

## Expro Excellence

# Expro provides high rate well testing operation in high gas production field

## Well Testing



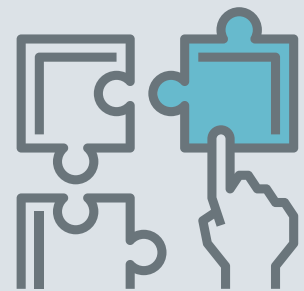
### Objectives and background

- A major operator approached Expro for a pre tender technical discussion on a high rate well testing operation in a high gas production field – Suban block in South Sumatra, Indonesia
- The Suban block is a high rate gas field with a number of high temperature wells
- Expro was initially contacted due to our track record and reputation in working in high rate well test projects from our previous experience in a project during 2008 where we successfully flowed 100 mmscfd gas in one of the world's most remote areas
- The customer considered this high rate project as one of their strategic projects to be executed to fulfil their commitment with their overseas buyer. The well test results from Suban 16 & 18 gave them key information to evaluate the reservoir performance on the whole Suban block. Due to the complexity of this project, the customer started discussions with Expro, two years in advance of the project being executed
- The main challenges of this project were:
  - High flow rate of gas (expected to be capable of flowing 150 mmscfd)
  - Potential solids production (sand), and as result the testing package needed to be equipped with solids removal equipment (sand filter or hydro cyclone)
  - Consideration of high temperature wells in excess of 300°F flowing tubing head pressure
  - There was considerable low pressure of the flowing wellhead pressure (FWHP) meant that a minimum restriction was required on the system to achieve the expected gas rate
- High rate separator package (can be both vertical or combined horizontal)
- Choke manifold and shut down system
- Sufficient amount of Storage tank to collect the liquid (no liquid to be flared)
- Computerised DAQ system
- The scope of the project included the utilities package, as the job was to be conducted in a rigless mode. Expro was required to provide a proper well testing package that was capable to overcome the challenge whilst also delivering the service in a high safety standard framework
- Expro's day to day engagement with the customer, along with strong support by our technical expertise and our wealth of experience in high rate gas, provided the customer with a solution that overcame the following challenges:
  - Expro proposed the use of an "expansion loop" system which overcame the high temperature gas from the well, this method was used to accommodate possible equipment shifting or metal stress due to the temperature expansion phenomena
  - Expro also proposed three sets of high rate sand filter packages to be combined together to ensure a solid clean gas flow effluent and minimise pressure drop/flow restriction, which allowed the expected high flow of gas to be achieved
  - Expro also proposed a dual train well test package with two vertical separators to minimise the flow restriction due to the low WHHP but still capable of achieving high rates of 150 mmscfd
- Expro's Indonesian operational team and our well test group collaborated during the design stage of the project and during the execution phase, contributing to the project's success



**Well done and a safe job - 100% performance rating**

### Integrated approach



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- Expro provided a land type of well clean-up and a full spread of well testing equipment and services for Suban 16 & 18. The well testing package was initially planned to flare the gas onsite but also due to the space limitation, the flare operation, it was decided to use the Suban permanent facility gas line (the flare located +/- 5 km from the well site). As an impact of using the permanent facility, for the gas to be flared it had to be free from solid particles, and as a result the solid handling equipment was required as part of the well testing package. The well testing package needed to take the following into consideration:
  - Solid handling package on the upstream
  - High rate separator package (can be both vertical or combined horizontal)

### Value to the client

- The customer was very appreciative of Expro's capability to provide an outstanding service for high rate well testing, this is the highest flow rate achieved during well testing operations in the Suban block
- Expro delivered their services in an excellent and safe manner without any single safety issue
- Expro provided a world class high rate well testing operations and within the time frame specified by the customer

### Contact

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