Response to Public Comments Received on the *WaterSense® Draft Specification for Point-of-Use Reverse Osmosis Systems*

November 2024

Background

This document provides the U.S. Environmental Protection Agency's (EPA's) responses to public comments received on the *WaterSense Draft Specification for Point-of-Use Reverse Osmosis Systems* and subsequent *WaterSense Specification Development Update: Point-of-Use Reverse Osmosis Systems*. For purposes of this document, the comments are summarized. The verbatim comments can be viewed in their entirety at www.epa.gov/watersense/product-background-materials.

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I. General Comments on the Specification

I.1 General Support for a WaterSense Reverse Osmosis (RO) Systems Specification

a. Two commenters expressed support for EPA's development of a WaterSense specification for point-of-use RO systems. One of the commenters said that RO systems are a growing market as the concern of water contamination rises and health concerns related to lead and per- and polyfluorinated substances (PFAS) in drinking water increase. This commenter said that a certification program for RO systems will support consumers in selecting more water-efficient products.

b. One commenter indicated they are an ENERGY STAR® program participant and expressed appreciation for the value that the ENERGY STAR label commands in the marketplace. The commenter said they are optimistic that a WaterSense label for their point-of-use RO systems will be of similar value and expressed support for an RO system specification. The commenter agreed with EPA's assertion that a WaterSense specification for point-of-use RO systems will enhance the market for more water-efficient RO systems that continue to provide adequate and reliable contaminant removal. The commenter also agreed that a specification for RO systems will help consumers who already intend to purchase an RO system identify those models that are both water-efficient and high-performing.

Response: EPA thanks the commenters for their support.

I.2 Request to Delay Final Specification Due to Pending NSF 58 Revisions

One commenter recommended that EPA pause further consideration of the specification until the NSF International (NSF) Joint Committee on Drinking Water Treatment Units (DWTU) approves and publishes its ensuing update to the NSF/American National Standards Institute (ANSI) 58 *Reverse Osmosis Drinking Water Treatment Systems* standard. The commenter said that waiting until the joint technical committee publishes these updates would afford manufacturers greater business certainty regarding their NSF 58 certified RO systems and avoid marketplace and consumer confusion surrounding RO systems.

Response: EPA is engaged with the NSF DWTU Joint Committee, and more specifically the task group related to RO efficiency. EPA is monitoring the status of the potential revisions to NSF/ANSI 58. It is EPA's goal to align, to the extent feasible, with the NSF/ANSI 58 standard so as not to require redundant testing, product marking, or product documentation. However, EPA has been informed that relevant updates to NSF/ANSI 58 may not occur until 2025, when the next update to the standard will be published. Because of this uncertainty, EPA has decided to move forward with the specification prior to updates to NSF/ANSI 58 being published.

If conflict or confusion in the marketplace results between the WaterSense specification and the NSF/ANSI 58 standard, EPA intends to continue to work within the NSF DWTU Joint Committee to harmonize test methods and requirements and will issue technical clarifications to the WaterSense specification, if necessary.

I.3 Consider Impacts to Water Use and Implement Careful Messaging

One commenter said that in contrast to typical WaterSense labeled products, which save water compared to a "standard" baseline, RO systems increase use upon installation. The commenter said that increased water use can be a concern for (1) community water systems in water-stressed areas that face difficulty expanding their available water supply; and (2) disadvantaged households for which the consequences of increased water use may significantly increase their water bill. The commenter acknowledged that the specification could be considerably valuable in situations where household RO treatment is truly warranted and did not make a recommendation on the overall merit of a WaterSense specification for point-of-use RO systems. However, they stressed the importance of implementing careful messaging to prevent consumers from making misinformed purchases and inadvertently increasing their water use.

Response: EPA acknowledges the concerns that water-stressed areas and underserved communities face regarding increased water consumption. EPA agrees that RO systems are distinct from some other WaterSense labeled products in that they are not a ubiquitous household plumbing fixture or fitting, and they otherwise contribute an increase in water use upon installation, rather than a decrease. EPA intends to employ messaging to convey RO system water use to potential buyers. EPA has been working with the NSF DWTU Task Group on RO efficiency to standardize water use marking across all NSF/ANSI 58 certified point-of-use RO systems. EPA has also incorporated marking requirements within the specification intended to clearly convey water use information to potential buyers. Finally, EPA is publishing supporting materials and resources on its website to educate consumers on home treatment options and suggest less water-intensive alternatives to RO systems, such as filtration.

II. Comments on Section 1.0: Scope and Objective

II.1 Consideration to Exclude Tankless ROs From the Specification Scope

a. One commenter recommended that tankless RO systems be excluded from the scope of the specification until the NSF DWTU Task Group on RO Efficiency revises NSF/ANSI 58 to account for flushing that occurs within tankless systems. The commenter noted that the standard currently does not account for water used during the tankless system flushing feature. While the flushing feature increases water waste, it is not recorded as reject water per the current NSF/ANSI 58 standard's test method for recovery rate. Pending revisions to the NSF/ANSI 58 standard are intended to address this issue.

b. One commenter recommended that instead of removing tankless systems from the scope of the RO specification, EPA should incorporate efficiency rating testing procedures that account for water wasted during flushing. This would resolve inaccuracies in the efficiency rating reported for tankless systems.

c. One commenter strongly encouraged including tankless systems in the scope of the specification due to their high efficiency. The commenter expressed concern that excluding tankless systems will run contrary to the WaterSense program goals and cause confusion. The commenter suggested that EPA allow the term "efficiency rating"

to be used in place of "recovery rating" to reduce confusion until the NSF task group has revised the standard. Alternatively, if EPA chooses to exclude tankless systems, the commenter said, the specification should require point-of-purchase messaging that clearly conveys that the scope of the WaterSense label is limited to tanked systems only.

Response: EPA thanks the commenters for their recommendations. While EPA is monitoring the status of revisions to NSF/ANSI 58 to account for water use for flushing and to establish an efficiency rating for tankless systems, these revisions will not be completed prior to the final specification release. EPA is therefore incorporating a requirement for RO systems with automatic flushing to be tested such that water used for flushing is accounted for when determining the efficiency rating of the system. Further, within the WaterSense specification, EPA is including instructions for translating the recovery rating of a tankless system into an efficiency rating to reduce consumer confusion.

If updates to the NSF/ANSI 58 standard to address automatic flushing and remove recovery rating claims are published, EPA will evaluate the changes and will revise its specification accordingly.

II.2 Support for Proposed Definitions and Scope Exclusions

One commenter expressed support for including the proposed product definitions in NSF/ANSI 330. The commenter also expressed support for the proposed scope exclusions, including components; point-of-entry RO systems; and RO system add-on devices, accessories, or aftermarket companion products.

