RATE OF SEDIMENTATION IN BOOMER LAKE

J. T. McCORMACK

Director of Geology, A. and M. College, Stillwater, Oklahoma

ABSTRACT

The rate of sedimentation in Boomer Lake, Stillwater, Oklahoma, is quite rapid. It was thought desirable to determine this rate in order to predict the useful life of the reservoir, and also such a study might reveal means of prolonging its life. Sediment traps of known surface area have been set up around the lake at half-mile intervals to catch the wind-borne dust, and measurements of wind velocity and direction readings are kept. Thus it is possible to know from what direction material comes and at what wind velocity it is carried. Samples of water from the streams draining into the lake are also taken at regular intervals and the amount of sediment they carry measured. In addition, samples of the lake water are taken at intervals to find out how much material is in suspension and the nature of the material.

Much fine sand is being carried into the lake by both streams and wind, and there is also a large amount of clay, which stays in suspension for a long time. The clay comes in greatest abundance from the parts of the water-shed on which the grass has been burned. Since the paving of the road past the lake the amount of wind borne dust has been reduced almost 70 per cent.

Silting over the entire area seems to take place at the rate of about nine inches per year, which would indicate an effective life of twenty-five years for the reservoir.