

# **The NA (nitrate-arsenic) Boundary as an Important Concept in Aquatic Environmental Studies**

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**Abstract.** The NA (nitrate and arsenic) boundary is proposed as an important new boundary concept for catchments. It is defined as the redox border distinguishing whether nitrate or arsenic can be present in water. The NA boundary concept is explained based on the role of the redox system and by introducing research examples which use nitrate and sulfate isotope ratios from urban catchments in a variety of Asian countries. The global-scale importance of the NA boundary concept for sustainable groundwater use is illustrated based on a compiled Asian dataset.

**Keywords:** Asia; boundary; redox; pollution; groundwater