Designation: D4472 – 08

StandardGuide for Recordkeeping for Reverse Osmosis and Nanofiltration Systems[1]

This standard is issued under the fixed designation D4472; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide covers procedures for well-defined recordkeeping of reverse osmosis (RO) and nanofiltration (NF) systems.

1.2 This guide includes a start-up report, recordkeeping of RO and NF operating data, recordkeeping of pretreatment operating data, and a maintenance log.

1.3 This guide is applicable to waters including brackish waters and seawaters but is not necessarily applicable to wastewaters.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1125 Test Methods for Electrical Conductivity and Resistivity of Water

D1129 Terminology Relating to Water

D1253 Test Method for Residual Chlorine in Water

D1889 Test Method for Turbidity of Water (Withdrawn 2007)[3]

D3739 Practice for Calculation and Adjustment of the Langelier Saturation Index for Reverse Osmosis

D4189 Test Method for Silt Density Index (SDI) of Water

D4194 Test Methods for Operating Characteristics of Reverse Osmosis and Nanofiltration Devices

D4195 Guide for Water Analysis for Reverse Osmosis and Nanofiltration Application

D4582 Practice for Calculation and Adjustment of the Stiff and Davis Stability Index for Reverse Osmosis

D6161 Terminology Used for Microfiltration, Ultrafiltration, Nanofiltration and Reverse Osmosis Membrane Processes

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, refer to Terminology D1129 and D6161.

4. Significance and Use

4.1 Proper operation and maintenance of RO and NF systems are key factors in obtaining successful performance. This guide provides the necessary input for the evaluation of the performance of the RO and NF systems, the pretreatment system, and the mechanical equipment in the plant.

4.2 This guide is for general guidance only and must not be used in place of the operating manual for a particular plant.

4.3 Site-dependent factors prevent specific recommendations for all recordkeeping. Thus, only the more general recordkeeping is covered by this guide.

4.4 This guide can be used for both brackish and seawater systems which contain either spiral-wound or hollow-fiber devices.

5. Procedure

5.1 *Start-Up Report:*

5.1.1 Provide a complete description of the RO or NF plant. This can be done by using a flow diagram and equipment, instrumentation, and material lists to show water source, pretreatment system, RO or NF configuration, and posttreatment system.

5.1.2 Record initial performance of RO or NF and pretreatment systems as provided in 5.2 and 5.3, respectively.

5.1.3 Calibrate all gauges and meters based on manufacturers' recommendations.

5.2 *RO or NF Operating Data (see D4194):*

[1] This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.08 on Membranes and Ion Exchange Materials.

Current edition approved May 1, 2008. Published May 2008. Originally approved in 1985. Last previous edition approved in 2003 as D4472 – 89 (2003). DOI: 10.1520/D4472-08.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.