CLAIMS

1. A system for recovering hydrocarbons from a wellbore, comprising:

a first annulus valve formed in a wellbore component, the first annulus valve being fluidly coupled to an annulus of the wellbore;

a production tree coupled to the wellbore component, the production tree comprising:

a production bore fluidly coupled to production tubing via the wellbore component, the production bore extending through a body of the production tree toward a tree cap and directing the downhole fluids out of the production tree;

a first production valve arranged in the production bore, the first production valve being moveable between an open position and a closed position to regulate the flow of the downhole fluids through the production bore and positioned in a downstream direction from the wellbore component;

a second production valve arranged in the production bore, the second production valve being movable between an open position and a closed position to regulate the flow of the downhole fluids through the production bore, the second production valve positioned downstream of the first production valve and in series with the first production valve such that downhole fluids that flow through the first production valve are directed toward the second production valve, the second production valve being upstream relative to the tree cap;

an annulus bore fluidly coupled to the annulus of the wellbore, the annulus bore being coupled to the production bore downstream of the tree cap at a coupling; and

a second annulus valve arranged in the annulus bore, the second annulus valve being positioned downstream of the first annulus valve and upstream of the coupling to the production bore;

wherein the first production valve and the second production valve provide two barriers of protection between the wellbore and a tree outlet and the first annulus valve and the second annulus valve provide two barriers of protection between the wellbore and the tree outlet, the two barriers formed by the first annulus valve and the second annulus valve being upstream of the coupling to the production bore.

2. The system of claim 1, wherein the wellbore component comprises a tubing head spool.

3. The system of claim 1, further comprising a transducer arranged on the annulus bore, the transducer positioned downstream of the wellbore component.

4. The system of claim 1, further comprising a transducer arranged on the production bore, the transducer determining at least one of a pressure or a temperature of the production bore and positioned downstream of the wellbore component.

5. The system of claim 1, further comprising a third annulus valve, the third annulus valve being downstream of the wellbore component.

6. The system of claim 1, further comprising a control module, the control module being communicatively coupled to at least one of the first annulus valve, the second annulus valve, the first production valve, or the second production valve.

7. The system of claim 1, further comprising a stab sub pocket arranged in the annulus bore upstream of the coupling to the production bore, wherein the stab sub pocket receives a tubular to perform enhanced recovery operations.

8. The system of claim 1, further comprising a pump cap, the pump cap coupling to a top of the tree to perform enhanced recovery operations.

9. The system of claim 1, further comprising a high pressure pipeline protection system (HIPPS), the HIPPS being positioned downstream of the first and second production valves.

10. A system for directing the flow of fluids into and out of underground formations containing hydrocarbons, the system comprising:

a wellhead apparatus supporting a tubing hanger, the wellhead apparatus at least partially enclosing a lower section of a production bore and a lower section of an annulus bore, wherein the lower section of the annulus bore includes a first annulus valve; and

a production tree positioned downstream of and coupled to the wellhead apparatus, the production tree extending upwardly from a lower surface to an upper surface and at least partially enclosing an upper section of the production bore and an upper section of the annulus bore, wherein one of the lower section and the upper section of the production bore includes a first production valve, the upper section of the production bore includes a second production valve, and the upper section of the annulus bore includes a second annulus valve.

11. The system of claim 10, wherein a tree cap includes a pump to perform enhanced recovery operations.

12. The system of claim 10, further comprising a tree cap having a first stab and a second stab concentrically formed such that an axis of the first stab is substantially aligned with an axis of the second stab.

13. The system of claim 11, wherein the tree cap includes a choke to regulate the flow of fluids through the production bore.

14. The system of claim 10, further comprising a stab sub pocket positioned in the upper section of the annulus bore, the stab sub pocket arranged to receive a tubular extending through the annulus bore from a top of the production tree to perform enhanced recovery operations.

15. The system of claim 10, further comprising a manifold positioned downstream of and coupled to the production tree, wherein the manifold includes at least one manifold valve and controls a flow of fluid from the production tree.

16. A system for recovering hydrocarbons from a wellbore, the system comprising:

a production tree coupled to the wellbore, the production tree including a production bore and an annulus bore, both extending from a base of the production tree to a top of the production tree;

a first production valve arranged in the production bore, the first production valve being movable between an open position and a closed position to regulate flow of a fluid through the production bore;

a second production valve arranged in the production bore downstream of the first production valve, the second production valve being moveable between an open position and a closed position to regulate flow of fluid through the production bore;

a first annulus valve arranged in the annulus bore, the first annulus valve being movable between an open position and a closed position to regulate flow of fluid through the annulus bore;

a first production valve actuator coupled to the first production valve, the first production valve actuator extending radially outward from the production tree at a first circumferential location; and

a second production valve actuator coupled to the second production valve, the second production valve actuator extending radially outward from the production tree at a second circumferential location, the second circumferential location being offset from the first circumferential location such that the first and second production valve actuators extend radially outward in different radial directions.

17. The system of claim 16, further comprising a pump cap, the pump cap positioned at the top of the production tree and including a pump to perform enhanced recovery operations.

18. The system of claim 16, further comprising a tree cap having a first stab and a second stab, the first and second stabs being concentrically formed such that an axis of the first stab is substantially aligned with an axis of the second stab.

19. The system of claim 16, further comprising a high pressure pipeline protection system (HIPPS), the HIPPS being positioned downstream of the first and second production valves.

20. The system of claim 16, further comprising at least one transducer positioned on the annulus bore to measure at least one of a pressure or temperature of the annulus, the at least one transducer arranged downstream of the first annulus valve and on the production tree.