

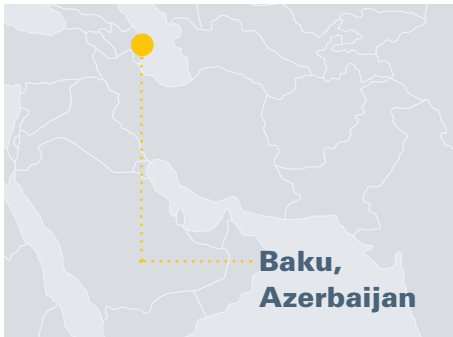
# Main Oil Line (MOL) Booster Pump Repairs to Enhance Safety and Productivity

Repair protocol delivers innovative solution aligned with field change requests and safety mandates

**SPM™ Oil & Gas**  
A Caterpillar Company

## Case Study

SPM Oil & Gas' Center of Manufacturing and Engineering Excellence in Baku enables oil and gas companies to reduce total cost of ownership (TCO) and nonproductive time (NPT) by providing superior engineering expertise to identify and repair damaged equipment quickly with quality materials, backed by a warranty.



### FUN FACTS



**Eliminated**  
new equipment cost



**21-Day**  
turnaround



In-Country  
**Commitment**

### HIGHLIGHTS:

- Repaired multiple points of failure in MOL Booster pump
- Restored equipment to OEM specifications
- Returned pump to service in approximately 21 days

### THE CHALLENGE

Main Oil Line (MOL) pumps are backed by a centrifugal MOL Booster pump to provide a safe Net Positive Suction Head (NPSH) margin and pump raw materials. Each pump has its own recycle line to ensure the pumps always operate at a safe minimum flow. An exploration and production (E&P) company's MOL Booster pump operating in an offshore oil and gas field in Azerbaijan demonstrated significant leaking and loss of performance. As losing the MOL Booster pump impacted the company's ability to transport crude oil to Sangachal terminal, the E&P sought to refurbish and return it to service quickly.

### THE APPROACH

The E&P approached SPM Oil & Gas' Center of Manufacturing and Engineering Excellence in Baku for a solution. SPM Oil & Gas' skilled technicians and engineers dismantled the MOL Booster pump and performed a detailed inspection, which revealed multiple points of failure. The lower bearing was in very poor condition and the lower bearing flush line reverse osmosis joint was perforated. Additionally, impeller and casing wear rings exhibited erosion; an assembly fixture was missing; thrust bearings were burned and the thrust bearing sleeve exhibited metal contaminants; the shaft thread was damaged; and the 'v' seal headland displayed signs of failure.

SPM Oil & Gas technicians restored the MOL Booster pump by replacing all damaged parts including mechanical seals, thrust bearings, impeller and casing rings, lower bearing, gaskets, and O-rings. Technicians also machined the flange surfaces to  $\frac{3}{4}$ " and balanced the rotors.

Finally, pump pressure and leak tests were performed to confirm the repair.

### THE RESULTS

The pump shaft could be easily rotated by hand and the MOL Booster pump exhibited zero leaks or loss of pressure.

The pump was returned to service in approximately 21 days, minimizing the operator's downtime and need to purchase new equipment.

### THE SOLUTION

SPM Oil & Gas' state-of-the-art Center of Manufacturing and Engineering Excellence in Baku and in-country engineering expertise assure best-in-class quality, delivery, and responsiveness for oil and gas companies across the Eastern Hemisphere. SPM Oil & Gas can solve engineering challenges and improve efficiencies with a global product offering and localized service capabilities that meet the needs of each operating environment. It's strategically located Centers of Excellence, engineering and technical proficiency and locally manufactured parts enable SPM Oil & Gas to reduce turnaround times by more than 50% compared to returning equipment to OEMs.

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