

Lift IQ Service and ESPs Deliver Production Increment of USD 74,800 Per Year for HydroCarbon Finder E&P

Surveillance and remote optimization of Maximus ESP systems with Continuum stages improve uptime, run life, oil production, and reservoir knowledge, Oman

CHALLENGE

Increase production from newly acquired wells by reducing ESP downtime and improving reservoir knowledge.

SOLUTION

- Install REDA Maximus* electrical submersible pump systems with REDA Continuum* unconventional extended-life ESP stages, Phoenix xt150* high-temperature ESP monitoring systems, and SCB3 satellite communication systems on each well.
- Monitor wells with Lift IQ* production life cycle management service, controlling ESPs remotely to resolve problems and better match reservoir conditions.

RESULTS

- Reduced average production downtime related to ESP performance from 24 to 2 hours.
- Eliminated approximately 30% of ESP shutdowns.
- Delivered an oil increment valued at USD 74,800 per well per year.
- Reduced HSE risks by replacing wellsite visits with remote operations.
- Improved knowledge of each well's production and problems, enabling further optimization.



ESP shutdowns and days of lost production

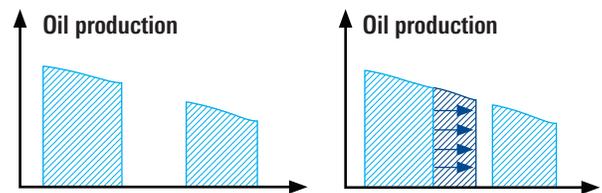
HydroCarbon Finder E&P recently acquired the Sahmah field in Oman with six operationally challenging ESP-lifted wells. The remote wells had no remote monitoring equipment, so monitoring well production and performance required site visits. Additionally, the only way to detect ESP shutdowns was to monitor overall production of the field through the production separator and then visit each well to find the one that was offline. This resulted in significant operational downtime—24 to 48 hours of lost production—for each major ESP event.

The other challenge was the limited amount of information available to the operator's reservoir and production engineers about each well and producing formation. This created considerable uncertainty when trying to optimize production and ESP run life, which led to excessive opex for the field.

Engineered ESP systems with remote monitoring and control

To address these challenges, Schlumberger designed Maximus ESP systems with Continuum stages to extend the operating envelope and improve performance in the unknown reservoir conditions. Wells were also equipped with Phoenix xt150 systems and satellite-based communication technology to ensure high-quality data acquisition and transmission for each well.

Installing this state-of-the-art equipment also enabled HydroCarbon Finder E&P to use the Lift IQ service to monitor and remotely control the ESPs. The Lift IQ service taps into Schlumberger and surveillance expertise with 24/7/365 access to the global network of Artificial Lift Service Centers (ALSCs).



Support Level	Without Real-Time Services	With Real-Time Services
Downtime per shutdown, h	24	2
Deferred production, bbl	120	10
Deferred revenue per shutdown at USD 55/bbl, USD	6,600	550
Average trips or shutdowns per year	12	8 [†]
Deferred revenue per year, USD	79,200	4,400

[†]Assuming a 30% reduction in number of shutdowns

HydroCarbon Finder E&P added an oil increment valued at USD 74,800 per well per year by adding remote monitoring and control equipment and using the Lift IQ service.

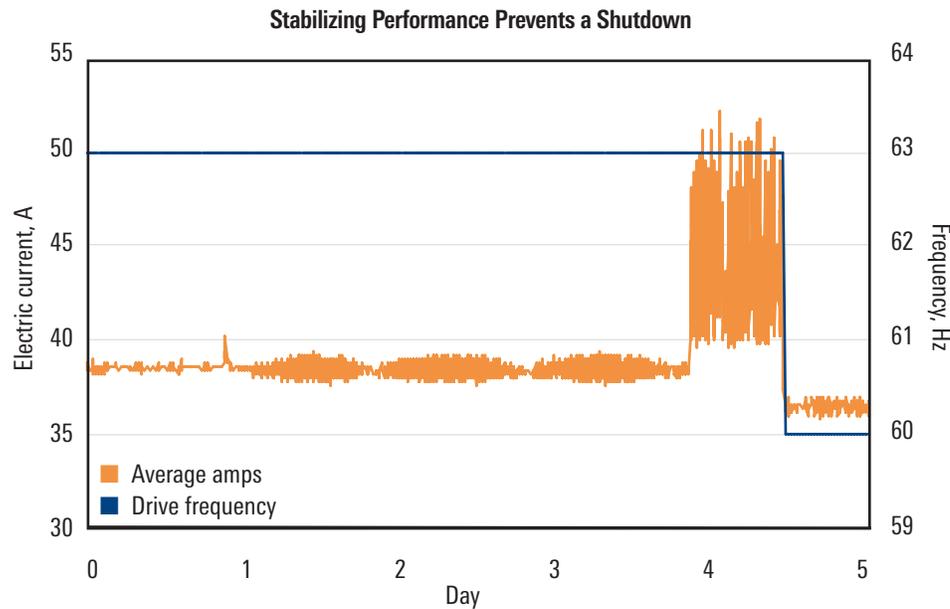
Consistent production, incremental revenue, and more reservoir knowledge

With ESP alarms and other data transmitted in real time from each wellsite to the ALSC, surveillance engineers could detect ESP events instantly. This reduced downtime and prevented approximately 30% of shutdowns with proactive, remote changes to ESP operating parameters. The overall reduction in downtime from days to hours enabled an oil production increment valued at USD 74,800 per well per year.

The remote operation also enabled HydroCarbon Finder E&P to assign its technical personnel value-added tasks instead of journeys to the field and eliminated the HSE risk associated with wellsite visits.

Additionally, the ALSC engineers began compiling a data record for each well in the field, which aids in identifying long-term production issues such as liquid loading, gas interference, and scale buildup. With more knowledge about each well's performance, HydroCarbon Finder E&P can plan appropriate remediation before problems significantly affect productivity.

The data has already helped identify production optimization measures. In one well, for example, Schlumberger recommended resizing the ESP to improve its run life by better matching unexpectedly high liquids production. In another well, the ESP data indicated that scale may be affecting performance, suggesting that the operator should review the scale inhibition program to avoid more significant production impairment.



Lift IQ service surveillance engineers recognized regular fluctuations in amperage and prevented unnecessary ESP shutdown and production deferral by remotely and proactively reducing speed to avoid slugging.