BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE OF FILING

Don Brown, Clerk of the Board
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(**VIA Electronic Filing)**

Martin Klein
Hearing Officer
Illinois Pollution Control Board
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SEE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have filed electronically today with the Illinois Pollution Control Board ILLINOIS EPA'S PRE-FILED QUESTIONS, a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By:/s/Stefanie N. Diers
Stefanie N. Diers
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Dated: January 16, 2019
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ILLINOIS EPA'S PRE-FILED QUESTIONS

The Illinois Environmental Protection Agency ("Illinois EPA" of "Agency"), by and through its attorneys, herby submits pre-filed questions in response to the pre-filed testimony of various witnesses in the above captioned case. The Agency may ask additional follow-up questions as necessary.

Questions for James E. Huff

1) On Page 3 of your pre-filed testimony you spoke to Candice Bauer at at USEPA. Did your conversation focus on funding your study? If not, what was the conversation about?

2) On Page 3 of your pre-filed testimony you state that work plans were submitted to USEPA but that you heard nothing back from USEPA. Did you follow-up with USEPA concerning the work plans that you sent? You also state you provided your work plan to Illinois EPA and that you heard nothing back. Did you do any follow up with Illinois EPA?

3) On page 4 of your pre-filed testimony you state that you spoke to Scott Twait at Illinois EPA and were told the Agency would like to see more testing at more temperatures.

a) Why were additional temperatures not tested to appropriately derive a slope, an associated final acute equation, and final chronic

equation for the proposed chloride standards, as described in USEPA guidance?

b) Would the 10-degree C chloride water quality standards be protective of aquatic life at temperatures slightly above 10-degree C?

c) Would chloride toxicity be further mitigated at test temperatures below 10-degree C?

4) Did you share the regulatory proposal with USEPA before filing the Petition with the Illinois Pollution Control Board ("Board")? If yes, what was did they say? If no, why not?

5) Do you plan to seek feedback from USEPA to see if the water quality standards you are proposing would be approvable by USEPA? If yes, when will you seek USEPA's feedback?

6) Did you share the regulatory proposal with Illinois EPA before filing the Petition with the Board? If yes, what did the Agency say? If no, why not?

7) Did you conduct any outreach with stakeholders before filing this proposal? If yes, when and with whom?

8) Did you speak to stakeholders specifically in the central and southern reaches of the State since your proposal is statewide? If yes, when and with whom? If no, why not?

9) As drafted, this proposal contains a statewide water quality standard; did you look at chloride impacts and road salt usage in central and southern Illinois?

10) Please describe how temperature and weather for northern, central and southern Illinois can vary?

11) Does your research consider the difference in temperature and snow fall events for the southern half of the State as compared to the northern half of the State?

12) It appears that the cold temperature standards were developed to coincide with periods when road salt usage is expected in northern Illinois. Did you consider invariant sources of chloride from coal mines and water treatment plants in the downstate area?

13) On page 6 of your pre-filed testimony you indicate that Illinois EPA provided you with all Illinois stream temperature data from 2002 to 2016, and you state "*Using just the data from December 1st to April 30th yielded a 75th percentile temperature of 9.3 degrees C. Based on these results, a temperature of 10 degrees C was selected for conducting winter temperature toxicity testing".*

a) Is it appropriate to combine winter data (December, January, and February) with spring data (March and April) and use the 75th percentile temperature to justify inclusion of March and April as months suitable for the 10-degree C standard?

b) By including temperature data from winter months, would there be a bias towards a colder 75th percentile result?

c) Using the same dataset referenced in this Petition, what are the 75th percentile temperatures of each individual month? Do the 75th percentile temperatures for March and April still fall below 10-degrees C?

d) Are there any differences in stream temperatures between northern Illinois and southern Illinois?

e) Are there any locations in Illinois where water temperatures in December through March are routinely above 10-degrees C?

14) On page 6 of your pre-filed testimony, it states that "*The Agency has a protocol for computing the 75th percentile temperature (and a similar approach for pH) for computing seasonal water quality standards for each specific water body for*

ammonia, and a similar approach was used for developing winter chloride standards."

