

WHAT IS CLAIMED

1. A method for controlling flow of fluid in a wellbore extending through a subterranean formation, the fluid having a characteristic which may change over time, the method comprising:

providing an apparatus having an inlet passageway, a flow biasing mechanism, and a variable flow resistance assembly, said flow biasing mechanism having a semi-toroidal-shaped wall contour element formed along one side of said flow biasing mechanism so as to affect a distribution of flow from an outlet of the flow biasing mechanism and thereby changing a fluid flow resistance of the variable flow resistance assembly based on said characteristic of said fluid;

flowing fluid through the inlet passageway; and

establishing a first fluid flow distribution across an outlet of the flow biasing mechanism that is determined by said characteristic of said fluid at a first point in time.

2. The method as in claim 1, further comprising:

establishing a second fluid flow distribution across an outlet of the flow biasing mechanism that is determined by said characteristic of said fluid at a second point in time that is different than said characteristic of said fluid at said first point in time.

3. The method as in claim 1, further comprising:

flowing the fluid to the surface or into the formation.

4. The method as in claim 1, wherein:

the characteristic of the fluid is one of fluid velocity, density, flow rate, and viscosity.

5. The method as in claim 1, wherein:

the biasing mechanism is a widening passageway narrower at the upstream end and wider at the downstream end.

6. The method as in claim 5, wherein:

the downstream end of the biasing mechanism defines two sides which connect to corresponding first and second sides of a fluidic switch assembly, corresponding first and second departure angles defined at the connections.

7. The method as in claim 1, wherein:

the first fluid flow distribution is substantially symmetric.
8. The method as in claim 1, wherein:

the variable flow resistance assembly includes an autonomous valve assembly.
9. The method as in claim 1, further comprising:

flowing fluid through a fluidic switch between the biasing mechanism and the variable flow resistance assembly.
10. The method as in claim 9, wherein:

the fluidic switch defines at least one flow passageway having an inlet coincident with the outlet of the inlet passageway.
11. The method as in claim 2, further comprising:

increasing the fluid flow resistance of an undesirable fluid.
12. The method as in claim 8, wherein:

the autonomous valve assembly further includes a vortex assembly.