

PROSPEX 2012

**Prospects 2 Go**  
**Mullen prospect, LO 11/7**  
**&**  
**Kiernan prospect, LO 11/8**

Hugh Mackay

Europa Oil & Gas

[www.europaoil.com](http://www.europaoil.com)

12<sup>th</sup> & 13<sup>th</sup> December 2012



Europa Oil & Gas plc is an AIM listed oil and gas exploration and production company with a significant portfolio of multi-stage hydrocarbon assets focussed on the UK, France and the Irish Atlantic Margin

# Board of Directors



**Hugh Mackay**  
*CEO*

Hugh Mackay, a geologist, joined Europa in 2011. He has a wealth of experience in the oil and gas sector, including eight years at BP in a variety of roles in the UK, the Oman and Egypt, then at Enterprise Oil in leadership roles, culminating as head of the SE Asia division. Hugh sold the Peak Group to AGR ASA for \$50 million and founded Avannaa Resources, a leading mineral exploration company in Greenland. Hugh has a BSc in Geology from the University of Edinburgh and a Sloan MSc in Management from London Business School.



**Phil Greenhalgh**  
*Financial Director*

Phil Greenhalgh graduated from Imperial College with a BEng in chemical engineering and subsequently became a member of the Chartered Institute of Management Accountants. He began his financial career as Financial Controller with Kelco International, a subsidiary of Merck & Co. He moved to Monsanto plc where he was Finance Director for UK, Eire and Western Sector before becoming Finance Director with Pharmacia Ltd, a UK subsidiary company of Pharmacia formed from the merger of Monsanto and Pharmacia & Upjohn with sales of £276m. He moved to Whatman plc, a FTSE 250 company, where he had extensive dealings with the City of London, lead the financing of a €50m company acquisition and oversaw a substantial share price recovery and was a key member of the Whatman turnaround and acquisition strategy leading to £300 million sale to GE. He has been with Europa since 2008, raising £9.8 million.



**Bill Adamson OBE**  
*Non-Executive Chairman*

Bill Adamson, a Chartered Engineer, has had a longstanding career in the energy industry with BG Group Plc managing all aspects of large gas businesses including CNG, power generation, joint venture management, corporate governance and risk and safety management. He was the Chairman and CEO of MetroGas S.A., Argentina's post-privatisation leading gas utility, Vice President and General Manager of BG Group's UK Downstream and most recently Managing Director BG India where he managed a portfolio of Upstream and Downstream businesses. He was also Chairman of Composite Energy which was sold to Dart for \$48 million. Bill holds an Honours Degree in Gas Engineering from the University of Salford.



**William Ahlefeldt**  
*Non-Executive Director*

William Ahlefeldt helped take Europa Oil and Gas onto AIM and is its largest shareholder. He started his career at Maersk as a petroleum engineer followed, in 1987, by IPEC, a London based consultancy company, where he was responsible for field reserves estimations. In 1990, he became an independent consultant, undertaking field and portfolio evaluations for acquisitions and field development work on a range of projects in the North Sea, former Soviet Union and Middle East. William has been a non executive director of Europa since its float in 2004. He is also the founder of IFX Infoforex. William has continued to be active in petroleum engineering consulting doing portfolio evaluations and project management in the Middle East.



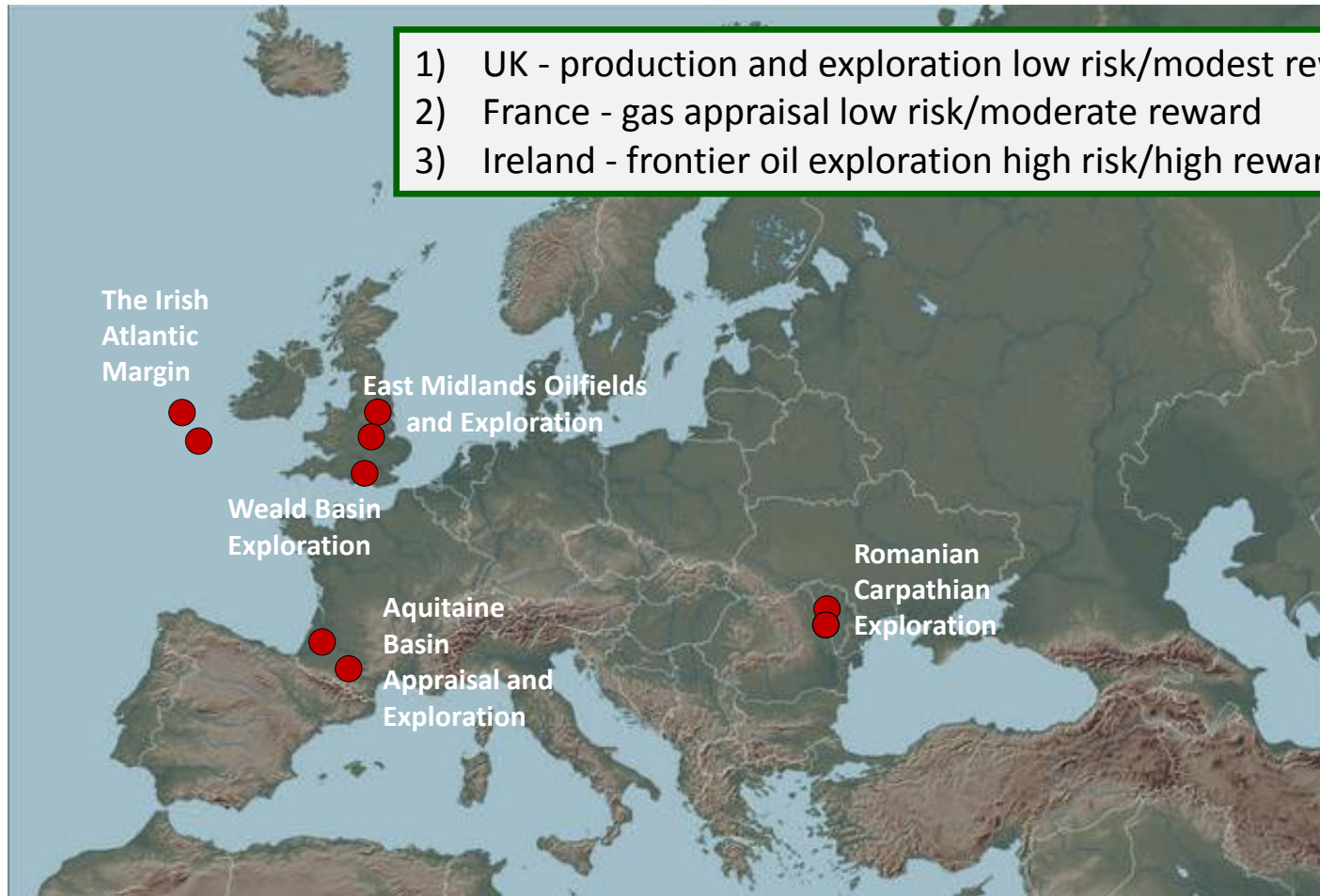
**Roderick Corrie**  
*Non-Executive Director*

Roderick Corrie is a graduate of Cambridge University, an Associate of the Chartered Institute of Banking and a Member of the Securities Institute. He is a strategic adviser and financier with a variety of companies. Holds or has held executive or non-executive roles in corporate finance, strategic advice, financial services, health, property, mineral exploration, investment and manufacturing companies. Previously held senior positions in the banking industry. Roderick Corrie is also the CFO of Lydian International, a \$300 million gold exploration company.

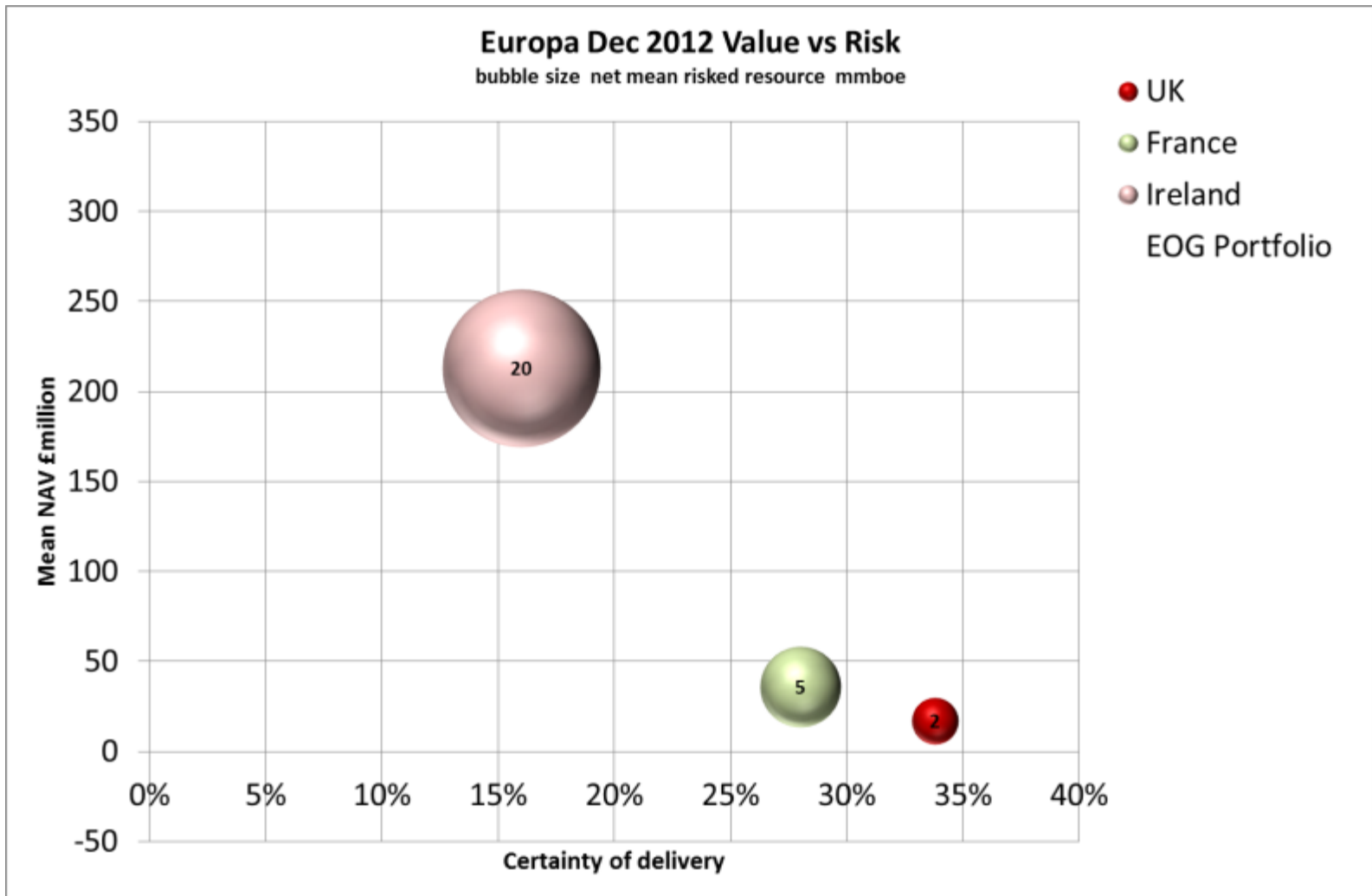
# Portfolio

“Our portfolio has three core areas : UK, France and Ireland”

