CASE STUDY

3-Phase Separator shines in HPHT sour gas application: (Texas)

“The M-I SWACO team brought an improved level of performance to the well site. Their 3-Phase Separator was key to our efficiency in performing in a difficult situation.”

M-I SWACO PTS Supervisor

The Situation
A major operator in the Haynesville Shale required a reliable hostile service equipment package for a high-pressure, high-temperature (HPHT) production test of a gas well in an H₂S environment.

The Solution
After analyzing the customer’s requirements, M-I SWACO recommended a service delivery plan comprising a 15K psi working pressure equipment package that included its field-proven 3-Phase Separator. The 42 in. 1,440 psi NACE 3-Phase Separator was suggested as part of a package that included a 15K hydraulic choke manifold, a 15K sand separator and a 15K 2 mm BTU line heater. The 3-Phase Separator came equipped with a major operator-certified skid lifting package and a 60 ft (18 m) 6 in. flare stack with auto-ignitor. Critical to this operation was the capacity of the separator to deliver longer retention times for better separation and the incorporation of multiple pressure relief valves to protect personnel and the environment against vessel over-pressurization and exposure to H₂S gas. The unit also was designed with redundant bypasses to allow servicing without interrupting flow. In addition, the recommended 3-Phase Separator would include Electronic Flow Measurement for improved accuracy and real-time data acquisition and comingle capabilities to tie phases together to meet the client’s specific needs.

The Results
Use of the M-I SWACO 3-Phase Separator as part of the high-pressure, high-volume, H₂S environment package allowed M-I SWACO Production Testing Services to successfully deliver and execute a solution that met the client’s technical objectives. The design of the high performance M-I SWACO 3-Phase Separator increased separation efficiency of well effluents with zero non-productive time (NPT) related to the separator. Additionally, a separate bypass, unique to the M-I SWACO 3-Phase Separator, bypassed oil to the gas sales lines, allowing for onsite processing. The overall equipment package allowed the customer to process the well producing greater than 20 MMcf/day of gas with water rates exceeding 7,000 bbl/day.

![Graph of Gas, Oil & Water Rates](image)

- **OIL (BBL/HR)**
- **WATER (BBL/HR)**
- **VOLUME (MCF/DAY)**
Questions? We’ll be glad to answer them.
If you’d like to know more about the M-I SWACO 3-Phase Separator and how it’s performing for our other customers, please call the M-I SWACO office nearest you.