CLAIMS

What is claimed is:

1. A well screen for use with a perforated base pipe to be positioned in a borehole, the well screen comprising:

an arcuate outer shroud comprising perforations, the outer shroud comprising a first longitudinal end and a second longitudinal end spaced arcuately apart such that a gap is formed between the first longitudinal end of the outer shroud and the second longitudinal end of the outer shroud;

a mesh layer that restricts flow of particulate materials of a predetermined size from passing therethrough, the mesh layer positioned radially inward from the outer shroud, the mesh layer comprising a first longitudinal end that is radially aligned with the first longitudinal end of the outer shroud and a second longitudinal end that is radially aligned with the second longitudinal end of the outer shroud to continue the gap; and

a cylindrical drainage layer, having a circular cross-section and circumferentially surrounding the perforated base pipe and positioned radially inward from the mesh layer and comprising stand-offs extending radially inward towards the perforated base pipe such that the perforated base pipe is eccentrically supported within the drainage layer closer to the gap by the stand-offs.

2. The well screen of claim 1, further comprising a first bumper and a second bumper, wherein:

each bumper is coupled to the drainage layer and extends along an axial length of the well screen;

the first bumper is coupled to the first longitudinal end of the outer shroud and the first longitudinal end of the mesh layer; and

the second bumper is coupled to the second longitudinal end of the outer shroud and the second longitudinal end of the mesh layer.

3. The well screen of claim 1, wherein the drainage layer comprises perforations and the stand-offs comprise at least one of dimples formed into the drainage layer or sections of rods coupled to the drainage layer.

4. The well screen of claim 3, wherein the stand-offs extend further radially inward to contact the perforated base pipe as an arcuate distance between the respective stand-off and the gap increases such that the stand-offs opposite the gap extend the furthest inward.

5. The well screen of claim 3, wherein the drainage layer is not perforated in an arcuate area radially inward from the gap.

6. The well screen of claim 3, wherein the perforations in an arcuate area radially inward from the gap are sized to provide the same restriction of flow of the particulate materials of the predetermined size as the mesh layer.

7. The well screen of claim 1, wherein the drainage layer comprises louvers forming stand-offs and wherein no louvers are formed in an arcuate area radially inward from the gap.

8. The well screen of claim 7, wherein the stand-offs extend further inward as an arcuate distance between the respective stand-off and the gap increases such that the stand-offs opposite the gap extend the furthest inward.

9. The well screen of claim 7, wherein the well screen is formed prior to being placed on the perforated base pipe.

10. A completion system for a borehole, the completion system comprising:

a perforated base pipe; and

a well screen surrounding the perforated base pipe, the well screen comprising:

an arcuate outer shroud comprising perforations, the outer shroud comprising a first longitudinal end and a second longitudinal end spaced arcuately apart such that a gap is formed between the first end of the outer shroud and the second end of the outer shroud;

a mesh layer that restricts flow of particulate materials of a predetermined size from passing therethrough, the mesh layer coupled to and positioned radially inward from the outer shroud, the mesh layer comprising a first longitudinal end that is radially aligned with the first longitudinal end of the outer shroud and a second longitudinal end that is radially aligned with the second longitudinal end of the outer shroud; and

a cylindrical drainage layer, having a circular cross-section and circumferentially surrounding the perforated base pipe and positioned radially inward from the mesh layer and

comprising stand-offs extending radially inward towards the perforated base pipe such that the perforated base pipe is eccentrically supported within the drainage layer closer to the gap by the stand-offs.

11. The completion system of claim 10, wherein:

the well screen further comprises a first bumper and a second bumper;

each bumper is coupled to the drainage layer and extends along an axial length of the well screen;

the first bumper is coupled to the first longitudinal end of the outer shroud and the first longitudinal end of the mesh layer; and

the second bumper is coupled to the second longitudinal end of the outer shroud and the second longitudinal end of the mesh layer.

12. The completion system of claim 10, wherein the stand-offs comprise at least one of dimples formed into the drainage layer and sections of rods coupled to the drainage layer.

13. The completion system of claim 12, wherein the stand-offs extend further radially inward towards the perforated base pipe as an arcuate distance between the respective stand-off and the gap increases such that the stand-offs opposite the gap extend the furthest inward.

14. The completion system of claim 12, wherein the drainage layer is not perforated in the same arcuate area radially inward from the gap.

15. The completion system of claim 10, further comprising casing positioned between the borehole and the outer shroud.

16. The completion system of claim 10, wherein the drainage layer comprises louvers forming stand-offs and wherein no louvers are formed in an arcuate area radially inward from the gap.

17. The completion system of claim 16, wherein the stand-offs extend further inward as an arcuate distance between the respective stand-off and the gap increases such that the stand-offs opposite the gap extend the furthest inward.

18. The completion system of claim 10, further comprising a communication line positioned in the gap of the well screen and in communication with a downhole device.

19. A method of producing hydrocarbons from a formation, the method comprising:

installing a well screen and perforated base pipe within a borehole formed in the formation, the well screen comprising:

an arcuate outer shroud comprising perforations, the outer shroud comprising a first longitudinal end and a second longitudinal end spaced arcuately apart such that a gap is formed between the first longitudinal end of the outer shroud and the second longitudinal end of the outer shroud;

a mesh layer that restricts flow of particulate materials of a predetermined size from passing therethrough, the mesh layer coupled to and positioned radially inward from the outer shroud, the mesh layer comprising a first longitudinal end that is radially aligned with the first longitudinal end of the outer shroud and a second longitudinal end that is radially aligned with the second longitudinal end of the outer shroud; and

a cylindrical drainage layer, having a circular cross-section and circumferentially surrounding the perforated base pipe and positioned radially inward from to the mesh layer and comprising stand-offs extending radially inward towards the perforated base pipe such that the perforated base pipe is eccentrically supported within the drainage layer closer to the gap by the stand-offs;

running a communication line through the gap of the well screen; and

pumping a particulate slurry from a surface through an annulus formed between the borehole and the well screen.

20. The method of claim 19, further comprising controlling a downhole device via the communication line.