

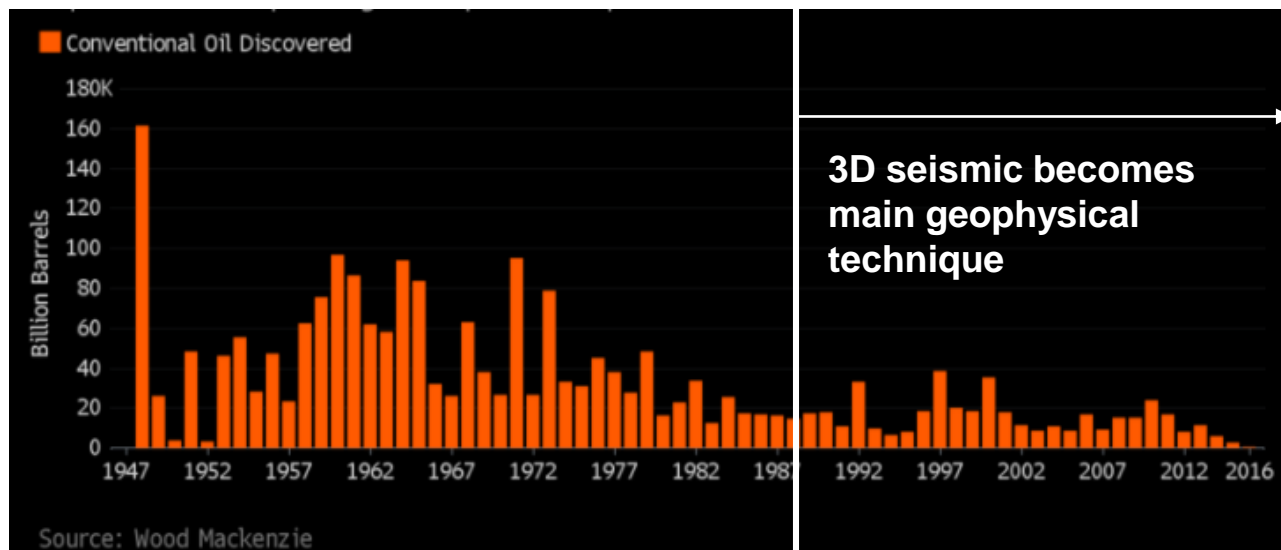
De-risking offshore exploration to survive in the low oil price era

Daniel Baltar

Appex 2018, London

Historical exploration success

- Conventional replacement of reserves is at its historical lowest
- Even though we now have better information than ever

