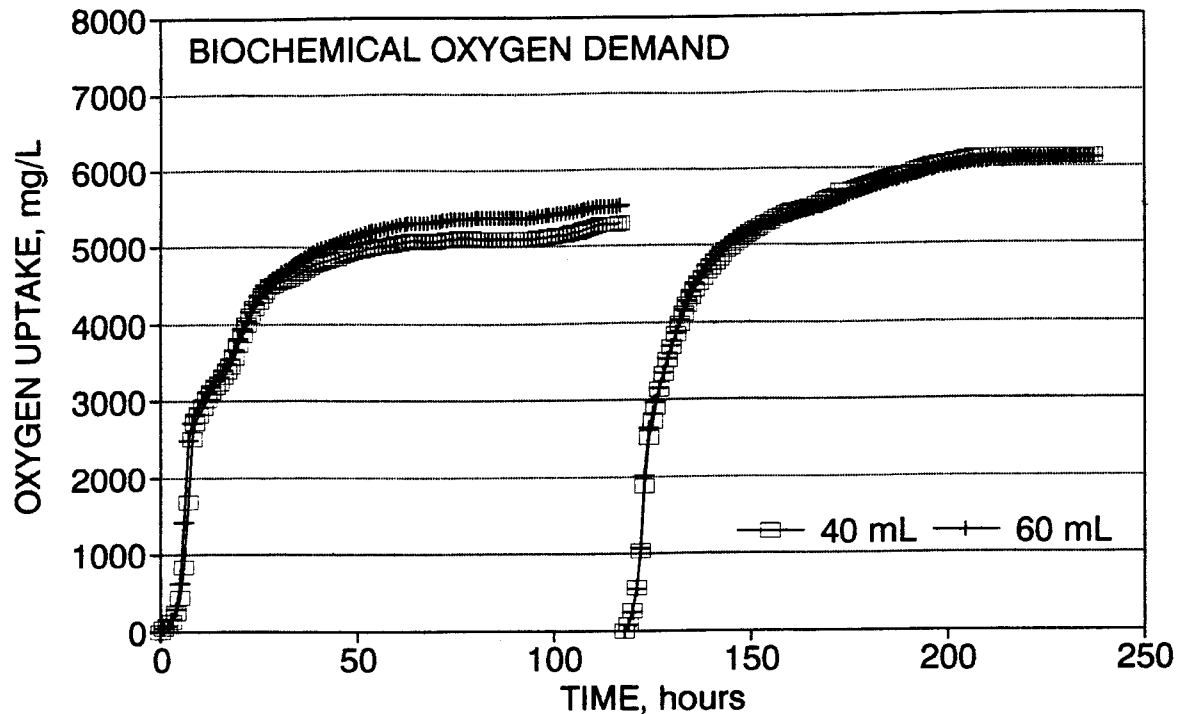


APPLICATION: INDUSTRIAL WASTE TREATABILITY



Waste Type: Landfill leachate

COD: 6,260 mg/L

Objective: To determine if the organic constituents in the test waste were biodegradable by aerobic processes.

Test Setup: 40 and 60 mL of wastewater were added to individual respirometer flasks each containing nutrient/mineral/buffer medium to form two different dilutions. TCMP was added to inhibit nitrification. 25 mL of seed from a laboratory scale reactor was added to each test reactor. Oxygen uptake was monitored using a CHALLENGE AER-200 respirometer for five days. A second dose of 40 and 60 mL of leachate sample was then added to each reactor and oxygen uptake was measured for another 5 days.

Analysis: The organic materials in the landfill leachate were 80 to 85% degraded in five days as indicated by the agreement between the 5 day oxygen uptake and the COD. Oxygen uptake measurements, after correction for dilution and seed, were in very close agreement, thereby indicating excellent measurement precision over the 10-day test period. The short plateau at about 24 hours of incubation in the first test run indicates the presence of one or more substances that required acclimation of microorganisms. The lack of a plateau in the second test run shows that acclimation had occurred. The higher cumulative oxygen uptake in the second test run reflects carry-over of residual organic matter from the first to the second test run.