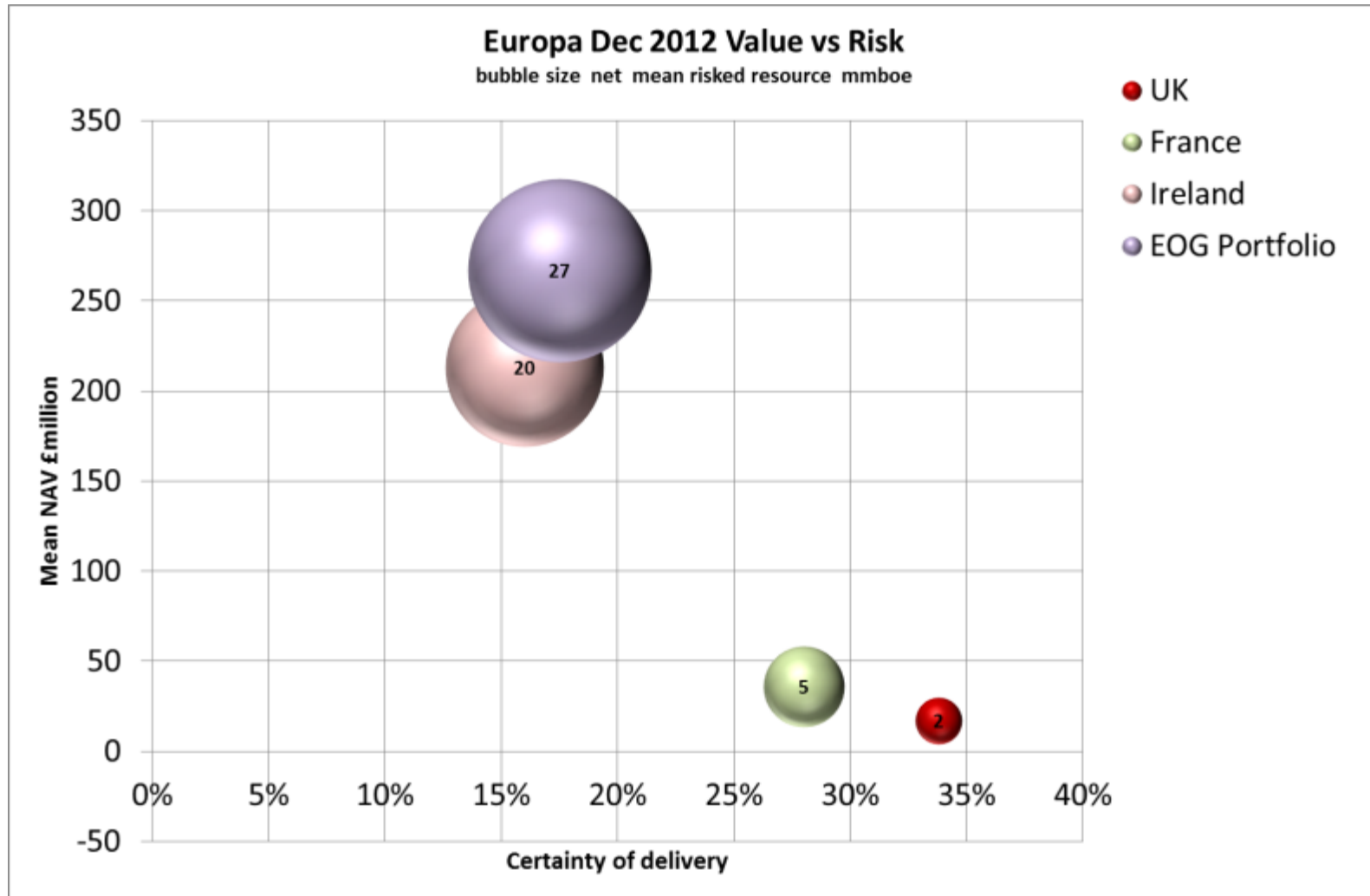
- 1) UK - production and exploration low risk/modest reward
- 2) France - gas appraisal low risk/moderate reward
- 3) Ireland - frontier oil exploration high risk/high reward



# Three Core Areas

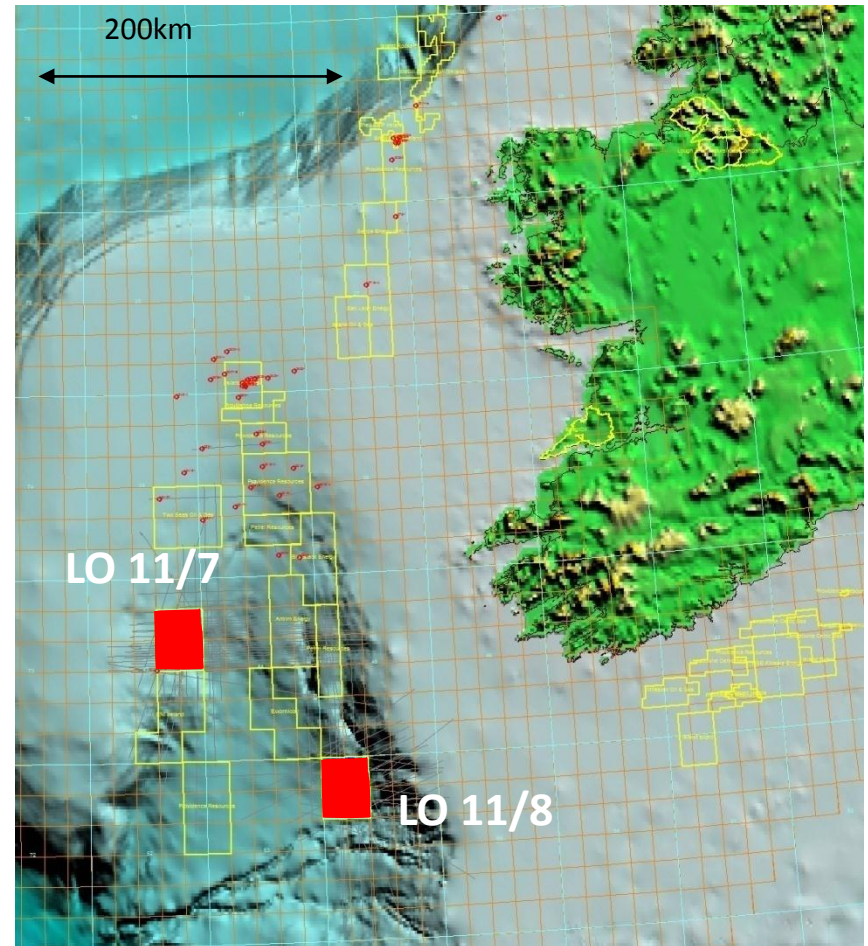


# Portfolio Perspective



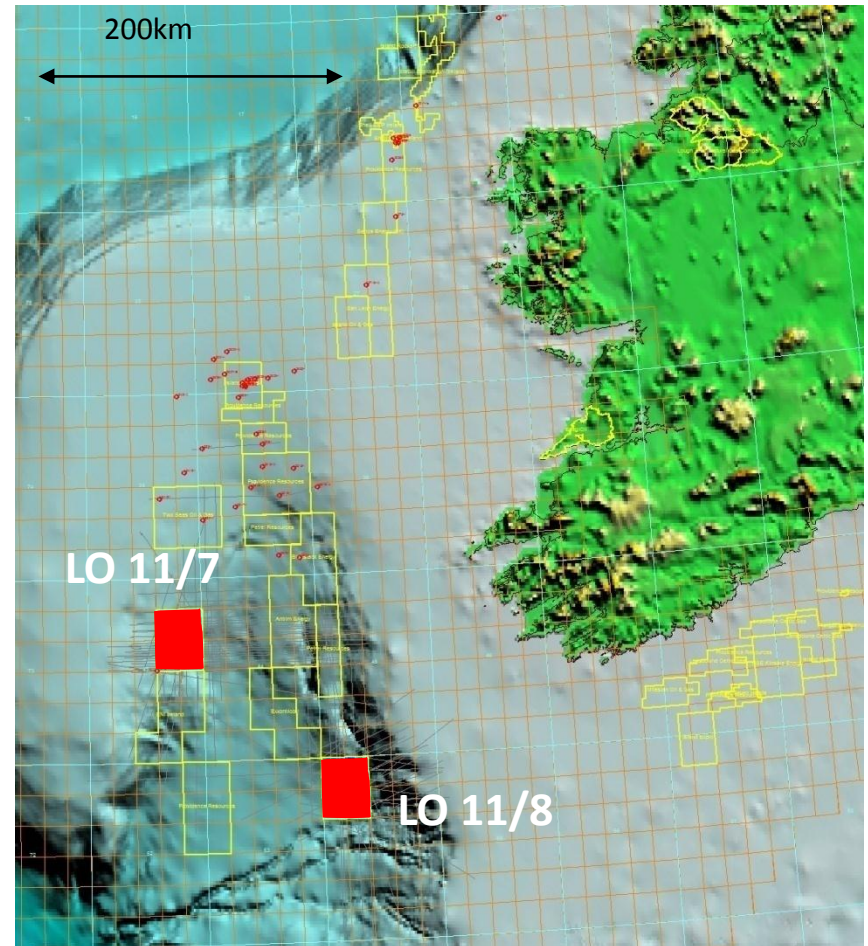
# Location

- South Porcupine Basin, virtually unexplored
- 100% equity in two licence options LO 11/7 and LO 11/8
- Large Lower Cretaceous clastic prospects with amplitude support
  - Proven play at Burren (North Porcupine), flowed oil
  - Potentially very large volumes
- Excellent fiscal terms (25-40% PRT)
- Moderate to deep water prospects (1000-2000m)
- Similar operating environment to West of Shetlands
- Seeking JV partner to take to a frontier exploration license, de-risk and drill

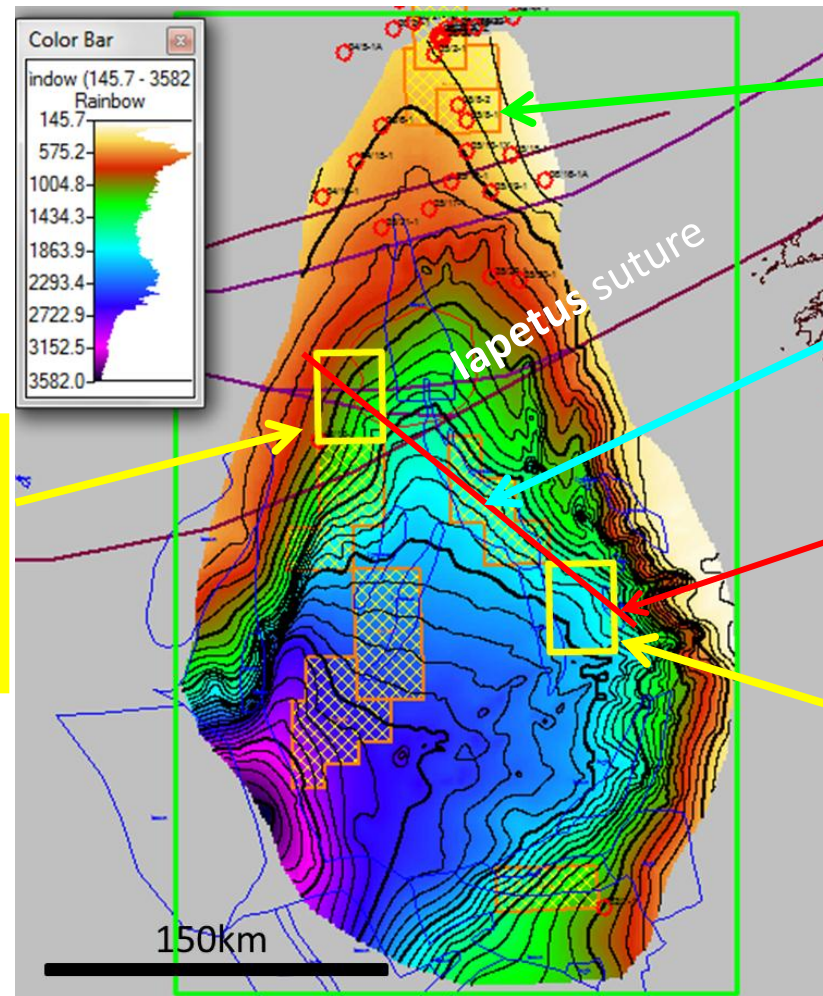


# Licence details

- Two separate License Options
- LO 11/7 & LO 11/8
- ~ 1000 km<sup>2</sup> each
- 100% Europa
- License Option
  - 1 Nov 11 – 31 Oct 13
- Apply for Frontier Exploration Licence
  - Relinquish minimum 25%
  - 15 years duration
  - 1 phase of 3 years followed by 3 phases of 4 years each.
  - seismic and well commitments



