53i163r1 – PFAS Cation Water Chemistry

Ballot comments and responses

Group	Joint Committee on Drinking Water Treatment Units	total committee ballots sent:	33
		% committee ballots returned:	85%
		affirmative votes:	8
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		abstentions:	4
Public comment end	3/9/2025	% affirmative of total ballots sent:	24%
		% affirmative of total affirmative + negative ballots:	33%

Commenter name	Jun Kim	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	Section 7.2.6.5
Commenter company	Florida Polytechnic University	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	Substantive / te
Subject, comment	**Hardness and alkalinity,** The following language and numbers need to be revisited and modified properly. In Table 7.8, Chloride (Cl-) cannot be controlled with +/- 20% if the target value is **> 80 mg/L**. Hardness (bottom of the table) should be expressed as CaCO3. 7.2.6.5 d) ... 200 mg/L of **"alkalinity expressed as CaCO3"** is insufficient without considering pH. 7.2.6.5 e) ... **11 mg/L** as sulfate is inaccurate. 7.2.6.5 f) ... **75 mg/L as sodium** seems to be low, in the context of "total concentration," because of the existing sodium from sodium bicarbonate (NaHCO3) in d).				
Proposed change	I suggest revisiting the calculation in the "PFAS Cation Water Chemistry Lab Results.PDF," checking all numbers & expressions, and carefully updating 7.2.6.5 accordingly.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We will return to the 100 mg/L as currently stated in the standard. Agreed. "as CaCO3" has been added as requested. Agreed; 11 was a typo and has been changed to 45. Agreed; 75 mg/L has been updated and a clarifying statement has been added." Look for a revised (r2) ballot with these updates soon.				

[A] Type of comment: **ge** = general **te** = technical **ed** = editorial

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Commenter name	Rick Andrew	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	Section 7.2.6.5, Table 7.8
Commenter company	Rick Andrew Consulting Services	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	Substantive
Subject, comment	**Values in 7.2.6.5 Seem to Need Some Corrections,** I agree with the comment by Jun Kim that some of the values in 7.2.6.5 may need corrections in order for the prescribed concentrations in Table 7.8 to work out. Also, the +/- on the Chloride > 80 mg/L in Table 7.8 should be corrected. Also the units for hardness in Table 7.8 should probably be mg/L as CaCO3.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim. Agreed. The change to >80 mg/L has been dropped, sticking to 100 mg/L in the current standard. Agreed. "...as CaCO3" has been added as requested." Look for a revised (r2) ballot with these updates soon.				

Commenter name	Mandy Huntoon	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	Table 7.8
Commenter company	NSF	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	Substantive
Subject, comment	**Chloride target and Table 7.7,** I agree with previous comments. A chloride target of >80mg/L cannot also have overall average and single point tolerances. The PFAS influent targets could be removed from Table 7.8, as these are contained in Table 7.7.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim, including dropping the change to >80 mg/L and keeping the 100 mg/L in the current standard. The influent targets in Table 7.8 were not added as part of this ballot; they are in the existing standard. They could be removed as a separate ballot." Look for a revised (r2) ballot soon.				

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Commenter name	Andrew Lombardo	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	KT Corporation	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Agree with other comments here.** Just need to chance those Cl concentration ranges and it looks good.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim, including the Cl concentration range." Look for a revised (r2) ballot soon.				

Commenter name	Tedd Schneidewend	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Culligan International Company	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Corrections,** I agree with other comments that were detailed out by Jun Kim.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	Joe Wolff	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Elkay Manufacturing	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**See other comments.**				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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Commenter name	Jeffrey Kempic	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	U.S. EPA	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	Substantive
Subject, comment	**Agree with other negative votes,** I agree with the other negative votes that there needs to be changes made to the language. In particular, tolerances make no sense with a target value expresed as > 80. If actual value is 100, then +/- 20% is 20, but if 200, then +/- 20% is 40. May need an upper bound on the target value.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim, including dropping the change to >80 mg/L and keeping the 100 mg/L in the current standard." Look for a revised (r2) ballot soon.				

