Lift IQ
Production life cycle management service
Monitoring and surveillance is proven to minimize downtime, maximize production, and reduce total operating cost. High-value offshore wells have historically been monitored; however, large brownfields are now being connected to further optimize production and enable remote operations.

The Lift IQ® production life cycle management service is the premier monitoring and surveillance platform for artificial lift systems. It provides real-time analytics and optimization with four convenient levels of coverage. From operations in a single well to an entire field, the Lift IQ service taps into the renowned engineering, manufacturing, and surveillance expertise of Schlumberger with access to service centers 24 hours a day and convenient locations across the globe.

Schlumberger is redefining artificial lift excellence with the Lift IQ production life cycle management service.

- Reduce total cost of ownership
- Mitigate risk of deferred production and workover costs
- Minimize downtime and achieve higher operational reliability
- Increase production through optimization and enhancement techniques
- Eliminate risk of early failure
- Extend ESP run life
- Optimize power consumption
- Obtain valuable well and reservoir diagnostics
Convenient Service Levels

**Level 4 — Field optimization**
Identity unapped field reserves and increase recovery

- Increase production
- Increase recovery factor

**Level 3 — Well optimization**
Select wells for optimization based on production enhancement potential

- Increase production
- Reduce cost per barrel produced

**Level 2 — Lift surveillance, analytics, and diagnostics**
Proactively manage system performance and well production

- Reduce opex and capex
- Reduce well interventions
- Minimize downtime and deferred production
- Extend asset run life
- Run life, survivability, and MTBF
- Deferred production
- Power consumption per barrel
- Field trips and miles driven
- ESP failure rate

**Level 1 — Visualization**
Use available data to make informed decisions and optimize operations

- Real-time lift status
- Lift system protection
- Uptime and downtime
- Shutdown count
- Tracking well count

**Advantages**
- Increase production
- Increase recovery factor
- Incremental production
- Production decline
- Run life, survivability, and MTBF
- Deferred production
- Power consumption per barrel
- Field trips and miles driven
- ESP failure rate

**Performance Indicators**
- Incremental production
- Well intervention candidate count
- Network analysis
- Reservoir analysis
- Nodal analysis
- Pressure transient analysis

**Deliverables**
- Surveillance
- Remote operation
- Event detection
- Diagnostics and optimization
- Production composite log
- Data visualization
- Surveillance and monitoring
- Alarms management

Make your data work for you
Experience matters

- 90 years of experience and technology leadership
- 32 countries and 187 oil companies using Lift IQ service
- Distinction in research and engineering, manufacturing, operations, application engineering, downhole inspection, failure analysis, and quality, health, safety, and environment (QHSE) reporting
- Multidisciplinary collaboration and support across Schlumberger
- Access to InTouchSupport.com* online support and knowledge management system and QHSE reporting systems, best practices, case studies, and knowledge base repository

Dedicated artificial lift surveillance engineers are based at one of many Schlumberger Artificial Lift Surveillance Centers (ALSCs), where they monitor alarms 24/7, 365 days of the year. Our engineers track ESP trips and alarms, from initial identification and diagnosis of the root cause to quick recommendations of remedial action.

The Schlumberger ALSC monitors hundreds of data signatures—conditions that cause alarms to be sent. One-third of these alarms are considered critical to preventing ESP downtime, misuse, or failure. Prevention of tripping prevents stress on equipment, thereby minimizing failures of pumps and controllers, prolonging their life, and reducing workover costs and the costs of deferred production.
Wellsite Data Infrastructure

Transmission mode

Connectivity modes including satellite, cellular, and closed SCADA system connection

Server options

Worldwide, in-country, and on-premise solutions

Artificial Lift Surveillance Centers

Dedicated engineers available 24/7 for real-time troubleshooting and analysis

Instruct® control unit

All-in-one interface design

SCB3 Site communication box

Remote commissioning and two-way communication

Wellsite

Transmission of critical well data through premium security networks to global server

Lift IQ Service Connectivity

Data transmission, storage, and processing are securely managed through the Schlumberger network to deliver effective solutions quickly and using the right data, tools, and expertise.
Data Collection and Transmission

The Instruct all-in-one acquisition and control unit and the SCB3 site communication box are two critical components required to transmit data using the Lift IQ service. With easy-to-use interfaces, the units securely store data and connect the wellsite with 24/7 real-time support and surveillance.

Instruct All-In-One Acquisition and Control Unit

The Instruct unit is designed for the Schlumberger SpeedStar® variable speed drive, SpeedStar MVD® medium-voltage variable speed drive, low-voltage variable speed drive, stand-alone downhole monitoring, and SCADA systems.

slb.com/Instruct

SCB3 Site Communication Box

The SCB3 site communication box provides remote commissioning and two-way communication via the Artificial Lift Surveillance Centers. It uses local storage to prevent data loss during network outages as well as alarm notifications and exemption reports.

The SCB3 connects to any industry standard controllers using Modbus®.

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Diagnostics and Optimization

Receive real-time ESP diagnostics and optimization using high-frequency data through Schlumberger proprietary DesignPro® ESP design software. The DesignPro software provides insight into ESP performance and enables engineers to optimize production in the most efficient manner.

**Integrated Proprietary Platform**

Lift IQ service provides access to all critical wellsite data in one software solution. No more singular programs that lack synchronized integration. Lift IQ service seamlessly merges data into one platform for quick and easy management of all monitoring and troubleshooting requirements.

- One platform with a solutions-based approach
- Monitoring and surveillance
- Well and field performance indicators
- For alarms and events management
- Online ESP diagnostics and optimization

**PCL Production Composite Log**

This service includes a lift health check, which provides power optimization, enhanced inflow, and decline curve modeling as well as pressure and rate transient analysis.

Find out more at slb.com/AL

Visualization screen after the system stabilizes under defined conditions.

Real-time flow rate and water-cut trends.
Background
With the current economic climate, the Schlumberger ASLC encouraged Compañía Española de Petróleos (Cepsa) to evaluate system operations to increase efficiency. The installed ESPs were designed based on predicted reservoir and production conditions. However, at the current stage of production, the ESPs were encountered 90% water cut with motor load of less than 45%, which made them inefficient and were encountering frequent ESP stops, short operating cycles, excessive motor heating, and increased downtime and production deferment.

Technologies
- Lift IQ production life cycle management service
- DesignPro* artificial lift design and optimization software
- PIPESIM* steady-state multiphase flow simulator
- Avocet* production operations software platform

Using Lift IQ service, Schlumberger monitored the ESP operational data for the Caracara Sur field, evaluated the statistical information, and also reviewed production trends, surface and downhole variables, well intervention history, failure cause, and total electric cost and consumption.

Based on this evaluation, Schlumberger used DesignPro software and PIPESIM simulator to optimize electric cost for the ESPs, reducing electric costs by 10% per month across three wells—an approximate savings of USD 79,000 per year. Once introduced to the remaining wells, total savings are expected to reach USD 480,000.

Electric Cost Optimization for ESP Saves Estimated USD 480,000 for Cepsa

Lift IQ service obtains real-time data to enable 16% reduction in electric costs during field test.

Using Lift IQ service, Schlumberger deployed Lift IQ service to provide real-time control and acquire data, which was analyzed using DesignPro software, PIPESIM simulator, and Avocet platform. Based on this analysis, the team made ESP trip and set point adjustments, improved cyclic-mode periods, and implemented motor amps and load-feedback modes to address the issues encountered. As a result, the operator was able to eliminate ESP stops and enhance ESP operation based on improved motor feedback as conditions changed.
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Monitoring
Surveillance
Diagnostics
Optimization
Analytics