Does the onset of nitrification equally impact in decaying chloramine?

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**Abstract**

Accelerated chloramine decay is normally observed after the onset of nitrification in the chloraminated water distribution systems. However, it is unknown whether the onset of nitrification equally impacts in decaying chloramine in different water distribution systems. To compare the impact of nitrification on chloramine decay, bulk water samples collected from the three distribution systems were tested. After the onset of nitrification, different chloramine decay rates were observed. Total decay coefficients of chloramine increased by 4–10 times in the samples obtained from Sydney Water Distribution System (SWDS) and lab-scale system whereas the decay rates increased by only 3–3.5 times in the samples obtained from Goldfields and Agricultural Water Supply System (GAWSS) after the onset of nitrification. The chloramine decay rate increased with ammonia drop rate, but the other mechanisms could not be ruled out. If chloramine residuals have to be controlled not only nitrification but also other mechanisms should be understood and controlled.

**Keywords:** Chloramine; Chemical decay; Microbial decay; Mild nitrification; Severe nitrification

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