

# Soku Flow Station Debottlenecking Project

*Shell Petroleum Development Company of Nigeria Limited*



Identifying the need to expand its Soku Flow Station facilities, Shell developed a three-phase project for gathering all associated gas streams and flowing to the Soku Gas Plant to achieve minimum flaring and maximum oil production.

In September 2000, Willbros was awarded an engineering and construction contract for the first phase of the project. Phase I activities were designed to debottleneck the facilities, enabling an increase in gross production capacity and high-pressure associated gas gathering capacity by:

- Increasing the crude processing capacity from 30 to 50 Mbdp through the installation of a second surge vessel, two additional crude pumps and addition metering
- Upgrading the existing high-pressure flare from 30 to 60 MMscf/d capacity and smokeless operation

The Soku facilities are located in a coastal swamp area about 40 km southwest of Port Harcourt. The flow station and development facilities are situated on piled platforms in the swamp, and can only be reached by boat or helicopter.

## *Engineering Studies*

- Process simulation studies and capacity checks
- Surge vessel location report
- Detailed design drawing package
- Hazard and Operability studies and review
- Updated operating and maintenance procedures
- Comprehensive bill of materials

Engineering design included the addition of one surge vessel, two centrifugal pumps, a PD meter and all associated facilities, including instruments, controls, pipings, drains and electrical. Upgrading the high-pressure flare system through the installation of a new, smokeless flare tip. And the in-plot piping modifications and flow station platform extension.

Phase II of the project required the installation of gas compression facilities at the flow station. Willbros completed these activities under a prior EPC contract.

*Project Award  
September 2000*

*Project Completion  
August 2001*

*Nigeria*