SUMMARY

According to the first aspect of the invention, there is provided a well screen, comprising: a shunt flow path; and

an erosion resistant layer between the shunt flow path and a body, the erosion resistant layer comprising a coating applied to an interior of the body, the shunt flow path, and an intersection ~~between~~ integrating the shunt flow path ~~and~~ with the body.

According to the second aspect of the invention, there is provided method of constructing a well screen, the method comprising: constructing a shunt flow path having an erosion resistant layer therein, the erosion resistant layer comprising a coating; applying the coating to an interior of a body, the shunt flow path and an intersection integrating ~~between~~ the shunt flow path ~~and~~ with the body; and positioning the shunt flow path with the well screen.

According to the third aspect of the invention, there is provided a system for use with a well, the system comprising: a well screen including a shunt flow path through which an erosive slurry flows between longitudinal sections of an annulus external to the well screen, and an internal erosion resistant layer in the shunt flow path, the erosion resistant layer comprising a coating applied to an interior of a body, the shunt flow path and an intersection integrating ~~between~~ the shunt flow path ~~and~~ with the body.

According to the fourth aspect of the invention, there is provided well screen, comprising: a shunt flow path;

a nozzle which provides fluid communication between the shunt flow path and an exterior of the well screen; and

an erosion resistant layer which lines substantially all of the shunt flow path and an interior of the nozzle,

wherein the erosion resistant layer comprises a coating applied to the interior of the nozzle, the shunt flow path and an intersection integrating ~~between~~ the shunt flow path ~~and~~ with the nozzle.

WHAT IS CLAIMED IS:

1. A well screen, comprising:

a shunt flow path; and

an erosion resistant layer between the shunt flow path and a body, the erosion resistant layer comprising a coating applied to an interior of the body, the shunt flow path, and an intersection ~~between~~ integrating the shunt flow path ~~and~~ with the body.

2. The well screen of claim 1, wherein the erosion resistant layer internally lines substantially all of the shunt flow path.

3. The well screen of claim 1, wherein the erosion resistant layer is positioned in a section of the shunt flow path having a reduced cross-sectional area.

4. The well screen of claim 1, wherein the erosion resistant layer is positioned in a section of the shunt flow path having a change in direction.

5. The well screen of claim 1, wherein the erosion resistant layer is positioned in a section of the shunt flow path comprising an intersection between shunt tubes.

6. The well screen of claim 1, wherein the shunt flow path provides fluid communication between opposite ends of the well screen.

13. A method of constructing a well screen, the method comprising:

constructing a shunt flow path having an erosion resistant layer therein, the erosion resistant layer comprising a coating;

applying the coating to an interior of a body, the shunt flow path and an intersection ~~between~~ integrating the shunt flow path ~~and~~ with the body; and

positioning the shunt flow path with the well screen.

14. The method of claim 13, wherein the constructing further comprises positioning the erosion resistant layer between the shunt flow path and the body, the erosion resistant layer having a greater erosion resistance as compared to the body.

15. The method of claim 14, wherein a steel body surrounds the shunt flow path, the steel body having the erosion resistant layer therein, whereby the erosion resistant layer protects the steel body from the erosive slurry.

16. The method of claim 13, wherein the constructing further comprises the erosion resistant layer internally lining substantially all of the shunt flow path.

17. The method of claim 13, wherein the constructing further comprises positioning the erosion resistant layer in a section of the shunt flow path having a reduced cross-sectional area.

24. A system for use with a well, the system comprising:

a well screen including a shunt flow path through which an erosive slurry flows between longitudinal sections of an annulus external to the well screen, and an internal erosion resistant layer in the shunt flow path, the erosion resistant layer comprising a coating applied to an interior of a body, the shunt flow path and an intersection ~~between~~ integrating the shunt flow path ~~and~~ with the body.

25. The system of claim 24, wherein the erosion resistant layer is positioned between the shunt flow path and the body, the erosion resistant layer having a greater erosion resistance as compared to the body.

26. The system of claim 25, wherein the body comprises a steel material.

27. The system of claim 24, wherein the erosion resistant layer internally lines substantially all of the shunt flow path.

28. The system of claim 24, wherein the erosion resistant layer is positioned in a section of the shunt flow path having a reduced cross-sectional area.

29. The system of claim 24, wherein the erosion resistant layer is positioned in a section of the shunt flow path having a change in direction.

33. A well screen, comprising:

a shunt flow path;

a nozzle which provides fluid communication between the shunt flow path and an exterior of the well screen; and

an erosion resistant layer which lines substantially all of the shunt flow path and an interior of the nozzle,

wherein the erosion resistant layer comprises a coating applied to the interior of the nozzle, the shunt flow path and an intersection ~~between~~ integrating the shunt flow path ~~and~~ with the nozzle.

34. The well screen of claim 33, wherein the shunt flow path provides fluid communication between opposite ends of the well screen.

35. The well screen of claim 33, wherein the nozzle comprises a steel body having the erosion resistant layer therein, whereby the erosion resistant layer protects the steel body from an erosive slurry.

36. The well screen of claim 33, wherein the erosion resistant layer comprises a tungsten carbide material.