TO: Joint Committee on Drinking Water Treatment Units

FROM: Dr. Robert Powitz, Chair of the Joint Committee

DATE: October 18, 2022

SUBJECT: Proposed revisions to NSF/ANSI 58: *Reverse Osmosis Drinking Water Treatment Systems* (53i103r1)

Revision 1 of NSF/ANSI 58 issue 103 is being forwarded to the Joint Committee for consideration. Please review the proposal and **submit your ballot by November 8, 2022** via the NSF Online Workspace <www.standards.nsf.org>.

Please review all ballot materials. When adding comments, please include the section number applicable to your comment and add all comments under one comment number whenever possible. If you need additional space, please use the attached blank comment template in the reference documents and upload online via the browse function.

Purpose

The proposed revisions update a normative reference and remove "Note" from normative language.

If you have any questions about the technical content of the ballot, you may contact me in care of:

Dr. Robert Powitz
Chair, Joint Committee on Drinking Water Treatment Units
c/o Monica Milla
Joint Committee Secretariat
NSF International
Tel: (734) 214-6223
Email: mmilla@nsf.org

[Note – The recommended changes to the standard which include the current text of the relevant section(s) indicate deletions by use of ~~strikeout~~ and additions by gray highlighting. Rationale statements are in *italics* and only used to add clarity; these statements will NOT be in the finished publication.]

NSF/ANSI Standard
for Drinking Water Treatment Units –

Reverse Osmosis
Drinking Water Treatment Systems

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2 Normative references

The following documents contain requirements that, by reference in this text, constitute requirements of this standard. At the time of publication, the indicated editions were valid. All of the documents are subject to revision and parties are encouraged to investigate the possibility of applying the recent editions of the documents indicated below. The most recent published edition of the document shall be used for undated references.

21 CFR, *Food and Drugs,* Subchapter B, *Food for Human Consumption,* Parts 170-199[3]

40 CFR Part 141, *National Primary Drinking Water Regulations*[3]

40 CFR Part 143, *Other Safe Drinking Water Act Regulations*, Subpart A, *National Secondary Drinking Water Regulations*[Error! Bookmark not defined.]

APHA/AWWA/WEF, *Standard Methods for the Examination of Water and Wastewater*, (hereinafter referred to as *Standard Methods*)[4]

EPA-600/4-79-020, *Methods for the Chemical Analysis of Water and Wastes*, March 1983[5]

EPA-600/4-82-057~~EPA-600/4-84-053~~, *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, May 2002~~June 1984~~[5]

EPA-600/4-90-020, *Methods for the Determination of Organic Compounds in Drinking Water, Supplement 1*, July 1990[5]

EPA-600/R-05-054, *Method 521: Determination of Nitrosamines in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatography With Large Volume Injection and Chemical Ionization Tandem Mass Spectrometry (MS/MS)*, September 2004[5]

Rationale: Corrects document number and updates publication year.

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4 Materials

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4.5 Gas chromatography / mass spectroscopy (GC/MS) analysis

4.5.1 General requirements for GC/MS analysis

When determined to be required following a product-specific formulation review, US EPA Analytical Methods for semi-volatiles and volatiles that include mass spectral libraries shall be performed on products or components and shall include full range mass spectral libraries to monitor for nontarget compounds.

Testing for semivolatiles (e.g., US EPA Method 625, 528, or 525.2) and volatiles (e.g., US EPA Method 524.2 or 524.3) shall be conducted using the required target compounds in Tables 4.2 and 4.3 and the laboratory's RL shall be no greater than the RL's listed in Tables 4.2 and 4.3.

4.5.1.1 Target compounds shall be validated in accordance with the requirements of the referenced method. US EPA Methods 524.2 and 625 have specific validation requirements including precision and accuracy requirements as well as demonstration of sensitivity (method detection limit study or MDL).

For US EPA Method 625, the minimum instrument operation requirements for GC/MS analysis shall be in accordance with those protocols as defined by the method with the following modifications:

— to guard against significant drift from an initial instrument calibration to subsequent instrument batches, the average chromatographic peak area of each internal standard in the calibration curve shall be determined. The chromatographic peak area of each internal standard in the continuing calibration shall be greater than 50% and not more than 200% of that average~~;~~.

— due to the number of characteristics of the analytes associated with US EPA Method 625, while a continuing calibration check (CCC) is performed, concentrations of 10% of the target compounds for each analysis (e.g., base / neutral, base / neutral / acid, acid) shall be allowed to fall outside the range of 70% to 130% (outlier) of the true value. None of the concentrations shall be allowed to fall below 50% or above 200% of the true value. If a positive sample analyte result is identified for any outlier, a second CCC shall be performed. If the second CCC determines the sample analyte result no longer to be an outlier, the sample shall be reanalyzed. However, if the second CCC also determines the analyte to be an outlier, a new calibration curve shall be determined, and the sample shall be reanalyzed~~;~~.

> ~~NOTE —~~ At the laboratory's discretion, a calibration may be performed specifically for the compound in question, with the reporting of its data from this second calibration. It should be understood, that if the laboratory utilizes this approach (calibrating for the specific analyte) all method requirements as specified by US EPA Method 625 shall be achieved.

Rationale: Removes "NOTE —" from normative language.