Have you looked at the ammonia water quality standards in Section 302.212(b)?

a) In those equations, what is "T" and what is "pH"?

b) When using those equations to determine compliance in the receiving stream, the Agency uses the pH and temperature at the time of the ammonia sample. Were you instead referring to how the Agency calculates permit limits based on ambient data (75^{th} percentile temperature and 75^{th} percentile and 50^{th} percentile pH) located at 35 Ill. Adm. Code Part 355?

15) The proposed regulatory language in Section 302.214(a) requires a zone of initial dilution (ZID) for the acute chloride WQS and requires a ZID for the chronic chloride water quality standard. Did you intend to require a ZID for the acute chloride WQS and a mixing zone or allowed mixing for the chronic chloride WQS?

16) The proposed regulatory language in Section 302.214(b) requires a ZID for the acute chloride WQS and allows no mixing for the chronic chloride WQS. Did you intend to require a ZID for the acute chloride WQS and a mixing zone or allowed mixing for the chronic chloride WQS?

17) In the proposed regulatory language in Section 302.214(b)(2), there is a statement that the samples for determining compliance must be collected in a manner that assures a representative sample. Did you intend for this requirement to be in Section 302.214(a)(2) also?

18) Is it your intention that these proposed chloride water quality standards are the general use standards, or is it your intention that the proposed standards replace the chloride standards in Section 302.407(g)(2) and Section 303.449 for the site-specific standard for the Chicago Sanitary and Ship Canal?

19) On page 8 of your pre-filed testimony, you state that: "*From the technical Support Document, each exceedance was generally less than a week duration which formed the basis for asking Dr. Soucek to run the third series of toxicity testing with exposure to elevated chloride for seven days followed by returning the chlorides to a lower concentration over a period of days*." Is this representative of discharges from an industry that has a consistent discharge of chloride?

20) On Page 94 of the regulatory petition, it states that *"Using the toxicity data published in the 1988 Ambient Water Quality for Chlorides, and then modifying the results for certain species based on the current 10˚C research, winter water quality criteria for chlorides can be derived. Table 1 presents a listing of the Chloride Genus and Species Mean Acute Values, ranked from the most tolerant to chlorides to the least tolerant species"*.

a) However, Table 1 (page 95 of 404) is not from the 1988 National Criteria. Rather, it appears this is the dataset used in the 2009 Iowa chloride standard, with the exception being the inclusion/modification of GMAVs for the organisms recently tested in support of this Petition. Is that correct?

b) Was the dataset from Iowa ultimately used as the baseline for deriving the cold temperature standards.? If yes, then why were the 1988 National Criteria proposed for the General Use standards, whereas a modified dataset of the 2009 Iowa standard was used in derivation of the cold temperature standards?

c) Why was the cold temperature database not appropriately identified as the 2009 Iowa dataset in the Petition?

d) The 2009 Iowa chloride standards are hardness and sulfate dependent. Why were hardness and sulfate not incorporated into the new standards proposed by this Petition?

21) The GMAVs in Table 1 were ascertained from the 2009 Iowa dataset and are normalized to a hardness of 300 mg/L and a sulfate of 65 mg/L, which appears to

inflate the reported GMAV values compared to the non-normalized GMAVs that are representative of the actual reported literature values.

a) Was it your intent to incorporate the hardness and sulfate dependent toxicity of chloride into the GMAVs?

b) Use of the hardness and sulfate normalized GMAVs in Table 1 may lead to the derivation of less stringent acute and, via the ACR approach, chronic standards. Was an attempt made to report the GMAVs in a non-normalized format?

22) On page 94 of the Petition, you state that the 1988 Ambient Water Quality for Chlorides was used as the initial source of toxicity data; however, the species list on Page 95 of your petition does not match the species list in the 1988 NCD. Why is the species list different from the 1988 NCD?

23) During the Chicago Area Waterway hearings, USEPA took the position that the Iowa standard was no longer approvable. Have you communicated with USEPA about their position concerning Iowa's chloride standard? If yes, has USEPA changed their view?

24) Why is your proposal silent on hardness and sulfate?

