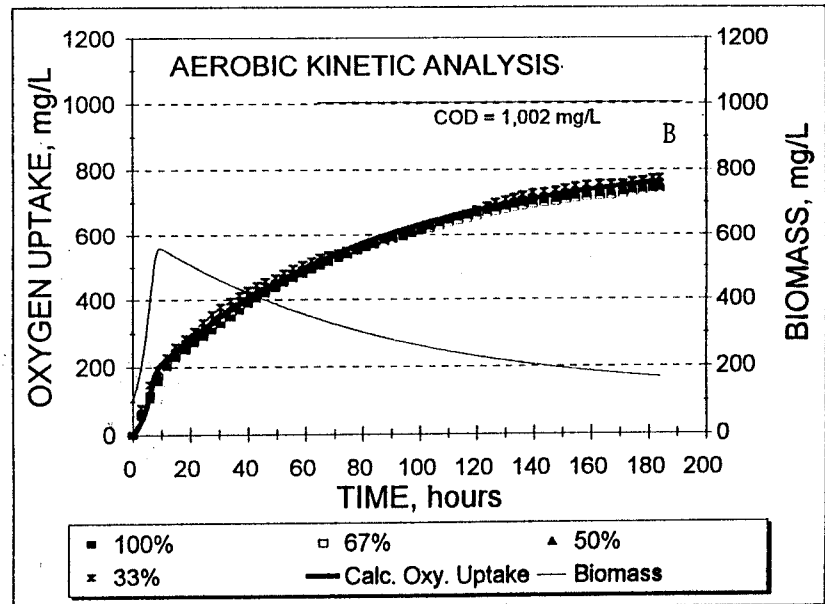
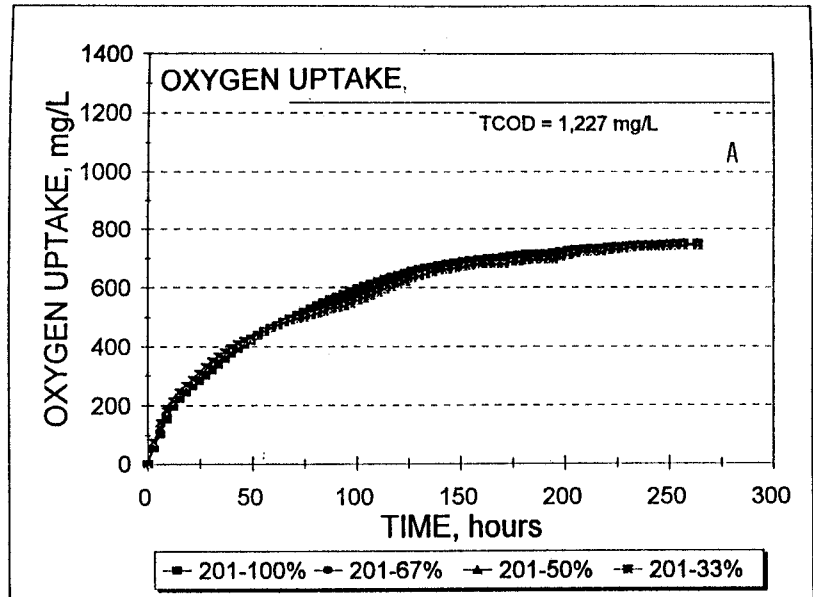


APPLICATION: BIODEGRATATION KINETICS OF INDUSTRIAL WASTES

METHOD

An industry was discharging wastewater to a municipal sewer and was suspected of causing problems with treatment at the plant. Samples of the industrial wastewater were collected and oxygen uptake for four dilutions was measured using a CHALLENGE AER-200 aerobic/anaerobic respirometer system. Biodegradation kinetic coefficients were determined using the method described by Dang, et. al. (*Res. J. of Water Poll. Control Fed.*, p. 1711, 1989). Results of the oxygen uptake measurements and kinetic analyses are shown in the accompanying figures.



ANALYSIS

The respirometer tests showed the same oxygen uptake for all four dilutions so that toxicity was not considered to be a factor in treatability and the oxygen uptake after 10 days of incubation was about 70% of the total COD so that biodegradation was considered not to be a problem. Kinetic analysis produced a biomass yield coefficient of 0.57 mg VSS/mg COD removed, a half-saturation coefficient,  $K_s$ , of 250 mg/L and a maximum specific substrate conversion rate of 0.7 mg COD/mg VSS-hr. These coefficients indicated a high biodegradation rate. Therefore, the conclusion was drawn that this particular industrial wastewater was not the source of problems at the municipal wastewater treatment plant.