

# Dual-Leg Diligens Spectra Unit Enables Successful Mobile Multiphase Testing Across 15-Well Campaign

Superior metrology and operational efficiency achieved across wells with varying flow rate conditions, Venezuela

## CHALLENGE

Achieve timely, accurate, and reliable measurements during a multiwell multiphase production testing operation.

## SOLUTION

Employ the dual-leg Diligens Spectra\* mobile multiphase production testing unit that combines two Vx Spectra\* surface multiphase flowmeters—19-mm and 40-mm venturi throat sizes—mounted on the same skid to efficiently accommodate wells with varying flow rates.

## RESULTS

- Streamlined the operator's multiphase production testing program.
- Achieved superior metrology and operational efficiency, ease of equipment relocation, and quick rigging operations.
- Delivered timely and accurate flow measurements across more than 15 wells.



## Design an efficient multiwell multiphase testing program

When operating in the oil fields of Venezuela, an operator was experiencing multiphase flow rates ranging from 500 to 8,000 bbl/d and gas flow rates ranging from 0.2 to 1 MMcf/d. With such flow rate variation, obtaining accurate multiphase well tests would require the operator to run the optimal venturi size for each well by using multiple units and configurations. This large equipment footprint would negatively impact project efficiency due to associated transportation logistics, equipment installation, and numerous calibrations.

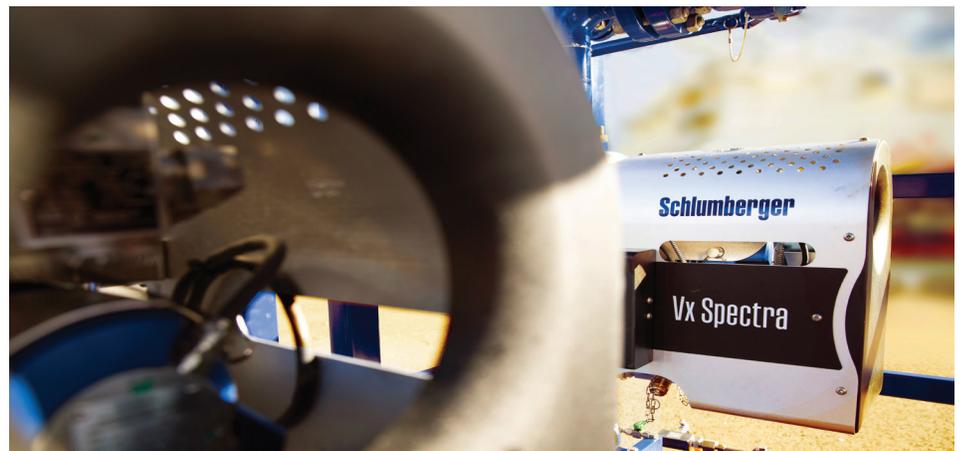
## Run the dual-leg Diligens Spectra unit

Schlumberger recommended the Diligens Spectra mobile multiphase production testing unit that combines two Vx Spectra flowmeters—19-mm and 40-mm venturi throat sizes—mounted on the same skid. The two multiphase meters are connected through a bypass, providing the flexibility to choose the optimal venturi size for each well and quickly redirect flow between the venturis without the need for mechanical reconfiguration of equipment.

The mobile Diligens Spectra unit is ideally suited for a multiwell project. It offers ease of relocation, small footprint, and quick rig-up and rig-down operations. The Vx Spectra flowmeter incorporates full-gamma spectroscopy and provides high-frequency, repeatable, single-point measurement, which produces unmatched multiphase metrological performance that is independent of flow regime and fluid type.

## Achieved accurate and efficient flow measurements

The Diligens Spectra unit achieved the operator's goals of accurate and efficient multiphase production testing under varying flow rate conditions—across more than 15 wells. The dual-leg design streamlined the multiwell testing program, delivering superior metrology, operational efficiency, ease of equipment relocation, and quick rigging operations.



*With two multiphase Vx Spectra surface multiphase flowmeters—19-mm and 40-mm venturi throat sizes—on the same skid, the Diligens Spectra unit provides superior measurements in fluids ranging from heavy oil to wet gas.*