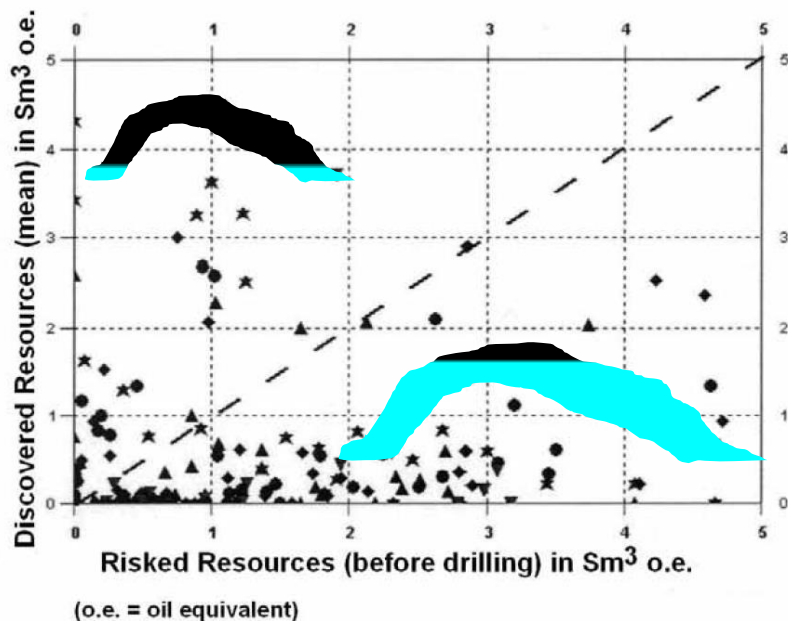


Exploration performance

Exploration
Performance

Exploration
Decisions

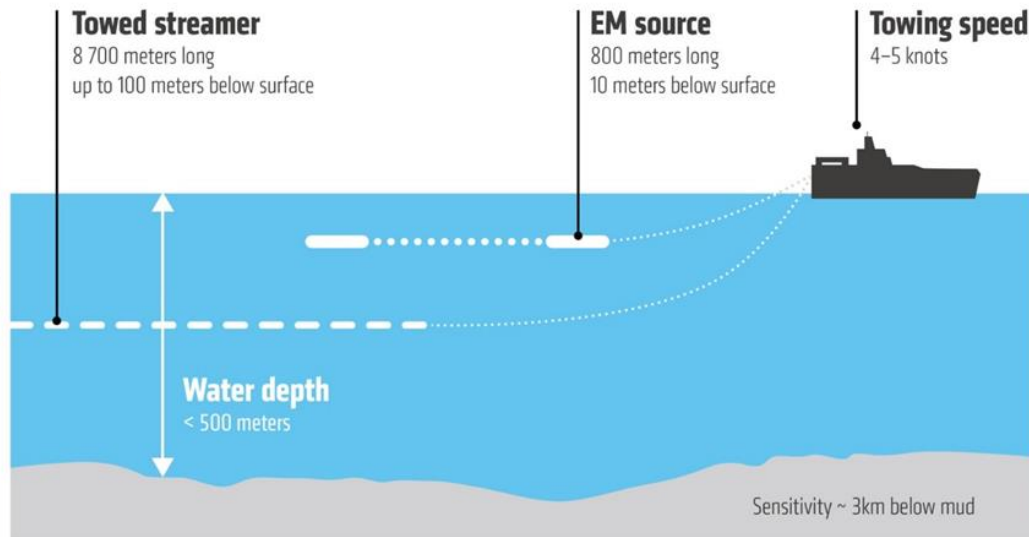
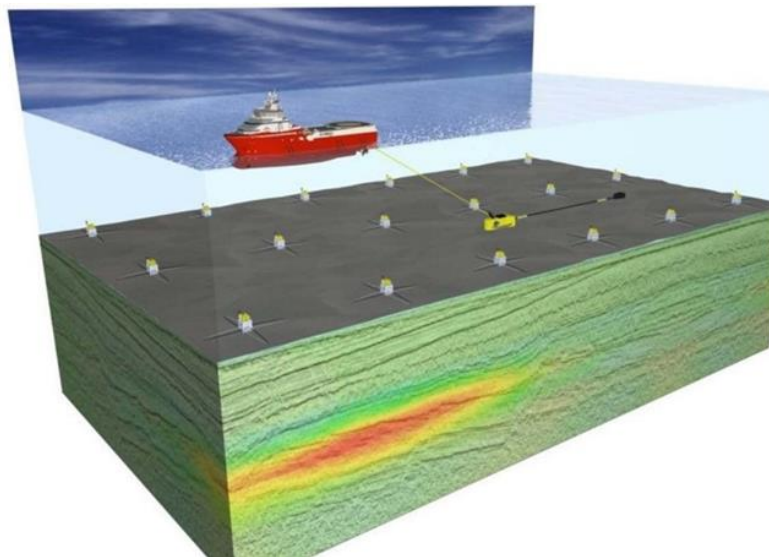
Geological
Evaluation