25) Have there been any other studies since the 2009 Iowa derivation?

26) On Page 5 of your pre-filed testimony, you state that *"As the four most sensitive species drive the derivation of the FAV, and subsequently the CMC and CCC, the work plan selected the four species most sensitive to chlorides for toxicity testing. The approach was to substitute the results from these four species and similar organisms in the list of Genus Mean Acute Values (GMAV), leaving the remaining species results as published, without temperature adjustment and then recompute the new FAV with this mixed temperature list."*

a) Have the four species most acutely sensitive to chloride been tested under cold temperatures?

b) It seems when using the non-normalized Iowa dataset and supplementing it with the cold temperature test results, *Lampsilis* and *Physa* are among the most acutely sensitive taxa. Why were these genera not selected for cold temperature testing?

27) Would you agree that new acute toxicity data for chloride is available and is unaccounted for in the dataset used in the Petition?

28) Would the incorporation of new acute toxicity data modify the standards proposed in this Petition?

29) Would you agree that new chronic toxicity data for chloride is available and is unaccounted for in the derivation of chronic standards proposed by this Petition?

a) If yes, would you agree that this new toxicity data should be incorporated into the Petition?

b) Would the incorporation of new chronic toxicity data allow for the derivation of chronic standards that may be derived using GMCVs in lieu of the ACR approach?

c) Would the incorporation of new chronic toxicity data modify the standards proposed by this Petition?

30) Additionally, it appears that there is an underlying error in the FAV calculations provided in Table 2, as the FAV of 2,028 mg/L is not replicable when using the GMAVs provided in the table. Could you please look and see if there is an error with this calculation?

31) Both the 1988 National Criteria document and the 2009 Iowa standard included a GMCV for *Pimephales* (fathead minnow) of 433 mg/L, which was the second most sensitive GMCV in the dataset (*Ceriodaphnia* GMCV = <419 mg/L). Yet, the cold

temperature chronic standard was developed using an invertebrate ACR that is two-fold less protective than the vertebrate ACR.

a) Why was temperature dependent chloride testing not conducted on *Pimephales*?

b) Does use of the invertebrate ACR result in a chronic cold temperature standard that is protective of *Pimephales* and other vertebrates?

32) Was any consideration given to testing vertebrates (e.g., fish) under cold temperatures?

a) Is there evidence that suggests vertebrate sensitivity to chloride is temperature variant?

b) Is there any evidence to suggest that invertebrates would be the most sensitive organisms under cold temperatures?

c) Could other temperature invariant taxa such as vertebrates be more sensitive under cold temperatures?

33) Are you aware of any Illinois invertebrates with life cycles that require, or prefer, temperatures of 10-degrees C, or lower, for completing mating, egg deposition, and development of offspring?

a) If yes, is there any chloride toxicity data for these taxa?

b) Would the proposed cold temperature chloride standards be protective of invertebrates that utilize cooler temperatures to complete their life cycles?

Questions for Mr. Klocek

34) You mention that the ACR of 3.187 was ascertained from the 2009 Iowa chloride standard and that this ACR was solely developed from invertebrate data.

a) What was the justification for developing the chronic standard using the invertebrate ACR, while dismissing the vertebrate ACR of 7.308?

b) Is it appropriate to continue to use the acute to chronic ratio (ACR) when enough data is available to compute the chronic standard without the ACR?

c) Would it be more appropriate to rank GMCVs, calculate an FCV, then adjust the FCV with a multiplier ascertained from the paired cold temperature and warm temperature tests conducted in support of this Petition?

Respectfully submitted,

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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CERTIFICATE OF SERVICE

I, STEFANIE N. DIERS, Assistant Counsel for the Illinois EPA, herein certifies that she has served a copy of the foregoing NOTICE OF FILING, and PRE-FILED QUESTIONS, upon persons listed on the Service List, by placing by sending an email from my email account (Stefanie.diers@illinois.gov) to the email addresses designated below with the following attached as a PDF document in an e-mail transmission on or before 5:00 pm on January 16, 2019.

/s/Stefanie N. Diers
Stefanie N. Diers
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