

Anaerobic Settled Bed (ASB or UASB) ↑

Skills: microbiology, fluids, fabrication, ProCoDA, Mathcad

1. plied to the UASB without causing failure? Industrial uses of ASB reactors treat [waste exceeding 10 g/L COD](#). How does this compare with the maximum COD of a toilet water collection system?
2. What is the hydraulic residence time in the settled bed of granules?
3. Is autoclaving stocks necessary? Refrigeration would prevent significant biological growth for approximately 1 week. Thus if the stocks are replaced at weekly intervals then there is no need to autoclave. The stock containers must be thoroughly cleaned (perhaps with dilute bleach) before reuse.

Tasks and goals

- Measure the hydraulic residence time of the settled bed reactors. Fluoride could be a good tracer given that we have a fluoride probe and fluoride should be a good conservative tracer.
- Red dye may also be worth testing for residence time unless it is degraded by the granules before reaching the effluent.
- Switch to improved [gas sensor](#) as soon as the sensor team fabricates them
- Measure performance as a function of organic loading rate (holding upflow velocity constant) to determine the maximum organic loading rate
- Develop a Mathcad sheet that calculates gas production for your experimental apparatus