

Oil in the Netherlands

What is happening?



Guido Hoetz, chief geoscientist EBN B.V.
PROSPEX London 2013

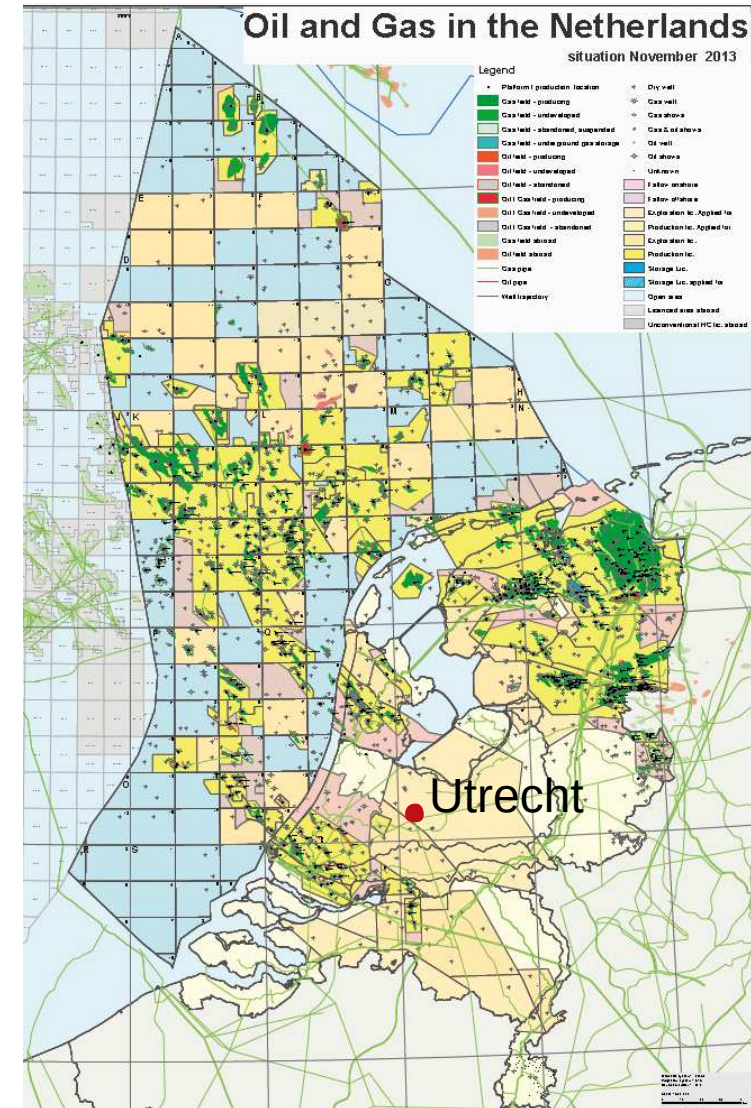
Oil in the Netherlands

- **Introduction (& the role of EBN)**
- **How Oil started**
- **Recent Developments**
- **The Future**
- **Summary**

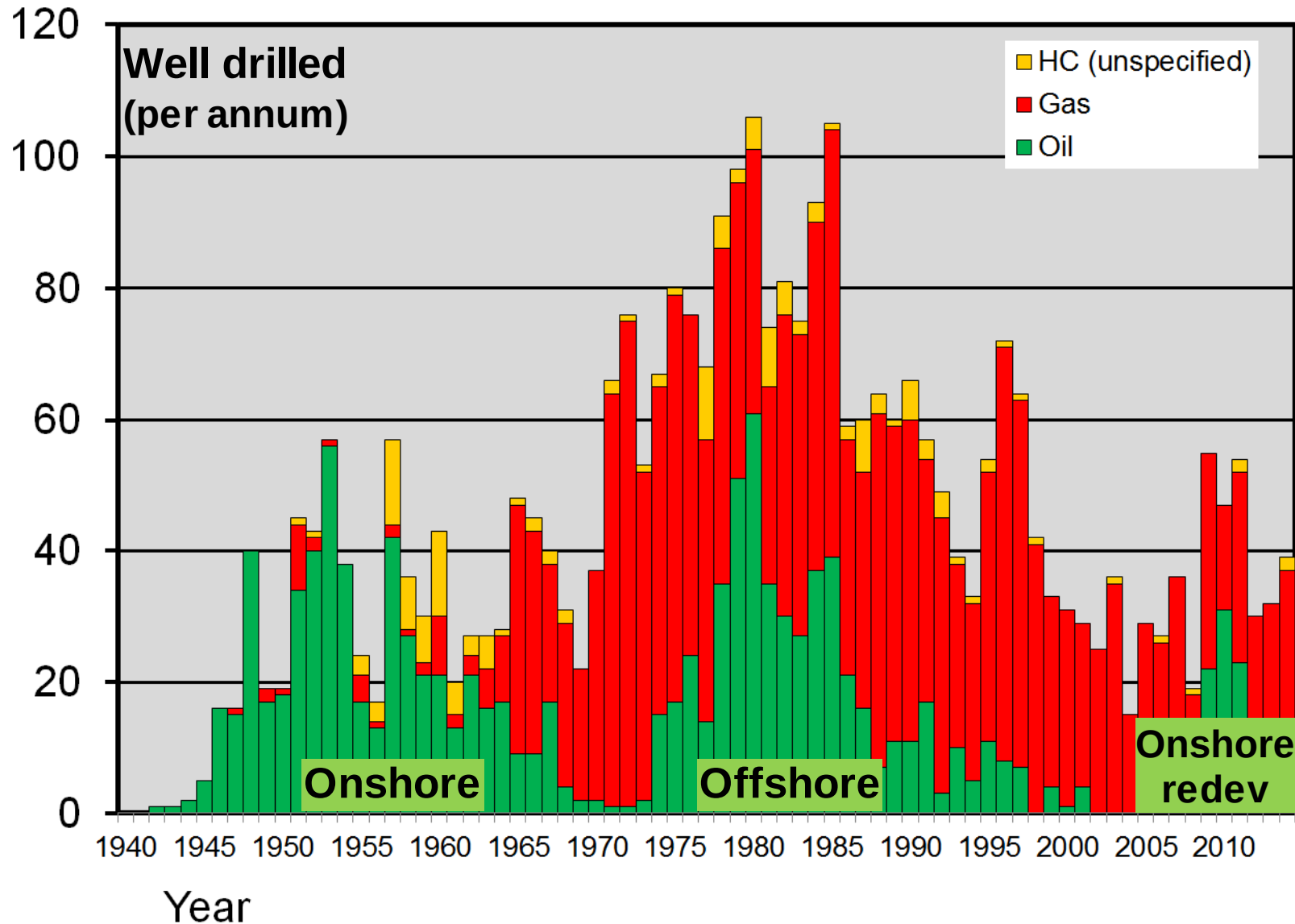
EBN: who, what, where?



- Large E&P player in NL via NOV's
- Production (equity): 500,000 BOE/day
- 100% owned by Ministry of Economic Affairs
- Focus on oil & gas exploration & production
- Drivers: financial, reliable supply, clean
- Optimise use of assets & subsurface knowledge

