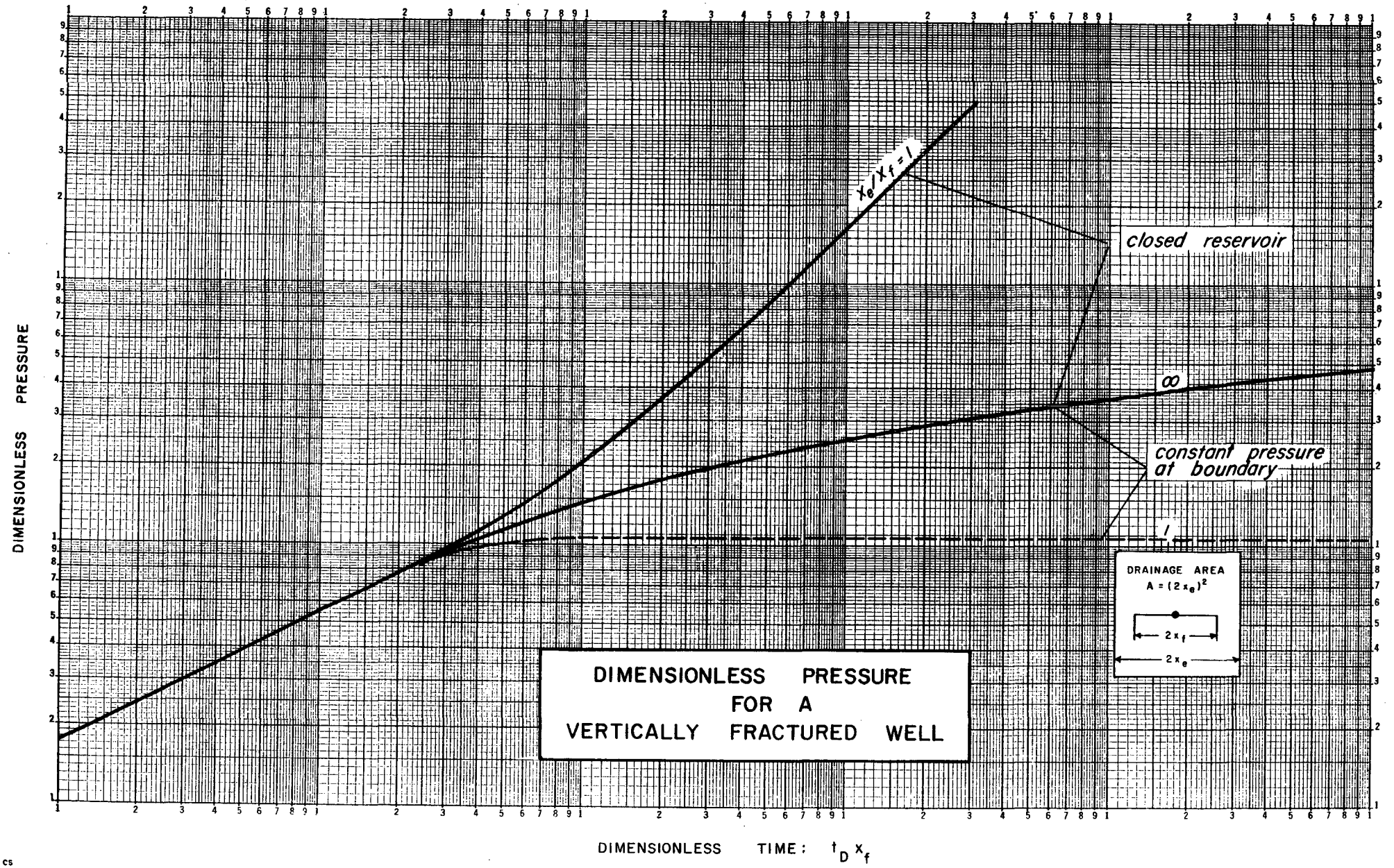