SPE/WPC/AAPG Guidelines for the Evaluation of Petroleum Reserves and Resources

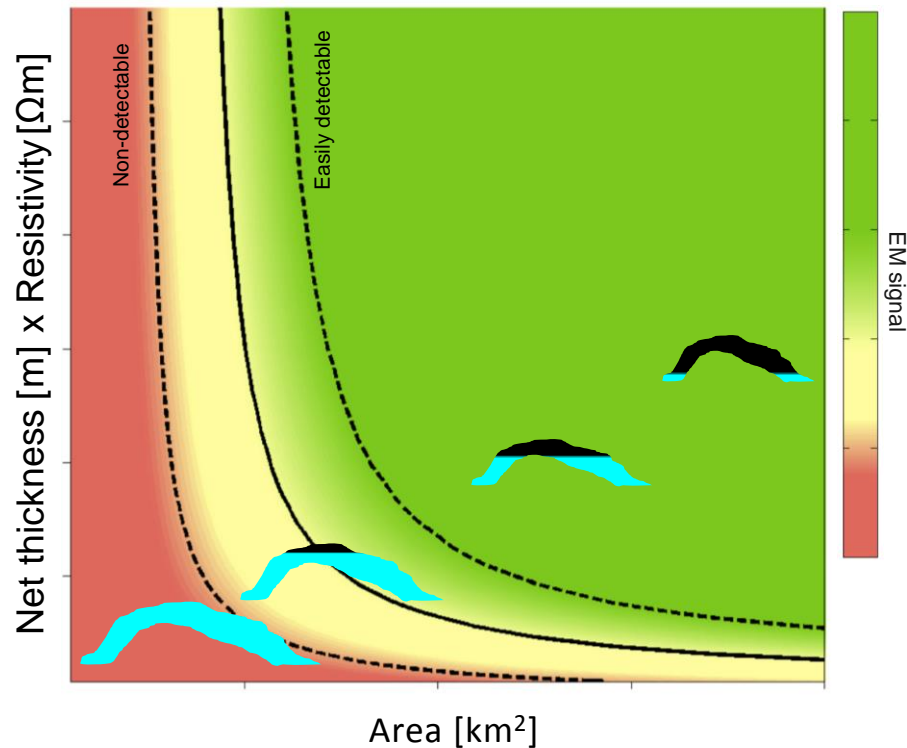
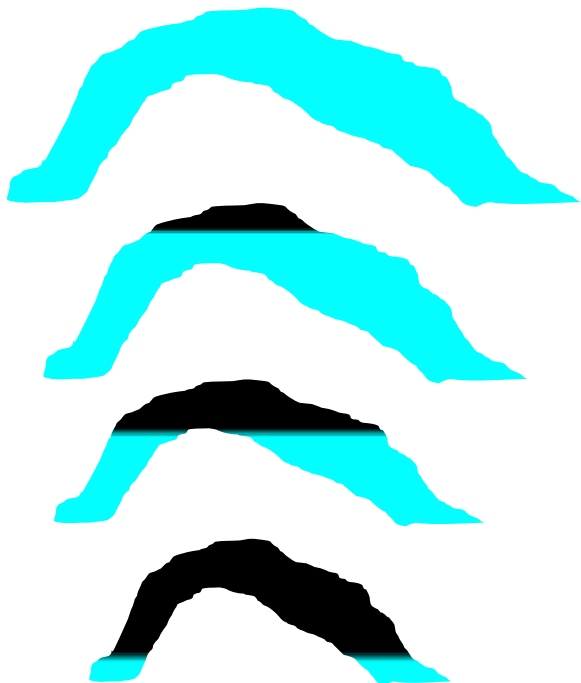
- Our pre-drill evaluations are too optimistic
- Seismic often does not provide sufficient de-risking
- We need more information ahead of drilling

CSEM introduction



- What EM does: Images subsurface resistivity

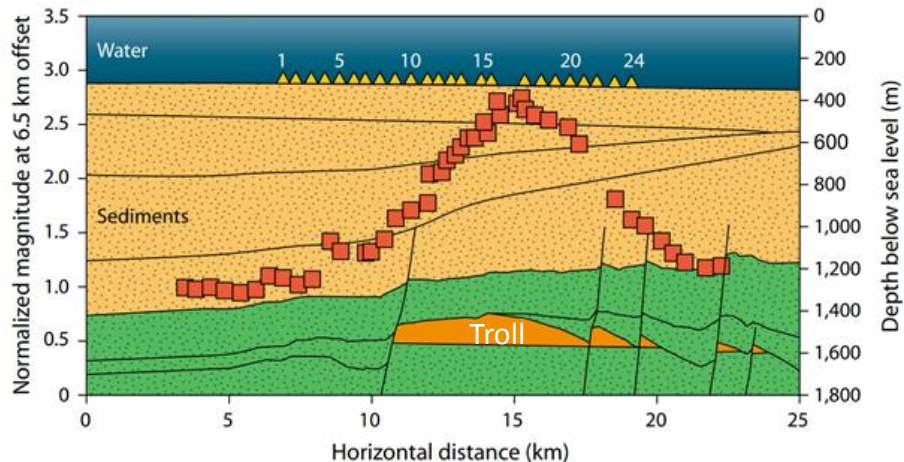
CSEM sensitivity



Note: the sensitivity of CSEM depends on the depth to target, survey design, and background resistivity. Modified from Baltar and Barker, 2015