Response: EPA thanks the commenter for their support.

III. Comments on Section 2.0: General Requirements

III.1 Recommendation to Allow Certification to ASSE 1086 to Fulfill NSF/ANSI 58 Requirements

One commenter said that ASSE International's Product Standards Committee is looking to open the ASSE 1086 standard up for revision so that they can consider aligning its efficiency requirement with the WaterSense 30 percent threshold. The commenter said that because ASSE 1086 requires the product to be certified to NSF/ANSI 58 as a prerequisite, the specification could allow for certification to either NSF/ANSI 58 or ASSE 1086 to meet EPA's requirement in Section 2.1 of the specification, which requires products to meet applicable requirements within NSF/ANSI 58. This would allow manufacturers to choose between either certifying to NSF/ANSI 58 and including the additional membrane life test from ASSE 1086, or simply certifying to ASSE 1086.

The commenter explained that certification costs can be expensive for manufacturers, and those costs get passed down to consumers. The commenter said that by allowing certification to ASSE 1086, EPA could eliminate the need for companies to pay additional filing fees to have their product certified to both standards.

Response: EPA agrees with the commenter's suggestion and has revised the specification to include a provision in Appendix A clarifying that RO systems can alternatively be certified to ASSE 1086 to fulfill the requirements included in Section 2.0 (General Requirements), Section 3.0 (Water Efficiency Criteria), and Section 4.0 (Performance Criteria) of the WaterSense specification, provided that a licensed certifying body has determined this testing is equivalent and the product meets the criteria within the WaterSense specification. EPA has added the following language to Appendix A of the final specification:

> "4.0 Testing and Certification Clarifications
>
> 4.1 At the determination of the licensed certifying body, the requirements included in Section 2.0 (General Requirements), Section 3.0 (Water Efficiency Criteria), and Section 4.0 (Performance Criteria) of this specification may be satisfied through an RO system's testing and certification to ASSE 1086 *Performance Requirements for Reverse Osmosis Water Efficiency—Drinking Water*."

EPA intends that this added language will encompass the commenter's suggestion.

III.2 Request to Clarify Certification Requirements and Standardize Language

One commenter expressed general support for the specification's reliance on the NSF/ANSI 58 standard as a general foundational requirement. However, the commenter said that the draft specification uses the terms "tested," "verified," and "certified" interchangeably. The commenter said the specification should clearly convey certification requirements.

Response: EPA thanks the commenter for their support and agrees with their suggestion to clarify and standardize language pertaining to certification requirements. EPA has updated the language in Section 2.1 to clarify that systems must be certified to NSF/ANSI 58 to achieve the WaterSense label (unless they have been certified to ASSE 1086, as specified in Appendix A and explained in Section III.1 above):

> "2.1 ~~Except as otherwise indicated in this specification, t~~ The RO system shall ~~conform to applicable requirements in~~ be certified to NSF/ANSI 58~~, including the total dissolved solids (TDS) reduction requirement~~."

EPA has also reviewed its use of the terms "tested" and "verified" throughout the specification to ensure requirements are conveyed clearly. "Tested" refers to adherence with the specific test methods and procedures prescribed in a standard. "Verified" refers to efficiency and performance claims that have undergone testing in accordance with the relevant standard and met applicable requirements.

III.3 Request to Clarify How Systems Will Be Tested by Certifying Bodies

One commenter said that the testing and certification criteria for RO systems are confusing and expressed a need for one certification that can carry both health standards and efficiency. NSF/ANSI 58 cannot verify membrane life or long-term

efficiency. The commenter expressed a need for confirmation and clarity from certification bodies explaining how they would test these systems to the specification. The commenter also said that additional layers of certification are expensive and time-consuming and not beneficial for consumers or manufacturers.

Response: EPA spoke with multiple certifying bodies that currently certify point-of-use RO systems to NSF/ANSI 58 to discuss the viability of testing systems for adherence to the specification. Each of these certification bodies confirmed that they understand EPA's intent and have the capability to test and certify the system to NSF/ANSI 58 while conducting the additional ASSE 1086 membrane life test to meet EPA's criteria.

EPA also understands the desire to keep certification costs to a minimum. EPA directs the commenter to its response in Section III.1. EPA intends to allow systems that have been certified to ASSE 1086 to satisfy the NSF/ANSI 58 requirements included in Section 2.0 (General Requirements), Section 3.0 (Water Efficiency Criteria), and Section 4.0 (Performance Criteria) of the specification. EPA hopes that this will translate to lower certification costs for manufacturers by eliminating the need for redundant testing or product certifications.

IV. Comments on Section 3.0: Water Efficiency Criteria

IV.1 Lower the 30 Percent Efficiency Rating Requirement

Five commenters expressed concerns that the 30 percent efficiency rating requirement could lead to potential tradeoffs to membrane life and contaminant reduction. The commenters expressed concern that increased efficiency would lead to more frequent membrane replacement, and potentially affect the system's ability to reduce contaminants.

a. One commenter recommended a target efficiency rating of 20 percent, as it is more achievable and would curb impacts to membrane life and performance.

b. One commenter expressed concern that states and regions suffering from water shortages might make WaterSense labeled systems mandatory, which would be harmful to small systems and private well owners that rely on POU RO treatment to remove health-related contaminants.

   The commenter referenced the WaterSense program goal of reducing water use by 20 percent compared to typical non-WaterSense labeled alternatives. The commenter estimates that a typical system has an efficiency rating of about 15 percent. A 20 percent efficiency rating requirement would represent a 25 percent reduction in water use compared to non-WaterSense labeled systems, thereby achieving WaterSense's program goal.

   Similarly, the commenter said that if a typical system has an efficiency rating of 17 percent, as demonstrated in the draft supporting statement, a target efficiency rating of 22 percent would result in greater than 20 percent overall water savings compared to a non-labeled system.

The commenter said that a 20 or 22 percent efficiency rating would be a more realistic target for the industry and would not compromise significant tradeoffs to membrane life or removal of contaminants.

c. One commenter said if municipalities or states require WaterSense labeled systems, there is a potential health risk to consumers as labeled systems might be sacrificing water quality to improve efficiency. The commenter said that most products cannot meet a 30 percent efficiency rating. However, as technology improves, or with the addition of a booster pump, a 30 percent efficiency rating will become more achievable. The commenter said, without industry acceptance, there will likely be little uptake of WaterSense labeled systems, because most RO systems are either installed by a professional or bought online. The commenter recommended an efficiency rating of 20 or 25 percent for the initial specification publication and suggested increasing to 30 percent after at least five years.

d. One commenter said that RO reject water is not destroyed, it simply discharges down the drain, and water is never truly "wasted." The commenter emphasized the need for RO systems to be able to reject several dangerous impurities such as lead, algal toxins, nitrates, chromium VI, and other emerging contaminants. The commenter said the program goals should be to maintain high-quality water and low long-term costs. The commenter recommended an efficiency rating target of 20 or 25 percent.

e. One commenter referenced WaterSense's program goal of reducing water use by 20 percent compared to typical non-WaterSense labeled products. If a typical product has an efficiency rating of 15 percent, the commenter said, WaterSense should set a threshold in the low 20 percent range to meet the program's water savings goal.

