

This report describes an investigation to determine the stability of potable water in long-term contact with new materials for the fabrication of various sized fabric water-storage tanks and containers and to determine the effect of extended storage on the tanks and containers themselves. After periodic testing of the stored water, analysis of significant samples of the materials of construction of the tanks and containers, and observation of tank condition as a function of time the following conclusions were drawn:

- a. Residual chlorine lasted only 1 to 16 days in water stored in neoprene and styrene butadiene rubber (SBR) tanks. In vinyl tanks, the chlorine lasted as long as 31 days.
- b. Residual chlorine lasted at least 15 months in water stored in a polyethylene Combination Water Container and Commode (GWGC).
- c. Residual chlorine lasted at least 23 months in water stored in a Sanitation Kit Metal Container (SKMG).
- d. A rubbery taste and odor developed in a time frame of 1 to 6 weeks in water stored in a neoprene tank.
- e. A rubbery taste and odor developed in about 1 week in water stored in an SBR tank.
- f. A medicinal taste and odor developed in a time frame of 1 month to 1 year in water stored in a vinyl tank.
- g. Water stored in the GWGC and SKMG showed a chlorinous taste and odor for a long period of time due to the persistency of chlorine in these two containers. The water would be acceptable for drinking throughout the time period of the test.
- h. Water stored in neoprene tanks developed an unsatisfactory high level of color.
- i. Water stored in SBR and vinyl tanks, in the CWCC, and in the SKMG did not develop a significant amount of color.
- j. Neoprene, SBR, and vinyl tanks were subject to fungal attack; however, fabric disintegration did not occur during the span of this test.
- k. Neoprene tanks in the 50- and 100-gallon sizes survived a 1-ft free drop without rupture.
- l. During the overall time period of this study (2 years), no tank failures took place.

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