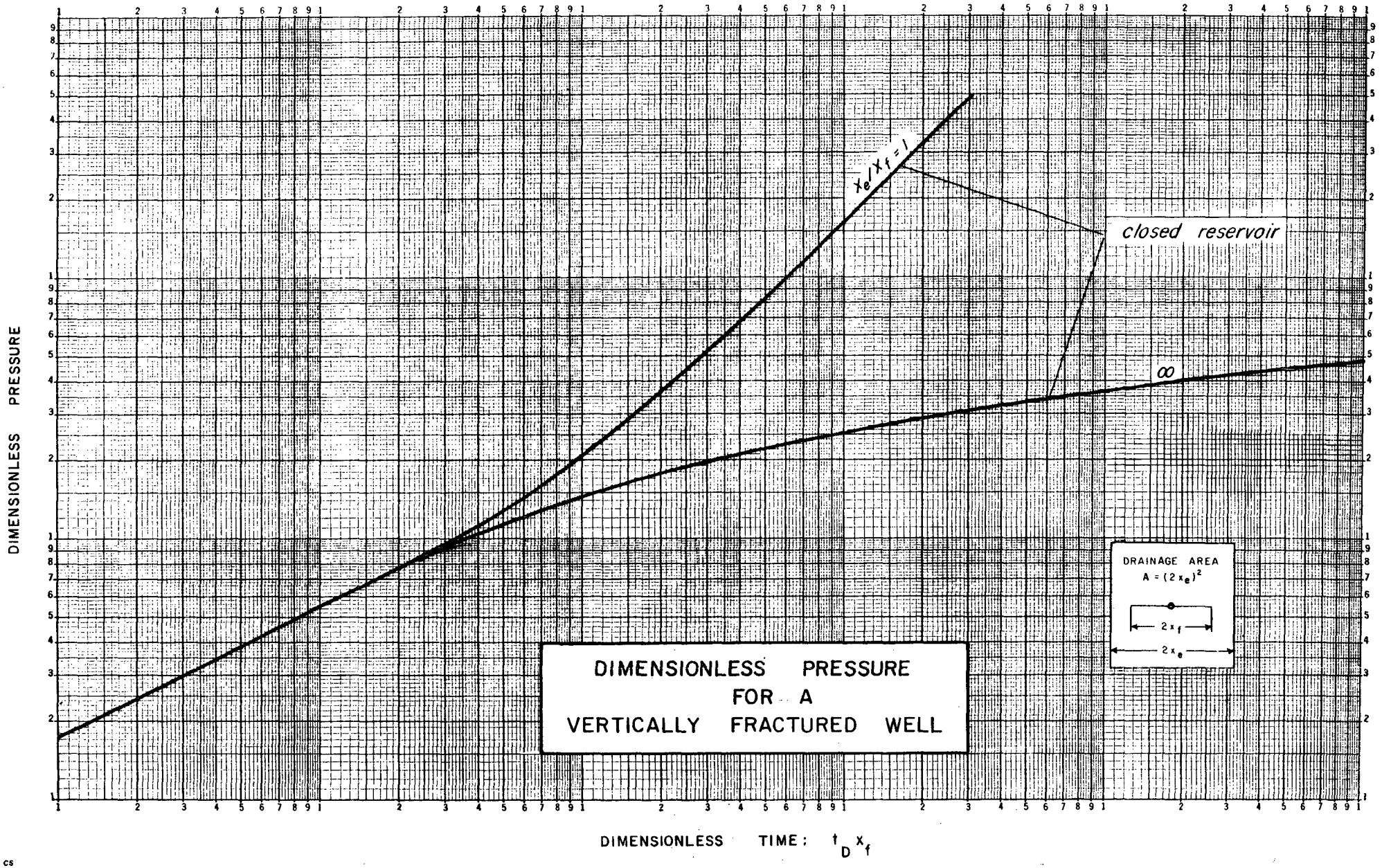

