CLAIMS

What is claimed is:

1. A method for producing a subterranean formation, the method comprising:

introducing a reactive material into a wellbore penetrating the subterranean formation, wherein the reactive material further comprises an at least one dopant selected from the group consisting of nickel, iron, copper, carbon, titanium, cobalt, iridium, gold, palladium, gallium, and any combination thereof;

hydrolyzing the reactive material with an aqueous-based wellbore fluid to produce hydrogen gas;

adjusting a pH of the aqueous-based wellbore fluid to alter a rate of the hydrolyzing the reactive material;

reducing a bulk density of the aqueous based wellbore fluid; and

producing the wellbore.

2. The method of claim 1, wherein reducing the bulk density further comprises allowing the hydrogen gas to expand as the hydrogen gas flows through the aqueous based wellbore fluid towards a surface of the wellbore.

3. The method of claim 1, wherein the bulk density of the aqueous based wellbore fluid is reduced ~~to~~ by at least 0.1 pound per gallon (12 g/l).

4. The method of claim 1, wherein the reactive material is a dissolvable metal selected from the group consisting of metal, metal alloy, and any combination thereof.

5. The method of claim 4, wherein the dissolvable metal comprises at least one material selected from the group consisting of calcium, magnesium, aluminum, barium, strontium, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, yttrium, zirconium, niobium, molybdenum, rhodium, palladium, silver, cadmium, hafnium, tantalum, tungsten, rhenium, osmium, iridium, platinum, gold, and any combination thereof.

~~6. The method of claim 1, wherein the reactive material further comprises an at least one dopant selected from the group consisting of nickel, iron, copper, carbon, titanium, cobalt, iridium, gold, palladium, gallium, magnesium, and any combination thereof.~~

~~7~~6. The method of claim 1, wherein the reactive material further comprises a coating selected from the group consisting of a metal coating, a polymeric coating, a ceramic coating, an organic coating, and any combination thereof.

~~8~~7. The method of claim ~~7~~6, wherein the coating is selected to delay hydrolysis for a time period of ~~about~~ 1 hour to ~~about~~ 36 hours after entering the wellbore.

~~9~~8. The method of claim 1, wherein the hydrogen gas is continuously produced for ~~about~~ 15 minutes to ~~about~~ 2 days after the reactive material begins to hydrolyze.

~~10~~9. The method of claim 1, wherein the reactive material has a shape selected from at least one of a ball, a rod, a tube, and any combinations thereof.

~~11~~10. The method of claim 1, wherein the reactive material has a ~~volume to~~ surface area to volume ratio greater than ~~about~~ 7 $inch^{-1}$ to ~~about~~ 1000 $inch^{-1}$ (17.8 cm^{-1} to 2540 cm^{-1}) before hydrolysis begins.

~~12~~11. The method of claim ~~11~~10, wherein a rate of hydrolysis is proportional to a surface area of the reactive material, wherein total dissolution of the reactive material ~~hydrolyzes at a rate of~~occurs in a time of ~~about~~ 15 minutes to ~~about~~ 15 days.

~~13~~12. The method of claim 1, wherein the method further comprises:

allowing the reactive material to hydrolyze, wherein hydrolysis of the reactive material produces a powder residue within the wellbore; and

producing the powder residue in the wellbore to a surface of the wellbore.

~~14~~13. The method of claim 1, wherein the reactive material is a non-sealing structure.

~~15~~14. A system for producing a wellbore, the system comprising:

an oilfield tubular disposed in a producing wellbore;

a fluid column comprising an aqueous based wellbore fluid within the oilfield tubular, wherein the fluid column comprises a hydrostatic head greater than a pore pressure of the wellbore; wherein a pH of the aqueous-based wellbore fluid is configured be adjusted, and

a solid reactive material capable of chemically reacting with the aqueous-based wellbore fluid thereby reducing the hydrostatic head; wherein the adjustment of the pH of the aqueous based wellbore fluid results in the altering of a rate of the chemical reaction of the aqueous based wellbore fluid with the solid reactive material, wherein the reactive material further comprises an at least one dopant selected from the group consisting of nickel, iron, copper, carbon, titanium, cobalt, iridium, gold, palladium, gallium, and any combination thereof.

~~16. The system of claim 15, wherein the reactive material comprises an at least one metal selected from the group consisting of calcium, magnesium, aluminum, barium, manganese, iron, nickel, copper, zinc, and any combinations thereof, and any combination thereof.~~

~~17~~15. The system of claim ~~15~~14, wherein the reactive material hydrolyzes to produce hydrogen gas, wherein the hydrogen gas reduces the bulk density of the aqueous based wellbore fluid as it flows towards a surface of the wellbore.

~~18~~16. The system of claim ~~15~~14, wherein the reactive material further comprises an at least one dopant selected from the group consisting of nickel, iron, copper, carbon, titanium, cobalt, iridium, gold, palladium, gallium, magnesium, and any combination thereof.

~~19~~17. The system of claim ~~15~~14, wherein the reactive material further comprises a coating selected from the group consisting of a metal coating, a ceramic coating, a polymer coating, an organic coating, and any combinations thereof.

~~20~~18. The system of claim ~~15~~14, wherein the reactive material has a ~~volume to~~ surface area to volume ratio of ~~about~~ 1 $inch^{-1}$ to ~~about~~ 1000 $inch^{-1}$ (2.5 cm^{-1} to 2540 cm^{-1}) before hydrolysis begins.