sensia
Rockwell Automation + Schlumberger

+ CASE STUDY

+ Ecuadorian pilot of environmentally friendly gas handling skid immediately improves output

Project Luna proved to have an instant impact – with the gas handling skid successfully controlling the pressure on the annulus to a setpoint that maximizes the well's output over time.

CHALLENGE
Alleviate the disruptive accumulation of natural gas produced by client's electric submersible pump wells (ESP).

SOLUTION
Pilot an innovative new environmentally friendly gas handling skid to control the pressure on the annulus.

RESULTS
+ Well production initially increased by 20+%
+ Latest well production increase around 14%
+ Field intervention reduced by 98%
+ Manual valve manipulation reduced by 95%
+ 12 additional skids ordered after successful pilot

REGION

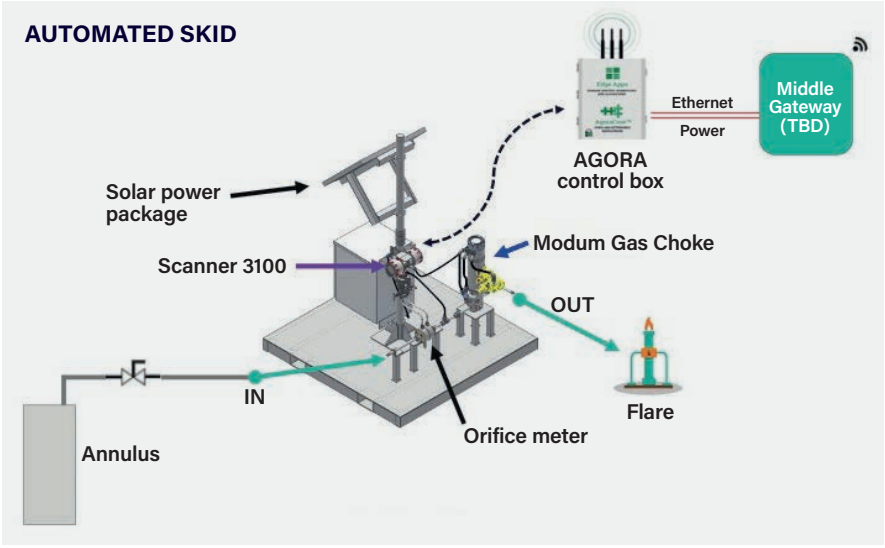

ECUADORIAN OPERATOR REQUIRED HELP OVERCOMING GAS LOCK

The excess natural gas produced by some electric submersible pump wells (ESP) can have serious operational implications. As the gas slowly accumulates, it can affect the pump liquid level until it is pushed downhole. This 'gas lock' can be hugely detrimental to the operation and performance of the ESP unless the natural gas pressure can be quickly and effectively alleviated.

For an Ecuadorian operator, this challenge was becoming regularly problematic. Field interventions – particularly manual valve manipulation – seemed to be the only way forward. An expensive and inefficient solution. Until Project Luna, a collaboration between experts at Sensia and parent company Schlumberger, offered a smarter option. It was time to take Intelligent Action.

OPTIMIZING ESP PERFORMANCE WITH AUTOMATED GAS LOCK PREVENTION

Project Luna united domain expertise from across Sensia and Schlumberger to deliver an innovative modular, self-contained, process skid that was just as seamless to transport and integrate as it was to operate. By automatically assessing and adjusting the annular gas pressure in real-time, our gas handling skid manages the well liquid level to prevent gas lock conditions. Before they happen. Optimizing ESP performance and improving oil production while almost eliminating the need for manual interventions.

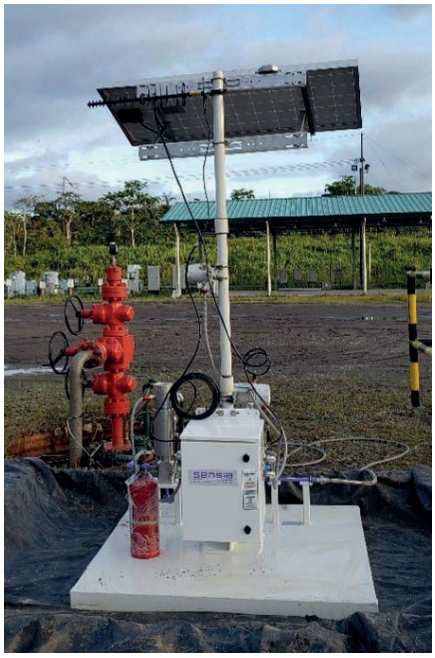


Well production increase of

14%

Field intervention reduced by

98%



A TRIUMPH IN TECHNOLOGY AND COLLABORATION – PROVEN IN THE FIELD

Our combined project team worked closely with the operator to develop an automated skid that could be deployed in the field as proof-of-concept. The skid brought together best-in class technology from both sides – with a Scanner 3100 flow computer, small-bore orifice meter and integral PID control from Sensia used to measure flow and adjust Modum Gas choke to manage the pressure.

By automating the control of the annulus pressure, the field trial proved an instant success. Optimizing production while also eliminating the need for a field technician to install and configure a manual valve to the correct set-point. A task that would routinely take hours, if not days.

Following this successful deployment, the operator has already ordered 12 additional skids utilizing the field-proven concept design.