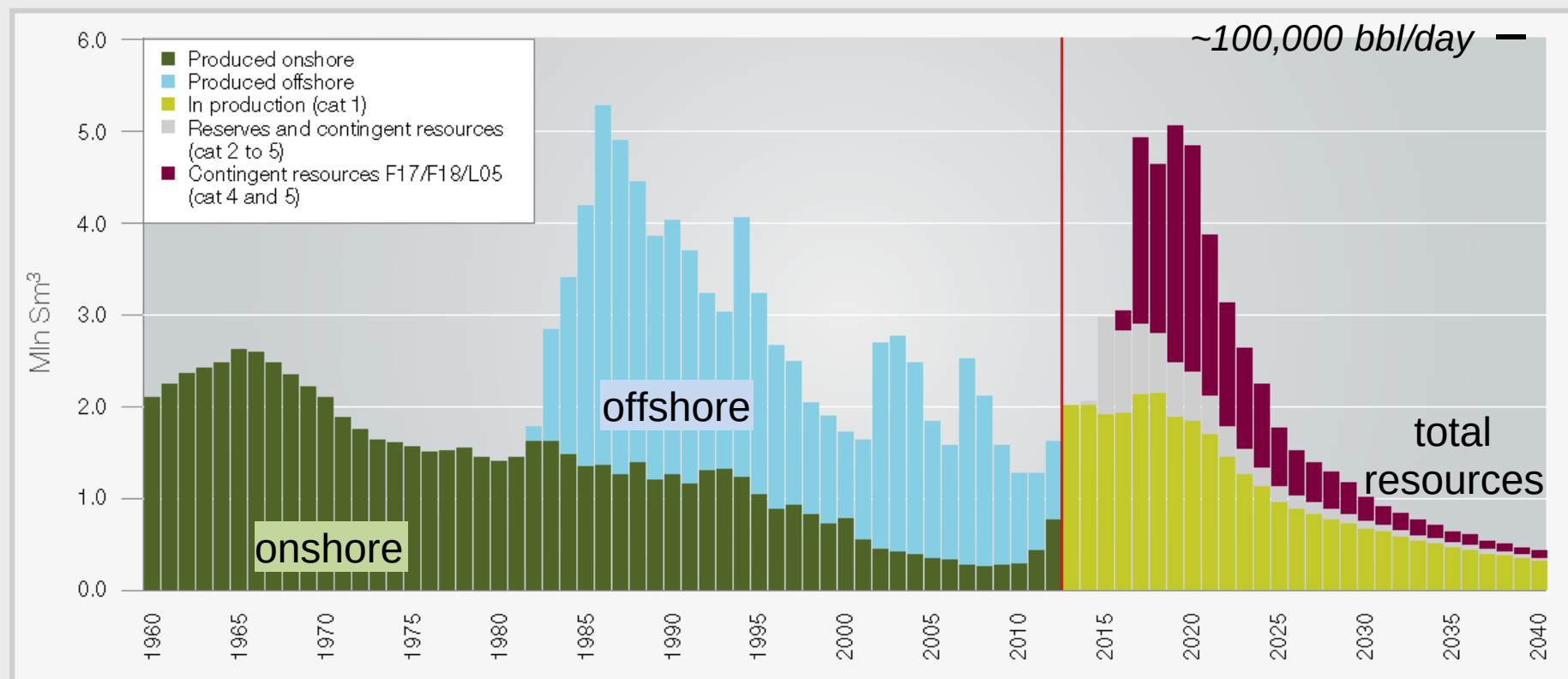


(Oil) Drilling activity in the Netherlands



Domestic oil supply

Historic and future oil production



Contingent resources are unrisks.

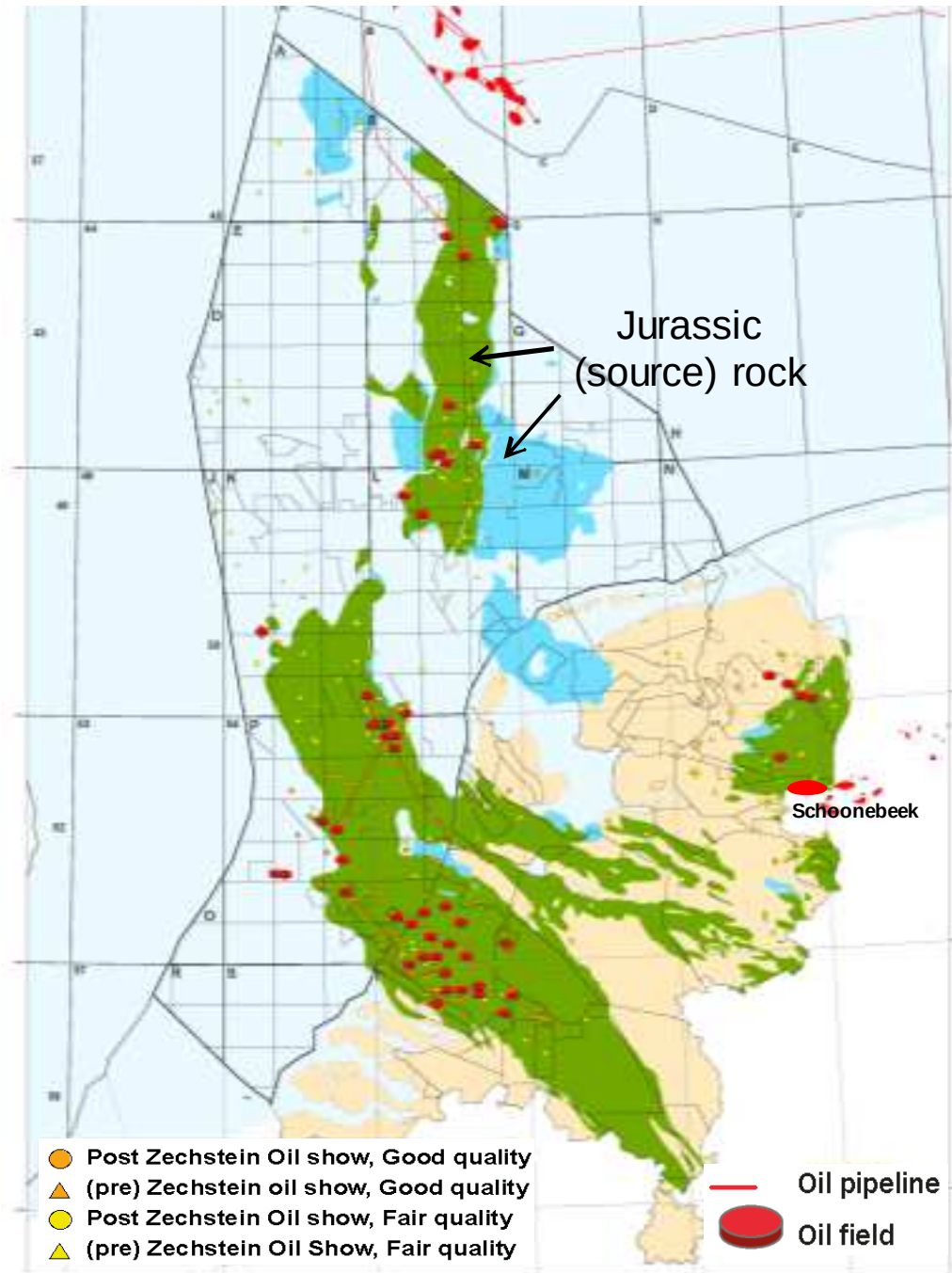
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Oilfields in the Netherlands

- 46 proven accumulations
- 8 ceased production
- 15 producing fields
- 3 fields under development
- Schoonebeek: largest onshore oilfield of W-Europe (~1 billion bbl STOIIP)