# Porcupine Basin Water Depth (m)



## LO 11/7 Mullen

Lower Cretaceous play  
800m-1400m water depth,  
limit of fixed platform

## Burren

Lower Cretaceous oil  
discovery ~375 bopd

## Dunquin

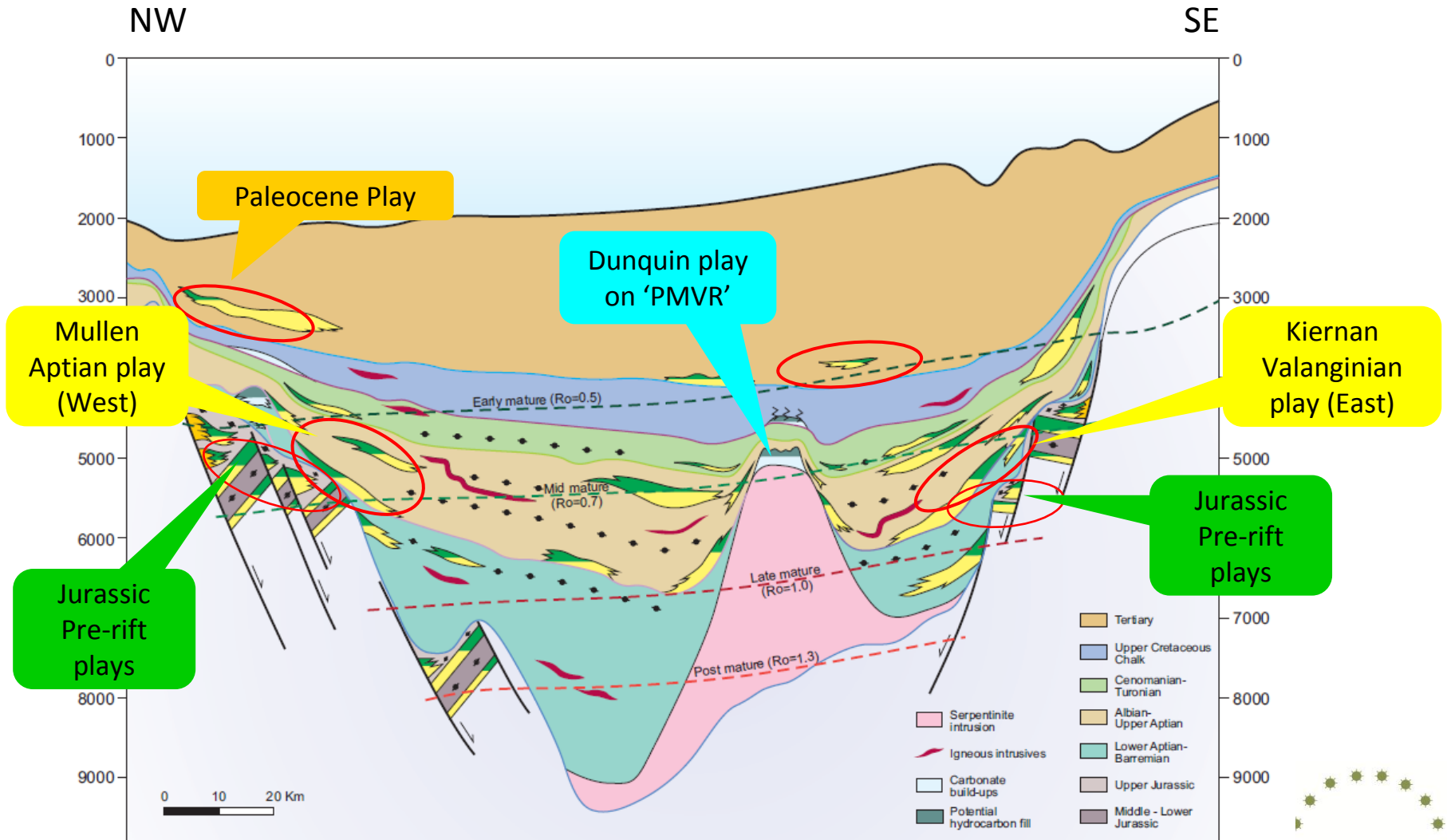
Middle Cretaceous  
Carbonate prospect  
8.4 TCF + 316 MMBO drill  
Q1 2013

Line of section

## LO 11/8 Kiernan

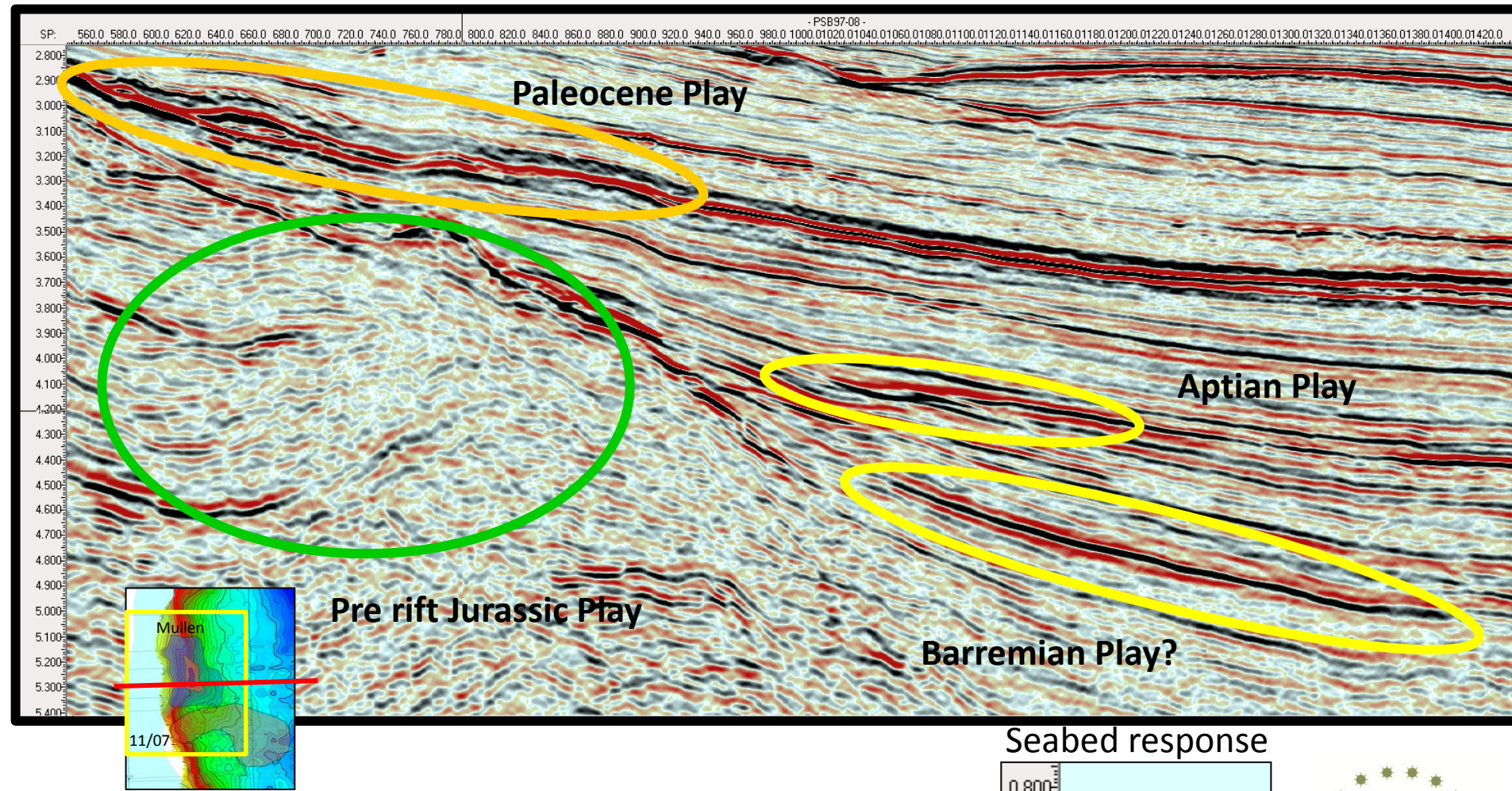
Lower Cretaceous play  
1400-2000m water depth,  
most likely suited  
to FPS

# South Porcupine Basin Cross Section



PMVR: Porcupine Median Volcanic Ridge  
 Cross-section courtesy of PhysicalGeo Limited

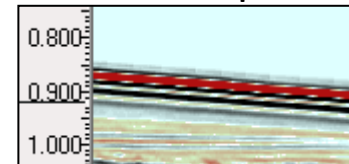
# Line PSB97-08 LO 11/7 Mullen Plays



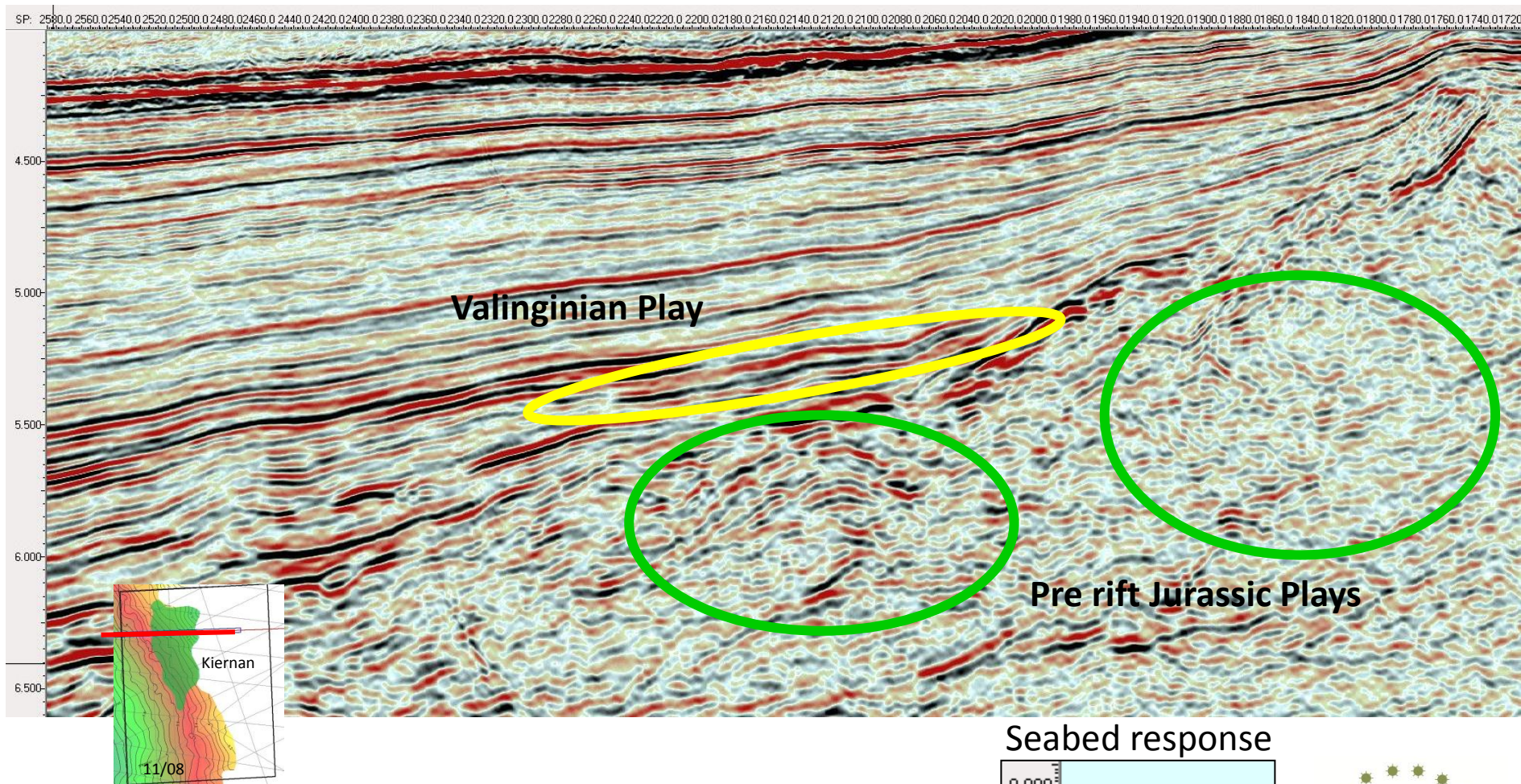
Polarity : black peak decrease in acoustic impedance

