

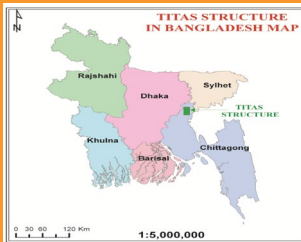
GAS SEEPAGE INVESTIGATION CASE STUDY

Bangladesh Gas Field Company Limited - Titas Gas Field
Onshore Surma Basin, Bangladesh

AWT DISCIPLINES

Seepage Control
Geology & Petrophysics
Petroleum Engineering
Reservoir Engineering
Completions Engineering
Drilling Engineering

PROJECT BACKGROUND



Block History:

Bangladesh Gas Fields Company Limited (BGFCL), a company of Bangladesh Oil, Gas & Mineral Corporation (Petrobangla) operates six (6) gas fields and Titas is one of the largest gas fields. Production started in 1968 (Titas #1 & #2 were drilled by Shell Oil Company in 1962 and 1963). Between 1969 – 2006, fourteen (14) more wells were drilled. Daily gas production of 400 MMscf gas was being supplied to the national grid from 14 wells.

Location:

Located near the town of Brahmanbaria and approx. 100km to the east north-east of Dhaka. The Titas structure in the south-central part of the Surma Basin is an elongate north-south asymmetrical anticline measuring 23 x 10.5 km within the 4600m contour area.

Reservoir Properties:

A, B & C sandstone formation.

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AWT WORKSCOPE

The Titas gas field was experiencing a gas seepage problem, with gas escaping through the soil in the surrounding populated rural areas.

A gas seepage study was initiated to determine the cause of the gas seepage and recommend remedial activities. The Phase I team comprised of Well Control Specialist, Petroleum Engineer (Seepage Control), Petroleum Geologist (Seepage Control) and Reservoir Engineer / Petrophysicist.

The project implementation support and seepage investigation services were considered as Phase I of the overall project. Phase II was to finalize the no. of wells for workover and to assist the workover and remedial work on these wells, followed by Phase III which was to drill four (4) new production wells.

The study consisted of the following activities:

- Collection and analysis well data, production data, log data, well completion / workover reports.
- Preparation of the study report regarding causes of gas seepage in the Titas gas field.
- Submission of reports regarding causes of gas seepage with recommendations for remedial / workover jobs (Phase II) for the suspected wells.
- Workover / remedial programs for any wells suspected of contributing to the Titas Gas Field seepage problem to be included with the report.

AWT ADDED VALUE

The study was completed and the Titas Field Gas Seepage Study Report was issued in 2012 with the following key results & recommendations.

- AWT identified five (5) wells (Titas #1, #2, #5, #10 & #11) for workover candidates as these wells showed unacceptable levels of annular pressure in the A annulus, suggesting a leakage from the production tubing.
- Because of the age of these wells, an investigation into the condition of the production casing by means of electric logging was required
- By working over of the proposed wells, gas production capacity of the field would be increased.
- The work will create a safer working environment due to remediation of well integrity issues and cessation of gas seepage in the surrounding areas
- In addition, the ongoing loss of valuable gas reserves would be remedied
- Project was completed on schedule, on budget and with all Client reviews completed

