

HydroFORM Liner: A Reliable Fix for Damaged Screens

The Problem:

A high-capacity 16in diameter water well relief screen was damaged during initial installation when a drilling contractor used the rig's Kelly drive to install a cone reducer. This caused the J-Latch to disengage, resulting in over-torquing of the riser and twisting of the pressure-relief screen. Though still operational, the screen's structural integrity was compromised, making it unsuitable for long-term use. The damage occurred at a depth of 620 feet, with a static water level approximately 240 feet below ground.

Our Solutions:

To resolve the issue, a 20-foot custom bridge liner was installed to replace the damaged section. Key aspects of the solution included:

- **HydroFORM Liner Design:** Constructed using food-grade neoprene vulcanized to Sch10 12" stainless steel pipe and welded to the relief screen. The patch was positioned just below the compromised J-Latch to ensure proper coverage of the twisted screen.
- **Pack Installation Tool:** An IPI 9.75-inch Swage Packer, equipped with a 30mm Auto Dump Valve (ADV), was used to accommodate the well's static water level.
- **In-House Preparation:**
 - A 12.75-inch calibration blank was prepared to obtain expected values for installation. The actual installation values were later confirmed to match the calibration valves with ~30 litres per inflation at a setting pressure of 2,300 psi for a full expansion diameter of 15.25 inches.
 - The HydroFORM Liner was shortened from 72 inches to 70.5 inches after swaging.

The Results:

The job was completed successfully, with the packer in near-perfect condition after seven total inflations. Key outcomes included:

- **Efficiency:** Inflation times ranged from 30-40 minutes, with deflation times efficiently reduced to 7-10 minutes with the help of the ADV.
- **Precision:** The Televiwer log indicated the patch's setting depth was within ½ inch of the target, ensuring accurate placement.
- **Avoiding Risks:** The packer was never set in the compromised J-Latch, preventing additional complications.

The repair restored the well's structural integrity and functionality, providing a reliable, long-term solution with minimal downtime.



Region: North America
Customer: Water Systems Contractor
Well Type: High-Capacity Water Well

Production Casing

J-Latch

IPI Swage Packer

Twisted Well Screen

Screen Patch

Casing