Data shown courtesy of TGS and WesternGeco

Seabed response



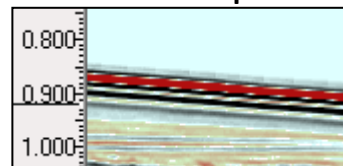
# Line PSB97-50 LO 11/8 Kiernan Plays



Polarity : black peak decrease in acoustic impedance

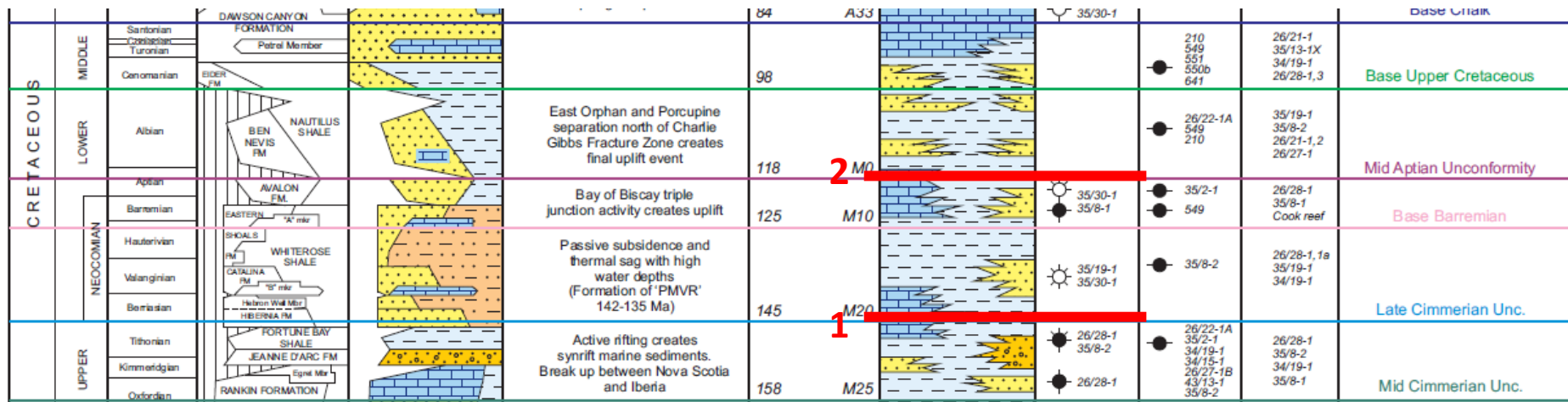
Data shown courtesy of TGS and WesternGeco

Seabed response

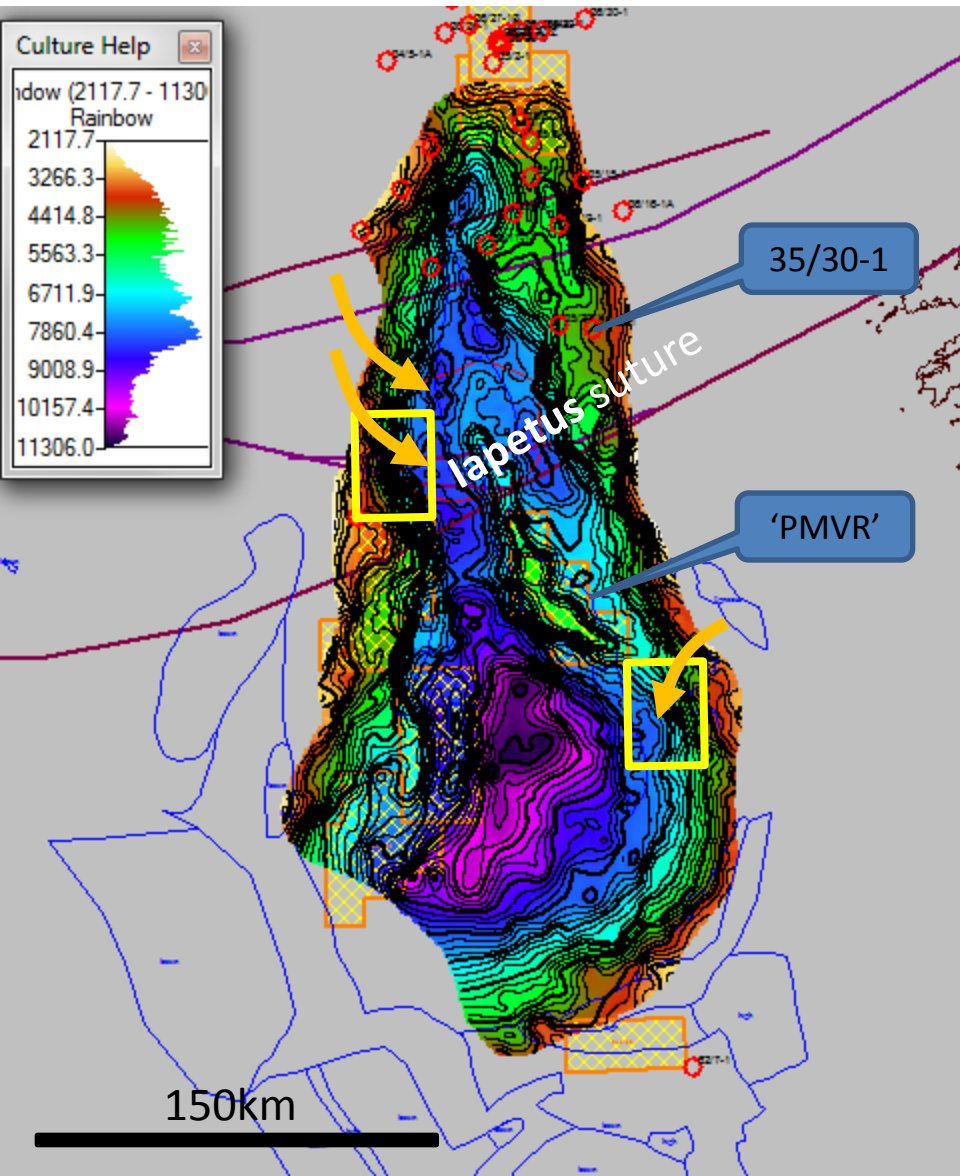


# Reservoir

- Lower Cretaceous sands of the Mullen (West) and Kiernan (East) prospects are deposited as deepwater turbidite channels
- Coincident with local uplift events on the basin margins
  - Kiernan (East) is fed by a Valanginian channel, immediately above the Base Cretaceous Unconformity (145my, Chron M20)
  - Mullen (West) is fed by an Aptian channel, immediately above the Mid Aptian Unconformity (118my, Chron M0)



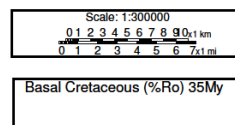
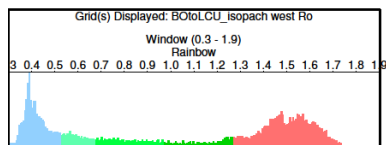
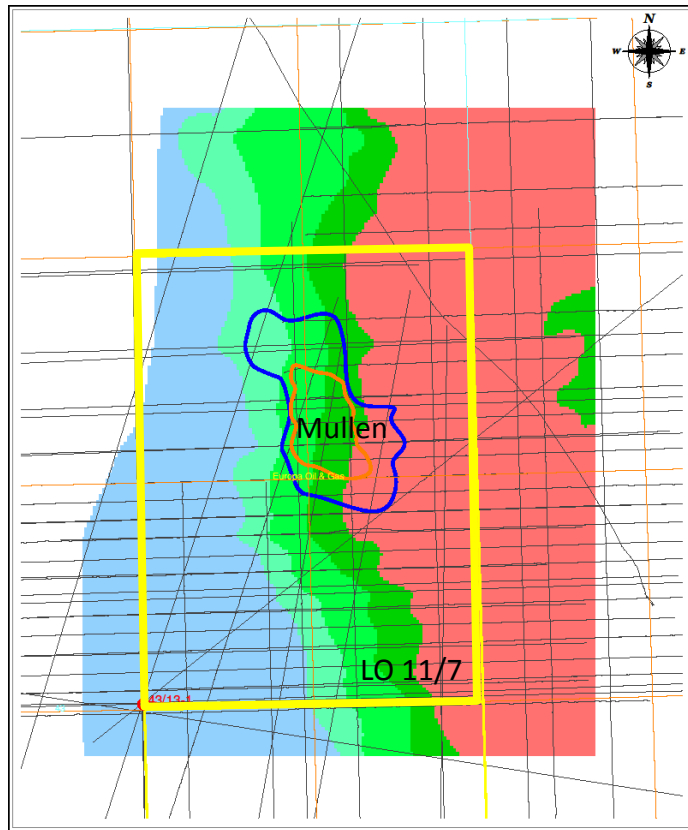
# Base Cretaceous Depth map (m)



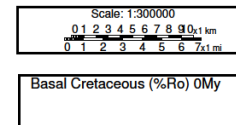
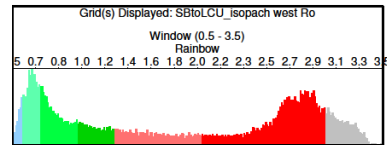
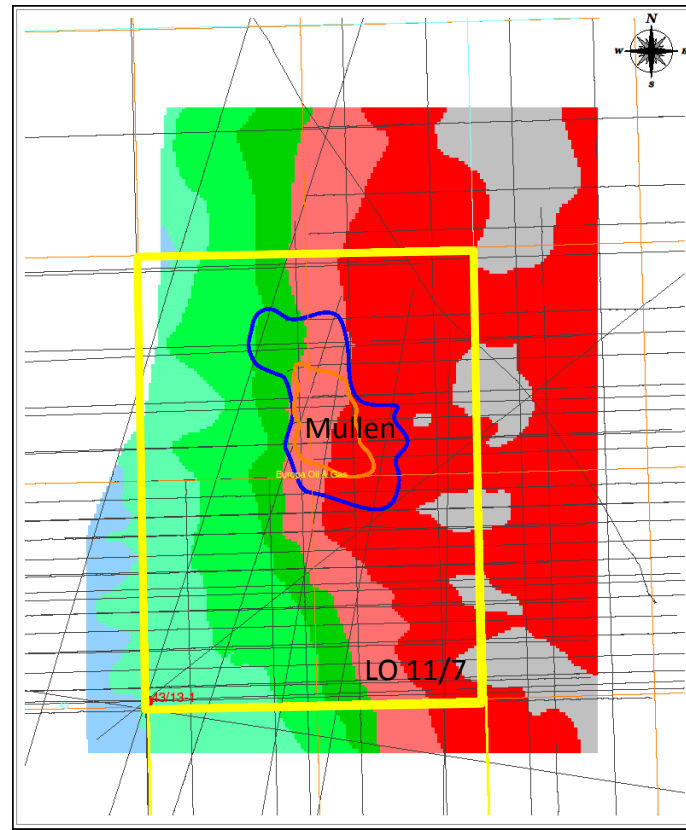
- Combined map of Late Cimmerian Unc. and PMVR structure.
- Arrows indicate possible Lower Cretaceous sand provenance directions
  - From Porcupine High in West
  - From Munster basin (ORS) in East

# Mullen – Jurassic source maturity

Top Jurassic maturity 35 My

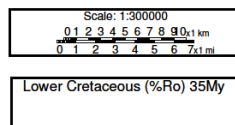
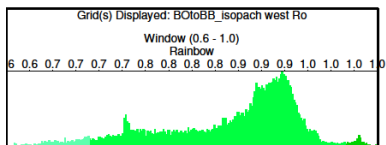
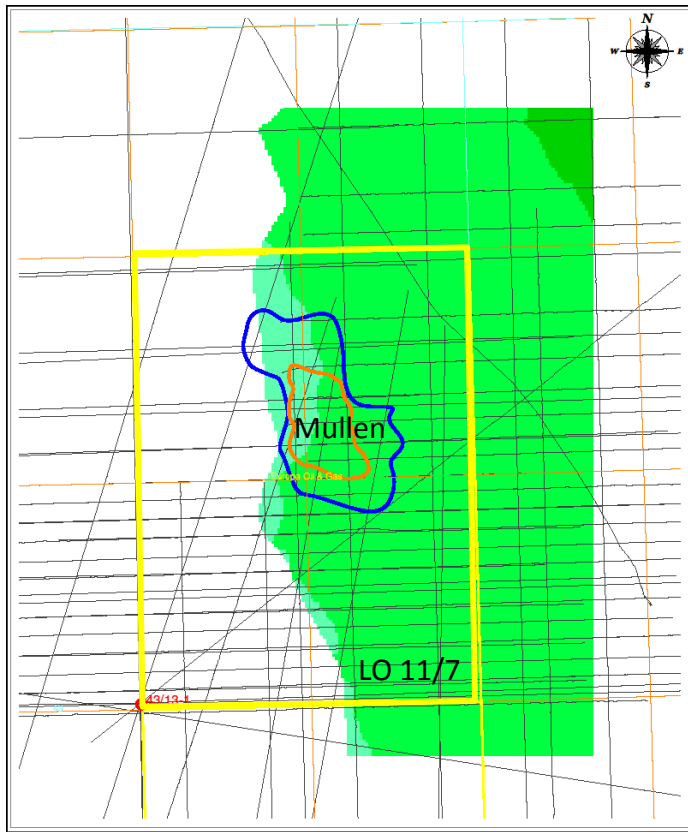


