

GDF Suez Defines Key Drilling Investments with Collaborative Well Planning

Immersive collaboration using the Petrel Well Design module drives confident decisions in North Sea field

CHALLENGE

Plan a multiwell development project in the North Sea, overcoming complex faults and thin reservoir targets that present increased drilling risks for the operator.

SOLUTION

A collaborative well planning session using the Petrel[®] Well Design module optimized the multidisciplinary team's insight into the target area, to facilitate well planning, focusing on key workflows and landing strategies.

RESULTS

Improved understanding of geological requirements and drilling risks, as well as optimized well planning decisions, leading to two new developmental phases.

"Bringing the main decision makers together really improved the efficiency of the process. We got more out of this session than expected and with three new trajectories, I was extremely pleased with the result."

Emily Price
Senior Development Geologist
GDF Suez

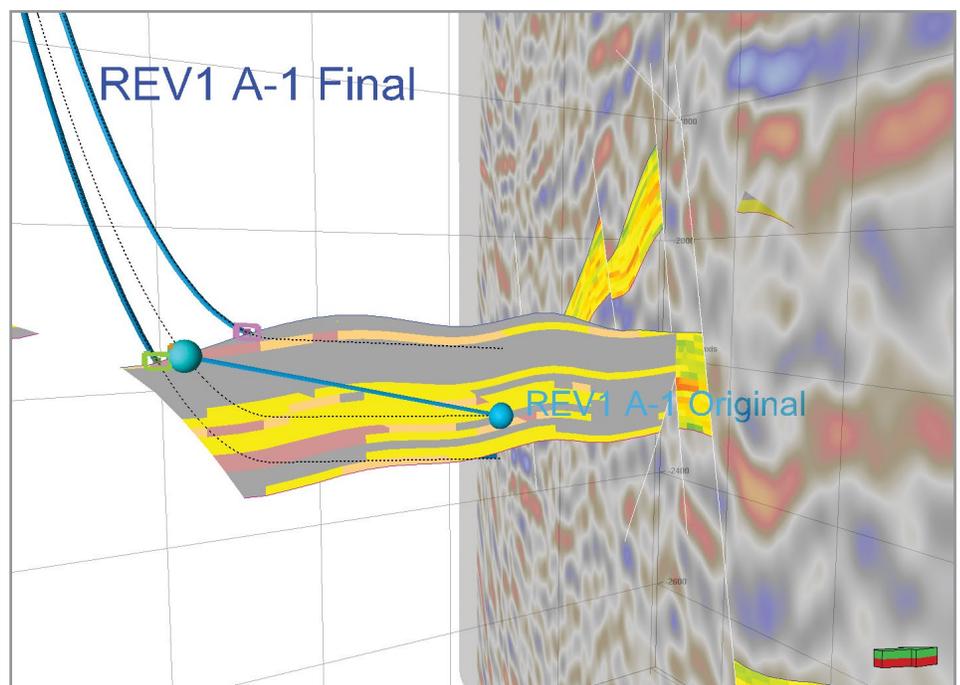
Field development planning in complex geological environments is challenging for operators. During the planning process, the geological and geophysical (G&G) and drilling teams must work together to reach a consensus, in full understanding of the requirements and risks. The more complex the geology, the more complex the planning process is for multidisciplinary teams, making collaborative working increasingly crucial.

GDF Suez was facing a challenging multiwell development project in the North Sea Cygnus field, characterized by complex faults and thin reservoir targets presenting increased drilling risks and hazards.

Collaborative workshop

As communication between the GDF Suez G&G and drilling teams was critical to producing an optimal field development plan (FDP), a tailored collaborative well planning session was organized. This brought all the decision makers together, in one location, to optimize well planning discussions in an immersive environment using the Petrel Well Design module. Subsurface models were brought to life with the latest graphic display methods to deepen insight into the target area.

