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GDF SUEZ E&P Norge Optimizes Drilling Event Analysis

Petrel drilling visualization plug-in unlocks integration, detail, and speed

CHALLENGE
Integrate, accelerate, and improve GDF SUEZ E&P Norge's drilling event analysis.

SOLUTION
Petrel* platform with the drilling risk visualization plug-in used to enable a new drilling event analysis workflow: integrating subsurface disciplines and current and historical drilling data in a single application.

RESULTS
- Fuller, faster, and more detailed drilling event analysis unlocked
- Optimized use of historical drilling event data
- Improved well design capability
- Integrated collaboration for subsurface team.

"Having the capability to bring drilling data into our 3D Petrel environment has improved our drilling event analysis. Our geologists, geophysicists, and drilling engineers can now collaborate around a single earth model to optimize well placement and drilling strategy, which will save us and our partners time and money."

Steve Bryant,
Senior Geologist,
GDF SUEZ E&P Norge

GDF SUEZ E&P Norge is a wholly-owned affiliate of GDF SUEZ, and has been present in Norway since 2001. The growing company jointly operates several fields on the Norwegian continental shelf.

The company needed to improve its drilling event analysis, as its drilling engineers were using Microsoft Excel and Word to view and record well data. This method made offset well analysis a cumbersome and time-consuming task. GDF's drilling engineers were also unable to take full advantage of the information coming from the other subsurface specialities, since there was no common analysis platform or data repository. This methodology also meant that fewer wells could be analyzed, with less accuracy.

Petrel software: optimizing drilling event analysis
GDF wanted the capability to capture all drilling event data in one application, to optimize lessons learned from event analysis, and allow the whole subsurface team to collaborate on planning new wells. After meeting with Schlumberger to discuss possible solutions, it became clear that the Petrel platform—with a specific Ocean plug-in—could solve the problem.

GDF already used the Petrel E&P software platform for geological, geophysical, and reservoir engineering workflows. It was not, however, used as a tool to gather and share drilling knowledge. Schlumberger outlined how GDF could harness the power of Petrel workflows to bring the drilling engineers into the existing 3D shared earth model already used by the subsurface team. Central to the proposed solution was the drilling visualization plug-in for Petrel software. The plug-in enables Petrel users to integrate drilling and subsurface information, unlocking a collaborative approach to well planning and drilling.
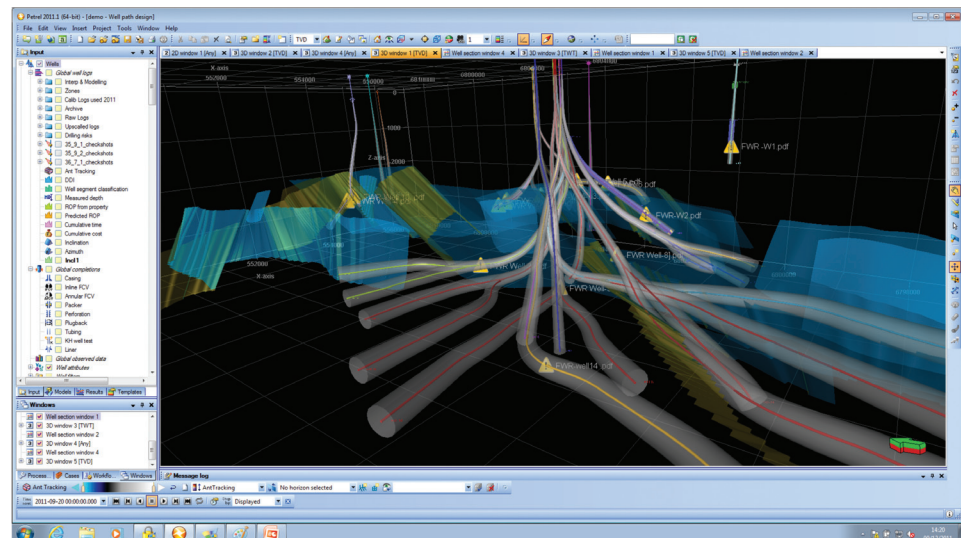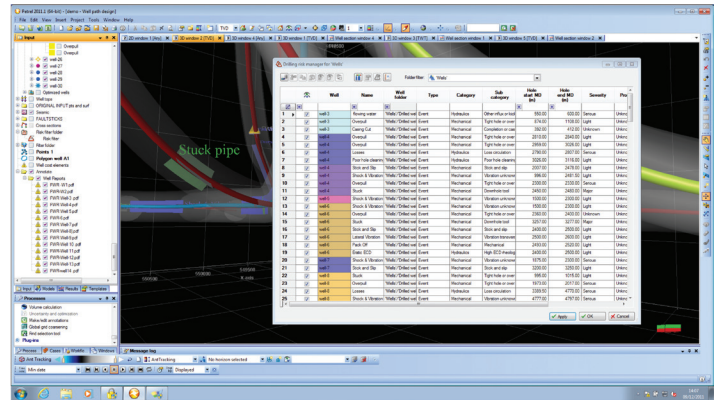

3D window with final well reports attached and ellipse of uncertainty.
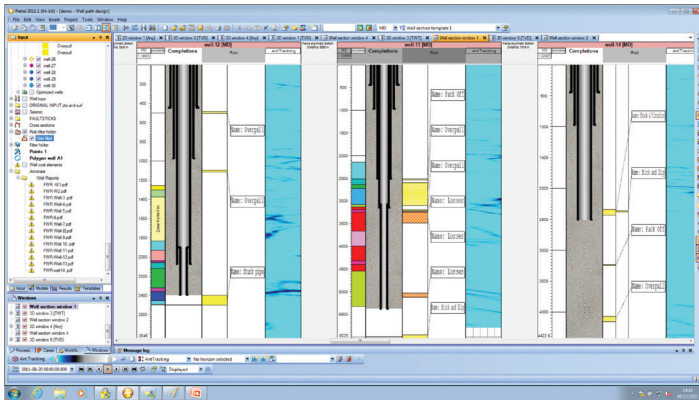
Offset well analysis with drilling events, casing design, formation tops and faults extraction.

3D window with drilling events offset summary.

Results

A pilot project was scheduled to test the proposed solution on real field data: populating the existing Petrel model with all current and historical drilling events data, as well as event summaries and end of well reports for each of the field's 27 wells.

The pilot showed GDF how drilling event analysis could be improved and accelerated by using the right technology. Because all the information was available in the Petrel environment, users were able to filter drilling events by well, section, and category—as well as take advantage of Petrel well-design features. The Studio* E&P knowledge environment annotate tool enables effortless sharing of relevant information to deepen the understanding of specific events. Finally, the pilot enabled users to visualize all drilling events within a certain radius of a proposed well—at the touch of a button, making the analysis process much faster.

Well sections were used in Petrel to correlate 2D drilling events for each well against casing points, formation tops, and faults. They could also be visualized against any existing logs. The drilling visualization plug-in allowed continuous monitoring of current well positions, as well as an effective communication of geological objectives and well path uncertainty. This helped ensure that wells were landed in the right place, and stayed in the reservoir.

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

www.slb.com/petrel

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