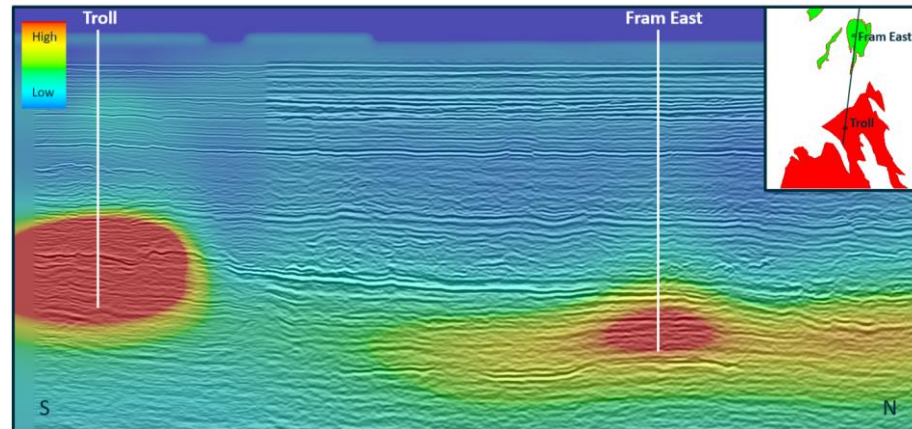
CSEM survey around Troll

Troll WGP 2D survey from 2005 and 1,000 amp source

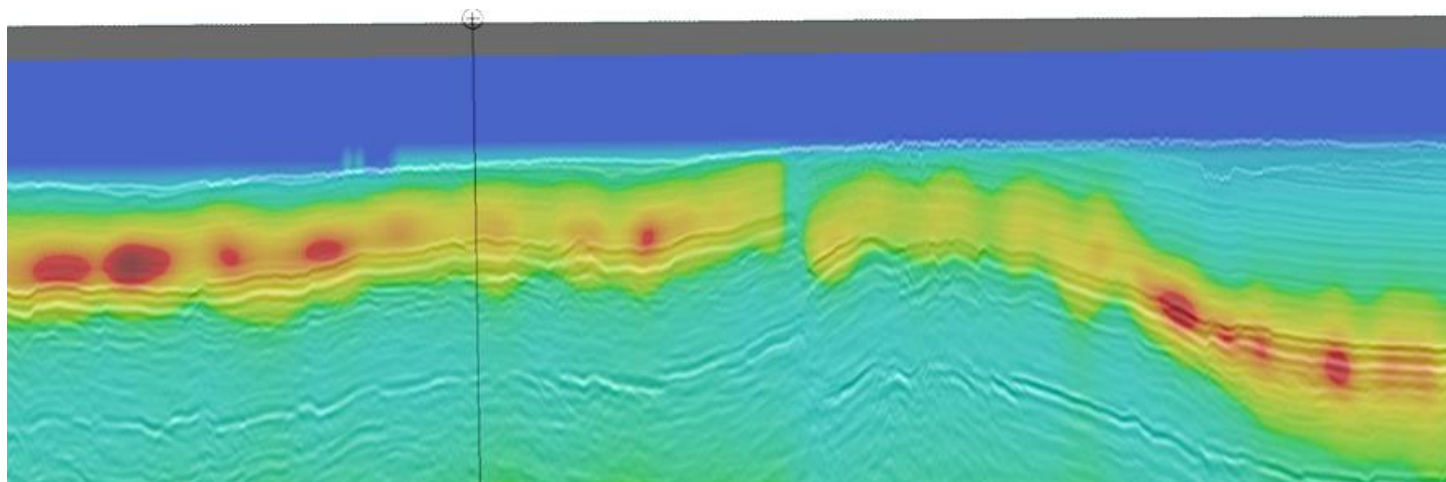


Represents CSEM Data and the bump is the EM anomaly

Troll & Fram 2014 3D survey with 7,200 amp source



Korpfjell

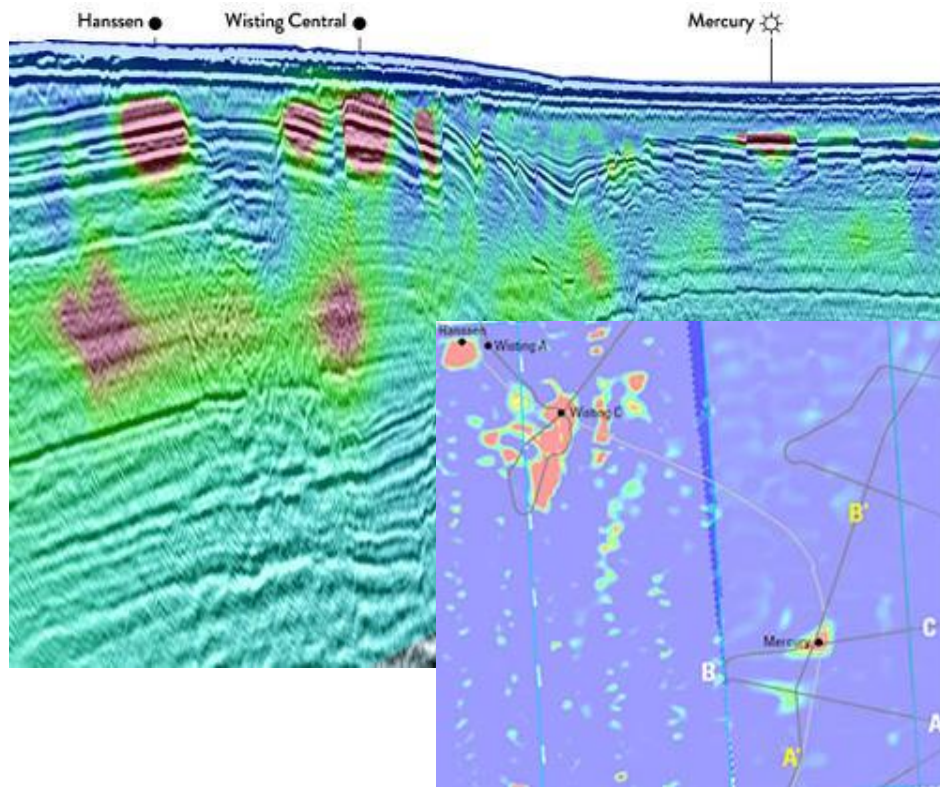


Jurassic Reservoir

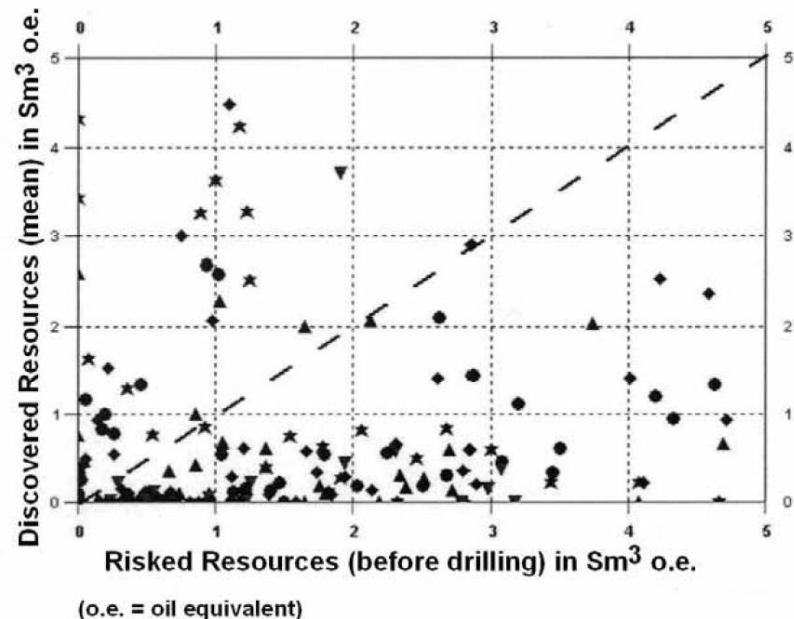


- Most sought after block on 23rd round, 300 km² closure with AVO support
- Many companies did not bid because of CSEM

Wisting, creaming a risky play



- CSEM information helps cream risky plays



To finalize

- Independent advice on portfolio suitability for CSEM
- Management/QC of CSEM survey design, acquisition, processing and interpretation



Neville Barker

CSEM acquisition and processing
Solution development
Longterm CSEM specialist



Daniel Baltar

Worldwide exploration experience
Non-CSEM geophysics
CSEM exploration

For more information visit:
www.foxgeoexploration.com
www.simco-pet.com