If the assumed aquifer and dimensionless time are correct, the plot will be a straight line with N being the Y-intercept and C being the slope.In addition, statistical methods could be used in the consistency test to determine for a preassigned degree of probability the confidence band for the calculated values of N and C. In many large fields, it is often found that an infinite linear water drive satisfactorily describes the production pressure behavior of the said fields, it is suggested to try first the infinite linear case to determine if a successful solution could be obtained.As it is evident from the foregoing, there are two basic sources of errors, systematic and random, which could prevent the obtention of a straight line when Eq. 3a is applied.A systematically upward or downward curved line suggests that the ??p Q (?td) is too small or too large, respectively.After satisfactory values for r e r a / and for (?tD) are chosen, the results can be refined by applying the standard deviation test suggested by van Everdingen, et al.'The slopes of the N and C straight lines are then calculated and plotted vs their corresponding (?tD ), values on a common graph paper.These are a complete scatter, a line curved upward, a line curved downward, and an S-shaped curve (Fig.In some reservoirs, the standard deviation plotted vs log ?td will not give a sharp minimum but will be "dish-shaped".Proper statistical analysis could indicate which source causes the linearity of the plot predicted by Eg. 3a not to be satisfied.An S-shaped curve indicates that a better fit could be obtained if a linear water influx is assumed.The sequence of the plotted points as indicated by the arrow of Fig.Complete random scatter of the individual points indicates that the calculations and/or the basic data are in error. 3a).However.