



Restoring Confidence in Gas Lift Operations:

How Panametrics' Clamp-On Flowmeters Uncovered Hidden Discrepancies

Summary

A South American oil and gas operator supplied high-pressure gas from its processing plant to various production fields. Although permanent flow meters were installed at the producing fields, some sites reported insufficient gas lift, which threatened to impact production yields. However, because there were no flow measurement systems in place at the processing plant—neither on the main gas line nor on the sub-lines—the operator needed to investigate and independently verify the field personnel's reports.

Application

Medium:	Natural gas
Pipe size and thickness:	3" & 6" sch. 80 (DN80 7.62 mm & DN 150 10.973 mm)
Pipe material:	Carbon steel
Pressure:	1170 PSIG (~81 barg)
Flow rate:	0.8–25 MSCFD (~1–30 Nm ³ /h)
Temperature:	128°F (~53°C)
Requested accuracy:	2–5%

Benefits:

- Ease of installation
- Ability to run a quick and effective survey
- No process shutdown required for continuous operation
- Strong local support
- Low total cost of ownership

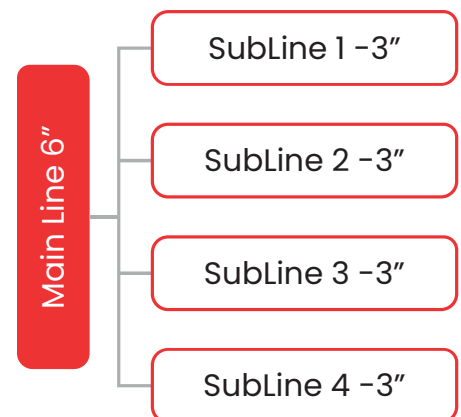


Fig. 1: Natural gas main and sub-lines schematic

Challenges

Interrupting production was simply not feasible, so the operator needed a solution that could be implemented without disrupting ongoing operations. They explored whether ultrasonic clamp-on gas flowmeters could provide accurate measurements under these conditions. The primary objective was to conduct spot checks to verify the actual gas supply from the processing plant to the various production fields, each fed by separate sub-lines.

Given Panametrics' strong local presence and proven technical expertise, the operator engaged the team to carry out the survey.

Solution

The Panametrics team deployed the PT878GC portable clamp-on gas meter to each individual line, collecting flow data for approximately 15 minutes per line. Pressure and temperature readings were manually entered using local instrumentation. Throughout the process, diagnostic checks were closely monitored, and the results were excellent—particularly with the triple traverse setup, which further enhanced measurement reliability. This approach provided a high level of confidence in the accuracy of the recorded flow rates.

The findings were particularly revealing: when the total flow from the 3" sub-lines was measured at 21.3 MSCFD and compared to the main feed line's reading of 21.11 MSCFD, the discrepancy was just 0.9%. However, field personnel had reported a combined flow of 24 MSCFD—a difference of 13.7%. This significant gap indicated that further investigation was necessary to identify the source of the inconsistency.

The customer initially anticipated that all four 3" lines would deliver similar flow rates; however, the measurements revealed significant discrepancies between the lines, with one line exhibiting notable instability. In response, the operator implemented corrective actions and began budgeting for the installation of permanent clamp-on gas meters across all gas lines to enable continuous flow monitoring. The customer's team was highly satisfied with the results and is now eager to proceed with the deployment of permanent meters.



Fig. 2: PT878GC installed on the main 6" CS line

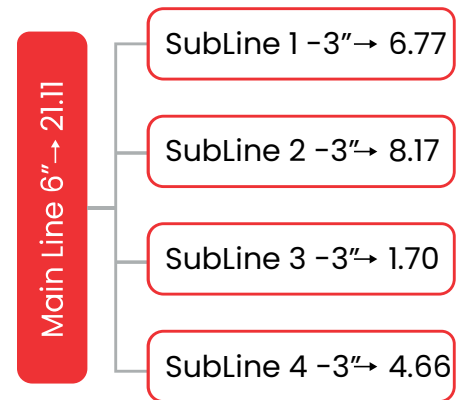


Fig. 3: Line balance of the natural gas flow rates