	LOEL/LOAEL	1.50	mg (ppm)	Other	Static non-renewal	≥80% survival	No
	Simocephalus	vetulus	Water flea								N/A
Fish	Pimephales	promelas	Fathead minnow								N/A
	Lepomis	Macrochirus	Bluegill								N/A
	Oncorhynchus	mykiss	Rainbow trout								N/A
	Salvelinus	fontinalis	Brook trout								N/A
	Other*										N/A

Only data from rows labeled “Yes” is included in the calculation

If Test Method is “Other”, go to Tab B (Acute-Optional).

Don't forget to save!

**E (CHRONIC-OPTIONAL)**

Note: This tab is used for data that for which "Other" was selected as the "Test Method" (see step 13).

**Step 14 (optional):** Use dropdown menus to select the test parameters used to generate the toxicity endpoint. All fields must be filled in before the data will be considered acceptable. Contact the Water Evaluation Toxicologist with questions. Once completed, go to F (Chronic) tab.

Toxicity Test Parameters	Water flea			Fathead Minnow
	(Ceriodaphnia spp.)	(Daphnia spp.)	(Simocephalus spp.)	(Pimephales promelas)
Test duration:	≤ 8 days			
Temperature:	20±1 °C			
Dilution water:	Synthetic water			
Number of test concentrations:	≥ 5 + control			
Dilution series setup:	≥0.5 dilution series			
Age of test organisms:	< 24 h			
Number of organisms/test chamber:	< 24 h Other			
Number of replicate chambers per concentration:	≥ 10			
Number of organisms per concentration:	≥ 10			
<b>Data acceptable?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>	<b>No</b>

**F (CHRONIC)**

**Step 15:** *No action is necessary in this tab.* DNR staff may wish to review to verify findings. All information is automatically entered into tab and a SCV is calculated. The final SCVs are highlighted in orange.

Taxa Category	Genus	Species	Common Name	SMAV mg/L	Chronic Test Value mg/L	SMCV	SMACR	Designated Use Classification				
								CW	WW	LFF	LAL	
Invertebrate	Ceriodaphnia	dubia	Water flea					X	X	X	X	
	Ceriodaphnia	reticulata	Water flea					X	X	X	X	
	Ceriodaphnia	serrulatus	Water flea					X	X	X	X	
					FALSE							
	Daphnia	magna	Water flea	3				X	X	X	X	
	Daphnia	pulex	Water flea					X	X	X	X	
					1.500	1.50		X	X	X	X	
	Simocephalus	serrulatus	Water flea					X	X	X	X	
	Simocephalus	vetulus	Water flea					X	X	X	X	
							Invertebrate SMACR:	18.00	(default)			
Fish	Pimephales	promelas	Fathead minnow	8.7				X	X	X		
	Lepomis	Macrochirus	Bluegill	6.5				X	X			
	Oncorhynchus	mykiss	Rainbow trout	2.3				X				
	Salvelinus	fontinalis	Brook trout					X				
							Fish SMACR:	18.00	(default)			
							Sensitive Freshwater Species SMACR:	9.43				
								SACR:	13.027	14.510	14.510	13.027
								Selected SAV:	0.288	0.413	0.413	0.413
								Calculated SCV:	0.022	0.028	0.028	0.032
								Selected SCV:	0.02	0.03	0.03	0.03 mg/L
									22.1	28.4	28.4	31.7 µg/L

Don't forget to save!

**SECONDARY VALUES REPORT**

**Step 16:** Return to “Secondary Values Report” Tab. The appropriate final secondary acute and chronic values are highlighted in orange.

*Note: If the SAV/SCV is greater than 0.1 mg/L (100 µg/L), the value with units of mg/L will be highlighted. If the SAV/SCV is less than 0.1 mg/L (100 µg/L), the value with units of µg/L will be highlighted.*

Product Secondary Values						
Select Designated Use Classification:	<input type="checkbox"/> Cold Water/Runoff Application	<input checked="" type="checkbox"/> Warm Water	<input type="checkbox"/> Limited Forage Fish	<input type="checkbox"/> Limited Aquatic Life		
Applicable Secondary Acute Value:	N/A	0.413	N/A	N/A	mg/L	
	N/A	413	N/A	N/A	µg/L	
Applicable Secondary Chronic Value:	N/A	8.83	N/A	N/A	mg/L	
	N/A	28.4	N/A	N/A	µg/L	

**Step 17:** Use the SAV and SCV to derive water-quality based effluent limits (WQBEL) using the procedures described in ss. NR 106, Wis. Adm. Code