DIMENSIONLESS PRESSURE
$x_e/x_f = 1$
closed reservoir
∞
constant pressure at boundary
1
DRAINAGE AREA
$A = (2x_e)^2$
$2x_f$
$2x_e$
DIMENSIONLESS PRESSURE FOR A VERTICALLY FRACTURED WELL
DIMENSIONLESS TIME : $t_D x_f$


DIMENSIONLESS PRESSURE
DIMENSIONLESS TIME : $t_{D x_f}$
$x_e/x_f = 1$
closed reservoir
∞
DRAINAGE AREA
$A = (2x_e)^2$
$2x_f$
$2x_e$
DIMENSIONLESS PRESSURE
FOR A
VERTICALLY FRACTURED WELL

1-88 cs

BASIC SHAPES OF PRESSURE BUILD-UP CURVES ON SHUTTING IN A PRODUCING WELL

Typical Canada Ojitos Unit build-up curves show downward (to level) slope changes (as distinct from the upward charging slope for wells with fractures in matrix porosity).

Curves with this leveling off of pressures means boundaries are influencing the pressures.

From just a semilog plot of pressures versus time, one cannot distinguish by shape alone, whether the boundary effect is the consequence of a flow system that is "closed" or whether it is one of constant pressure at the boundary.

However through the use of pressure differences on shut in and the type curves, it is possible to distinguish between these systems (one goes one direction and one the other - as opposed to the curves for both systems moving the same direction as in a semilog plot of shut in pressure versus time). (Example curves are shown on the next two pages.)

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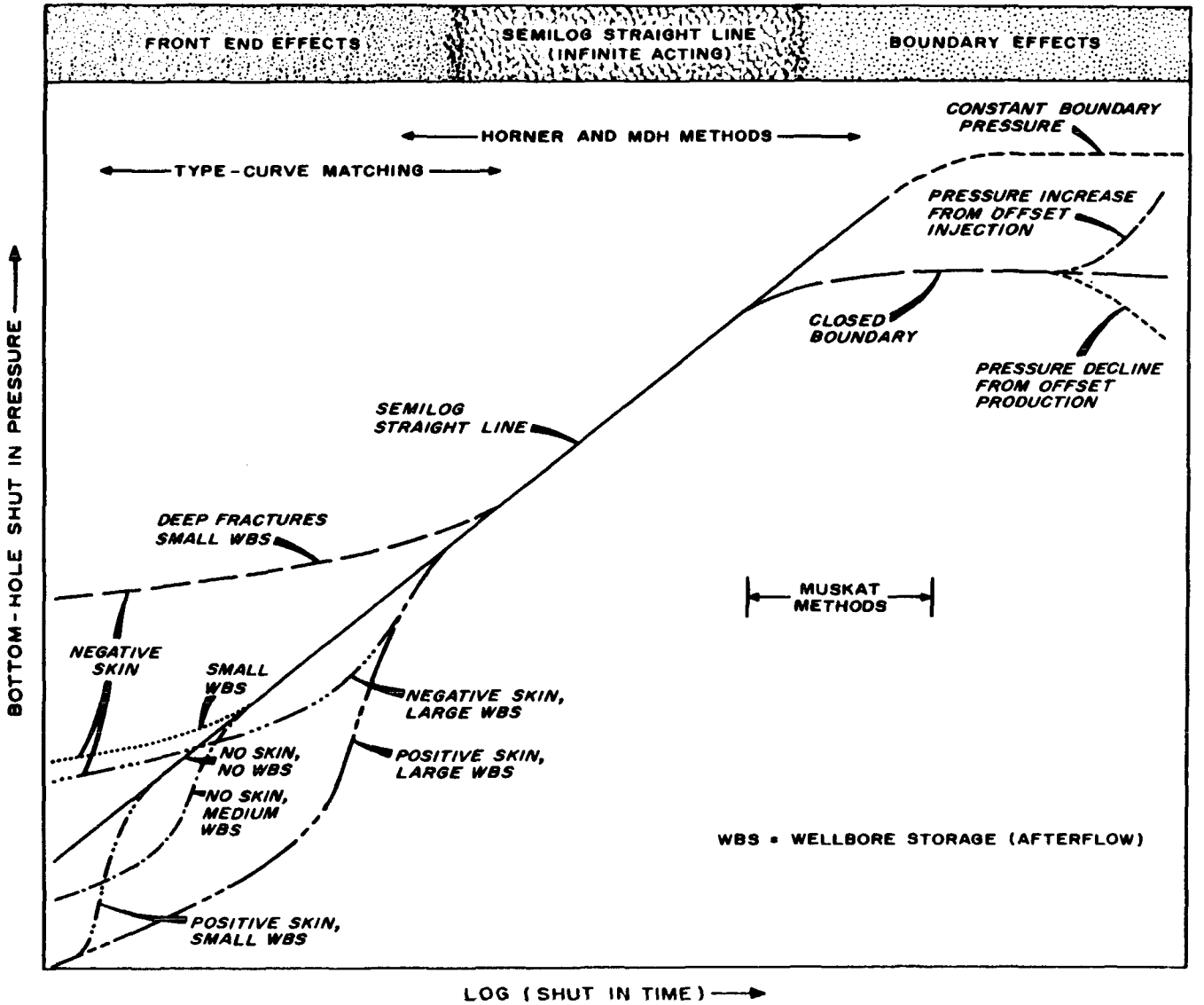

Fig. E.1 Typical bottom-hole pressure-buildup curve shapes. For production at pseudosteady state before shut-in.