A discontinuity in pH values in the South African national water quality monitoring database

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Abstract

South Africa's National Chemical Monitoring Programme (NCMP), is an extensive water monitoring programme co-ordinated and managed by Resource Quality Information Services of the Department of Water and Sanitation (DWS). The NCMP includes long-term records of several physical and chemical water quality variables, including pH. The pH data has been found to contain a discontinuity during the 1980s, with a series of lower than expected values that ends in about 1989. The discontinuity is higher in acidic waters with lower buffering capacities. While the cause of the discontinuity in pH data is uncertain, the pre-1990 automated method used a different rinse solution than the method currently used, which might explain why weakly buffered systems showed a greater change in pH values. Users of the NCMP database should take note of the uncertainty in pH results recorded before 1990 when analysing long-term trends.