Top Jurassic maturity 0 My

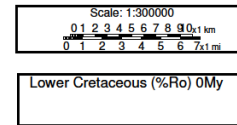
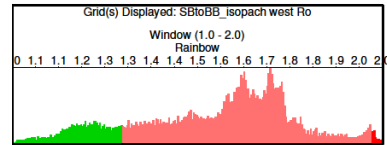
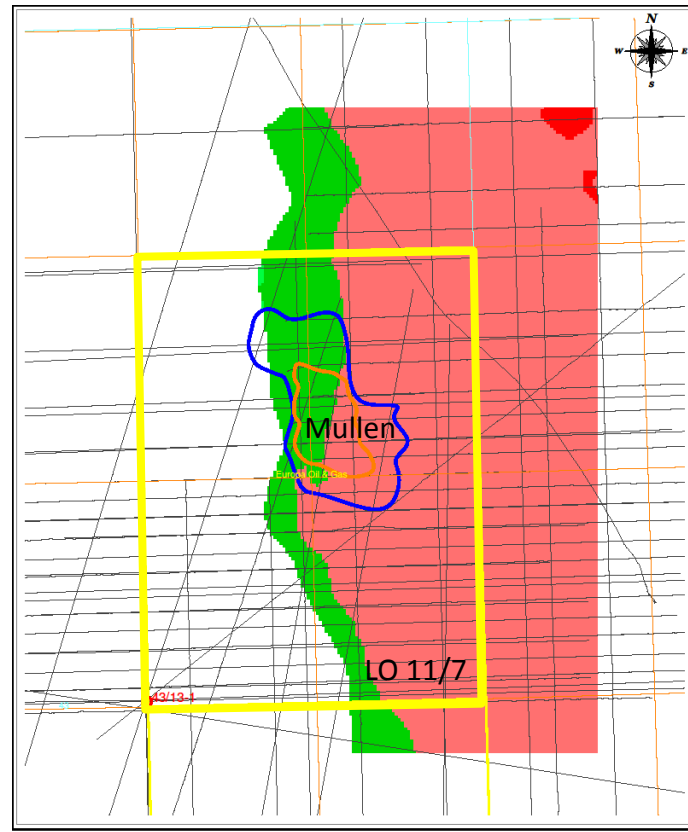