Oil fields and shows in the Netherlands



Oil in the Netherlands

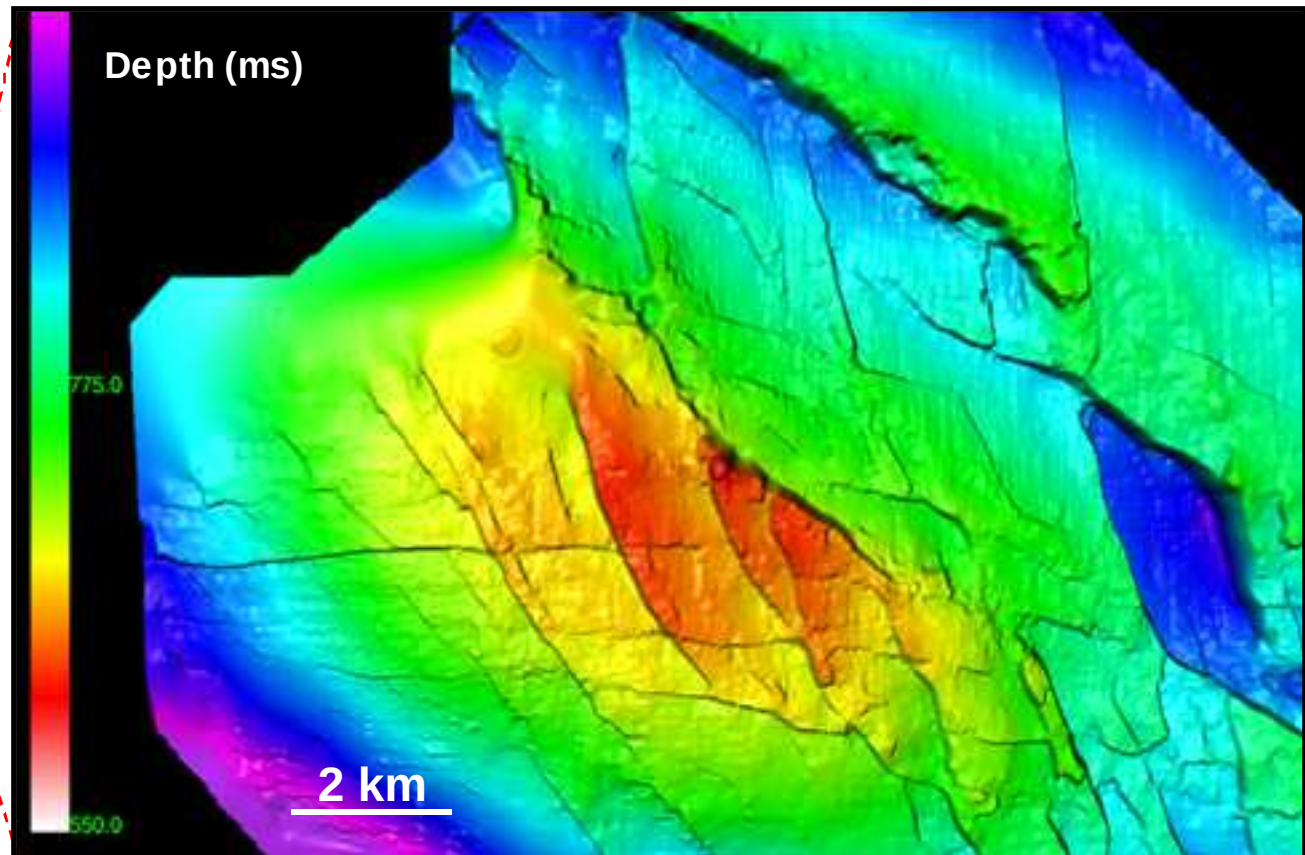
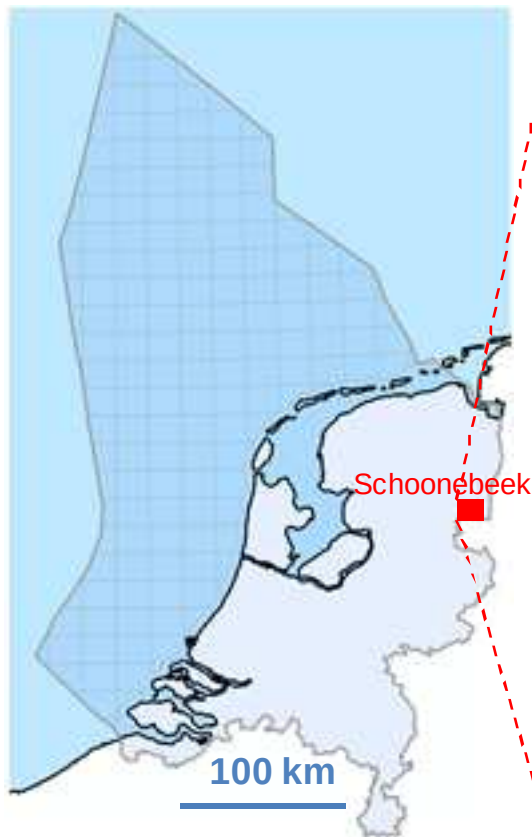
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Schoonebeek Oil Field

- Discovered 1943
- STOIIP: 1000 Mil bbl, produced: ~25% (heavy oil)
- Re-developed in 2010-13
- 3D Seismic & Steam technology (CoGeneration steam & electricity)
- 73 wells (44 producers, 25 injectors)

