

**22nd Edition of *Standard Methods for the Examination of Water and Wastewater*
ERRATA**

Despite the best efforts of those involved in the manufacture of the 22nd Edition of *Standard Methods*, the following errors have occurred in the text:

1. In Section 1020B.1 (p. 1-8), the second equation should be “Lower control limit = Mean – 3(Standard deviation)”.
2. In Section 1020B.8 (p. 1-9), the third sentence should be “An *LFM duplicate* is a second portion of the sample described in ¶ 7 above ...”
3. In Section 1020B.12a (p. 1-11), DELETE the last sentence and equation: “Relative standard deviation for duplicate sample⁴ (% RSD) is given as:

$$\% \text{ RSD} = \frac{|(\text{sample result} - \text{duplicate result})|}{(\text{sample result} + \text{duplicate result})} \times \sqrt{2} \times 100\%$$

4. In Section 1020B.12e (p. 1-11), the denominator in the first equation should be “spike solution concentration × spike volume”.
5. In Section 1060, Table 1060:I (p. 1-44), the twelfth row should be as follows:

Determination	Container†	Minimum Sample Size <i>mL</i>	Sample Type‡	Preservation§	Maximum Storage Recommended	Regulatory
Chlorophyll	P, G	500	G	Unfiltered, dark, ≤6°C Filtered, dark, –20°C (Do not store in frost-free freezer)	24-48 h 28 d	N.S.

6. In Section 1060C.2 (p. 1-46), the last three sentences in the first paragraph should be “Keep composite samples cool with ice or a refrigeration system set at ≤6°C during compositing. Analyze samples as quickly as possible on arrival at the laboratory. If immediate analysis is not possible, preferably store at ≤6°C.”

7. In Section 2020, Table 2020:II (p. 2-4), row 11 and rows 20 through 25 should be as follows:

		Calibrate or Standardize	QCS	MB	LFB	Duplicates	LFM
2320	Alkalinity	×	×	–	×	×	–
2540B	Solids	–	–	–	–	×	–
2540C		–	–	–	–	×	–
2540D		–	–	–	–	×	–
2540E		–	–	×	–	×	–
2540F		–	–	–	–	×	–
2540G		–	–	–	–	×	–

8. In Section 3500-Cr.B.4b (p. 3-70), the first sentence should be “Filter sample through a 0.45-µm filter.”
9. In Section 4020, Table 4020:I (p. 4-2), the following row is missing from the right-hand column:

Section	Method Blank	LFB*	LFM† & LFMD‡	Other
4500-CI B	×	×	×	3

10. In Section 4500-P.E.4c (p. 4-156), the first sentence should be “Prepare individual calibration curves from a series of six standards within the phosphate ranges indicated in 4500-P.E.1c.”
11. In Section 4500-SO₃²⁻.B.2b (p. 4-186), the subhead should be “*Standard potassium iodide-iodate titrant, 0.002083M:*”.
12. In Section 4500-SO₃²⁻.C3f (p. 4-187), the subhead should be “*Standard potassium iodide-iodate titrant, 0.002083M:*”.
13. In Section 5210D.3d (p. 5-14), the subhead should be “*Calcium chloride solution, 0.25M:*”.
14. In Section 5210D.3e (p. 5-14), the subhead should be “*Magnesium sulfate solution, 0.41M:*”.
15. In Section 5210D.3f (p. 5-14), the subhead should be “*Ferric chloride solution, 0.018M:*”.
16. In Section 7020A.3d (p. 7-6), the equation for relative percent difference (RPD) should be:

$$RPD = 100 \times \frac{|AC_s - AC_{dup}|}{(AC_s + AC_{dup})/2}$$

17. In Section 7110C.1c (p. 7-24), the equation should be “Efficiency, cpm/pCi = ...”
18. In Section 7500-Sr.B.2a (p. 7-53), the footnote for “(polyester plastic film*)” is “*Mylar, E.I. du Pont de Nemours, Wilmington, DE, or equivalent.”
19. In Section 8050B.3e (p. 8-38), the subhead should be “*e. Sodium sulfite stock solution:*”

20. In Section 9020B.5f1 (p. 9-13), the “l” is a lower-case letter l, NOT a number 1.
21. In Section 9020B.9c (p. 9-17), the second sentence should be “Perform duplicate analyses at least monthly or more frequently as needed, ...”
22. In Section 9020B.9e (p. 9-18), the fifth sentence in the second paragraph should be “Calculate the range (*R*) for each pair of transformed duplicates and the mean ...”
23. In Section 9221C.2 (p. 9-71), the last sentence on the page should be “Thus, the calculated MPN = 780/100 mL.”
24. In Section 9221C.2 (p. 9-72), the first equation in the left-hand column should be “MPN/100 mL (approx.) = $100 \times P/(N \times T)^{1/2}$ ”.
25. In Section 9221D.2a (p. 9-73), the fourth from the last sentence should be “Autoclave for 12 min at 121°C, with the total time in the autoclave limited to 30 minutes or less.”
26. In Section 9222B.4e (p. 9-81), the second full sentence in the right-hand column should be “After 22 h incubation, refrigerating cultures with high densities of noncoliform colonies ...”
27. In Section 9230B.2 (p. 9-112), the last sentence in the second paragraph should be “If no definite turbidity is present, reincubate, and read again at the end of 48 ± 3 h.”
28. In Section 9230B.3 (p. 9-112), the first sentence in the third paragraph should be “If growth is observed when tube is incubated at $45 \pm 0.5^\circ\text{C}$ after 48 ± 3 h ...”
29. In Section 9230B.4 (p. 9-112), the first sentence should be “Calculate the total fecal enterococci/streptococci density from the number of confirmed positive cultures on bile esculin azide agar and corresponding tubes of BHI broth with 6.5% NaCl at $45 \pm 0.5^\circ\text{C}$ after 48 ± 3 h ...”
30. In Section 9230D.3a (p. 9-115), the last sentence should be “Cap tubes and incubate at $41 \pm 0.5^\circ\text{C}$ for 24 h.”
31. In Section 9230D.3b (p. 9-116), the last sentence should be “Incubate at $41 \pm 0.5^\circ\text{C}$ for 24 h.”
32. In Section 9230D.3c (p. 9-116), the last sentence should be “Incubate at $41 \pm 0.5^\circ\text{C}$ for 24 h.”
33. In Section 9230D.5 (p. 9-116), the third full sentence in the right-hand column should be “Incubate these controls at $41 \pm 0.5^\circ\text{C}$ for 24 h.”

The *Standard Methods* team continuously reviews and updates content, so readers are encouraged to check standardmethods.org for any corrections that may be identified after the effective date of this memo.