

Information Sheet 2

AOC Testing

Basis of the Method

The assimilable organic carbon (AOC) method used by Research Laboratory Services is the standard method developed by van der Kooij et al. RLS is currently the only laboratory in Australia offering the AOC as a commercial test.

Principle of the Method

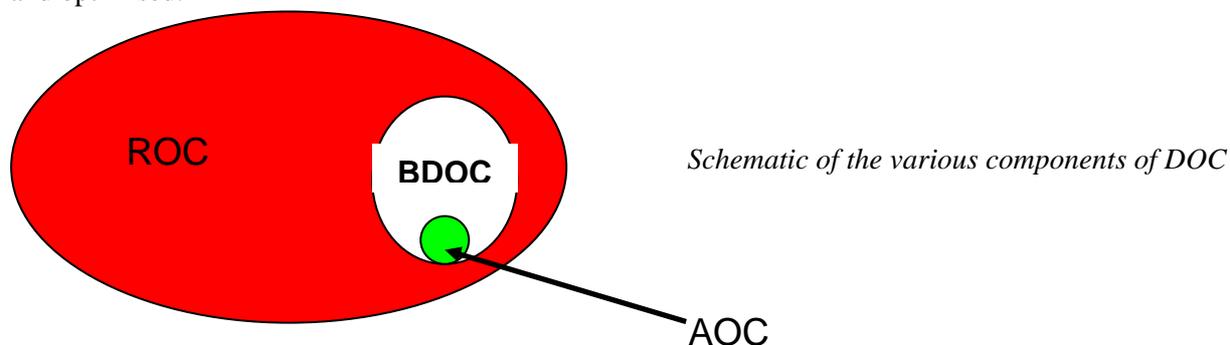
This method involves inoculating water samples with specific bacteria, determining their growth rates and calculating this growth back to an acetate (carbon) equivalent. AOC is a measure of the biomass building capability of the water sample.

Why Measure AOC?

Biofilm growth within distribution systems can lead to deterioration of treated water quality. Typically water authorities combat this growth by periodically cleaning the distribution system by mechanical measures or “pigging”. This process increases costs, disrupts supply and can lead to fluctuations in colour, taste and odour, disinfectant residuals and bacterial levels within the potable water supply. The AOC concentration correlates with the ability of a water to sustain biomass. By measuring AOC at the treatment plant and at strategic points throughout the distribution system more targeted treatment processes can be utilised to combat biofilm growth.

Relationship Between DOC, AOC and BDOC

Dissolved organic carbon (DOC) is the overall measure of organic carbon within the water supply. Of this DOC most of the water is non-biodegradable or refractory organic carbon (ROC). There is then a component of the water that is biodegradable called BDOC and of this BDOC fraction there is a smaller portion of DOC that is AOC – the biomass building part of the DOC. By looking at each of these parameters a picture of the water quality can be determined and treatment processes evaluated and optimised.



Skills and Experience of RLS

Research Laboratory Services AOC analyses are conducted by a qualified microbiologist. All samples are conducted in triplicate (inclusive in the per sample cost) to ensure maximum reproducibility of the data, combined with blank and yield controls run simultaneously with samples to ensure there is no contamination present or growth failures of the inoculums within the testing process. With over 15

years experience in water testing and water treatment plant optimisation you can be assured that you receive comprehensive interpretation of results and how they relate to your specific project.

Contact Details

For further information please contact Peta on 03 9431 2595 or email peta@researchlab.com.au

