

Field Management and Production

Case study: IPM and Romgaz optimize rehabilitation for Laslau Mare mature gas field

Challenge

To develop incremental production and additional reserves in the Laslau Mare gas field. Production peaked in 1987 at 7.5 million m³/d and the gas flow has since declined to 0.5 million m³/d.

Solution

Romgaz and the Schlumberger Integrated Project Management (IPM) team signed an agreement for a 15-year full field rehabilitation and management project for the development of oil production and reserves using new fit-for-purpose technology.

Results

Following a detailed and focused field reevaluation, the Romgaz and IPM project team will design a redevelopment plan that includes optimization of the gas compression, perforating, and stimulation operations, as well as recompletions and reentry drilling to deepen existing wells and enhance production from tight gas zones.

Gas field rehabilitation project to reverse declining gas flow

The Laslau Mare gas field, located in central Transylvania, Romania, has 51 producing wells, and 10 shut-in wells. The field was designed for a total gas production rate of 8 million m³/d and peaked in 1987 at 7.5 million m³/d. Since then, the gas flow has declined to 0.5 million m³/d.

In 2003, Romgaz and Schlumberger IPM signed an agreement for a 15-year full field rehabilitation and management project. Romgaz and IPM, as collaborative partners, are combining the latest technology from Schlumberger with the operational experience of Romgaz to refine the understanding of the reservoir and its productivity. The project team's goal is to develop incremental gas production and additional reserves using new fit-for-purpose technology. Under the terms of the risk-reward, gain-share contract, Schlumberger is rewarded according to the incremental production achieved by the project.

Collaborative project management

A project management team, consisting of both Romgaz and IPM personnel, developed a two-phase project plan:

- Phase 1, called the First Work Program, included data acquisition, data validation, and subsurface and modeling studies.
- Phase 2 will include redevelopment and optimization of the field.



Well manifold station.

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Project activities to increase production and reserves will be driven by the results of a detailed and focused field reevaluation, which will use advanced technologies to reassess and model the field. The scope of the first phase will validate assumptions made during earlier geological and reservoir studies. A key element of this phase is the acquisition of new data.

Based on the reevaluation, the Romgaz and IPM project team will design a redevelopment plan that will include optimization of the gas compression, perforating, and stimulation operations, as well as recompletions and reentry drilling to deepen existing wells and enhance production from tight gas zones. The contract also calls for the IPM team to undertake state-of-the-art data management and provide technical and process consulting to Romgaz.

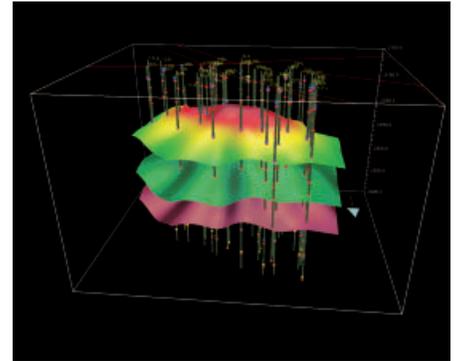
Planned implementation to use state-of-the-art technology

To identify bypassed gas intervals through the tubing and casing, measure reservoir characteristics, and process and evaluate the new data, the project team will use state-of-the-art Schlumberger tools, services, and software. These tools and services include the ABC* Analysis Behind Casing suite of services for formation evaluation measurements; the USI* UltraSonic imager for accurate, high-resolution, comprehensive, real-time answers about downhole pipe conditions; and DNL* Dual-Energy Neutron Log to calculate porosity, detect gas, and correlate between logs.

The project team is also using PIPESIM* production system analysis, software that conducts a comprehensive analysis of production performance and provides information about where production enhancement opportunities might exist. The NODAL* production system analysis software is being used to evaluate well performance.

Data from these tools and services will help the project team develop geologic, reservoir, wellbore, and facility models. From the models, the project team will gain a more thorough knowledge and understanding of the reservoir. With more knowledge and understanding, the project team will be better able to optimize the gas production to develop new gas reserves.

E-mail ipminfo@slb.com or contact your local Schlumberger representative to learn more.



A 3D view of the Laslau Mare gas field.

www.slb.com/ipm