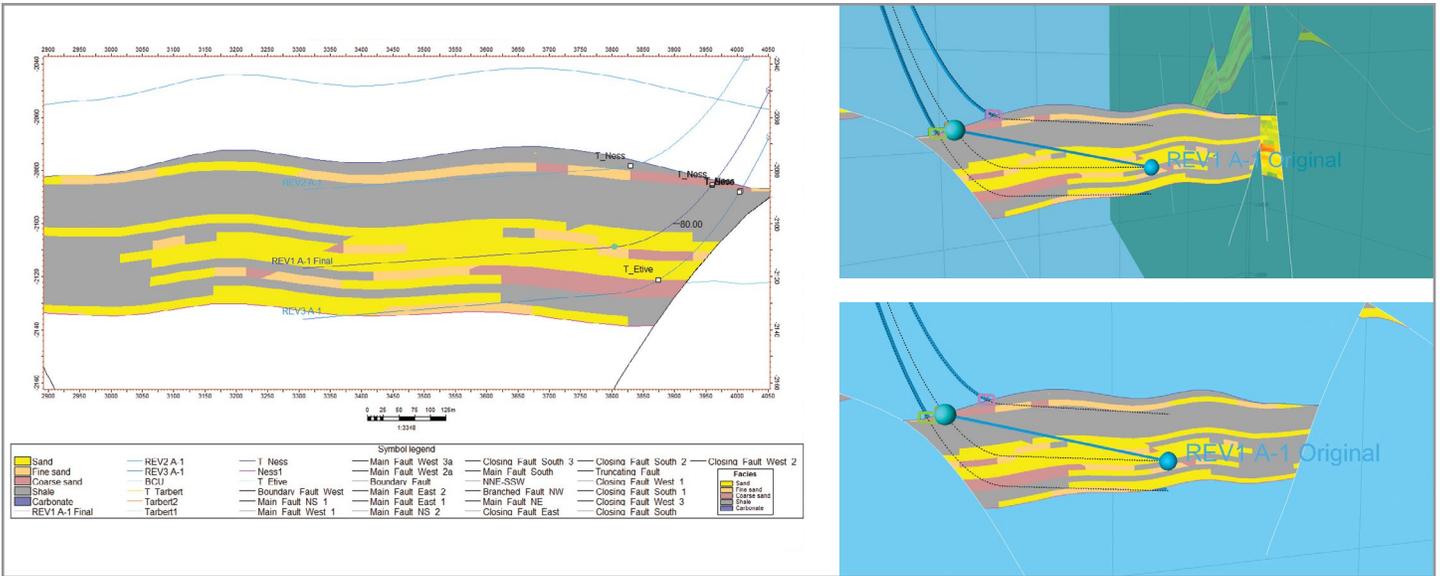
A Petrel field model was provided by GDF Suez before the meeting, allowing the Schlumberger team time for familiarization. Then, during the session, the model was closely examined by the entire group, allowing all possible trajectories to be assessed, with Schlumberger experts providing drilling, engineering, and geomechanical advice.



Final revised well plan integrating various data sources; trajectories, property models, horizons, and 3D seismic.



CASE STUDY: GDF Suez Makes Key Drilling Investment Decisions with Collaborative Well Planning, North Sea



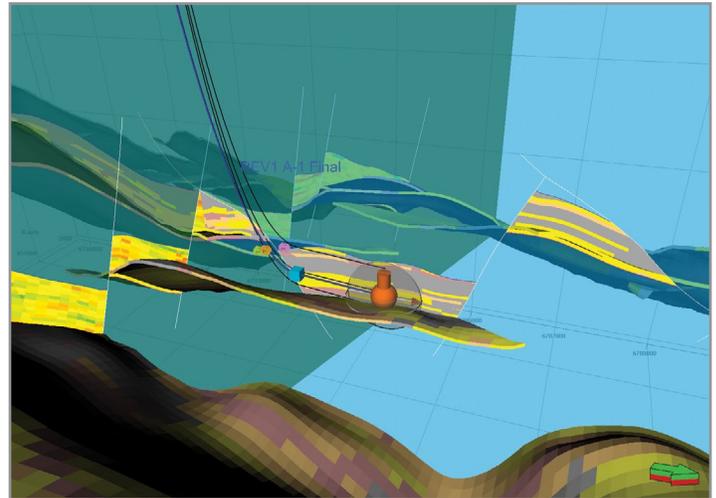
Intersection along well trajectories highlighting the thin target location and reservoir complexity.

GDF Suez’s Petrel field model was examined by the group and various possible trajectories loaded onto 3D wall-wide display panels for discussion. The drilling and G&G teams highlighted any challenges and risks collaboratively. In viewing the data in context the group was able to analyze proposed well paths in relation to formations and targets. The process also resulted in efficiency gains, as the number of well plan iterations was reduced.

Clear plans

As a result of the first collaborative session, several well trajectories were redesigned. The relative merits of various drilling tools were discussed, and trajectories refined based upon the most desired tool options. A second session was held, at the request of GDF Suez, to focus on a landing strategy for particularly challenging wells in the vicinity of an unconformity. During the session one of the pilot holes was redesigned, and the heel positions of two wells were amended for optimum placement in relation to the completion design.

GDF Suez concluded the sessions with revised well paths and other information required for submission of the field development plan. As a result GDF Suez finalized plans for drilling up to six wells from each of its two wellhead platforms on the field. The company intends to apply this collaborative process throughout the rest of the project as the efficiencies generated were very beneficial.



Example of well trajectories discussed during the collaborative sessions.



software.slb.com/Petrel

Schlumberger

*Mark of Schlumberger
Other company, product, and service names
are the properties of their respective owners.
Copyright © 2014 Schlumberger. All rights reserved. 14-IS-0181