Claims

1. A safety valve for a wellbore for production of hydrocarbons from a surrounding subsurface formation, the safety valve comprising:

a flow tube through which a flow of fluids passes from the surrounding subsurface formation downhole to a surface of the wellbore, wherein the flow tube comprises a lower end through which the flow of fluids is to enter the flow tube, wherein the flow tube is composed of metal, except for at least a cut out section of the lower end that is composed of a polymeric material; and

a flapper configured to close the safety valve by changing positions to cover an opening at the lower end of the flow tube such that an impact force of the closing of the flapper onto the flow tube is at least partially absorbed by the polymeric material.

2. The safety valve of claim 1, wherein the cut out section of the lower end is a portion of the lower end adjacent to the flapper while the flapper is in an open position.

3. The safety valve of claim 1, wherein the polymeric material comprises at least one of a rubber or plastic.

4. The safety valve of claim 1, wherein a shape of the cut out section comprises a rectangular shape.

5. The safety valve of claim 4, wherein a width of the cut out section is greater than a depth of the cut out section.

6. The safety valve of claim 1, wherein a shape of the cut out section is an elliptical shape.

7. The safety valve of claim 6, wherein a width of the cut out section is greater than a depth of the cut out section.

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8. The safety valve of claim 1, wherein an end of the flow tube that is composed of metal is coated with a plastic material.

9. The safety valve of claim 1, wherein the fluids comprise at least one of a liquid or gas.

10. The safety valve of claim 1, wherein the width of the cut out section is less than one-half of the circumference of the flow tube.

11. The safety valve of claim 1, wherein the width of the cut out section is a subpart of the lower end of the flow tube.

12. A wellbore system comprising:

a tubing string extendable within a wellbore;

a subsurface safety valve interconnected with the tubing string, the subsurface safety valve comprising,

a flow tube through which a flow of fluids passes from the surrounding subsurface formation downhole to a surface of the wellbore, wherein the flow tube comprises a lower end through which the flow of fluids is to enter the flow tube, wherein the flow tube is composed of metal, except for at least a cut out portion of the lower end that is composed of a polymeric material; and

a flapper configured to close the subsurface safety valve by changing from an open position to a closed position to cover an opening at the lower end of the flow tube such that an impact force of the closing of the flapper onto the flow tube is at least partially absorbed by the polymeric material; and

a valve tool to be positioned down the tubing string and to be engaged with the subsurface safety valve to move the flapper between the open position and the closed positions.

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13. The wellbore system of claim 12, wherein the cut out section of the lower end is a portion of the lower end adjacent to the flapper while the flapper is in an open position.

14. The wellbore system of claim 12, wherein the polymeric material comprises at least one of a rubber or plastic.

15. The wellbore system of claim 12, wherein a shape of the cut out section comprises at least one of a rectangular shape or an elliptical shape.

16. The wellbore system of claim 15, wherein a width of the cut out section is greater than a depth of the cut out section.

17. The wellbore system of claim 12, wherein an end of the flow tube that is composed of metal is coated with a plastic material.

18. A method to shut down recovery of production of hydrocarbons from a wellbore, the method comprising:

lowering a production tubing that is coupled to a subsurface safety valve down the wellbore;

initiating a flowing of fluids from a surrounding subsurface formation from downhole through the subsurface safety valve and the production tubing to a surface of the wellbore, wherein the subsurface safety valve comprises,

a flow tube through which the fluids passes flow from the surrounding subsurface formation downhole to the surface of the wellbore, wherein the flow tube comprises a lower end through which the flow of fluids is to enter the flow tube, wherein the flow tube is composed of metal, except for at least a cut out section of the lower end that is composed of a polymeric material; and

a flapper configured to close the subsurface safety valve by changing positions to cover an opening at the lower end of the flow tube

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such that an impact force of the closing of the flapper onto the flow tube is at least partially absorbed by the polymeric material;

determining whether an unsafe condition or event related to the production of the hydrocarbons has occurred;

in response to determining that the unsafe condition or event related to the production of the hydrocarbons has occurred,

closing the flapper, to limit or stop the flow of at least one of liquid or gas to the surface of the wellbore, to cover an opening at the lower end of the flow tube such that an impact force of the closing of the flapper onto the flow tube is at least partially absorbed by the polymeric material; and

determining whether the unsafe condition or event is no longer occurring; and

in response to determining that the unsafe condition or event is no longer occurring,

reopening the flapper to no longer limit or stop the flow of the at least one of the liquid or the gas to the surface of the wellbore.

19. The method of claim 18, wherein the cut out section of the lower end is a portion of the lower end adjacent to the flapper while the flapper is in an open position.

20. The method of claim 18, wherein the polymeric material comprises at least one of a rubber or plastic.

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