Commenter name	Richard Martin	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	RAM Consulting Services	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Revise or rework current ballot proposed language,** Please revise proposed language as noted by others.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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Commenter name	Michael Schock	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Consultant – Public Health/Regulatory	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	Substantive
Subject, comment	**Close but needs some verification and correction,** I'm not sure what kind of round-robin testing might have been done to test and validate the reproducibility of the final challenge water mix, but there seem to be recipe errors and other concerns about the target concentrations and possible media fouling. There are several very good water chemistry modeling computer programs (such as PHREEQE from the USGS, available for multiple operating systems and is free). I think two things need to be done. First, verify with a water chemistry model that the target final concentrations are achievable with the recipe and get a sense for the sensitivity of the final parameters with typical process errors from the labs. Also, check estimates of the satiuration states of minerals (if the right ones are in the models) to make sure precipitates won't form that would make the challenge water unstable. In the real world, Mg silicates often form in ground waters and in warm waters, and they're hard to quantitatively predict. So my second suggestion is, like the original development of the NSF 61 Section 9 high alkalinity challenge water for lead and metals, is to send the final corrected and adjusted recipe to multiple certification labs who would be working to certify products under this standard, and see how reproducible and accurate the resulting challenge waters would be under realistic production conditions.				
Proposed change	Covered in the comment.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Lab testing the water parameters was performed by the task group. Results were attached to the ballot as a reference item." The results are attached to this comment as well. Please let us know if this addresses your concerns. Look for a revised (r2) ballot soon, based on feedback received.				

Commenter name	Mark Unger	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	The LeverEdge	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Agree with previous comments,** Unresolved comments need to be addressed.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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Commenter name	Darren Lytle	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Hazen and Sawyer	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**I agree with other negative votes,** Accuracy questions need to be examined.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	Rob Astle	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	KX Technologies	**Affirmative, Negative, Abstain**	Negative – comment #1	**Type of comment** [a]	ge
Subject, comment	**Concerns raised,** There have been too many concerns raised... needs revisiting.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	Rob Astle	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	KX Technologies	**Affirmative, Negative, Abstain**	Negative - Comment #2	**Type of comment** [a]	ge
Subject, comment	**Too many objections,** Needs revision.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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Commenter name	Rob Astle	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	KX Technolgies	**Affirmative, Negative, Abstain**	Negative – Comment #3	**Type of comment** [a]	ge
Subject, comment	**Methodology,** Enough concern has been raised about accuracy and method to warrant revisiting first.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	Becky Tallon	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	A.O. Smith Corporation	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Same comments as already submitted,** Agree with comments already submitted by others for revisions needed.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	Brook Hatton	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	CSA Group	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Corrections are needed regarding concentrations,** It appears that there may be some errors and Jun Kim's comments should be addressed. Mandy points out that the PFAS concentrations are already listed in Table 7.7. Duplication should be avoided				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim. The influent targets in Table 7.8 were not added as part of this ballot; they are in the existing standard. They could be removed by a separate ballot." Look for a revised (r2) ballot soon.				

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Commenter name	Jonathan Brania	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	UL Solutions	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Same comments,** Agree with comments already provided.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

Commenter name	France Lemieux	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Health Canada	**Affirmative, Negative, Abstain**	Negative	**Type of comment** [a]	ge
Subject, comment	**Need to revisit,** Like others, I feel there seem to be errors and other concerns about the concentrations in the ballot for the water chemistry make-up. I need to be reviewed and validation testing should occur, preferably before the ballot is re-issued.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim. Lab testing the water parameters was performed by the task group. Results were attached to the ballot as a reference item." The results are attached to this comment as well. Please let us know if this addresses your concerns. Look for a revised (r2) ballot soon, based on feedback received.				

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Commenter name	Sun Yong Lee	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	PUREMEM Co.	**Affirmative, Negative, Abstain**	No Vote	**Type of comment** [a]	ge
Subject, comment	**I agree with the points raised by many,** It seems necessary to verify the reproducibility regarding the test water. Additionally, the aspects proposed by Professor Kim should also be reviewed.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim. Lab testing the water parameters was performed by the task group. Results were attached to the ballot as a reference item." The results are attached to this comment as well. Please let us know if this addresses your concerns. Look for a revised (r2) ballot soon, based on feedback received.				

Commenter name	Shannon Murphy	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Aquamor	**Affirmative, Negative, Abstain**	Abstain	**Type of comment** [a]	ge
Subject, comment	**Number of comments on the ballot,** Abstaining more as to make note on the number of comments on the ballot already which leads to additional work and review.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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Commenter name	Ariel Zoldan	**Voter or Nonvoter**	Voter	**Section, paragraph, figure, table, etc.**	N/a
Commenter company	Michigan Dept. of Environment, Great Lakes, & Energy	**Affirmative, Negative, Abstain**	No vote	**Type of comment** [a]	ge
Subject, comment	**Edits needed,** Supporting members who have stated that there are mistakes that need to be fixed before this ballot can be approved.				
Proposed change	Update table and fix chloride values.				
Response to comment	Thank you for your vote and comment. The issue proponent has provided this response: "Agreed. We have addressed all comments by Jun Kim." Look for a revised (r2) ballot soon.				

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