

Diffusers with Erosion Buster® Design Nearly Doubles Tiger Shark® Pump Run Life

SIDE-BY-SIDE COMPARISON WITH STANDARD PUMP DIFFUSERS

ALASKA

CHALLENGES

- » Diffuser and pump housing erosion due to scaling and high flow rate
- » Diffuser wear due to abrasive downhole particles

SOLUTIONS

- » Erosion Buster® design in Tiger Shark pump stages, which redirects fluid path inward and into the primary flow path, decreasing wear on critical areas
- » Heavier wall construction in the Erosion Buster extends durability in abrasive conditions

RESULTS

- » Nearly 100% increase in run life
- » Reduced diffuser abrasion and minor diffuser erosion
- » No pump housing erosion

OVERVIEW

In a well operated in Alaska, pump stages using standard diffusers showed significant housing erosion when the electric submersible pump (ESP) system was pulled. The erosion was caused by abrasives, made worse by high flow rate, making the pump run life average about one year in these conditions.

SOLUTION

Diffusers with the Erosion Buster® design were added to critical stages of the Tiger Shark® pump to deliver extended run life. After a year of service the pump was pulled. Upon examination, Summit ESP found that where the diffusers with the Erosion Buster design was in place, the pump housing was intact and there was only minor erosion in the diffusers. In the standard diffusers, abrasives had eroded through the housing in three locations.

In contrast to the standard ESP diffuser design, the unique Erosion Buster design redirects fluid path inward and into the primary flow path, decreasing wear on critical areas. In addition, the diffuser includes a heavier wall construction, increasing durability and run life. The Erosion Buster technology has emerged as the industry leader, further extending run life in abrasive applications, and making the run life for this new configuration nearly double.



Left » Erosion was significant in standard style diffusers.



Right » Diffuser with Erosion Buster® design shown fully intact.

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