# Mullen – Cretaceous source maturity

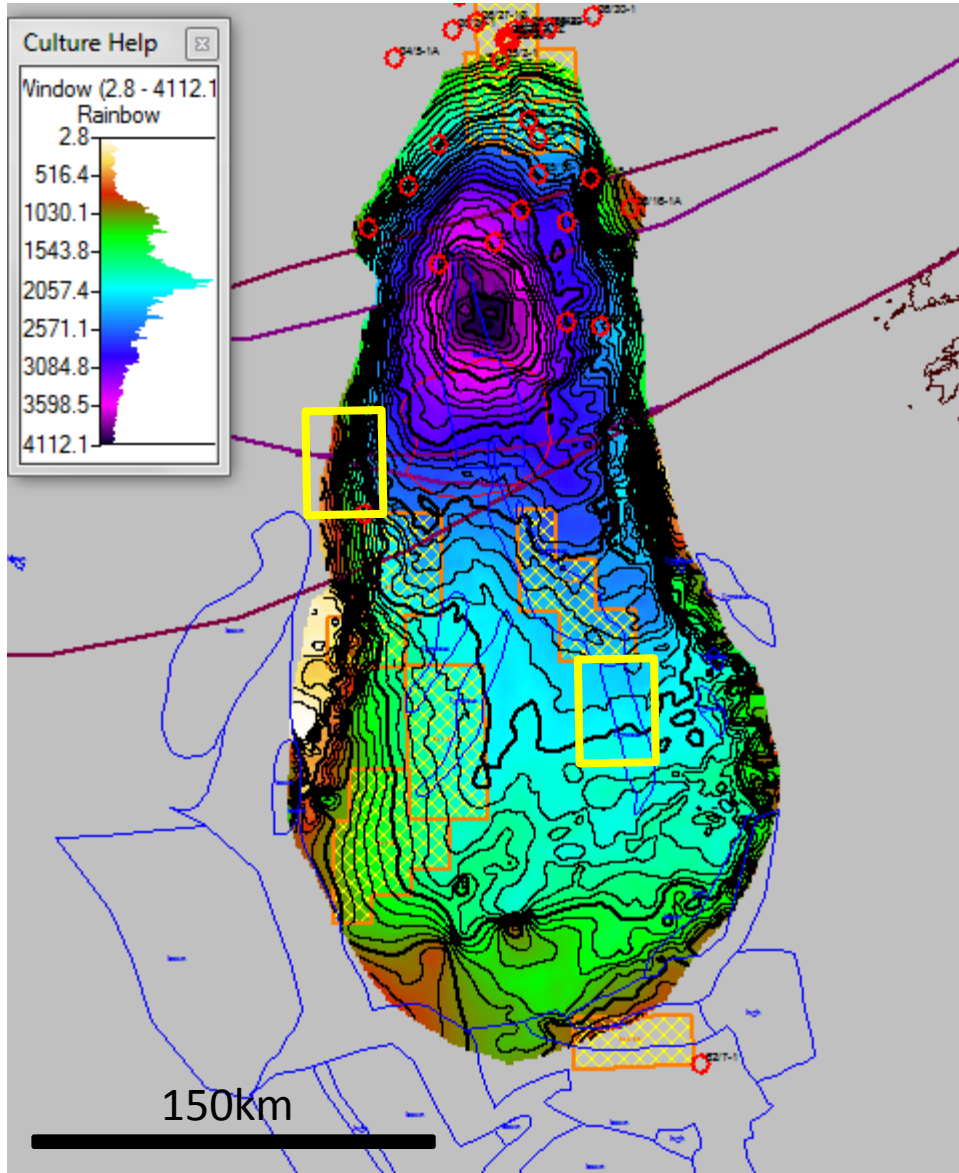
Lower Cretaceous maturity 35 My



Lower Cretaceous maturity 0 My

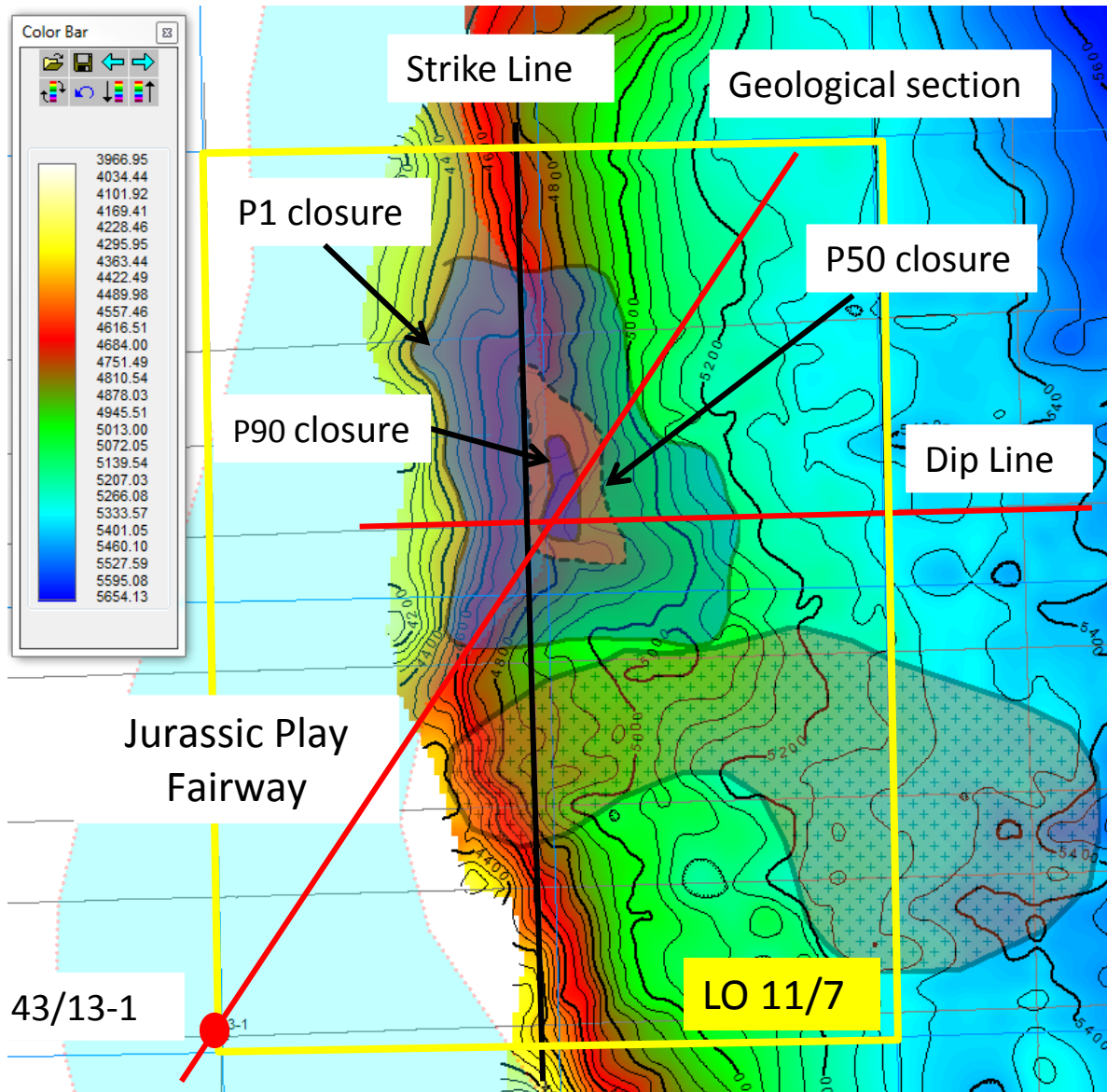


# Sea Bed - Base Tertiary isopach (m)

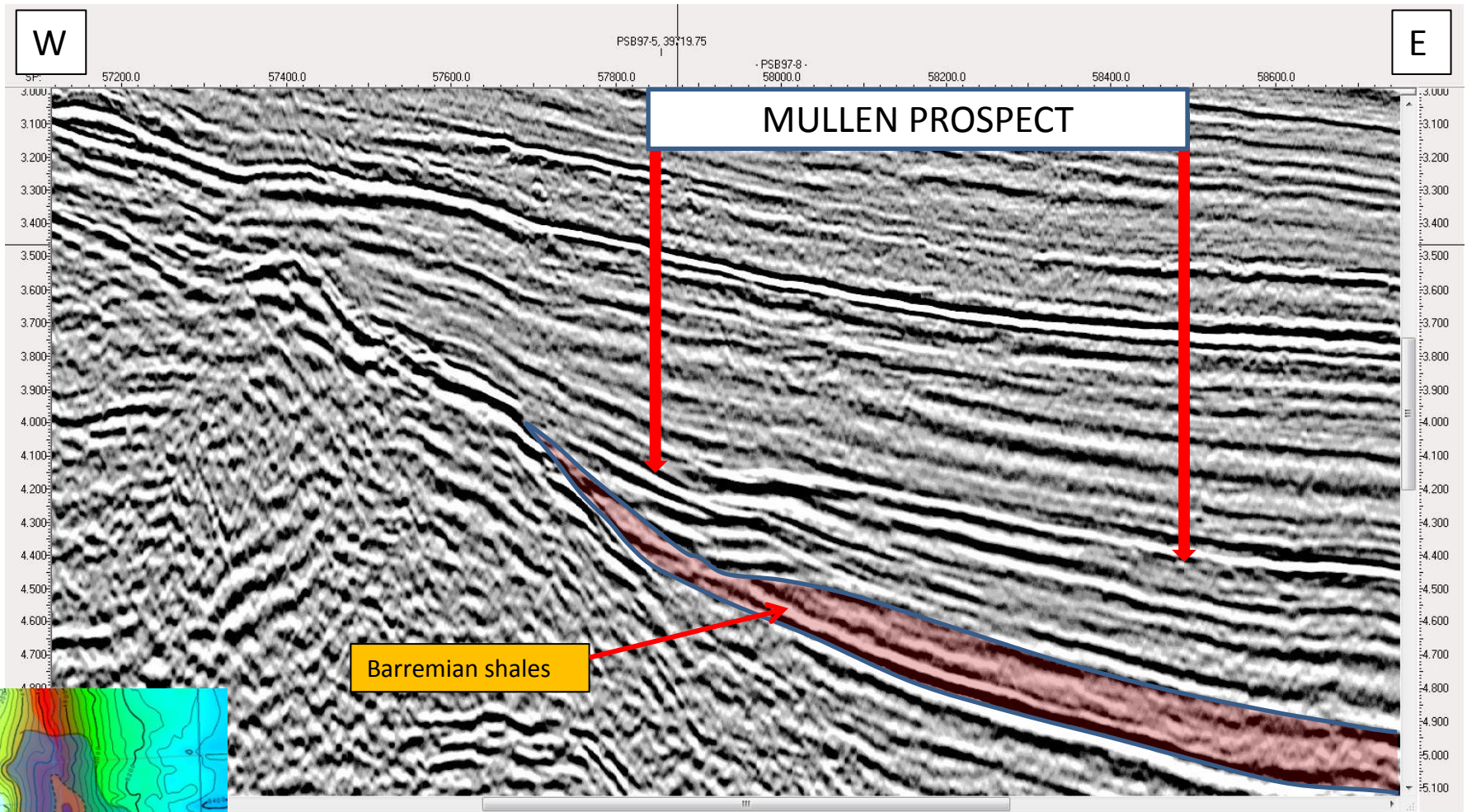


- Tertiary isopach illustrates variable thickness of overburden between the north and south
  - 2000m in South Porcupine vs up to 4000m in the North Porcupine
  - As a consequence source rocks will be less buried and may spend longer in potential maturation window depths in the south

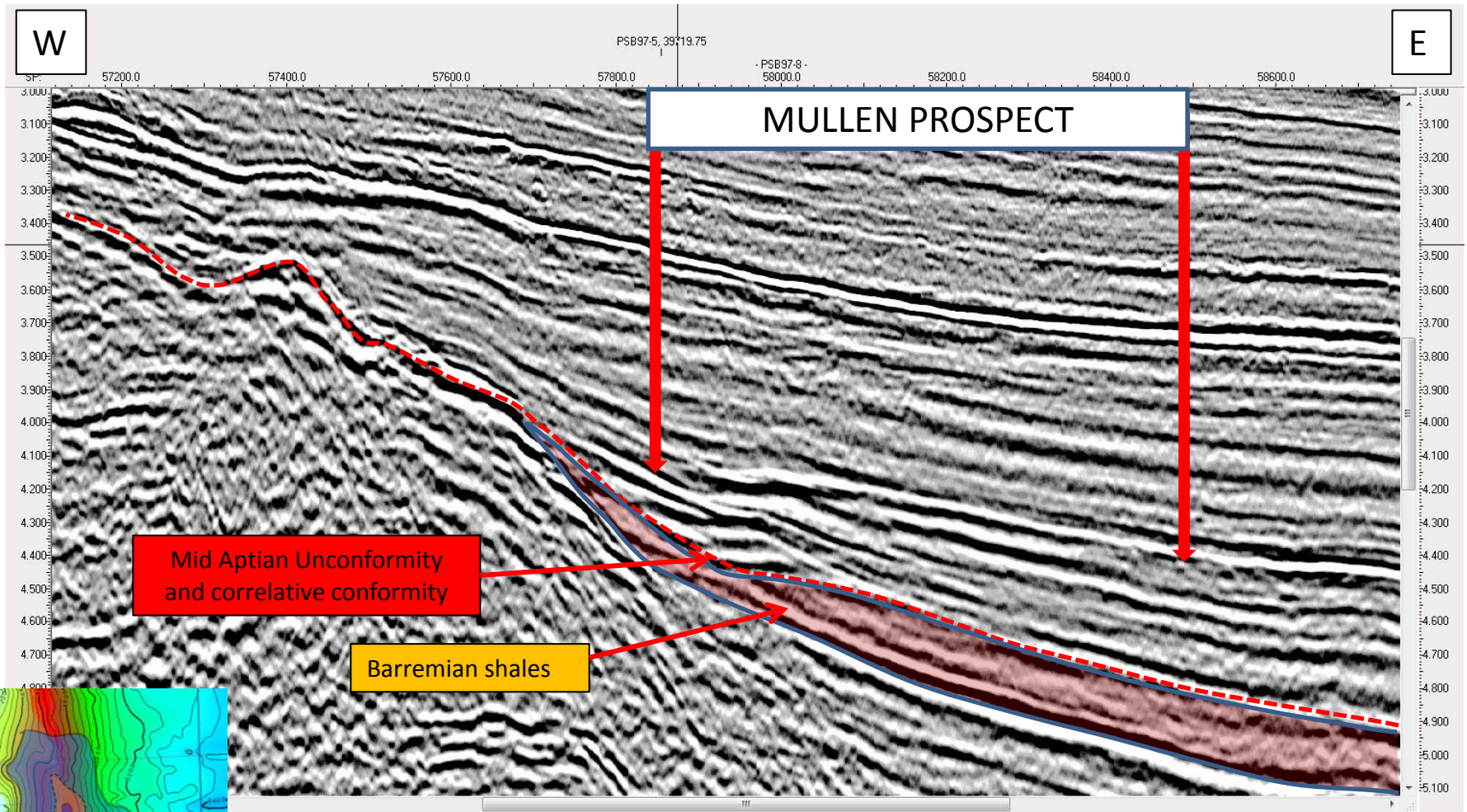
# Mullen Aptian Depth Map (m)