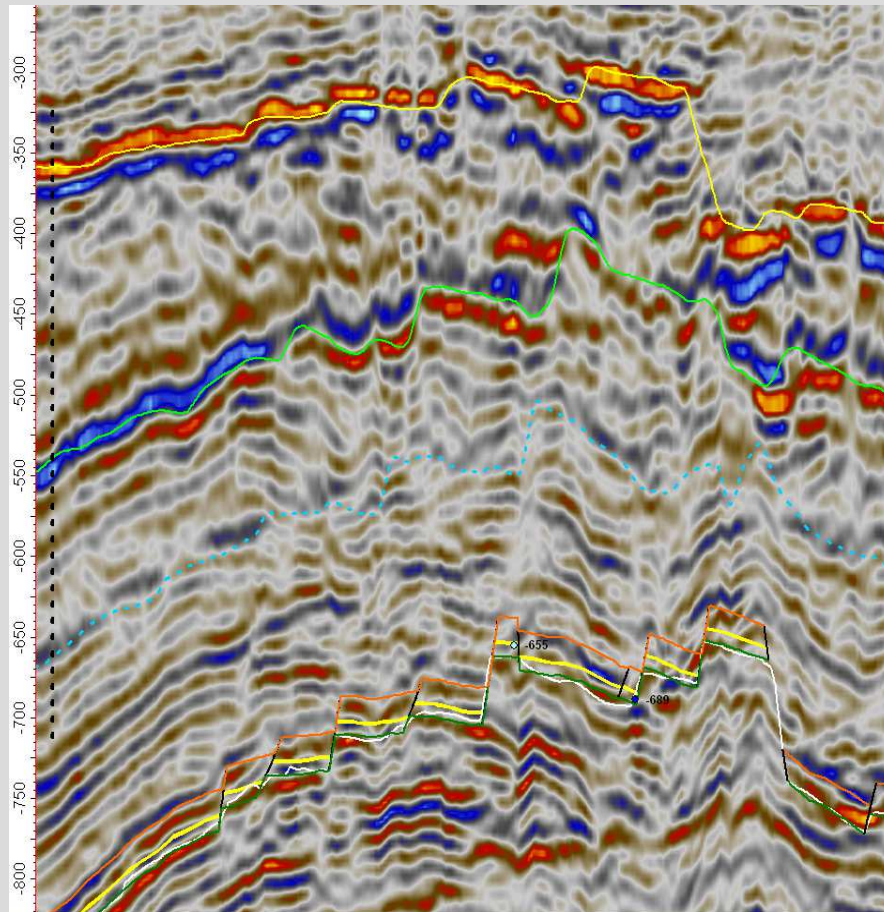


ebn

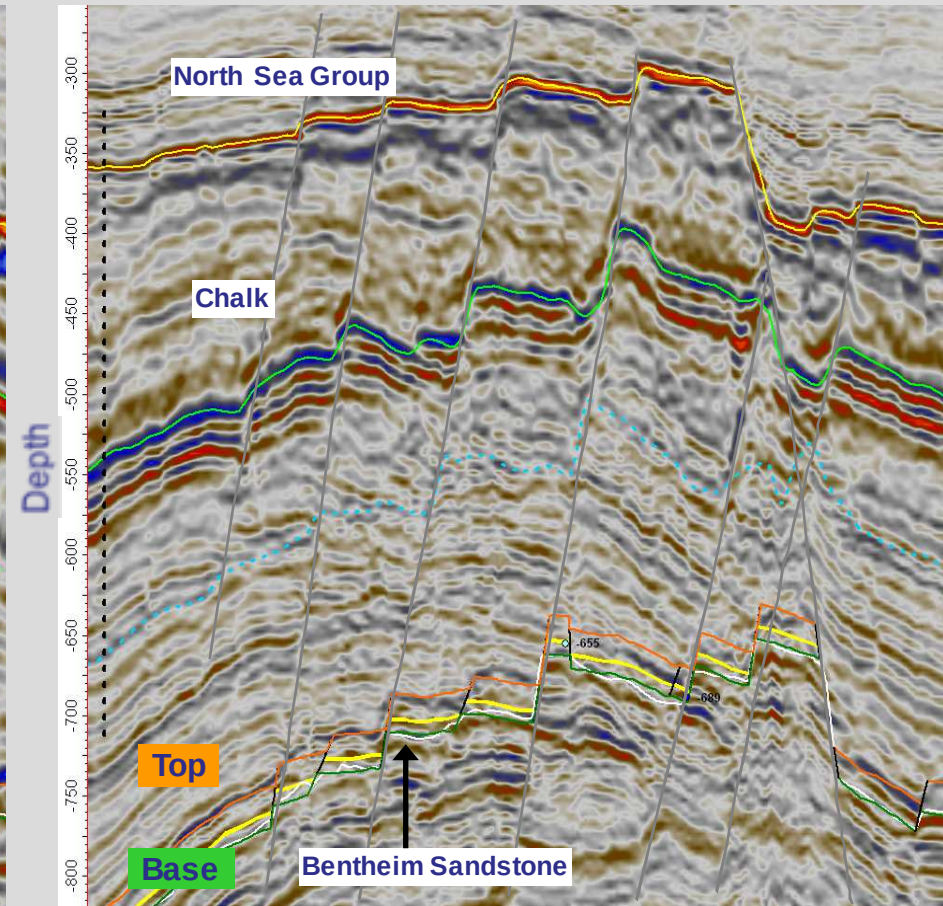


HIRES Seismic Breakthrough

vertical exaggeration 5x

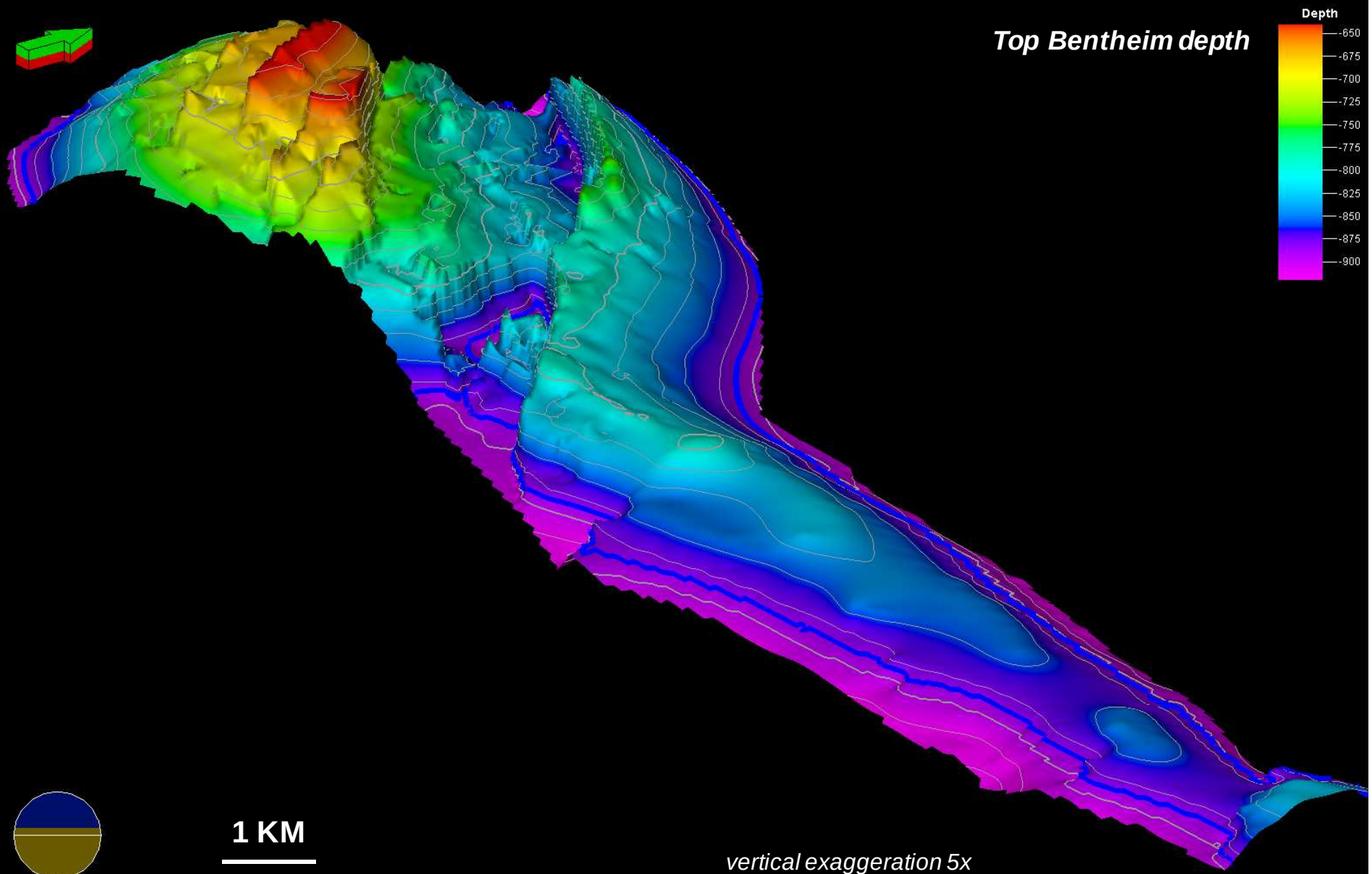


1993 Post-Stack Time

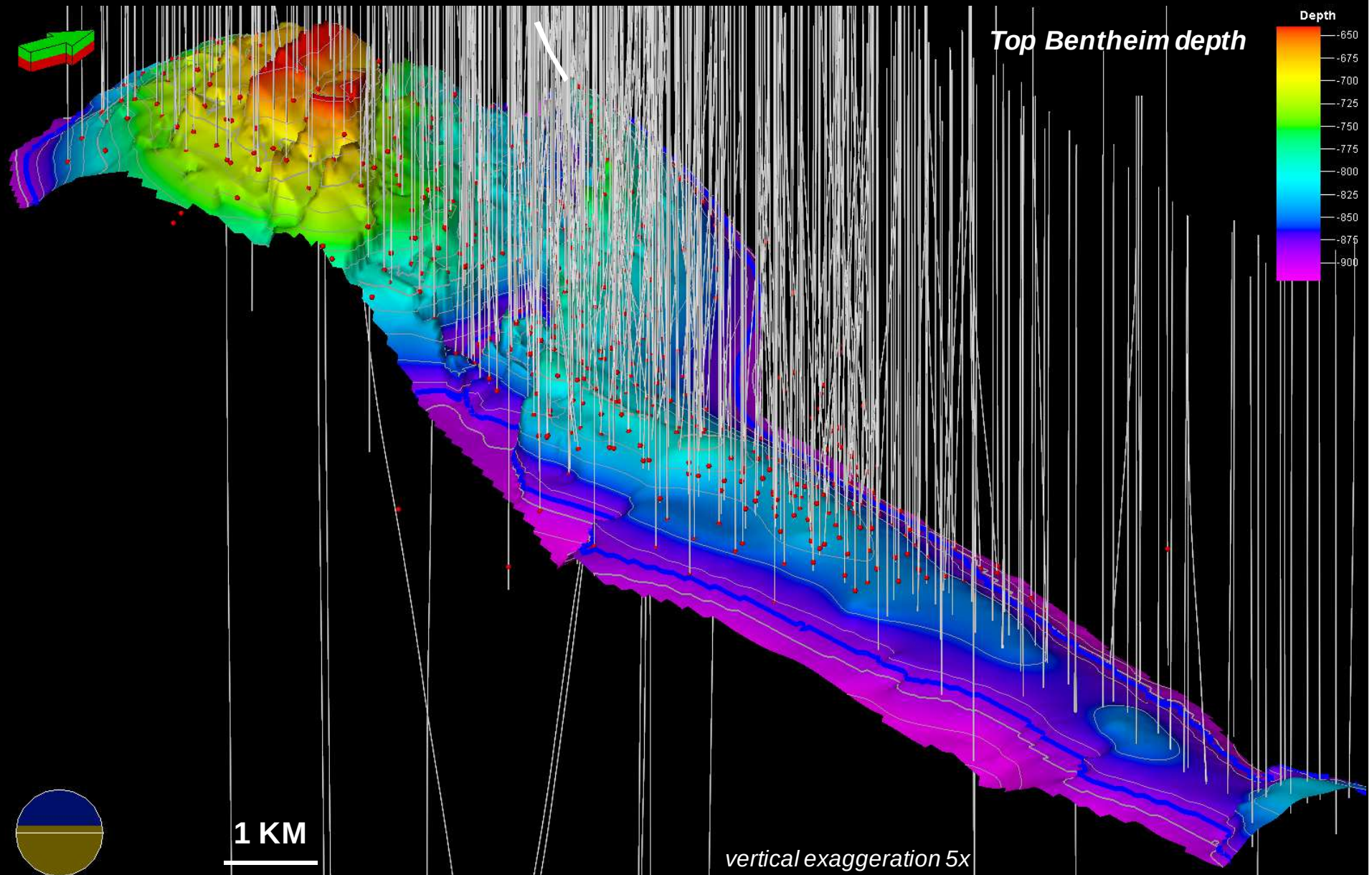


New HIRES Pre-Stack Depth

Schoonebeek full field, 3D-view from SE

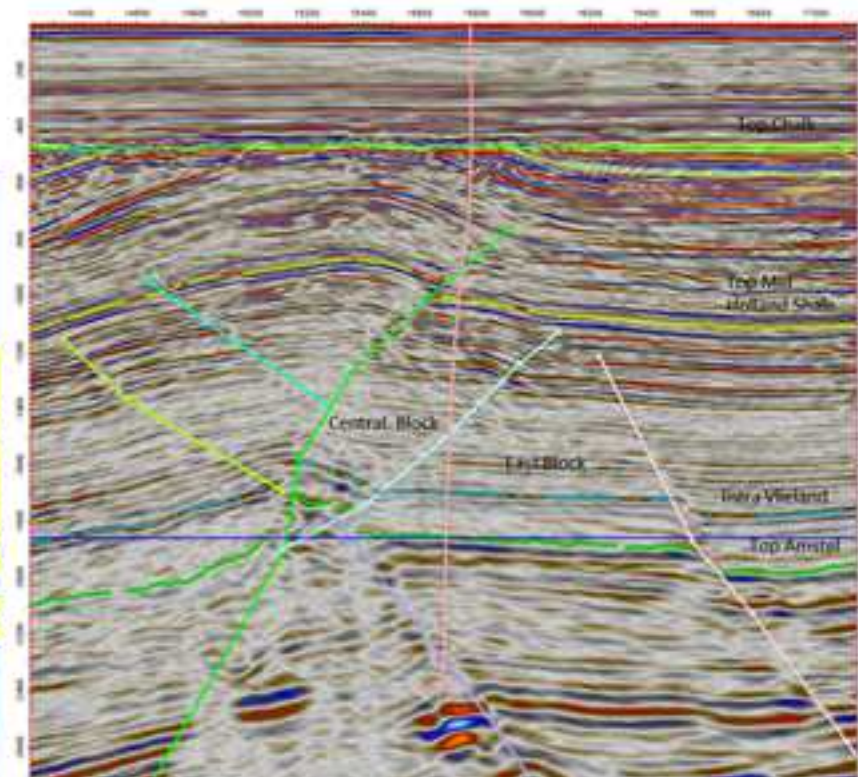
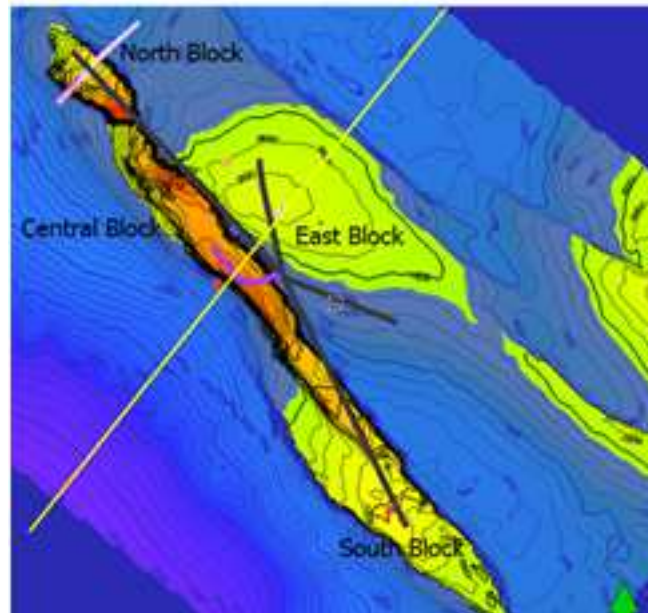
