

Zones

Each prospect is modeled as having one or more prospective reservoir zones. For the purposes of the 1002 area recoverable resource assessment, the number and reservoir characteristics of zones within prospects were based on the areal distribution and characteristics of the equivalent geologic plays used in the in-place resource assessment (see chap. 22). Stratigraphic units modeled as zones in the various prospects are shown as "potential objectives" in table 23.1.

Volumetric Inputs

The basic unit for calculation of hydrocarbon volumes in the PRESTO model is the reservoir zone. The model accepts seven volumetric input parameters, which are described below. All nonzero parameters used in the 1002 area resource assessment were entered as ranges of values, with associated probability distributions. To the maximum extent possible, ranges and distributions were correlated with equivalent parameters in the equivalent play reservoirs used for the in-place resource assessment (chap. 22).

1. Productive Area—Estimates of productive acreage are based on the total structural closure for the prospect (area enclosed by lowest closing contour) and on estimates of trap fill for the zone, expressed as a percentage of the area of total closure. Trap-fill estimates are derived from an assessment of (1) the quantity and types of organic source material available in the vicinity of the prospect and (2) the occurrence of geologic events and subsurface conditions conducive to the generation and migration of hydrocarbon fluids into reservoir zones.

2. Pay Thickness—Estimates for pay thickness represent the aggregate thickness (ft) of intervals in the reservoir zone thought to have both sufficient porosity to hold significant quantities of fluids and sufficient permeability to allow movement of fluids to a wellbore.

3. Oil Recovery Factor—Oil recovery factors for the 1002 area assessment were derived from the standard volumetric equation for oil by setting the productive area and thickness equal to 1:

$$RF = 7,758(\phi)(1-S_w)(RE)/B_o$$

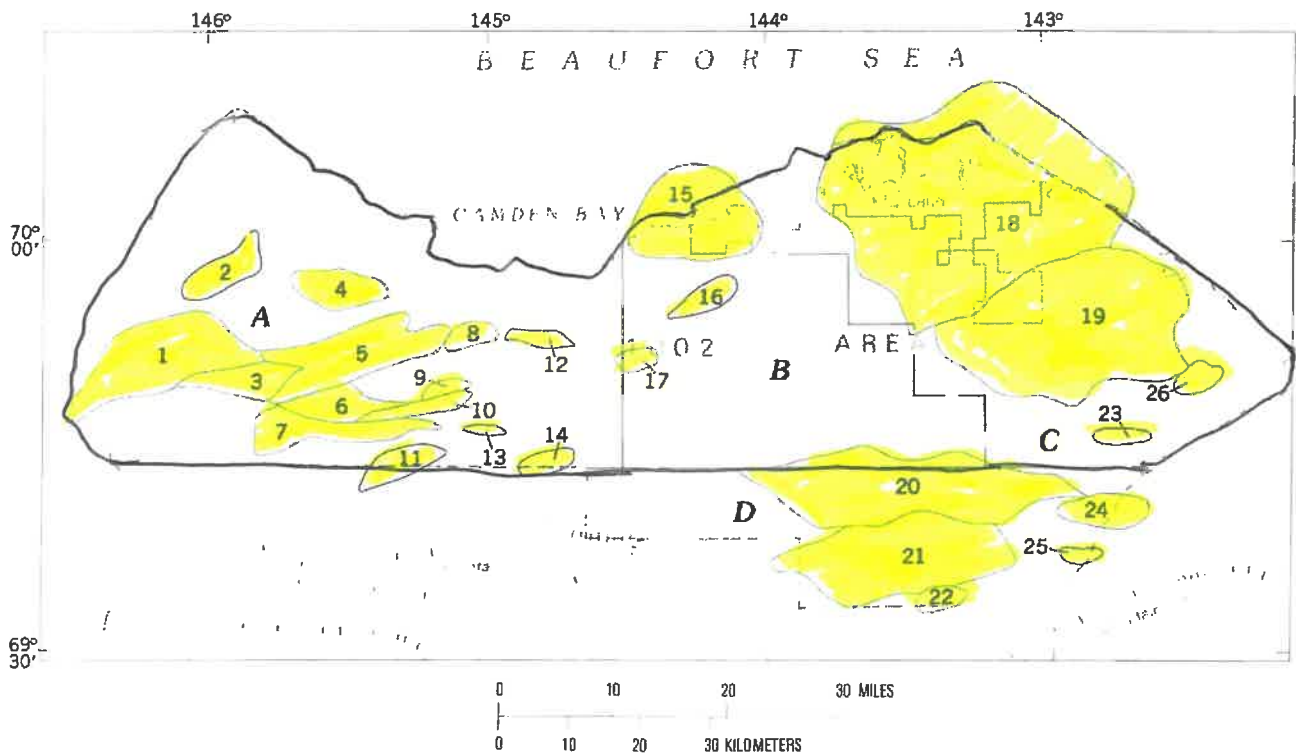


Figure 23.2. Seismically mapped prospects in the 1002 area. Numbers 1-26 refer to table 23.1. Blocks A-D refer to table 23.4.