Response: EPA understands the concerns regarding tradeoffs to membrane life, contaminant reduction, and consumer costs and agrees that these are important considerations when determining a target efficiency rating.

Concern for tradeoffs to the membrane life is justification for EPA's inclusion of the membrane life test from ASSE 1086 as a performance requirement. This test method was developed by industry stakeholders using a consensus process and is intended to ensure membrane longevity under challenging water conditions unlikely to be experienced in most real-world applications.

Based on feedback on potential tradeoffs between efficiency and contaminant removal, EPA approached manufacturers of RO membranes to determine potential concerns or limitations in the products they offered to system manufacturers. During these conversations, it was communicated to EPA that current membranes on the market are capable of achieving greater efficiencies with minimal impact to contaminant removal. The opinions offered suggested that current membrane technology could be used to achieve 30 percent efficiency while still meeting contaminant removal requirements within NSF/ANSI 58.

Lastly, EPA is reiterating that the WaterSense label is meant as a market transformation tool. EPA reviewed certification data from several licensed certifying bodies to get a better understanding of the range of efficiencies available on the market. Irrespective of market share, the median efficiency rating of the aggregate data from all the certification bodies was 21.5 percent, and there were several certified systems that had efficiencies higher than 30 percent. Given these findings, a 20 or 25 percent efficiency rating would not be high enough to distinguish water-efficient systems from the rest of the market nor generate significant water savings. Additionally, the ASSE 1086 standard sets an even higher percent recovery target of 40 percent. EPA is aware of manufacturers currently working to certify their systems to this standard. Therefore, EPA chose to move forward with the 30 percent efficiency rating, as it strikes the balance of offering an aggressive yet achievable target while minimizing impacts to membrane life and contaminant removal.

IV.2 Eliminate the Term "Recovery Rating" and Use "Efficiency Rating" for All Systems

a. One commenter said that the draft specification jumps back and forth between the terms "efficiency rating" and "recovery rating." The commenter said they understand the desire for EPA to adopt language consistent with the standards. They also recognized that the DWTU is working to remove the term "recovery rating" from the NSF/ANSI 58 standard. However, they said they find the inconsistency confusing. The commenter recommended adopting a definition for efficiency that encompasses all systems to avoid confusion. The commenter recommended that WaterSense adopt the NSF/ANSI 330 definition for efficiency rating: "the percentage of influent water to reverse osmosis system that is available to the user as treated water under operating conditions that approximate typical use."

b. One commenter said they are supportive of the proposed 30 percent efficiency rating threshold. The commenter recommended that WaterSense use only efficiency rating to qualify systems, because it is more meaningful to consumers and provides a more accurate operational metric. The commenter expressed concern that the current wording of the specification, which includes a minimum efficiency and recovery rating of 30 percent for a system with a storage tank and only a minimum recovery rating of 30 percent for a system without a tank, may lead to consumer confusion. The commenter also mentioned that the NSF DWTU Joint Committee will make ensuing changes to the NSF/ANSI 58 standard to address the confusion surrounding the recovery rating metric.

Response: EPA agrees that the distinction between efficiency rating and recovery rating can cause confusion or can result in misleading claims about system water use. EPA is monitoring the NSF DWTU RO Efficiency Task Group progress, which aims to eliminate the term recovery rating from the standard. In the meantime, within the WaterSense specification, EPA is including instructions for translating the recovery rating of a tankless system into an efficiency rating, so that consistent terminology can be used for systems with and without a storage tank. If updates to the NSF/ANSI 58 standard to remove recovery rating claims are published, EPA will evaluate the changes and will revise its specification accordingly.

EPA intends to maintain the term "percent recovery" in the final specification in reference to the membrane life test to reflect the language used in the ASSE 1086 standard. EPA would like to clarify that "percent recovery" and "recovery rating" are distinct terms for which values are determined through separate testing procedures.

IV.3 Request to Explain the Rationale for the 30 Percent Efficiency Rating Criteria

One commenter asked EPA to provide more background on how it selected the 30 percent efficiency rating criteria. The commenter referred to the draft supporting statement, which implied that the 40 percent efficiency rating in ASSE 1086 may be too high. While the 40 percent threshold may be too high, the commenter said they would like to know how EPA arrived at the 30 percent threshold based on the current market.

Response: Based on feedback from the *WaterSense Notice of Intent (NOI) to Develop a Draft Specification for Point-of-Use Reverse Osmosis (RO) Systems* and the fact that there has been little uptake in the RO system industry to certify to ASSE 1086, EPA determined that the proposed 40 percent efficiency rating may be too aggressive of an efficiency target for an initial specification. After receiving comments on the NOI, EPA obtained NSF/ASNI 58 certification data from multiple certifying bodies to get a better understanding of the range of efficiencies represented among certified systems.

The certification data indicated that there are a wide range of efficiencies represented among NSF/ANSI 58 certified systems, spanning from less than 5 percent to greater than 70 percent. The median efficiency rating of the aggregate data from all three certification bodies was 21.5 percent, and there were several systems with efficiencies above 30 percent. Given these findings, EPA determined that a 20 or 25 percent efficiency rating would not be high enough to distinguish water-efficient systems from the rest of the market nor generate significant water savings.

EPA selected the 30 percent efficiency rating because it strikes a balance that would lower potential tradeoffs to membrane life and contaminant removal, while still encouraging the market to advance towards greater water efficiency.

IV.4 Support for 30 Percent Efficiency Rating Requirement

a. One commenter expressed support for the 30 percent efficiency rating requirement and said if the efficiency rating were to be any lower, it wouldn't be worthwhile to introduce the specification to the industry. The commenter said 30 percent is a very realistic number with the technology available today and should be the minimum target.

   The commenter said that global membrane manufacturers are building products to operate in tough conditions to treat water in India and China. North American water is a relatively "clean" source compared to these places, so products designed for tougher conditions can achieve added efficiency operating in North America. The commenter said the element pricing is no different than the lesser quality or older technology elements on the market today.

b. One commenter said 30 percent is an achievable threshold and listed several companies with systems that can exceed this requirement. The commenter said that

water-over-water technology can help systems achieve the 30 percent efficiency rating while still providing reliable water quality.

