

CLAIMS

What is claimed is:

1. A well system comprising:
a production tubing;
a flow control device, wherein the flow control device is disposed onto the production tubing; and
a ball check valve disposed between the flow control device and the production tubing to restrict flow into the production tubing through a port in the flow control device, wherein the ball check valve comprises a housing and a ball.
2. The well system of claim 1, wherein the ball creates a seal against the flow control device.
3. The well system of claim 1, wherein the housing comprises an inlet, an outlet, and a check valve internal chamber.
4. The well system of claim 3, wherein the ball is disposed within the check valve internal chamber.
5. The well system of claim 3, wherein the inlet is disposed along a wall of the check valve internal chamber, wherein the outlet is disposed along an opposing wall of the check valve internal chamber from the inlet.
6. The well system of claim 1, wherein the ball comprises a dissolvable material.
7. The well system of claim 6, wherein the dissolvable material comprises at least one material selected from the group consisting of an aluminum alloy, a magnesium alloy, a calcium alloy, and an aliphatic polyester material.
8. The well system of claim 7, wherein the ball further comprises at least one additional material selected from the group consisting of iron, copper, nickel, tin, tungsten, and carbon to increase a standard state reduction potential of the ball.

9. The well system of claim 1, wherein the flow control device is an autonomous inflow control device.
10. A method of controlling flow of fluids, comprising:
injecting a fluid into a production tubing, wherein a flow control device is disposed on the production tubing, wherein a ball check valve is disposed between the flow control device and the production tubing to restrict flow into the production tubing through a port in the flow control device; and
actuating the ball check valve.
11. The method of claim 10, wherein the ball check valve comprises a housing and a ball.
12. The method of claim 11, wherein the actuating the ball check valve comprises displacing the ball within the housing.
13. The method of claim 12, wherein the displacing the ball comprises creating a seal that restricts the fluid from flowing through the ball check valve to the flow control device.
14. The method of claim 13, further comprising breaking the seal when a second fluid flows from a subterranean formation to the flow control device and into the ball check valve.
15. The method of claim 11, wherein the ball comprises at least one material selected from the group consisting of polyurethane, natural rubber, rubber modified polymers, high impact polystyrene, and acrylic rubber.
16. A method of controlling flow of fluids, comprising:
injecting a first fluid into a production tubing, wherein a flow control device is disposed on the production tubing, wherein a ball check valve is disposed between the flow control device and the production tubing, wherein the ball check valve comprises a housing and a dissolvable ball; and

actuating the ball check valve, wherein the actuating the ball check valve comprises displacing the dissolvable ball within the housing, wherein the displacing the dissolvable ball comprises of creating a seal that restricts the flow of the first fluid from the production tubing to the flow control device.

17. The method of claim 16, further comprising of injecting a dissolution fluid into the production tubing to contact the dissolvable ball, wherein the dissolution fluid comprises an electrolyte.

18. The method of claim 17, wherein the dissolvable ball dissolves due to galvanic corrosion in response to contact with the dissolution fluid, wherein the seal breaks.

19. The method of claim 17, wherein the dissolution fluid is a brine, water, oil, acid, or combination thereof.

20. The method of claim 16, wherein the dissolvable ball comprises at least one material selected from the group consisting of an aluminum alloy, a magnesium alloy, a calcium alloy, and an aliphatic polyester material.