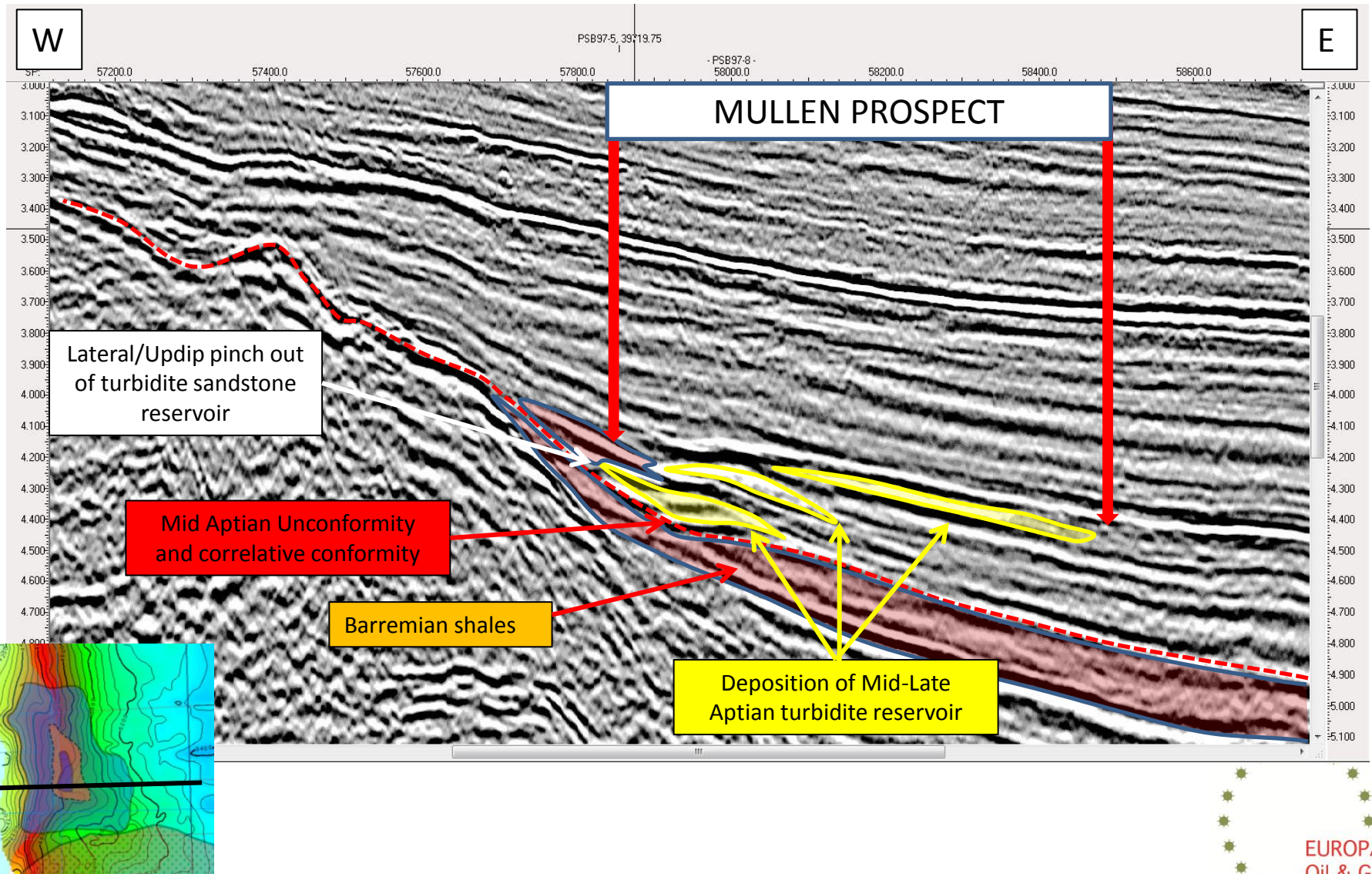
# Geoseismic Sections: Mullen Dip Line



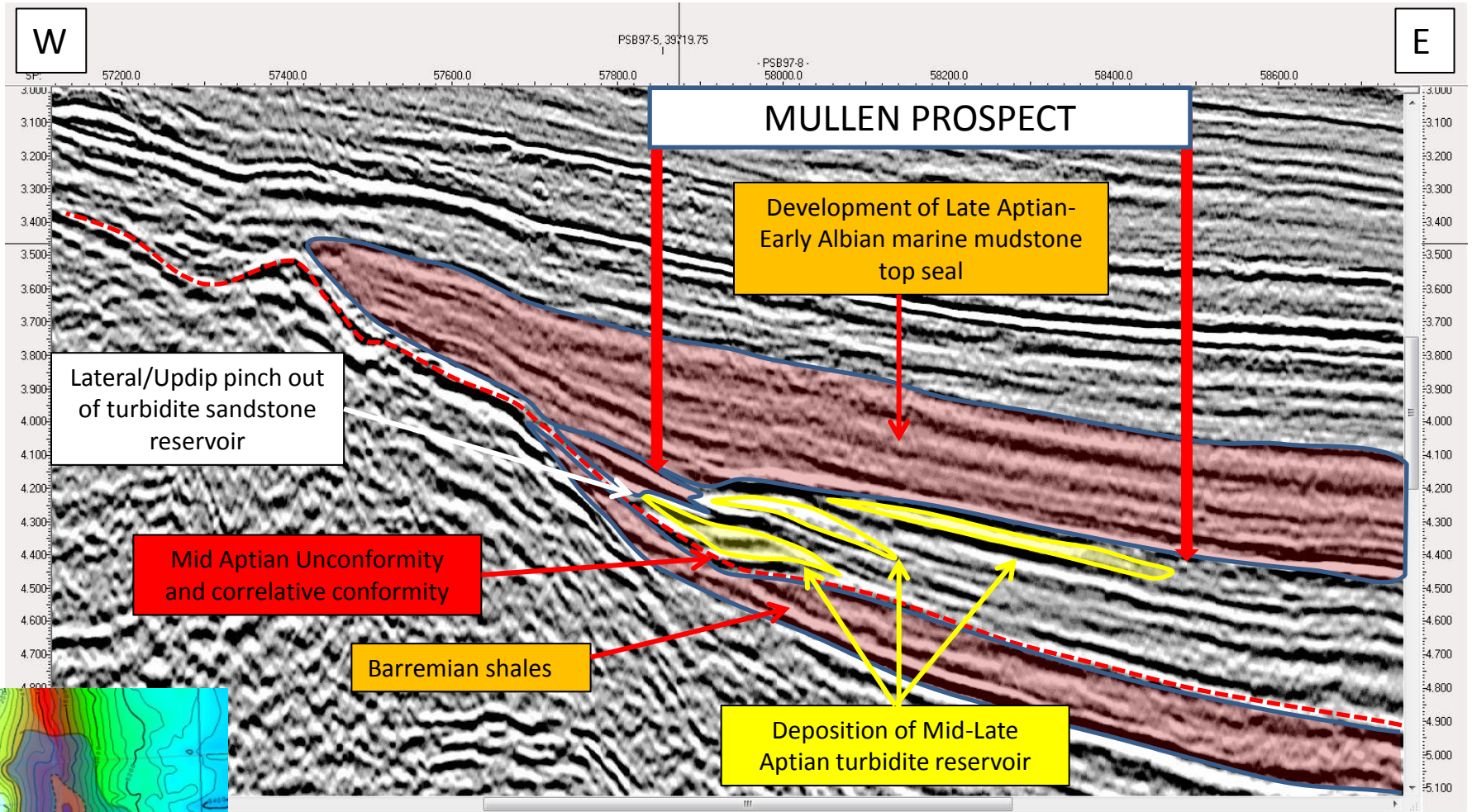
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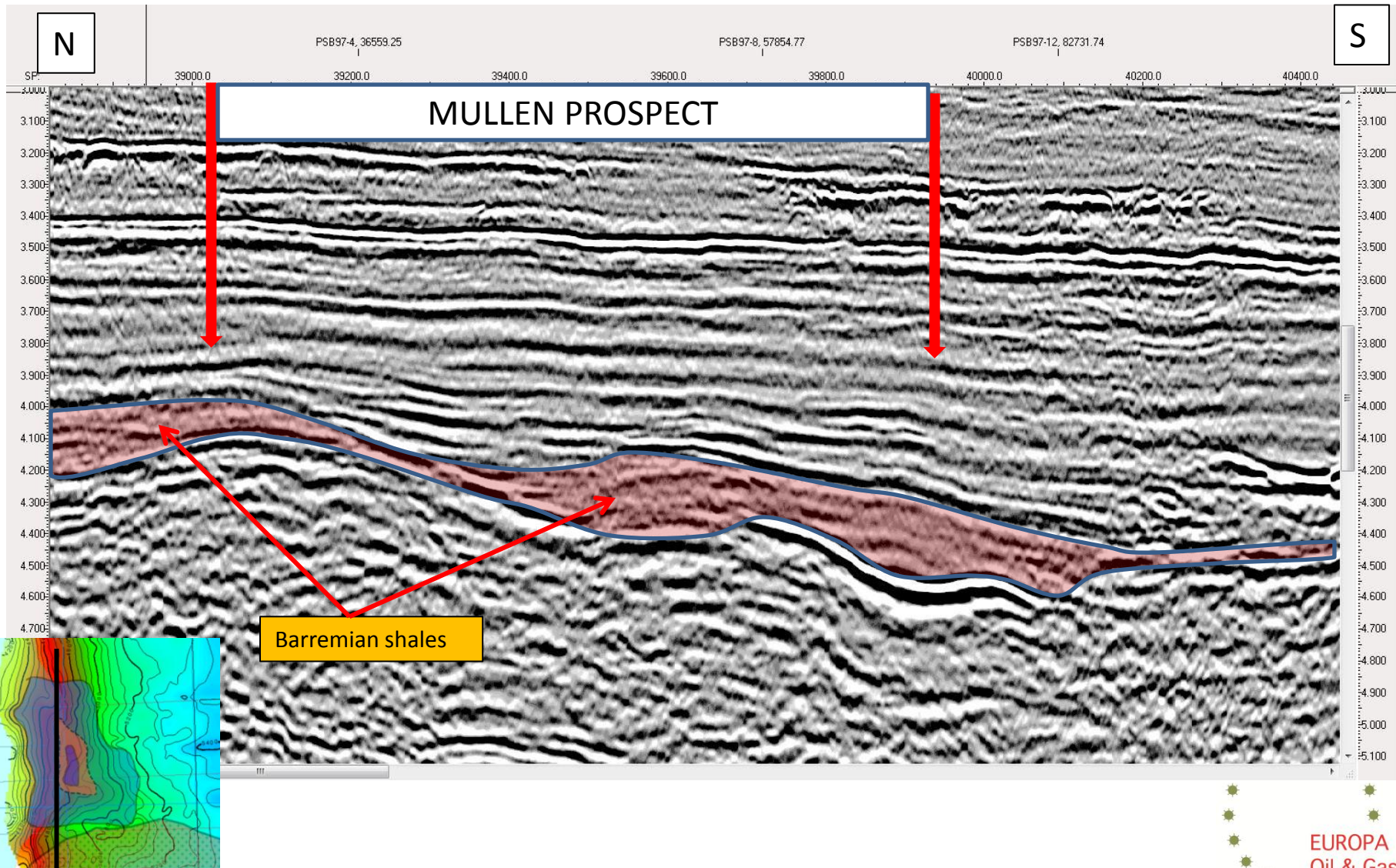
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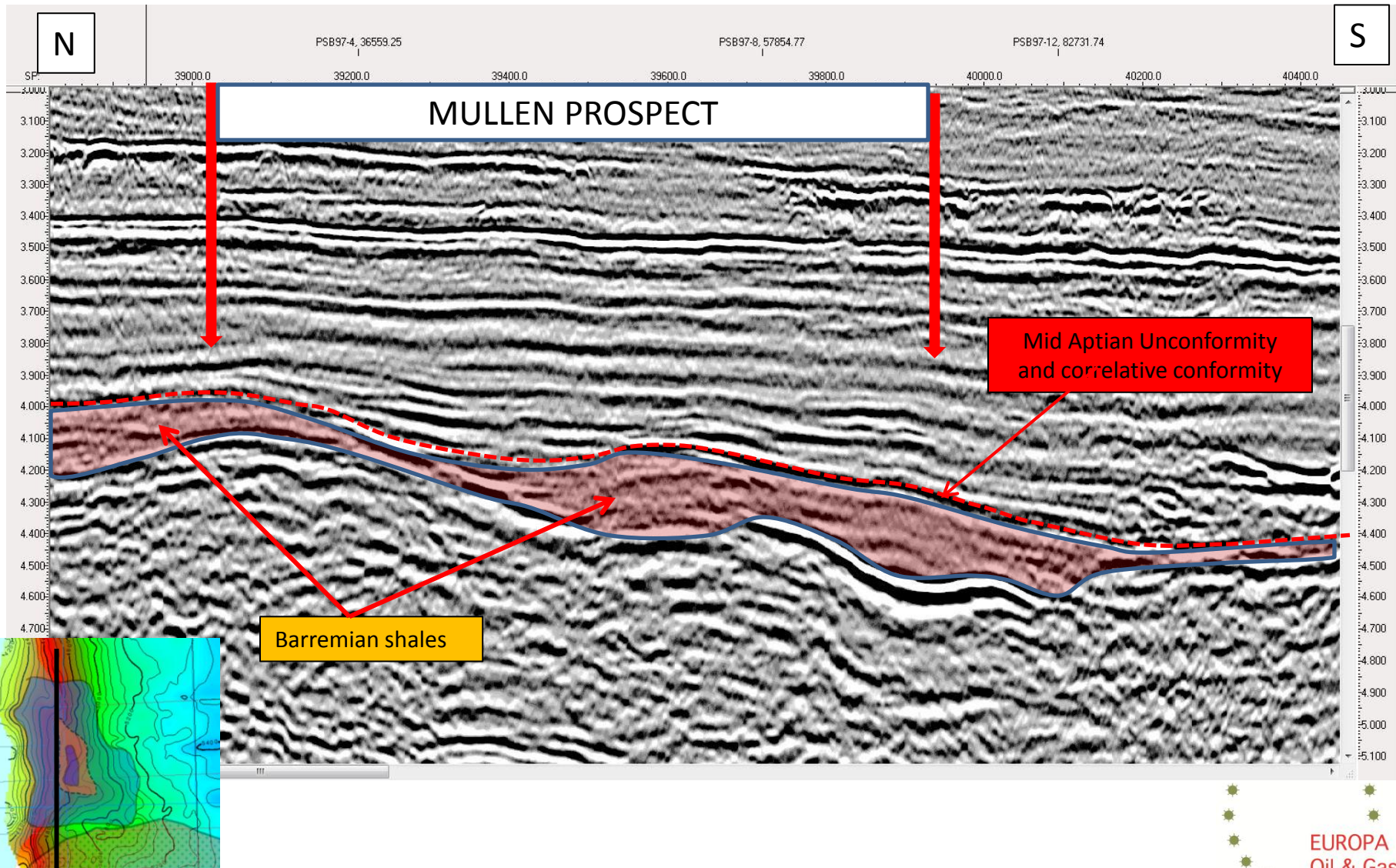
# Geoseismic Section: Mullen Dip Line



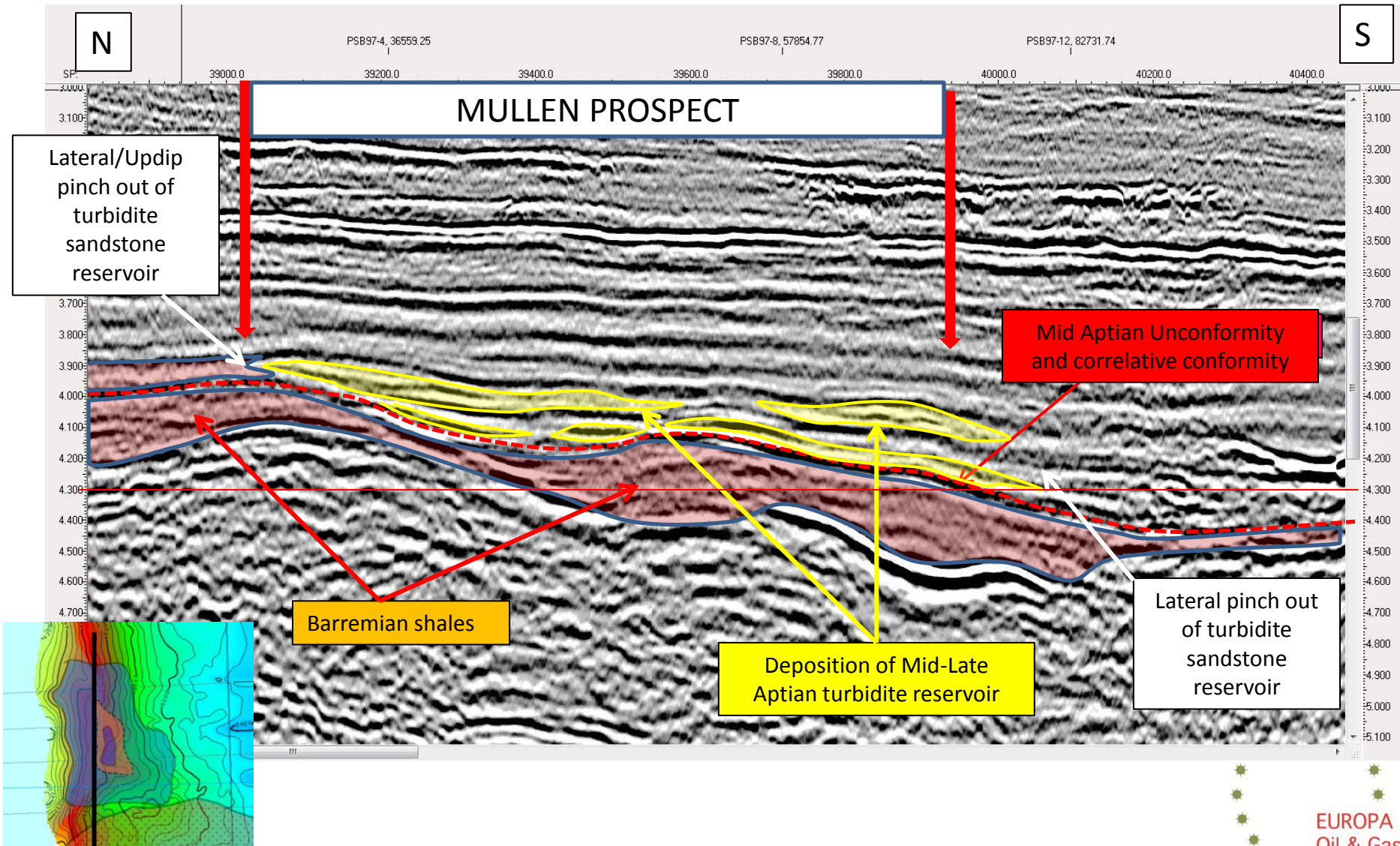
# Geoseismic Section: Mullen Strike Line