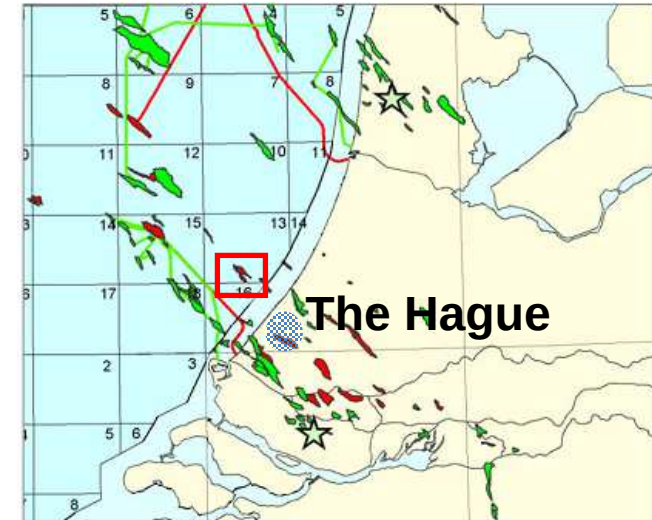


Schoonebeek full field, 3D-view from SE, with wells



Amstel Oil Field

- Discovered 1961
- Currently being developed
- Enabler: new operator & new ideas
- 4 producers, 1 injector
- L. Cret. Sst in pop-up structure
- STOIIP: 20-35 mil bbl



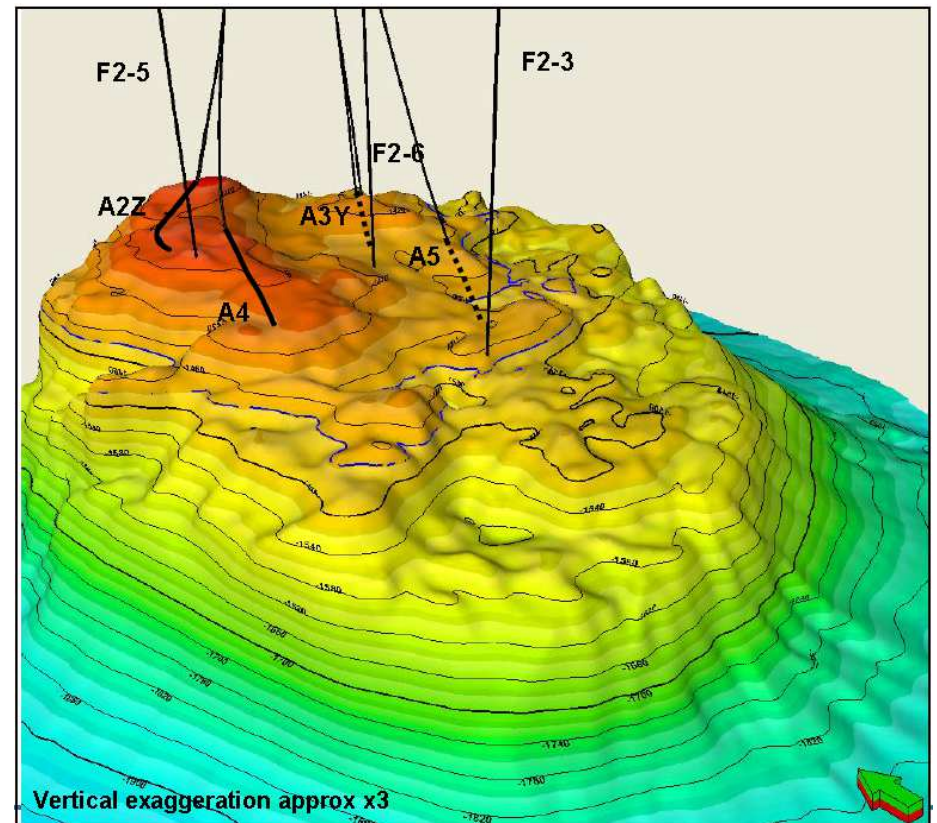
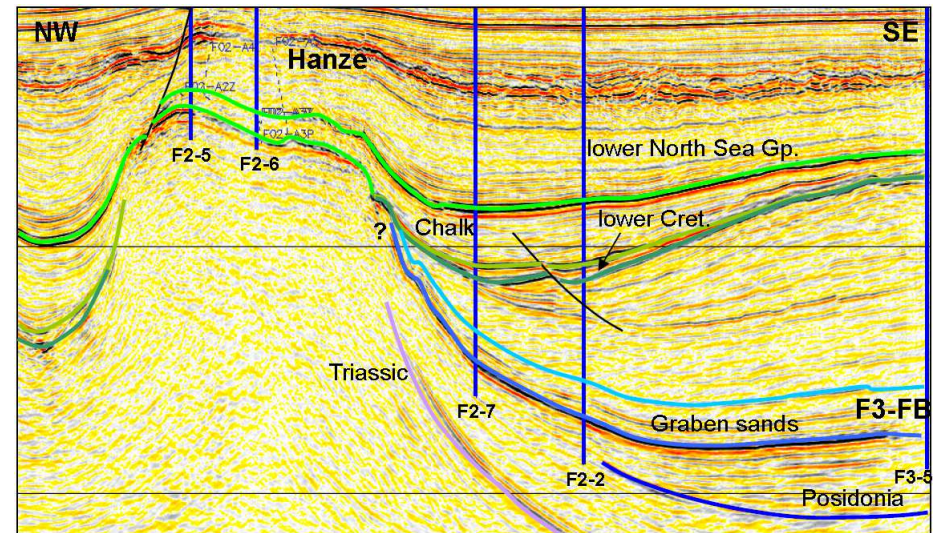
GDF SUEZ

