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Gas, Liquids Separator

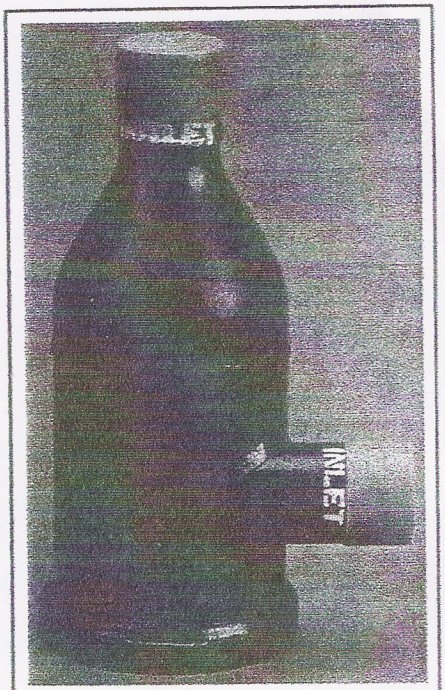
Borrowing decade-old technology from the mining industry, Vortex Flow, L.L.C., acquired the rights and created a tool that separates gas and liquids into a two-phase flow pattern. The liquids flow in a spiral along the outer wall of the pipe and the gas flows down the center. The vortex pattern prevents liquids from dropping out of the flow, and permits efficient movement over long distances and substantial changes in elevation and direction. The device can be used in pipelines, flow lines, or gathering lines.

Vortex Flow Chief Executive Officer Brad Fehn says the tool enhances well production three ways.

"High rates of gas and liquid flow from a well, say 750 Mcf/d through a two-inch line, results in a high amount of friction in the line," he relates. "Our tool organizes the flow that reduces that friction. With a multiphase flow, you frequently also find high turbulence, which can result in a pressure drop. By organizing the flow, the tool can reduce pressure drop by as much as 50 percent. Most importantly, our tool can move stagnant liquids along through a flow or gathering line, which yields a significant reduction in wellhead pressure."

Tests show the tools, which come in 2-, 3-, 4-, 6-, 8-, 10-, and 12-inch sizes, can improve gas production by 25 percent and oil production by as much as 50 percent. Fehn points out that if a gas well's output can be increased by just 25 Mcf/d, at $2 an Mcf, a $3,000 tool will pay for itself in just 60 days, not counting additional savings from reduced maintenance costs.

In a test in the Appalachian Basin, workers installed the tools at or near the wellheads of five plunger lift gas wells. Eight weeks after installation, the tools had reduced gathering line pressure by 10-25 percent, according to Fehn. The five wells were expected to produce 150 Mcf/d, and actually produced 230 Mcf/d, or 53 percent above expectations.



Vortex Flow LLC's VX™ tools are designed to extend the commercial lifespan of oil and gas wells by separating gas and liquids into a two-phase flow pattern to lower operating wellhead pressures, increase efficiencies, create production consistency and eliminate production problems caused by line freezing.

Additional benefits provided by the tool include fewer flowline freezes, increased plunger lift cycle frequency, enhanced ability to produce into higher line pressure, reduced need for pigging, and fewer gas plugs in water lines, according to Fehn. More than 100 installations have been made in seven states.