Response: EPA thanks the commenters for their support for the 30 percent efficiency rating requirement. EPA agrees that an efficiency rating requirement any lower might not contribute significant water savings to make a specification worthwhile to the industry or consumers. Based on feedback received from a variety of industry stakeholders, EPA also agrees that current membrane technology makes this efficiency threshold achievable.

IV.5 Comment to Align ASSE 1086 Efficiency Requirements With the Specification

One commenter said ASSE's Product Standard's committee has initiated a project to revise the ASSE 1086 standard to match the 30 percent efficiency requirement in the WaterSense specification. Depending on the timing of the revision and the release of the specification, this will allow the specification to state compliance with ASSE 1086 instead of noting the 40 percent vs. 30 percent efficiency difference between ASSE 1086 and the specification.

Response: EPA agrees that alignment between the ASSE 1086 standard and the specification would allow for more streamlined, comprehensible requirements and could potentially reduce certification costs for manufacturers. EPA thanks the commenter for working with the standards committee to revise ASSE 1086 to harmonize it with the WaterSense specification and intends to engage in this effort.

IV.6 Comment to Revise NSF/ANSI 58 to Address Tankless System Purge Water

One commenter confirmed that NSF/ANSI 58 does not include a test protocol to capture rinsing events for tankless systems. The commenter is leading the NSF DWTU task group to revise the testing procedures to capture this rinse water as part of the efficiency claim. The commenter said that the ASSE 1086 standard will capture some of the flushing events during its 20-day test.

Response: EPA thanks the commenter for this clarification. EPA agrees that the rinse water should be captured in the efficiency rating calculation for tankless systems to better reflect the system's water use. EPA is participating in the NSF DWTU task group related to RO efficiency and is monitoring progress on these revisions. Because the WaterSense specification is being published prior to revisions to the NSF/ANSI 58 standard, EPA is incorporating a requirement for RO systems with automatic flushing to be tested such that water used for flushing is accounted for when determining the efficiency rating of the system.

Once updates to the NSF/ANSI 58 standard to address automatic flushing are published, EPA will evaluate the changes and will revise its specification accordingly.

V. Comments on Section 4.0: Performance Criteria

V.1 General Support for RO Performance Characterization

One commenter expressed agreement with EPA's statement that from a consumer's perspective, the ideal RO system substantially reduces drinking water contaminants, is easy to maintain, and provides assurances that a consumer's drinking water is adequately treated.

Response: EPA thanks the commenter for their feedback.

V.2 Request to Remove or Suspend ASSE 1086 Membrane Life Test Requirement Due to Lack of Validation

Four commenters requested that EPA remove the ASSE 1086 membrane life test requirement, because they do not feel it has been sufficiently validated by the industry. The commenters indicated that they would reconsider inclusion of the test once it had been properly vetted.

a. One commenter said much more due diligence needs to occur before incorporating the test as a mandatory component to the specification. The commenter said that membrane life would not be an issue at a lower efficiency rating, such as 20 percent.

b. One commenter said they had sought out industry members and manufacturers who could provide data from the membrane life test to understand how the systems currently on the market will perform under this test. The commenter could not find any data or evidence that this test has been validated through testing in multiple independent laboratories.

   The commenter said the test needs to be vetted by testing on multiple different point-of-use RO systems and through multiple independent laboratories before EPA includes it in the specification. The commenter also said that RO technology has been used for decades and membrane lifespan is not currently an issue. During the 2018 Water Quality Association Convention and Exposition, three manufacturers presented on "Innovations in Residential RO Recovery." The consensus of the presenters was that membranes are typically replaced every five to 10 years.

   The commenter said that if EPA were to establish an efficiency rating requirement of 20 or 22 percent, the membrane life test would not be necessary, as a significant portion of the industry can achieve this level without negative tradeoffs to membrane life.

c. One commenter said that ASSE 1086 was originally intended for a challenge test and not a qualification test. The commenter requested that EPA remove the membrane life test requirement until an industry committee can review the standard and make recommended changes, suggesting that the test is difficult to run due to scaling of equipment leading up to the membrane. Further, the test only focuses on scale, which the commenter said they do not think is a sufficient metric for

determining system life. The commenter said EPA should allow for testing and review by certified labs to ensure the standard is appropriate for inclusion in the specification. The commenter also said that no device is currently tested to ASSE 1086, and there should be more manufacturers certifying to the standard before it is incorporated into the specification. The market will determine product life by self-correcting when a manufacturer sells a subpar product. The commenter said they have systems on the market that are able to achieve a 40 to 50 percent efficiency rating and they have received no complaints about membrane life. These systems were not tested to ASSE 1086.

d. One commenter asked whether data from testing is indicative of real-world performance. The commenter would also like to understand the repeatability of the test both from sample to sample and from lab to lab.

Response: EPA understands the commenters' concern that the ASSE 1086 is relatively new to the industry and has received little uptake since its publication. However, considering the suggested tradeoff between efficiency and membrane life, it is essential that the specification offers some form of assurance that a system can maintain adequate membrane life at high efficiencies. EPA chose the ASSE 1086 membrane life test because it was developed through a consensus process, which included RO system manufacturers and other industry stakeholders.

EPA spoke with members of the ASSE 1086 working group about the testing and validation process and it was communicated that the test method went through some laboratory validation prior to publication. EPA is aware of manufacturers who are currently certifying their products to ASSE 1086 and will continue to monitor uptake in the ASSE 1086 standard.

While EPA was not able to collect ASSE 1086 test reports from any certification bodies, EPA did discuss the test method with representatives of multiple certification bodies, who communicated that the test method was easy to understand and implement.

Lastly, EPA does not find suggestions to lower the efficiency rating target to eliminate the need for the membrane life test to be compelling. EPA is interested in transforming the market to promote water efficiency while maintaining high performance. Therefore, establishing a higher efficiency threshold coupled with a membrane life test is necessary to achieve the goals of the WaterSense program, while offering manufacturers an opportunity to distinguish their water-efficient, high-performing products in the marketplace.

V.3 Comment That ASSE 1086 Membrane Life Test Is Duplicative and Unreliable

One commenter said they do not support the inclusion of the ASSE 1086 standard to evaluate membrane life for the following reasons:

- Requiring both NSF/ANSI 58 and ASSE 1086 certifications is duplicative.
- Membrane life is adequately addressed in NSF/ANSI 58.
- The challenge water used in the membrane life test can lead to inconsistent results, as no single test can account for every water condition.

