

Boosting Equipment Longevity and Reducing Costs in Harsh Bakken Conditions

Client: Major Oilfield Service Company, Bakken Basin

Product Used: Allied Chemicals Corrosion Inhibitor (ADBAC80-based with antifreeze additives)

Location: North Dakota (Bakken Formation)

Application: Oilwell Completion Equipment Servicing

Background

A leading oilfield service provider operating in the Bakken Basin faced ongoing challenges with equipment degradation caused by harsh environmental conditions — particularly corrosion due to brine exposure, temperature extremes, and hydrogen-induced stress cracking. These conditions led to increased maintenance time, premature equipment failure, and higher replacement costs, especially during the winter freeze-thaw cycles and summer heat.

The Challenge

- Frequent equipment damage during disassembly due to corrosion
- Degradation of seal surfaces
- High spare parts replacement costs
- Increased equipment downtime during servicing
- Reduced operational efficiency during pressure testing and deployment

The Solution

The service company partnered with **Allied S&C** to apply a custom-formulated **corrosion inhibitor (CI)** containing **ADBAC80** and **antifreeze additives**. This inhibitor was specially designed to function effectively across North Dakota's broad temperature range and aggressive brine conditions.



Step-by-Step Implementation:

- 1. Pre-application Buffing:**
All equipment was thoroughly buffed to remove existing rust and surface corrosion.
- 2. External Spray Coating:**
Allied's CI was sprayed on the external surfaces of completion tools, creating an immediate protective layer.
- 3. Internal Coating via Proportional Injection:**
A proportioning system was installed to inject the CI at **20% concentration** during **hydrostatic pressure testing**. This ensured internal tool surfaces were coated evenly.
- 4. Gradual Protective Film Formation:**
Over time, a thin, stable film formed on both the **interior and exterior** of the tools, significantly slowing corrosion — particularly hydrogen stress cracking and damage from brine exposure.

Results & Benefits

✓ **Reduced Corrosion-Related Failures:**

The inhibitor prevented corrosive damage that previously caused tools to seize or degrade during disassembly.

✓ **Extended Equipment Life:**

Critical components, especially **seal surfaces**, retained integrity longer.

✓ **Simplified Servicing:**

Tools could be disassembled more easily, minimizing the risk of damage from rough handling.

✓ **Lower Replacement Costs:**

Spare parts demand dropped sharply due to decreased wear and tear.

✓ **Improved Operational Uptime:**

With less equipment being cycled out for repair or replacement, **downtime was reduced** significantly.

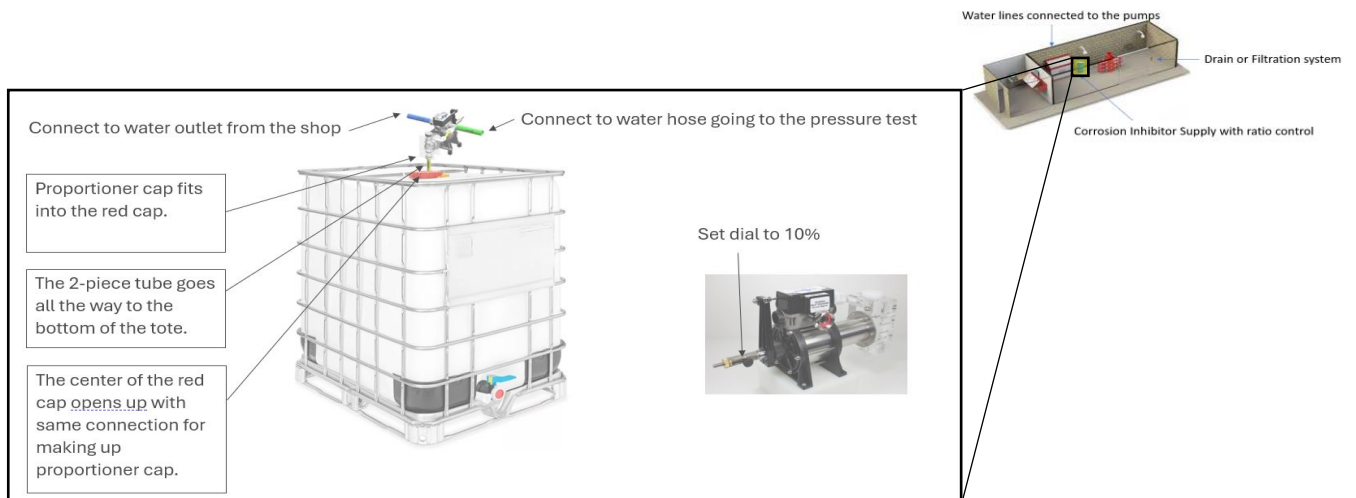
Financial Impact

- **Over \$275,000 in savings** from reduced spare part replacements and less downtime
- Maintenance intervals extended by **30–40%**, improving resource allocation
- Rapid ROI on corrosion inhibitor investment within **6 months**

Conclusion

By integrating Allied Chemicals' ADBAC80-based corrosion inhibitor into their service protocols, the company not only protected its high-value completion tools but also improved servicing efficiency and cost control. This case highlights how targeted chemical treatments, even when simple, can yield **significant operational and financial gains** in demanding oilfield environments.

Installation process



- No need for electrical or pneumatic power.
- Operates entirely without external hookups.

Designed and manufactured in the USA adhering to the highest industry standards.

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