TAQA

ebn

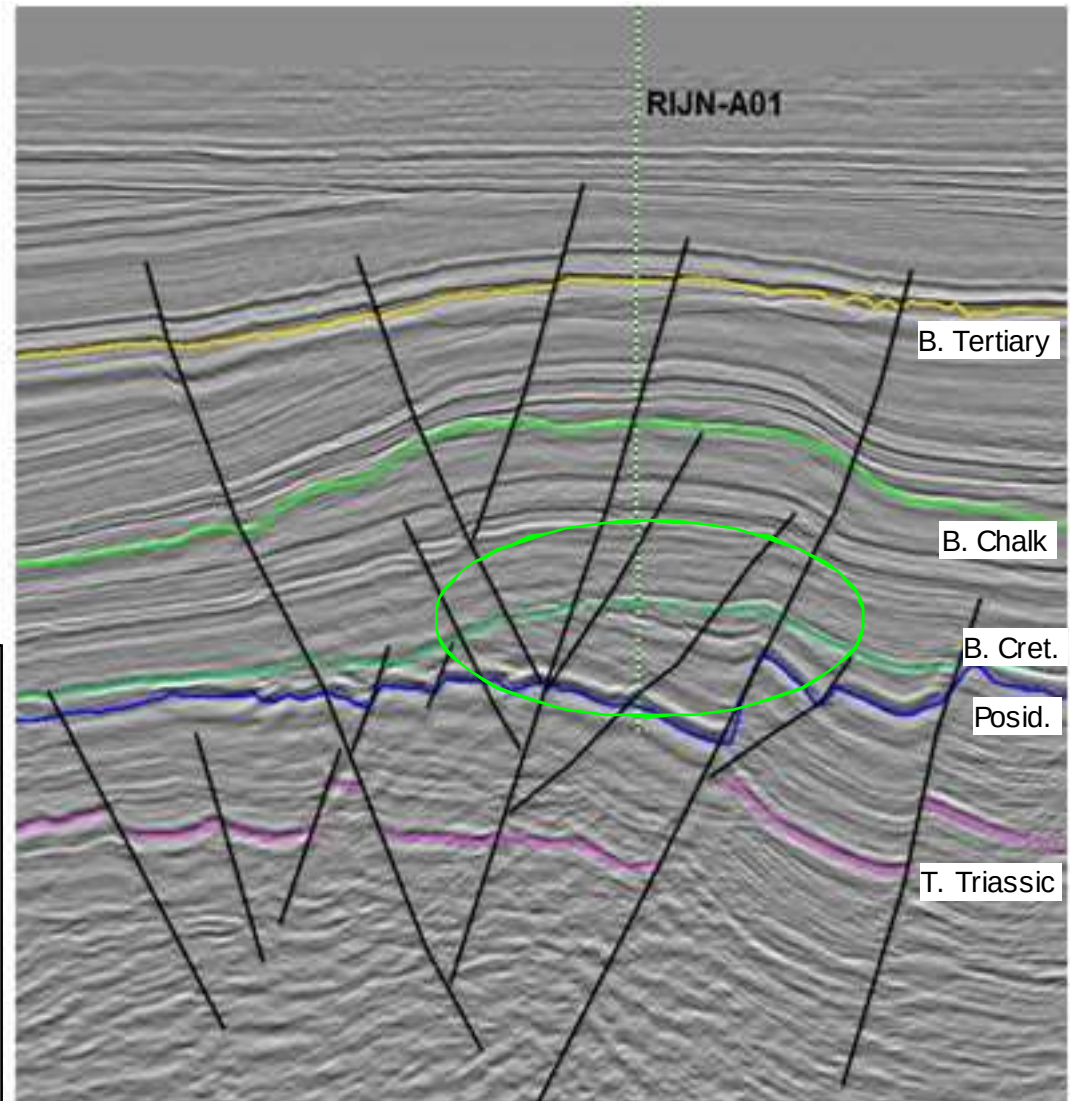
Hanze Oil Field (F02)

- Discovered : 1996
 - Production start: 2001
 - Initial production: 32000 bopd
 - current production: 2600 bopd
 - STOIIP: 156 Mil bbl
 - Recent infill drilling
-
- 4-way dipclosure on salt diapir
 - Depth ca. 1500 m
 - Reservoir: Chalk
 - Source: Posidonia Shale
 - Seal: Tertiary shale



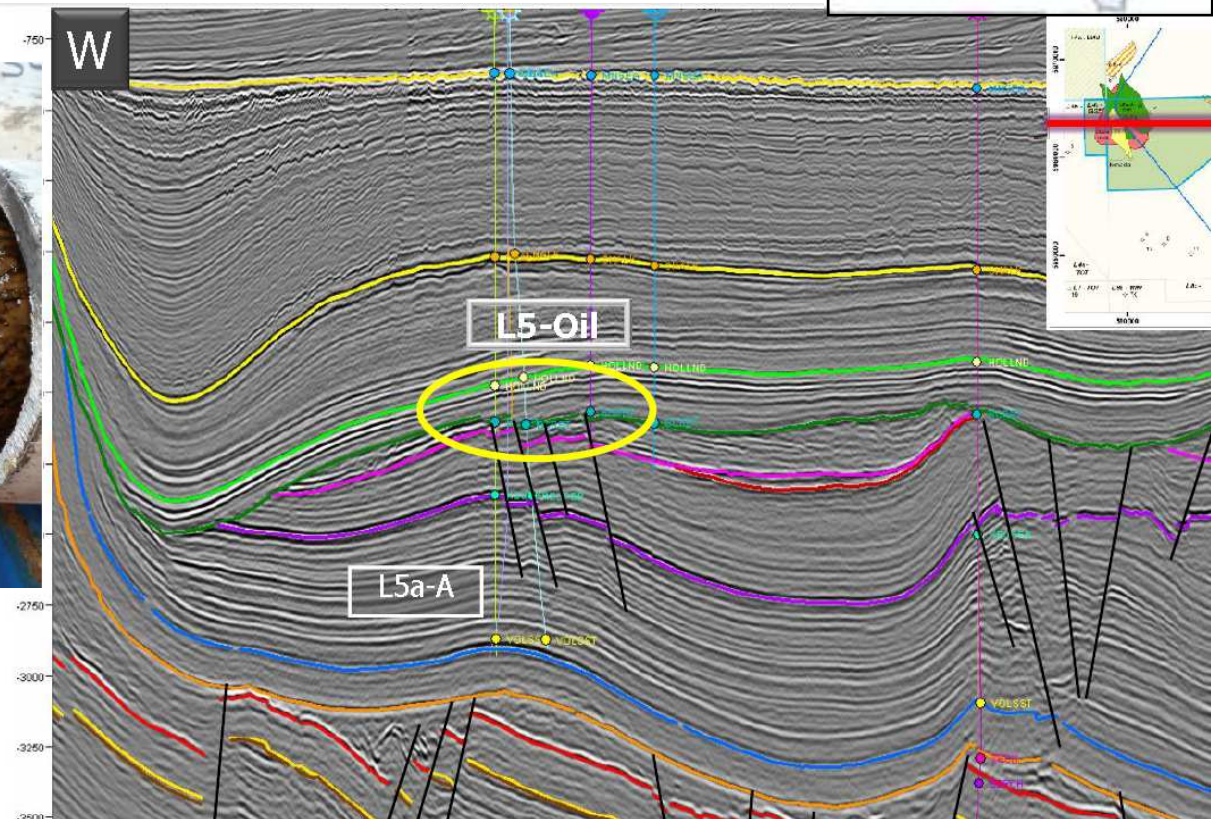
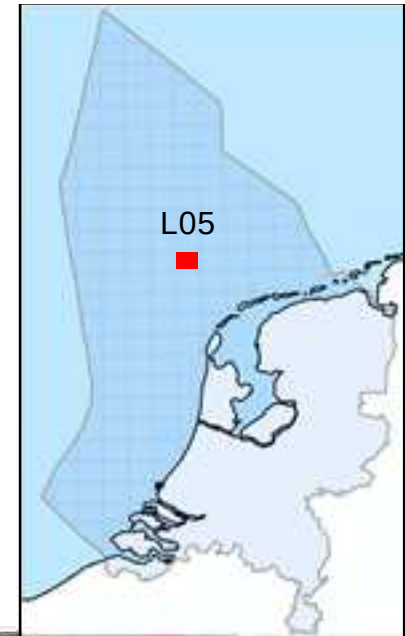
Rijn Oil Field (P15)