- The cost of additional certification is burdensome to manufacturers, which affects the cost to the consumer.

Response: EPA is clarifying that it does not intend to require certification to both NSF/ANSI 58 and ASSE 1086. Rather, it requires the system to be certified to NSF/ANSI 58 and tested in accordance with just the membrane life test from the ASSE 1086 standard. Alternatively, manufacturers can certify directly to ASSE 1086 and not NSF/ANSI 58 to fulfill the requirements of the specification.

EPA disagrees with the commenter that membrane life is adequately addressed in NSF/ANSI 58. While NSF/ANSI 58 prescribes requirements and/or testing procedures for structural performance, materials performance, and contaminant reduction claims, it does not directly address membrane life, especially as it relates to sustained water efficiency. Several commenters brought up concerns that increasing efficiency will result in negative tradeoffs to membrane life. The membrane life test is meant to address these concerns by ensuring adequate membrane life even with a sustained 30 percent efficiency rating.

While EPA agrees that water conditions can vary significantly across regions, EPA disagrees with the commenter's concern regarding the challenge water prescribed by the membrane life test. It is a common industry practice to develop test procedures with a challenge water formulated to imitate real-world or exaggerated conditions for testing. The ASSE 1086 membrane life test prescribes a challenge water with a high hardness (340 mg/L ± 10%) and total dissolved solids (TDS, 1,000 mg/L ± 10%). These characteristics are meant to represent conditions associated with rapid membrane fouling. Therefore, even though real-world water conditions may vary, there is no reason to expect that a system that passes the membrane life test would perform more poorly when installed in real-world conditions.

EPA also understands and acknowledges the desire to keep certification costs to a minimum. However, EPA believes that the membrane life test is essential for ensuring adequate performance over time and must be accounted for in the specification. EPA directs the commenter to its response in Section III.1 for additional information on certification options.

V.4 Comment That the Membrane Life Test Will Not Be Bound to Retesting Requirements

One commenter said that, because the specification does not require certification to ASSE 1086, EPA might want to include language in the Performance Criteria section clarifying the product retesting requirements. The commenter suggested the following language: "This specification does not require certification to the ASSE 1086 standard. However, certification agencies should consider the ASSE 1086 testing requirements in this specification when they are evaluating any retesting requirements per their certification policies for the NSF 58 listing."

Response: EPA thanks the commenter for raising this concern. The WaterSense program maintains a continuous compliance program that requires licensed certifying

bodies to conduct annual market surveillance, including product retesting and product packaging inspection, to ensure ongoing compliance with the WaterSense specification. The licensed certifying body is required to conduct annual market surveillance on at least 15 percent of all models it has certified for each relevant product category. More information can be found in the *WaterSense Product Certification System, Version 2.1.* EPA anticipates that its continuing compliance requirements are sufficient to ensure ongoing conformance with the membrane life test requirements and all other criteria within the specification.

V.5 Support for Inclusion of the Membrane Life Test

One commenter communicated support for the membrane life test and indicated that the 30 percent efficiency rating would otherwise be immaterial. The commenter indicated that products with a 30 percent efficiency rating can achieve NSF/ANSI 58 certification with ease. However, these systems would fail in the real world. The commenter said that certifying to NSF/ANSI 58 without testing to the ASSE 1086 membrane lifecycle challenge conditions would not result in robust products or performance claims. The commenter said the ASSE 1086 challenge conditions are ideal to simulate one year of use in the field.

Response: EPA agrees with the commenter that the membrane life cycle test is an important piece of the WaterSense specification to ensure ongoing product performance.

VI. Comments on Section 5.0: Packaging and Documentation Requirements

VI.1 Request for Clear Messaging to Convey RO System Water Use

Two commenters said if EPA chooses to move forward with a specification for RO systems, it should consider using careful messaging and labeling to inform consumers that RO systems increase water use (regardless of whether they are WaterSense labeled). The commenters expressed concern that consumers might not be aware of how much water goes down the drain for every gallon of treated water the system produces. One of the two commenters said that any product labeling and messaging should be developed in conjunction with RO system manufacturers and tested with consumers on a trial basis. The other commenter provided the following recommended language for product packaging: “Water savings are only applicable to situations where reverse osmosis is necessary. Use of reserve osmosis where not necessary will lead to increased water use.”

One of these commenters recommended that EPA develop supporting materials to help consumers discern whether an RO system is necessary for their needs. The materials should also inform consumers how to obtain independent professional advice on home water treatment options that best meet their needs.

Response: EPA agrees with these commenters and recognizes the importance of careful messaging to convey RO system water use to consumers. The product packaging and point-of-purchase summary table that EPA has included in the

specification requires the following statement to clearly convey the system's water use to the consumer (where "XX percent" is the system's efficiency rating and "Y.Y" is the system's waste-to-treated water ratio): *"This system has a XX percent efficiency rating in the production of treated water. Efficiency rating means the percentage of the water going into the system that becomes available to the user as RO treated water. This means that the system will send Y.Y gallons of water down the drain for every gallon of treated water it produces."*

EPA is working with the NSF DWTU task group to have this language included as a product packaging requirement in the NSF/ANSI 58 standard to help standardize water use information available to consumers in the marketplace.

EPA is also publishing resources to support the specification, including a home water treatment guide to educate potential buyers on the different treatment options available. The intent of the treatment guide is to inform buyers about less water-intensive systems that can still meet their treatment needs.

VI.2 Concern That the Summary Table Requirement Can Be Exploited by Non-Participating Manufacturers

Two commenters raised concerns that non-participating manufacturers could exploit the WaterSense summary table requirement to confuse consumers and put themselves at an advantage. The commenters said that there is currently no requirement for RO system certification and no standards for manufacturer reduction claims. Companies with non-labeled systems would be able to gain an unfair advantage by confusing consumers' understanding of the claims, since they don't have to display the standardized summary table on product packaging or point-of-purchase materials. For example, a non-participating manufacturer can make an arsenic claim even if their system does not remove arsenic adequately to meet the requirements in NSF/ANSI 58.

Response: EPA understands the commenter's concern that non-participating manufacturers can hide unfavorable information or advertise false claims, thereby making their products look more favorable to consumers. EPA is coordinating with the NSF DWTU Joint Committee with the goal of aligning and standardizing packaging and point-of-purchase documentation for all systems. Through these product packaging and documentation requirements, EPA intends to create a uniform packaging summary table that all NSF/ANSI 58 certified systems must display to convey important water use and contaminant reduction information. If these proposed revisions are adopted into the NSF/ANSI 58 standard, even non-WaterSense labeled products would be required to communicate efficiency and performance claims and water use on their packaging and point-of-purchase documentation if they wanted to be NSF/ANSI 58 certified.

