

Table 1: Shape Factors C_A for Common Drainage Area Geometries

Drainage Geometry	Shape Factor
	C_A (dimensionless)
Circular area, well at center	$4\pi \approx 12.57$
Square area, well at center	31.62
Square area, well at corner	6.25
Square area, well at side center	15.8
Rectangle (2:1 aspect ratio), well at center	26.2
Rectangle (4:1 aspect ratio), well at center	24.0
Rectangle (6:1 aspect ratio), well at center	23.3
Irregular shapes (approximate)	10–30

The choice of C_A is crucial for accurately estimating flow rate and productivity in finite reservoirs. When not directly known, it can be approximated from simulation or inferred from matching historical data.