

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
IN THE MATTER OF:)
)
AMENDMENTS TO THE GENERAL USE) R18-32
WATER QUALITY STANDARDS) Rulemaking – Water
FOR CHLORIDE)

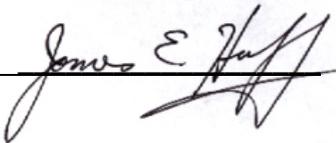
NOTICE OF FILING

To: Don Brown, Clerk
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph Street, Suite 11-500
Chicago, IL 60601

PLEASE TAKE NOTICE that I have today electronically filed with the Illinois Pollution Control Board, **HUFF & HUFF'S PRE-FILED QUESTIONS FOR LAURA BARGHUSEN AND CYNTHIA SKRUKRUD**, a copy of which is attached hereto and herewith served upon you.

Dated: January 14, 2019

Respectfully Submitted:

By: 

James E. Huff, P.E.
Huff & Huff, Inc.
915 Harger Road, Suite 330
Oak Brook, IL 60523

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HUFF & HUFF'S PRE-FILED QUESTIONS FOR LAURA BARGHUSEN

1. On page 1 you state that a more lenient standard for chlorides would ultimately result in greater pollution in these waters. The proposed summer standard is more restrictive than the current standard, so presumably this statement refers to the proposed winter standards. As no urban stream in Illinois currently meets the 500 mg/L chloride standard during snow melt periods, a condition that has existed for more than 40 years, can you explain how the proposal will result in greater pollution in urban streams?
2. Is the substance of your testimony that the Illinois Pollution Control Board should reject the proposed summer/winter chloride standards and simply maintain the 500 mg/L chloride standard? Is it your position that the 500 mg/L chloride standard is more protective of the aquatic community than what has been proposed?
3. On page 3 and again on page 6 you note that the proposal does not adequately account for softer water, especially downstate. Do you have a recommendation on how you would want water hardness introduced into the water quality standard? Should the relationship found by Wang, et al., for fatmucket be utilized for both summer and winter standards based upon your technical expertise?
4. On page 3, you note that warmer temperatures occur downstate, and the proposed seasonal limits may not be protective. Can you identify any stream data where snow melt has resulted in stream temperatures greater than 10°C? Do you have a recommendation as to separate downstate seasons, or are you recommending that actual stream temperatures be taken at the time of sampling and the standards be based on actual stream temperatures greater than or less than 10°C?
5. On page 4 you cite several mussel studies that show mussels are more sensitive than the existing database. Can you please provide the temperature at which these studies were conducted?
6. On page 4 you also cited a study by Wallace and Biastoch that found a threshold for diversity and abundance at chloride concentrations between 50 and 90 mg/L. Did this study look at seasonal chlorides, maximum chlorides, or summer chlorides? Are you proposing a not-to-exceed chloride standard of between 50 and 90 mg/L for Illinois? What percentage of streams in Illinois achieve a maximum chloride level of 90 mg/L currently? How would you propose achieving such a level in urban areas?
7. On page 4 you cite median effect concentrations (EC50) for a variety of mussels at hardness levels as low as 50 mg/L, while not reporting the EC50s for harder water. Where in Illinois are there streams with hardness values as low as 50 mg/L?