EPA understands that manufacturers of products that are not certified to NSF/ANSI 58 might continue to exploit the lack of standardized marking regulations within the industry. However, EPA intends to continue to communicate the value of product certification and develop materials to encourage consumers to look for WaterSense labeled and/or NSF/ANSI 58 certified RO systems.

VI.3 Concern That the Water Efficiency Messaging Will Make Labeled Systems Seem Wasteful to Potential Buyers

One commenter expressed concern that requiring packaging to state "this system sends Y.Y gallons of water down the drain for every gallon of treated water" dampens the WaterSense message and might give consumers the impression that the system is more wasteful than a typical RO system.

Response: EPA acknowledges that the water use messaging might concern customers who don't want to purchase a wasteful system. However, it is important to provide information that helps potential buyers make informed choices about their purchase. EPA hopes that the water use messaging encourages buyers to select a less wasteful RO system or consider more water-efficient treatment options such as filtration. EPA is also working with the NSF task group to have the summary table requirement incorporated into the NSF/ANSI 58 standard, thereby requiring all certified systems to convey water use in the same manner. While manufacturers of non-certified systems might still try to conceal water use information from potential buyers, EPA believes that promoting transparency in the marketplace will help inform potential buyers, so they know to look for efficiency when purchasing an RO system. Therefore, EPA chose to keep the water use messaging in the summary table.

VI.4 Labeling a Product for Contaminants It Cannot Remove Is Confusing

a. Three commenters said that it could be confusing to consumers to list what the product is not certified to remove. One of the commenters mentioned that it is expensive to combine health claim certification and efficiency, and that those costs will get passed on to the consumer.

   One of the commenters cited a current lawsuit against a water filtration company regarding confusing literature. The commenter said that only contaminants the system is verified to remove should be listed on the table, and including any mention of non-verified contaminants, even to say the system is not verified to remove them, would create liability concerns.

b. A fourth commenter said that including a row for a contaminant but leaving the verified contaminant reduction column blank might be too ambiguous. The commenter suggested using the term "not certified" instead of "not tested" or leaving it blank.

   Response: After publishing the draft specification and reviewing comments on the packaging summary table, EPA has had further conversations with industry stakeholders and understands that there is a strong aversion among manufacturers to listing contaminants that the system is not verified to treat on the product packaging. However, EPA believes that including a uniform summary table to convey which contaminants the system is certified to remove will help consumers compare products and select the one that best fits their needs. Therefore, EPA chose to maintain requirements to include a table of priority contaminant reduction claims. EPA updated the table so that it no longer requires manufacturers to indicate "not tested" for contaminants that have not been verified, rather they will indicate using a check mark or blank in respective "Yes" and No" columns, clearly stating whether the system has claims verified in accordance with

NSF/ANSI 58. EPA also added TDS as a contaminant required for inclusion in the list because it is a required test for RO systems certified to NSF/ANSI 58 and it will ensure all manufacturers have at least one reduction claim to display on the table.

VI.5 Recommendation to Defer to the NSF Committee to Determine Packaging Requirements

Two commenters said that industry should determine the appropriate packaging summary table requirements. Both commenters agreed that standardized requirements to reduce consumer confusion would be helpful to industry. However, they expressed a preference to have this issue addressed through existing NSF committees. One of the commenters named two initiatives underway within the NSF standards committee to clean up literature requirements. The commenter said the product packaging literature requirements should be developed through those initiatives rather than by EPA.

Response: EPA agrees that industry should be involved in developing the point-of-purchase summary table. EPA has been working with the NSF DWTU task group to incorporate literature requirements into the NSF/ANSI 58 standard to harmonize the WaterSense and industry requirements. However, the revision process requires the task group to address potential revisions one ballot at a time, and it has not yet initiated discussions on the packaging requirements. EPA is concerned that waiting for the NSF task group to develop point-of-purchase requirements would significantly delay the release of the specification. Therefore, EPA is choosing to move forward with its summary table requirements. EPA released a Specification Development Update document to seek further feedback from industry and continued to meet with industry to discuss the summary table until the release of the final specification. Industry had several opportunities to provide input on the summary table. Therefore, EPA feels that the updated summary table reflects industry's input while conveying product information in a clear, standardized format. If the NSF DWTU joint committee adopts point-of-purchase marking requirements in the future, EPA will consider them and consider options for revising its specification to avoid requiring RO systems from marking products with duplicative information.

VI.6 Recommended Updates to the Contaminants Listed in the Table

a. Three commenters pointed out that the draft specification required manufacturers to display performance claims for arsenic at 300 ppb but did not address arsenic at 50 ppb. They asked how a system certified to arsenic at 50 ppb would complete the contaminant reduction portion of the summary table. Two commenters proposed that systems certified to 50 ppb be allowed to indicate their claims on the table, provided that they clarify the system is only verified for removal at 50 ppb influent concentration.

b. One commenter said that the table lumps hexavalent and trivalent chromium together, despite the fact that they are separately listed in NSF/ANSI 58. The commenter said they should be separately listed in the summary table as well.

Response: EPA agrees that manufacturers should be able to advertise arsenic 50 ppb claims on the label. EPA updated the summary table in the final specification to allow for

manufacturers to advertise either 300 ppb or 50 ppb arsenic claims, and included a requirement that the table must display the influent challenge concentration.

EPA also agrees that hexavalent and trivalent chromium should have separate entries and revised the table accordingly.

VI.7 Comments About Distribution Packaging Versus Retail Packaging

a. One commenter said that because some RO systems are sold through brown box distribution packaging and installed by professionals, a consumer will not always see the summary table.

b. Two commenters recommended that the specification require this information to be posted online as well, not just on product packaging. One of the commenters expressed support for EPA's intent to communicate product efficiency and performance capabilities to prospective purchasers. However, similar to the commenter above, they said that since most RO systems are purchased online or through a trade professional, the consumer often won't see a box or manual before purchase. The commenter recommended requiring this information to be posted on online retailer product listings. The commenter also suggested including placement requirements to prevent the information from getting buried in product literature (e.g., include the table on the first page of the listing, ensuring that it is not hidden under a sub-menu).

Response: EPA understands that many RO systems are sold directly from distributors, and consumers often don't have a chance to browse for products in-store. EPA has updated the specification to clarify that the summary table must be included on product packaging and/or any point-of-purchase documentation used to convey product information to a potential buyer. This includes online webpage listings, as well as specification sheets or brochures used by distributors to advertise products to potential buyers. The revised language is below:

> "The RO system's packaging (where product packaging contains information for the prospective purchaser) and/or other point-of-purchase documentation (e.g., specification sheet, manufacturer web page, distributor brochure) shall, at a minimum, be marked with the following information and messaging:…"

VI.8 Allow Daily Production Rate to Be Reported in Gallons per Minute

One commenter said the specification should allow daily production rate to be reported in gallons per minute in parentheses after gallons per day for tankless systems.