- Discovered : 1982
- Produced : 1985 to 1998 (2 platforms)
- Shut-in: 1998 (BP)
- 2009: Recompletion of 10 wells (TAQA)
- Production restarted in 2010
- Developed STOIMP: 137 Mil bbl
- Fault bounded anticline
- Depth ca. 2000 m
- Reservoir: Lower Cretaceous - Rijn Mbr
- Source: Posidonia Shale
- Seal: Vlieland Claystone

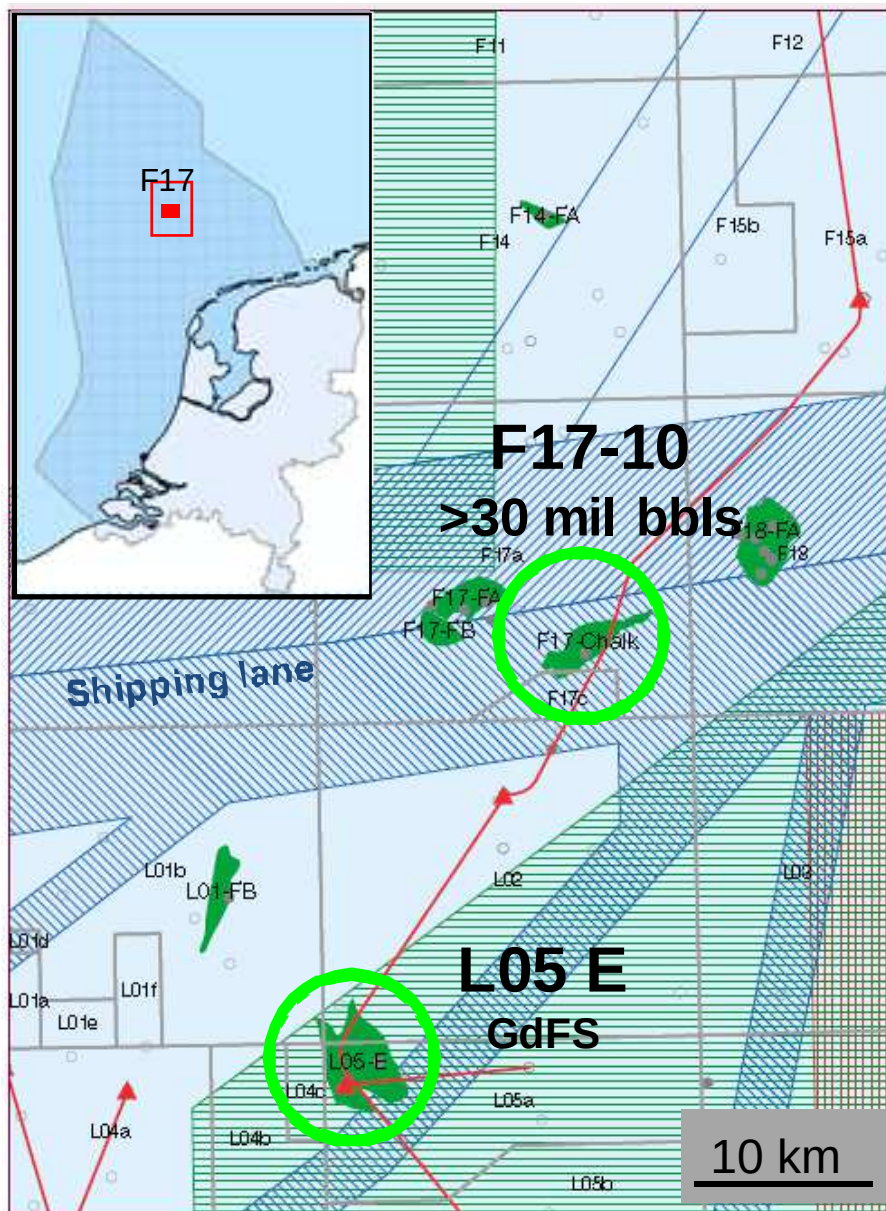


L05 E Oil Field

- Discovered 1983
- Jurassic Sst in faulted dip closure
- Oil above Triassic gasfield
- 3 appraisal wells drilled in 2013



Oil Province L05 - F17 - F18



Promising oil potential in the northern Dutch offshore

“The success of Wintershall’s F17-10 Chalk oil well has put the spotlight back onto this area, where 4 stranded fields are located: Sterling’s Korvet, Brigantine, Fregat and GdFS L05-E”

