Reference Project Report: Dual Shear Gun Operations for Client LMP in Angola

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Performance Review and Operational Feedback for Commercial Drilling Fluid Shearing Assignment

Introduction

This reference report provides a comprehensive review of the Dual Shear Gun deployment for Client in Angola, executed under a two-year commercial lease agreement. The assignment focused on cutting and mixing drilling fluid to optimize rheological properties, utilizing partially reconditioned mud. The following document presents operational feedback after few months of continuous field use, with details tailored for oilfield clients and engineering teams.

Project Overview

Client, a leading oilfield services provider, engaged our company to supply the Dual Shear Gun for enhanced drilling fluid management. The scope of the contract included equipment lease, technical support, and ongoing performance monitoring over a two-year period.

Operational Summary

The Dual Shear Gun was mobilized to LMP in Angola, where it was initially tasked with processing partially reconditioned drilling mud. Operations commenced in early Q2 2025, with the equipment subjected to various field conditions and mud types representative of regional drilling programs.

- Equipment Deployed: Dual Shear Gun
- Contract Duration: Two years (2025-2027)
- Mud Type: Partially reconditioned drilling fluid
- Operational Period Covered: Several months (ongoing)

Performance Data

Parameter	Value
Total Volume Sheared	15,000 bbls (as per October 2025)
Nozzle Size	12 in
Pressure Range	600–1100 psi
Flow Rate	4–7 bpm

Shearing Results

Operational runs typically involved 2–3 passes through the Dual Shear Gun. Post-shearing analysis revealed significant improvements in fluid rheological properties:

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- Low Shear Viscosity: Increased by 50–70% following 2–3 passes
- Emulsion Stability (ES): Increased from 13% to 20%

These enhancements contributed to improved suspension of solids and greater stability under downhole conditions, directly supporting drilling efficiency and wellbore integrity.

Wear and Maintenance Observations

Wear observations are currently pending further input from the field operations team since the total volume sheard is too little to visual see wear. Initial inspections have not indicated abnormal wear or unexpected maintenance requirements. Ongoing monitoring will continue to assess component longevity and maintenance intervals, with a full report to be provided upon completion of the first operational cycle.

Fluid Condition Comparison

Pre-shearing drilling fluid samples exhibited lower viscosity and emulsion stability, which limited solids suspension and increased the risk of barite sag. After shearing, the fluid demonstrated a marked improvement in desired rheological properties, as evidenced by a higher low shear viscosity and elevated ES values. Pressure differential across the tool remained within the anticipated range, confirming the equipment's ability to process mud efficiently without excessive energy consumption.

Overall Performance Feedback

Field viscosity readings were consistently aligned with laboratory measurements, confirming the reliability of the Dual Shear Gun in real-world applications. Client reported high levels of satisfaction with the equipment's performance, citing improved mud properties and operational efficiency. The deployment has met all contractual performance benchmarks to date, with no deviations observed.

Conclusion

The Dual Shear Gun has delivered robust and repeatable results for Clients`s drilling fluid shearing requirements. Key takeaways include significant improvements in mud viscosity and emulsion stability, efficient processing of reconditioned fluids, and operational reliability validated by both field and laboratory data. Pending wear observations will further inform maintenance planning and future deployments. Based on current performance, we anticipate continued positive outcomes and recommend the Dual Shear Gun for similar fluid conditioning assignments.

Attachments: See Article; Sag, Dual Shear Gun