Response: It is EPA's understanding that the NSF task group on RO efficiency intends to add the term "instantaneous flow rate" to the NSF/ANSI 58 standard as part of its revisions to represent the gallons per minute production of tankless systems. If these revisions are approved and published within NSF/ANSI 58, EPA intends to incorporate the term "instantaneous flow rate" into a revised specification to characterize the production rate of tankless systems.

VI.9 Clarify Whether Reduction Claims Below NSF/ANSI 58 Minimum Percent Reduction Can Be Reported

One commenter said that it was unclear whether a manufacturer can make a claim that does not meet the NSF/ANSI 58 minimum required reduction percentage. For example, if a given contaminant requires an 80 percent removal to be verified through NSF/ANSI 58, but the system can only achieve a 75 percent reduction, can the manufacturer report the 75 percent reduction, or does it need to list that entry as "not tested" or blank?

Response: EPA agrees that it is important to clarify this point. A manufacturer can only advertise claims that meet the NSF/ANSI 58 minimum required reduction. EPA has incorporated clarifying language in the specification to explain this requirement.

VI.10 The Current Language Is Confusing to Consumers

a. Two commenters said that use of the term "recovery rating" is confusing. One of the commenters requested that the language in the table be updated to exclude the term "recovery rating."

b. One commenter said that the NSF/ANSI 58 language is too technical and should be revised to make it understandable to a typical consumer. They also recommended changing the heading of the table to just "Performance at a Glance."

Response: EPA agrees that the term recovery rating is confusing. Within the specification, EPA is including instructions for translating the recovery rating of a tankless system into an efficiency rating to reduce consumer confusion. EPA anticipates similar revisions will be made to NSF/ANSI 58 based on the work of the NSF DTWU task group on RO efficiency.

EPA has also provided minor editorial revisions to the summary table to use more plain language meant to better communicate efficiency and performance claims to consumers.

VI.11 Request to Specify That the Efficiency Rating Was Verified by NSF/ANSI 58

One commenter requested that the specification clearly state that the efficiency rating displayed on the summary table was verified by NSF/ANSI 58 testing as the NSF/ANSI 58 and ASSE 1086 testing procedures differ.

Response: EPA has added a statement to the summary table that says: "This system has been tested according to NSF/ANSI 58 for daily production rate, efficiency, and contaminant reduction." This statement is consistent with a similar statement required in product instructions and information within NSF/ANSI 58.

VI.12 Request to Update the Minimum Percent Reductions Using Minimum Influent Values

One commenter said to update the Minimum Required Reduction requirements in the summary table using the lowest allowable influent value from the range:

- Arsenic: 96.3 percent
- Chromium: 63.0 percent
- Lead: 96.3 percent
- Nitrate/nitrite: 63.0 percent
- Perfluorooctanoic acid (PFOA)/Perfluorooctane sulfonic acid (PFOS): 94.8 percent

Response: EPA agrees with this comment but has decided to remove minimum required reduction values from the summary table based on comments that the information presented was too technical and confusing.

Of note, EPA is modifying the PFOA/PFOS marking requirement to instead address total PFAS, as defined by the most recent publication of the NSF/ANSI 58 standard.

VI.13 Request to Clarify Actual Reduction Value

One commenter asked if the "actual reduction" in the summary table is intended to be the maximum, minimum, or average reduction from the testing.

Response: EPA has changed this column in the final specification to show the verified reduction percentage. The value in this column shall be subject to the percent reduction claim requirements in NSF/ANSI 58. NSF/ANSI 58 states that the "The specified percent reduction shall not be greater than the reduction calculated using the arithmetic means of the influent challenge and the product water concentrations respectively."

VI.14 Request to Allow Manufacturers to List Additional Contaminants in the Summary Table

One commenter recommended that EPA update the specification to allow manufacturers to list additional verified contaminant reduction claims in the summary table.

Response: EPA agrees with this recommendation and updated the language in Section 5.2.2 of the specification to allow manufacturers to list additional verified reduction claims. The new language states that: "All systems must report verified TDS removal at a minimum. Manufacturers may choose to list verified reduction claims for additional contaminants to those listed [in Section 5.2.2]."

VI.15 Request to Include Language About the Normative Annex 2 Treatment Train

One commenter said to include language that states certified claims can be made by the membrane only or by using the treatment train option in Normative Annex 2 of NSF/ANSI 58.

Response: EPA included language in Appendix A of the specification to clarify that systems can achieve verified reduction claims using the treatment train options prescribed in NSF/ANSI 58 Normative Annex 2. EPA chose not to incorporate this language in the summary table because it could create unnecessary confusion for consumers.

VI.16 Comment That Efficiency Rating and Recovery Rating Definitions Differ Between NSF/ANSI 58 and the Specification

a. One commenter pointed out that the specification's documentation requirements for efficiency rating and recovery rating differ from what is required in NSF/ANSI 58. The commenter said product manufacturers would need to include these definitions along with what is required in NSF/ANSI 58, which could be confusing for the customer.

WaterSense Draft:

For a system with a storage tank: "This system is certified to achieve a XX% efficiency rating in the production of treated water. This means that it will send Y.Y gallons of water down the drain for every gallon of treated water it produces."

For a system without storage tank: "This system is certified to achieve a XX% recovery rating in the production of treated water. This means that it will send Y.Y gallons of water down the drain for every gallon of treated water it produces."

NSF/ANSI 58:

"Efficiency rating means the percentage of the influent water to the system that is available to the user as RO treated water under operating conditions that approximate typical daily usage."

"Recovery rating means the percentage of the influent water to the membrane portion of the system that is available to the user as RO treated water when the system is operated without a storage tank or when the storage tank is bypassed."

b. Another commenter suggested that EPA should require the recovery rating to be published, as it can be a valuable technical rating to determine an RO system's baseline operational parameters (as compared to ongoing performance).

Response: EPA has updated its documentation requirements and associated summary table to include the NSF/ANSI definition of efficiency rating in addition to the efficiency statement included in the draft specification. These statements can exist alongside one another without causing confusion or conflict.

To eliminate confusion surrounding the term "recovery rating," EPA has included instructions within the specification for translating the recovery rating of a tankless system into an efficiency rating to reduce consumer confusion.

