If the rate of drainage is very small or zero, Equation (13) may be written in the form of a linear equation in which the time rate of increase of the groundwater salinity is constant. The time required for the concentration to reach a specified maximum value C_m may be computed from the following equation.

$$t = \frac{SAh}{C_c(Q_c + Q_r)}(C_m - C_g) \qquad (14)$$

Values of t for a range of soil salt contents from 0 to 50 tons/acre and for well depths of 50 to 250 feet are given in Table VI. In part I of this table, the initial salt concentration in the groundwater is taken as 500 mg/1; in part II, it is 750 mg/1. These values were chosen in order to keep well within the range of conditions where there is general agreement that tubewells can be used [4]. For privately operated tubewells, it will be difficult to attain an "optimum" mixing ratio of tubewell and canal waters. Hence C_m is taken as 1500 ppm. We have assumed that the volume of canal water plus river recharge is 3.3 acre feet/acre/year, C_c is 250 ppm, and S is 0.25.

The times given above are those required for the *average* salinity in the groundwater layer which is supplying the well to reach 1500 ppm. As shown in the Panel Report, the time required for the well water to reach this salinity (after a brief initial period) will be somewhat longer than the above values, be cause thorough mixing does not occur in the aquifer. *But the delay due to imperfect mixing will be short for shallow wells, and long for deep wells.*

It is clear that relatively shallow tubewells without drainage channels to maintain a salt balance will become excessively salty in a few years, if they are used in areas where there is a significant initial salt accumulation in the soil. Within a few years after the tubewells are installed, channels will have to be constructed to carry away salty groundwater. If the salty water has a salinity of 1500 mg/1, the minimum amount of water that will need to be carried away will be 1/6th of the total canal supply, including that which enters the ground as recharge. Unless the conveyance channels are lined, about 25 per cent of the total water supply will have to be run into them, to make up for leakage. But part of this will, of course, be recovered by the wells. However, the 1/6th of the total supply that cannot be used will reduce the gross sown acreage.

Equation (14) and Table V give the time for salt build-up before surface drainage is installed. If soil drainage exists from the beginning, Equation (13) applies. The ultimate concentration in the groundwater will then be $C_c(Q_c + Q_r)/Q_d$. However, the time elapsed before a salt balance is attained may be very long. For example, if $C_c = 250$ milligrams per litre and $(Q_c + Q_r)/Q_d = 8$,