FODOG 2013

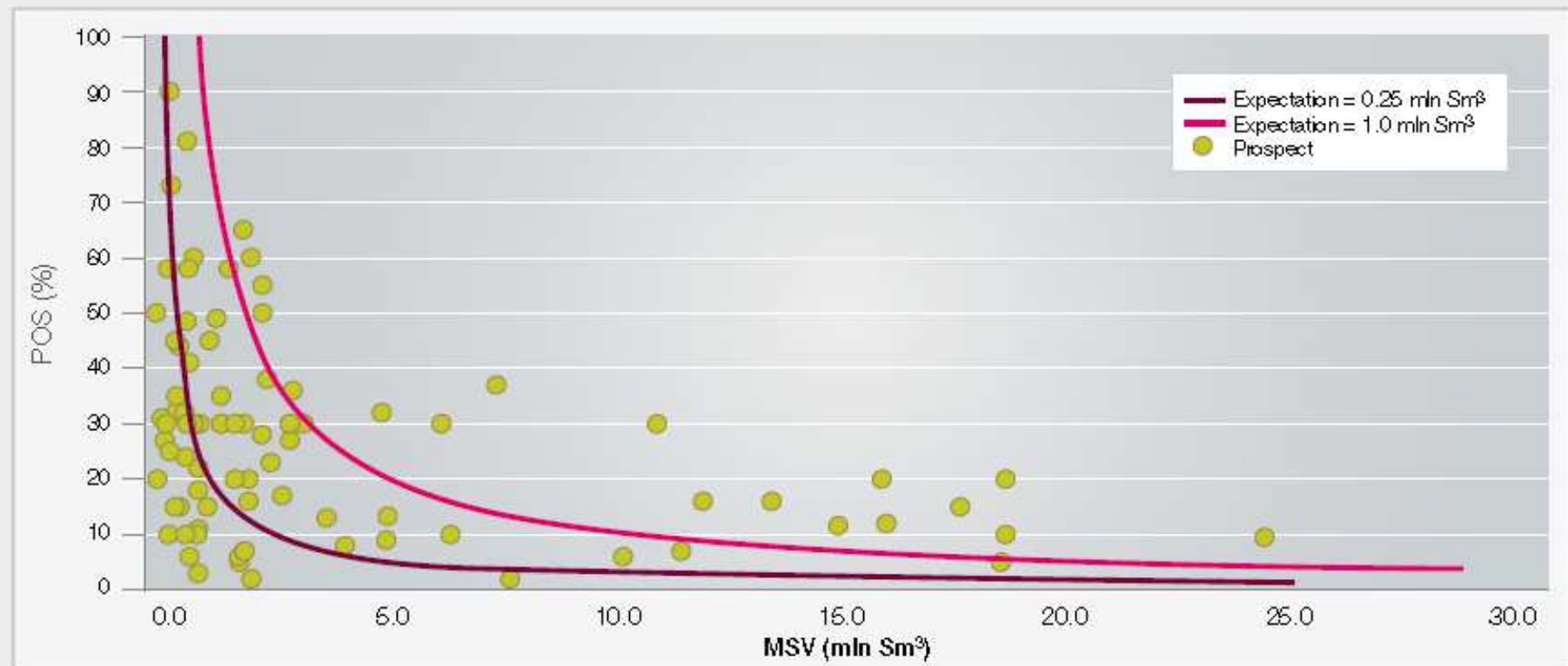


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Oil exploration portfolio

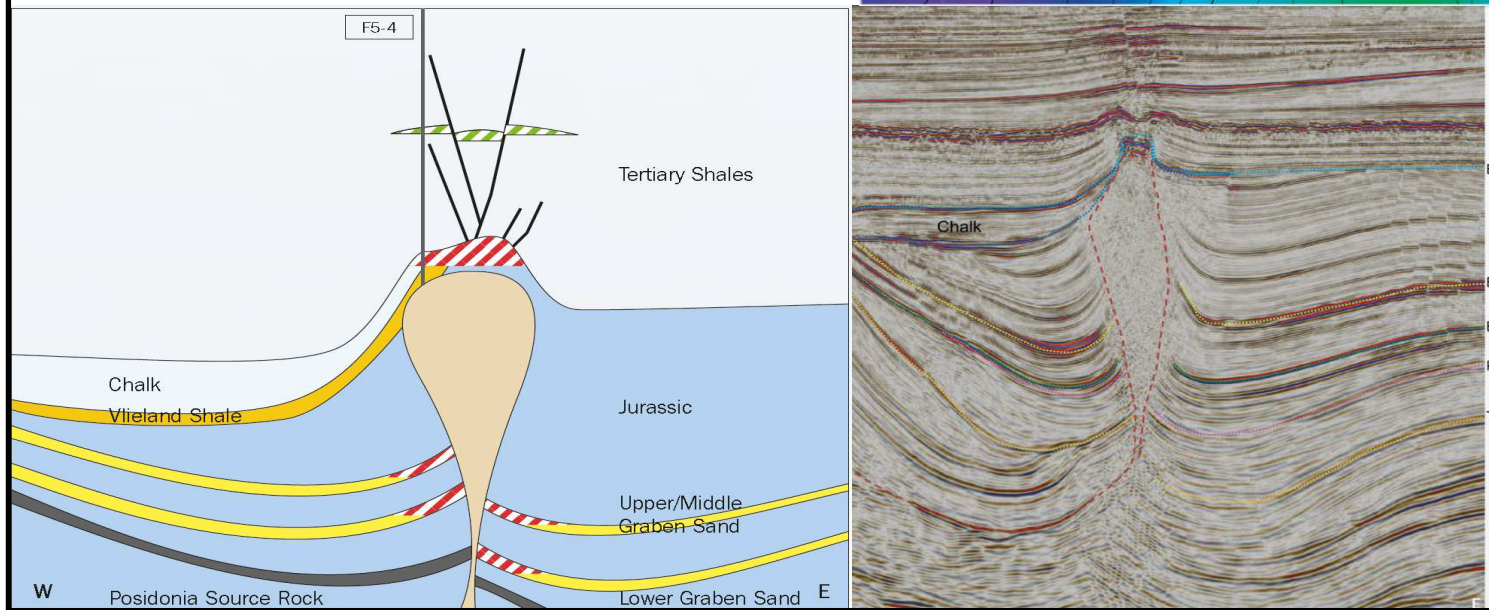
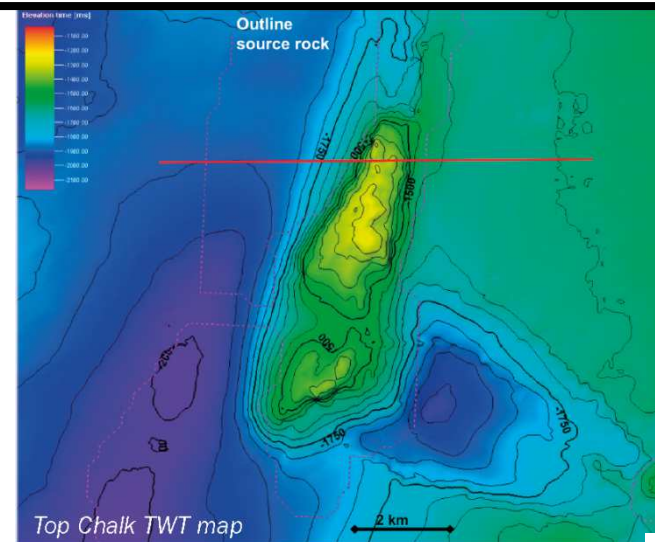
Offshore oil prospects: POS and MSV



New prospects: Kingfisher

F5-Kingfisher

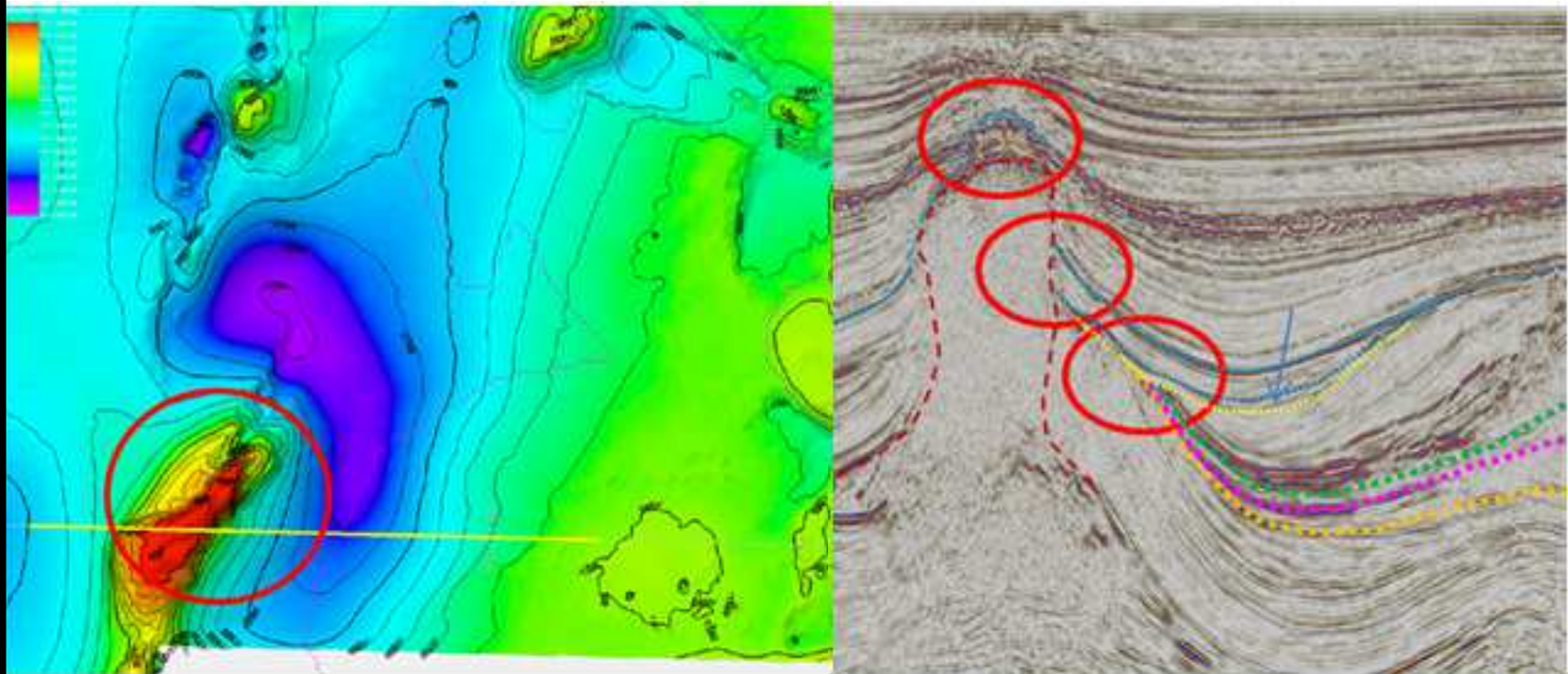
- Oil prospect updip from shows
- Multiple targets:
Tertiary, Chalk, Vlieland, Jurassic Sst
- First 3D coverage
- Open acreage



New prospects: Sea Eagle

F8-Sea Eagle

- Multiple traps: 4-way dipclosure, truncation trap, salt flank trap,
- Multiple targets: Tertiary, Chalk, Vlieland, Jurassic Sst
- Adjacent to mature Posidonia oil kitchen
- First 3D coverage: enhanced structural definition
- Open acreage



Summary

- Rich history (90 years!) of Oil in the Netherlands
- New oil developments ongoing: technology enables!
- Healthy portfolio of re-developments, stranded fields & exploration

Oil in the Netherlands: Q&A

Schoonebeek 2013

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