EPA expects that the forthcoming revisions to NSF/ANSI 58 from the NSF DWTU task group on RO efficiency will remove recovery rating claims from the standard. Because claims related to recovery ratings will be removed from both the WaterSense specification and the NSF/ANSI 58 standard, EPA anticipates confusion related to recovery rating claims will be eliminated.

VI.17 Comment That the Summary Table Would Not Fit on Product Packaging

One commenter mentioned that there is limited space on product packaging and incorporating the summary table would require manufacturers to make the packaging larger, which is wasteful.

Response: EPA recognizes the importance and value of packaging real estate to manufacturers. However, it has not received compelling evidence to suggest that the summary table would require larger packaging or force manufacturers to compromise essential informational or aesthetic elements of their packaging. RO systems are relatively large products and have ample packaging real estate to accommodate the proposed summary table.

VI.18 Comment That the Summary Table and Performance Data Sheet Serve Duplicative Purposes

One commenter said that the information presented in the summary table is already included in the product's performance data sheet. The commenter said that most manufacturers' packaging does not list all the NSF/ANSI requirements, as that information is more suitable for product manuals and performance data sheet tables. The commenter said that making manufacturers change the formatting of their performance data sheet tables and label for WaterSense labeled products seems arbitrary and unnecessary if the information is already being communicated to the consumer.

Response: The goal of EPA's summary table is to communicate performance and efficiency data to potential buyers at the point of purchase. EPA understands that consumers have access to performance data sheets and product manuals once they purchase a system. However, at the point of purchase, this information is typically sealed in a box or difficult to find, if available at all, online. With the requirement to include efficiency and contaminant reduction claims on product packaging or otherwise at the point of purchase, EPA intends to offer consumers a clear, standardized marking system they can use to compare multiple products before they commit to purchasing one. Neither the performance data sheets nor product manuals sufficiently serve this purpose. Additionally, the WaterSense specification does not introduce any criteria that would require manufacturers to change the current formatting of their product data sheets or product manuals. Where inconsistencies have been identified, EPA is updating its requirements to align with NSF/ANSI 58 to the extent possible.

VI.19 Recommendation to Remove "NSF/ANSI 58" From the Summary Table

One commenter proposed removing "NSF/ANSI 58" from the first two bullets in the table or changing them to "NSF/ANSI 53 or NSF/ANSI 58."

Response: EPA reformatted the summary table such that these bullets no longer exist. The new table includes a reference to NSF/ANSI 58 in the first section stating that the product "has been tested according to NSF/ANSI 58 for daily production rate, efficiency, and reduction of the substances listed below." Because NSF/ANSI 58 expressly allows

for treatment train options that allow NSF/ANSI 53 components to contribute to reduction claims, EPA determined that it is not necessary to mention NSF/ANSI 53 in the label.

VI.20 Recommendation to Include the Cost of Ownership and Consumer Satisfaction

One commenter said to include cost of ownership and consumer satisfaction on point-of-purchase packaging.

Response: EPA chose not to incorporate this recommendation, as this information might change over time or be difficult to determine. EPA intends for the specification efficiency rating and performance requirements to ensure a baseline level of consumer satisfaction.

VII. Other

VII.1 Alternative Technologies to Reverse Osmosis Should Be Considered

One commenter raised a concern about bacterial growth in storage tanks that can cause health concerns. Further, many RO system faucets are made of copper coated with nickel chrome rather than stainless steel, which could cause nickel to leach into the water. The commenter said RO systems should be designed to increase the membrane's output capacity and thereby eliminate the need for a storage tank. The commenter also acknowledged the need to keep costs low to avoid placing a financial burden on consumers. They suggested shortening the membrane from 10 inches to 3 inches to lower the cost or reducing the diameter from 2.5 inches to 1 inch.

The commenter also recommended transitioning from cellulose triacetate (CTA) membranes to thin-film composite (TFC) membranes, which can produce more water at high contaminant removal rates while maintaining high membrane life.

The commenter said shutoff devices do not provide any advantages as they are unreliable and waste water. The commenter said they also require frequent replacement.

The commenter also said RO systems remove minerals from drinking water that are important for human health, such as magnesium, calcium, and iodine. The commenter said that any water below 100 TDS poses a health risk due to excess cleanliness. They expressed concern that reverse osmosis treated water is dangerous, which is why RO systems have been banned in India and the Netherlands. The commenter said they produce a "nosmosis" system, which is similar to an RO system, but it delivers water above 100 TDS, does not include a storage tank, and includes a pouring faucet made entirely of stainless steel.

Response: EPA thanks the commenter for this information. EPA encourages technological advancements in the RO system industry to drive development of products that are water-efficient, remove sufficient contaminants, and protect human health and safety. EPA does not intend to incorporate the commenter's suggestions to adjust membrane sizing or transition to TFC membranes as requirements in the specification. However, EPA encourages manufacturers to use the best available technology to

develop high-performing, water-efficient, and affordable RO systems. Manufacturers are welcome to use the strategies mentioned above to aid in achieving the requirements of the WaterSense specification.

EPA disagrees with the commenter's belief that automatic shutoff devices do not provide any advantages. As EPA articulated in its supporting statement, automatic shutoff devices are designed to automatically close when the storage tank fills to a certain point, thereby preventing the storage tank from overflowing and contributing significantly to water conservation. Inclusion of an automatic shutoff device within an RO system is a requirement in ASSE 1086. In the WaterSense RO systems NOI, EPA sought input on its intent to include an automatic shutoff requirement in the specification and received generally supportive feedback. For these reasons, EPA intends to include the automatic shutoff requirement in its specification.

EPA also disagrees with the commenter's statement that RO treated water poses a health risk. EPA acknowledges that RO systems remove several contaminants from drinking water that might actually be beneficial to human health, such as magnesium, calcium, and iodine; however, these minerals are also offered via food intake. For consumers who are concerned about the removal of beneficial minerals, there are RO systems available in the market that include a remineralization stage, which adds minerals back into the water after treatment. EPA does not intend to require remineralizers in its specification, because it does not consider them an essential performance component of RO systems, where the primary purpose is to remove harmful contaminants.

VII.2 Recommendation to Include Online Database of Published Manufacturer Data

One commenter said it would be helpful to have an online database with published data from each manufacturer. This could help improve transparency. The commenter said EPA should publish the recovery rating because efficiency rating is easy to skew.

Response: EPA maintains list of labeled products within its WaterSense Product Search Tool. This listing is populated with labeled products and associated information that relates to each product, including efficiency rating and verified contaminant reduction claims.

Based on several comments and a general understanding that recovery rating is confusing and not reflective of real-world usage, EPA has chosen not to include recovery rating in its product listings.