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8. Did not Gillis note that the poor quality of the glochidia (77.4% control survival) might have impacted the lower EC50 of 168 mg Cl/L? Did not Wang, et al., find the EC50 in low hardness water was 441 mg/L, significantly higher than Gillis' result at 20°C?
9. On page 4 you cite Gillis' article on glochidia. Did not Gillis conclude that natural river water offers 'protection' from acute chloride toxicity as opposed to the reconstituted laboratory water? Would not this finding provide an additional degree of protection?
10. On page 5 you note several studies describing the presence of larval freshwater mussels in the winter months. Two of the species you note on page 5, *L. siliquoidea* and *L. cardium* are commonly found in the West Branch of the DuPage River, yet elevated winter chloride concentrations occur, but summer chlorides are below 230 mg/L? Does not this suggest that temperature is an important consideration for toxicity to mussels?
11. On page 5, you note April temperatures as high as 70°C. Would you expect any significant snow melt with chlorides entering these waterways during such events? If a winter chloride standard excluding April is ultimately adopted, how would you propose accounting for snow melt from late season storm events which occur in April with respect to the chloride standard?
12. On page 7 you recommend that more than just temperature should be taken into account for a chloride water quality standard. Do you have a proposal for such a regulation, and do you have data on the effect of sulfate concentrations at lower temperatures? Assuming no such data exist at this time, are you proposing the Board do nothing at this time until funding for such research is secured and the studies are completed? Do you have an opinion on the economic impact such a delay will have on the urban areas of Illinois where development will cease?
13. On page 7 you cite a series of mussel toxicity results conducted at 21°C and note the results are below the proposed winter chronic standard. Can you explain the relevance of this statement? Are you implying the chronic toxicities at 10°C would also be below the proposed winter chronic standard based on the data presented by Dr. Soucek, and if so, what is the basis for this concern?
14. On page 7 you describe the translocation of the Northern riffleshell mussels into the Vermillion River basin. Can you describe the peak chlorides recorded in this watershed where the mussels were translocated, and would these areas be described as urban or rural areas? Are you also implying that the existing 500 mg/L chloride water quality standard is sufficiently protective of this mussel?
15. On page 8 you express concern over chlorides accumulating in lakes that ice over. Are you proposing different chloride standards for lakes? Do you have data on chloride concentrations in lakes in Illinois? Your comment on the lakes impact implies you believe there will be an increase in chloride concentrations in lakes if the Board should adopt the proposed summer/winter standards. As the proposed summer standard is less than half of the existing chloride standard, would not the flushing time for the lakes have to be less than one month to achieve the summer standard if the chlorides exceeded 500 mg/L in the winter?

16. On page 8 you note the Huff petition "raises excellent points about chloride toxicities". Can you identify these excellent points as they were not identified in your written testimony?

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HUFF & HUFF’S PRE-FILED QUESTIONS FOR CYNTHIA SKRUKRUD

1. Bullet 1 of your pre-filed testimony indicates that the Petition makes little sense as applied, as it focuses on highway deicing practices. Is not highway/pavement deicing the primary winter source of chlorides in Illinois streams? Is not highway/pavement deicing the focus of all watersheds seeking watershed variances currently?
2. Do coal mining operations in Southern Illinois have a significant seasonal pattern? If the Board adopted the proposed chloride water quality standard, would not the coal industry have to comply with the more restrictive summer chloride water quality standard? If the industry complies with the more restrictive summer standard, what change in their operation would they implement to vary the amount of chlorides discharged from summer to winter months?
3. Bullet 2 of your pre-filed testimony notes winter includes March and April. Is it your contention that heavy snow events do not occur during those months or that highway de-icing salts are not utilized for such events? How would you propose to address snowfall impacts during those months? As snow fall generally occurs at or near freezing temperatures, and snowfall runoff would have a temperature well below 10°C, would you not expect the receiving stream temperatures during these events to be less than 10°C?
4. Are you proposing alternative chloride standards for the coal industry or southern streams?
5. Bullet 4 of your pre-filed testimony appears inconsistent with USEPA protocol to derive water quality standards. Are you implying the Petition did not follow USEPA protocol? Can you reference the authority you followed that utilizes an individual species result to develop water quality standards?
6. While acknowledging the proposed summer chloride standards are from the USEPA, you express concern they are not restrictive enough. What would you propose for summer chloride standards, and what will be the impact on Illinois economy?
7. Bullet 6 cites a draft document on other dissolved solids that has not been finalized. Does not the literature indicate that both increasing hardness and increasing sulfates increase the median effect concentration (EC50) of chlorides (or reduce the toxic effects of chlorides)? Can you cite specific concerns regarding dissolved minerals in Illinois streams that you believe would change the proposed water quality chloride standards?

SERVICE LIST R18-32

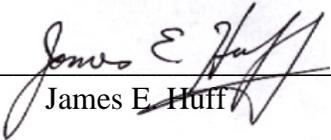
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CERTIFICATE OF SERVICE

I, the undersigned, certify that on January 14, 2019, I served electronically the attached PRE-FILED QUESTIONS TO LAURA BARGHUSEN AND CYNTHIA SKRUKRUD to the participants listed on the attached SERVICE LIST.


James E. Huff