

**BEFORE THE ILLINOIS POLLUTION CONTROL BOARD**

IN THE MATTER OF: )  
 )  
PROPOSED AMENDMENTS TO: ) R18-32  
 ) (Rulemaking – Water)  
35 ILL. ADM. CODE 302.102 and 302.208(g) )  
WATER QUALITY STANDARDS FOR )  
CHLORIDES )

**NOTICE OF ELECTRONIC FILING**

PLEASE TAKE NOTICE that on January 16, 2019, I electronically filed with the Clerk of the Pollution Control Board of the State of Illinois, **OPENLANDS' PRE-FILED QUESTIONS FOR JAMES E. HUFF AND DAVID J. SOUCEK**, a copy of which is attached hereto and herewith served upon you.

Dated: January 16, 2019

Respectfully Submitted,



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**OPENLANDS' PRE-FILED QUESTIONS FOR JAMES E. HUFF**

1. In your testimony, you state that “[t]here is no basis for believing that BMPs by themselves will result in achieving a 500 mg/L not to exceed winter standard. Smaller streams still have peak chloride concentrations in excess of 1500 mg/L and it is not realistic to expect the 67% reduction in salt usage that would be required during the worse (sic) runoff events in order to achieve compliance.” Page 2, para. 2 of Huff Testimony. “I believe the efforts will fall far short of achieving the 500 mg/L not to exceed chloride level.” Page 3, para. 2.

Question: What is your basis for stating that BMPs can’t result in meeting these standards everywhere in the state?

2. In your testimony, you state that: “I reached out to the USEPA at the end of the UAA proceedings about the possibility of funding cold temperature toxicity testing as they had recently funded chloride toxicity testing on several aquatic species.” Page 3, para. 2.

Questions:

- What were the studies regarding “recently funded chloride toxicity testing” by the USEPA?
- Did these studies include the following on glochidia of fat muckets?
  - Wang, N, CD Ivey, RA Dorman, CG Ingersoll, J Steevens, EJ Hammer, CR Bauer, and DR Mount. 2018b. Acute toxicity of sodium chloride and potassium chloride to a unionid mussel (*Lampsilis siliquoidea*) in water exposures. *Environmental Toxicology and Chemistry*. First published: 19 June 2018 <https://doi.org/10.1002/etc.4206>
  - Wang, N, JL Kunz, RA Dorman, CG Ingersoll, JA Steevens, EJ Hammer, and CR Bauer. 2018a. Evaluating chronic toxicity of sodium chloride or potassium chloride to a unionid mussel 10 (*Lamsilis siliquoidea*) in water exposures using standard and refined toxicity testing methods. *Environmental Toxicology and Chemistry*. 2018 Aug 21. doi: 10.1002/etc.4258. [Epub ahead of print].
- Did you utilize the study by Gillis, which presents data showing that the glochidia of two species present in Illinois waters (the Wavy rayed lamp mussel and Northern riffleshell) have significantly lower acute tolerances to chloride?
- Were the studies you referenced in process or complete when you originated the cold-water studies presented in your petition?
- If complete, how did you consider the results of these studies in your proposal?

3. In the petition for the proposed chlorides standard, in reviewing Table 1 title "Chloride Genus and Species Mean Acute Values (GMAV, SMAV) in MG/L," the four most sensitive species listed are the: Mayfly (*Neocloeon triangulifer*); Water Flea Species (*Ceriodaphnia dubia*); *Lampsilis* Mussel; and Fingernail Clam (*Spaerium simile*). See pages 95 to 96 of 404, *Huff Petition for Amended Chloride WQS*, R2018-032.

Questions:

- Are you aware that in the 2011 Gillis report that the toxicities for these species are significantly lower than the numbers in Table 1 of the four sensitive species in the Huff proposal? See Gillis, PL. 2011. Assessing the toxicity of sodium chloride to the glochidia of freshwater mussels: implications for salinization of surface waters. *Environmental pollution* 159: 1702-108.
  - Are you aware that the Northern Riffleshell, the Wavy Rayed Lamp Mussel and the Fat Mucket live in Illinois waters?
  - Have you read, as part of your literature review of the Gillis 2011 report, which is referenced in your study, that the acute thresholds for these species are much lower than the species mean acute value in Table 1 of the Huff Proposal? Why are figures so much higher for species like the *Lampsilis fasciola* mussel species, which has a mean acute value in the Huff proposal of 2,907.1 mg/L of chloride, when the Gillis study reflects an acute mean of 113 mg/L and 235 mg/L?
  - Do the values you state in this table reflect the acute mean values for glochidia and juvenile mussels?
  - Do studies, such as the two published by Wang, demonstrate that more stringent chlorides thresholds are necessary to protect all life stages of these and other mussels?
4. In the petition for the proposed chlorides standard, the USEPA used a protocol to compute the seasonal water quality standards for each specific water body for ammonia. It states the Huff proposal is premised upon a similar approach to develop winter chloride standards. *Huff Testimony* at page 6.

Question: Are you aware how variable the temperatures are across the state compared to assessing the seasonal figures for a specific water body? Don't the temperatures in southern Illinois vary widely from ones in Northern Illinois?

5. According to the USGS, there are softer waters present in southern Illinois.

Questions:

- Are you aware that studies like the two referenced by Wang have found that softer waters result in lower chlorides toxicities, as has been demonstrated in the Fat Mucket Mussel?
- Would you agree that aquatic life will be less protected from chlorides overall in southern Illinois than northern Illinois?
- Are you aware of places mapped as having harder water, such as McHenry County, that are using water softeners that contain chlorides?
- How did you account for these variables in your analysis and proposal?

6. It appears that, in the Huff petition and accompanying materials, that Fat Mucket glochidia were not tested at 10°C? Why? If you are assuming that this adds protection to more sensitive species, then why are the figures still so much higher than ones found for acute toxicity for glochidia in Gillis and Wang?

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**OPENLANDS' PRE-FILED QUESTIONS FOR DAVID J. SOUCEK**

1. Chloride toxicity to fingernail clams as well as two other non-mussel species were studied. Your pre-filed testimony indicates a finding that the fingernail clams did not get relief in terms of chronic chloride toxicities at the lower temperature (10°C).

Questions:

- Do you believe that fingernail clams are representative of other Illinois native species in this respect?
- How was it decided to limit representation of mussels solely to that species?
- Are you aware that there are other sensitive mussel species in Illinois waters?
- How did you account for softer water in different parts of the State in your findings on mussel species sensitivity?
- In your experience as a toxicologist, is it your opinion that at 10°C, you would likely see a similar influence of hardness on chloride toxicities to mussels, as seen at warmer temperatures (according to the Wang and Gillis 2011 studies)?

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**CERTIFICATE OF SERVICE**

I, Stacy Meyers, hereby certify that I have filed the attached **NOTICE OF ELECTRONIC FILING** and **OPENLANDS' PRE-FILED QUESTIONS TO JAMES E. HUFF AND DAVID J. SOUCEK** upon the attached service list by electronic mail on January 16, 2019.

Dated: January 16, 2019

Respectfully Submitted,



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**PCB R2018-032 SERVICE LIST**

January 2019

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