

removing the second annular segment during the next subsequent revolution of said drill bit after removal of the first annular segment.

78. A method as recited in claim 76 further comprising:

removing the first annular segment at a first selected axial level, and simultaneously removing the second annular segment at a second selected axial level, the first and second selected axial levels being axially spaced by approximately the distance of axial advancement of said drill bit during one revolution, the second selected axial level being less axially advanced than the first selected axial level.

79. A method as recited in claim 76 wherein the steps of removing the first and second annular segments comprise:

forming each annular segment into concentric rings of material, and removing concentric rings of material from each annular segment.

80. A method as recited in claim 79 further comprising, with respect to each annular segment:

5 ing:

removing the concentric rings in sequence, beginning with the ring most radially inward and sequentially progressing to the most radially outward ring.

81. A method as recited in claim 79 further comprising: cutting slots in the material to define each concentric ring prior to removing the rings.

82. A method of forming an opening through material by rotation of a drill bit at a drill face of a bore hole, comprising steps of:

emitting a single fluid jet from a predetermined position on said drill bit, said fluid jet being of sufficient energy to cut the material, the predetermined position being radially spaced from the rotational axis of said drill bit;

angling the single emitted fluid jet from the predetermined position axially in the direction of advancement of the drill bit and radially inward to intersect and pass substantially through the rotational axis of said drill bit;

cutting substantially more material with said fluid jet from the radial side of said drill face diametrically opposite the predetermined position than the amount of material cut from the drill face on the radial side between the rotational axis and the predetermined position, and rotating said drill bit.

\* \* \* \* \*

30

35

40

45

50

55

60

65