Case History

Drilling Optimization

Active Performance Benchmarking with Halliburton’s MaxActivity™ Analysis Tool Facilitates Step-Change Performance for Operator and Saves $20 Million
Location: UK Region

OPERATOR’S CHALLENGE – The operator needed to improve well delivery and achieve top quartile (TQ) performance by identifying gaps and driving opportunities. This would require targeting invisible lost time (ILT) to improve performance through active benchmarking against fleet-wide key performance indicators (KPIs). The solution would need to provide data quickly and reliably to facilitate real-time performance discussions and increase sharing of best practices and lessons learned across the assets.

HALLIBURTON’S SOLUTION – Working within a collaborative real-time environment in the client’s offices, Halliburton recommended the ADT® Applied Drilling Technology drilling optimization service using MaxActivity™ software. The service was deployed to rapidly analyze real-time data in the InSite® database with a full breakdown of key rig activities. Actual performance could then be benchmarked against set KPIs to establish performance gaps, which could then effectively be acted upon as operations progressed. The automated process would not only deliver timely results, but would enable performance to be easily tracked across wells/drilling units to quickly identify improvement trends.

The first step towards benchmarking comparisons was to assist the client in setting regional performance KPIs by the analysis of historical wells in the region. Once these had been agreed upon, performance gaps could be quickly identified and shared between assets.

The real-time data consolidated in the InSite database from multiple vendor sources was identified as the most reliable and consistent source of data for performance analysis, since it is immediately available for analysis through the MaxActivity software. The software identified activity events and provided a full-time breakdown including repeatable operations such as casing/drillpipe/BHA running, connection times and percentage of drilling/circulating hours.

MaxActivity software analyzed the real-time operations and generated reports on a daily basis to facilitate active performance discussions within the teams as operations progressed, enabling performance gaps and lessons learned to be identified and acted upon quickly. Identifiable non-productive time (NPT) or unavoidable events were excluded from the statistics to ensure data was not skewed and focus was maintained on work practices and consistency. Performance was compared against both pre-established KPIs and the statistical median or first quartile to establish potential savings opportunities and was tracked across not only drilling units, but wells, shifts/crews and other regions to quickly identify improvement trends.

A detailed breakdown of connections was provided to enable teams to exactly identify which steps in a procedure needed focus, with information extracted from the daily drilling reports also added to daily reporting to ensure known issues were not pursued unnecessarily.

Monthly fleet comparisons and quarterly reports were also generated for the customer, enabling teams and management to identify performance opportunities and pursue best practice share. The results provided a tangible link between best practice
and dollar savings, highlighting the added value of the MaxActivity service in real terms.

For example, data on ILT provided by MaxActivity software helped identified performance discrepancies in the drilling connection timings between crews on one of the supported jack-ups in the fleet. The MaxActivity software daily reporting facilitated an active performance discussion with the rig teams which revealed that the crews had an unbalanced experience weighting with the drillers and assistant drillers. Once the experience levels were balanced, overall performance increased and the connection timings between crews became consistent. This saved the customer time and cost in the operation as well as identifying a potential safety issue with crew experience levels.

**ECONOMIC VALUE CREATED** – Utilization of Halliburton’s MaxActivity software not only provided vital statistics to the teams in a quick and effective way, but also served as part of a process involving the active participation of management, asset teams and rig crews to actively pursue performance improvement through best practice share and mentoring.

Improvements implemented included experience discrepancies amongst crews, and consistency issues in key activities that focused the teams on previously unidentified opportunities, allowing them to close the gap and hit TQ performance targets. As a result, over the course of a 12 month period, fleet-wide performance in the region measured against overall weighted KPIs had improved by seven percent, equating to $20 million in savings to the client.