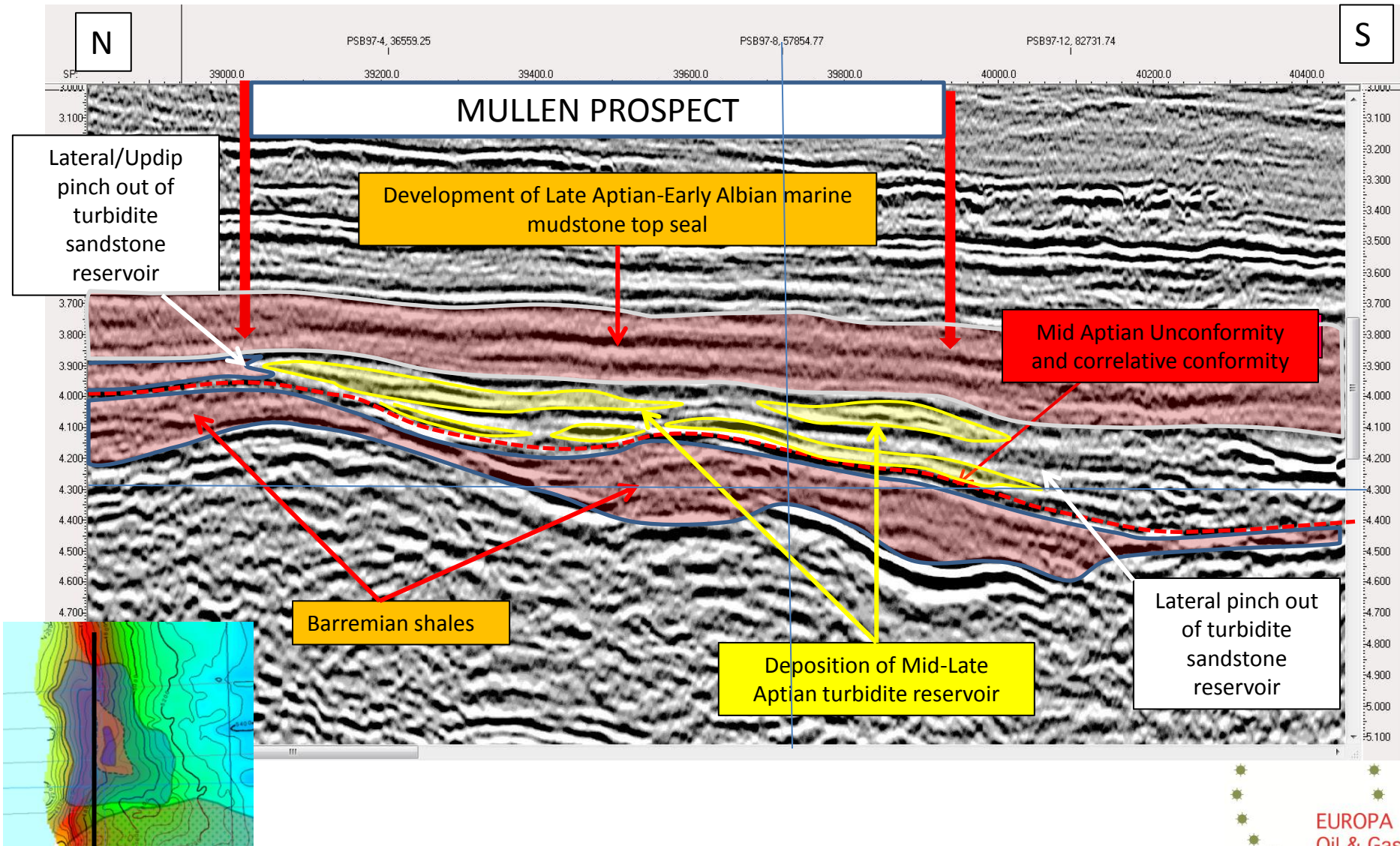
# Geoseismic Section: Mullen Strike Line



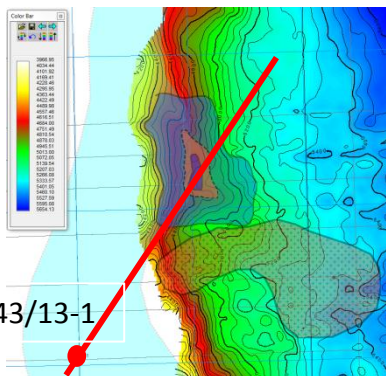
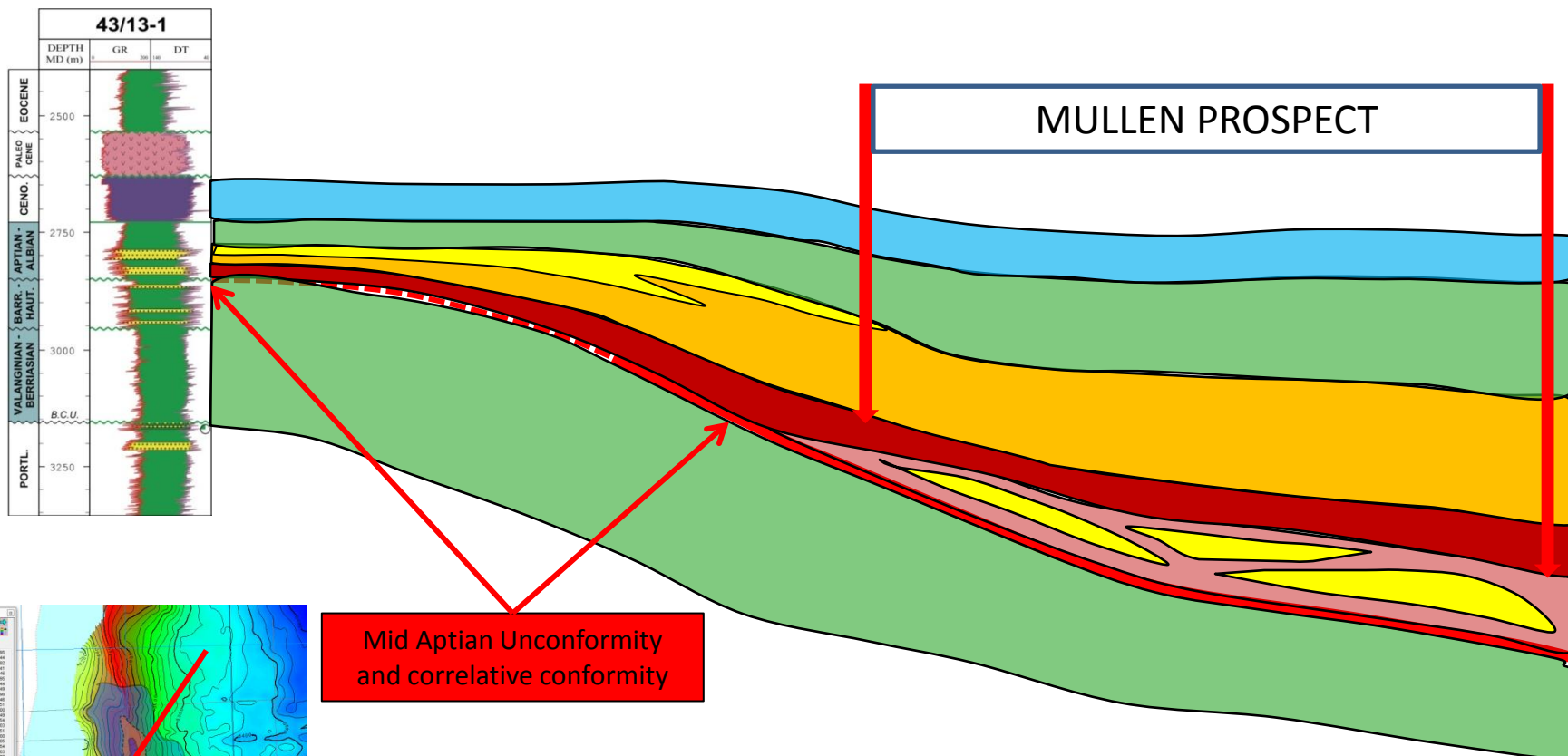
# Geoseismic Section: Mullen Strike Line



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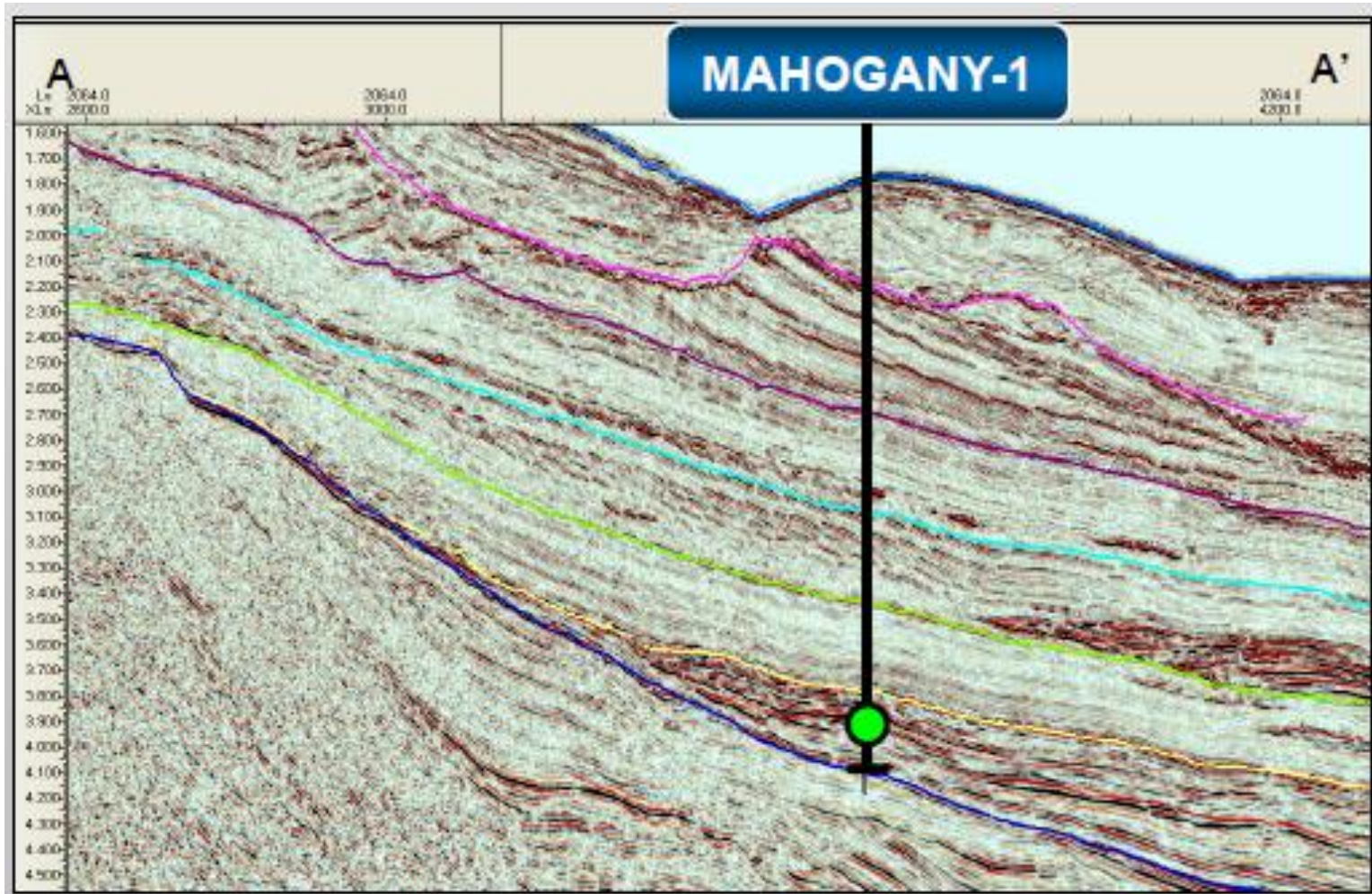


# Geoseismic Section



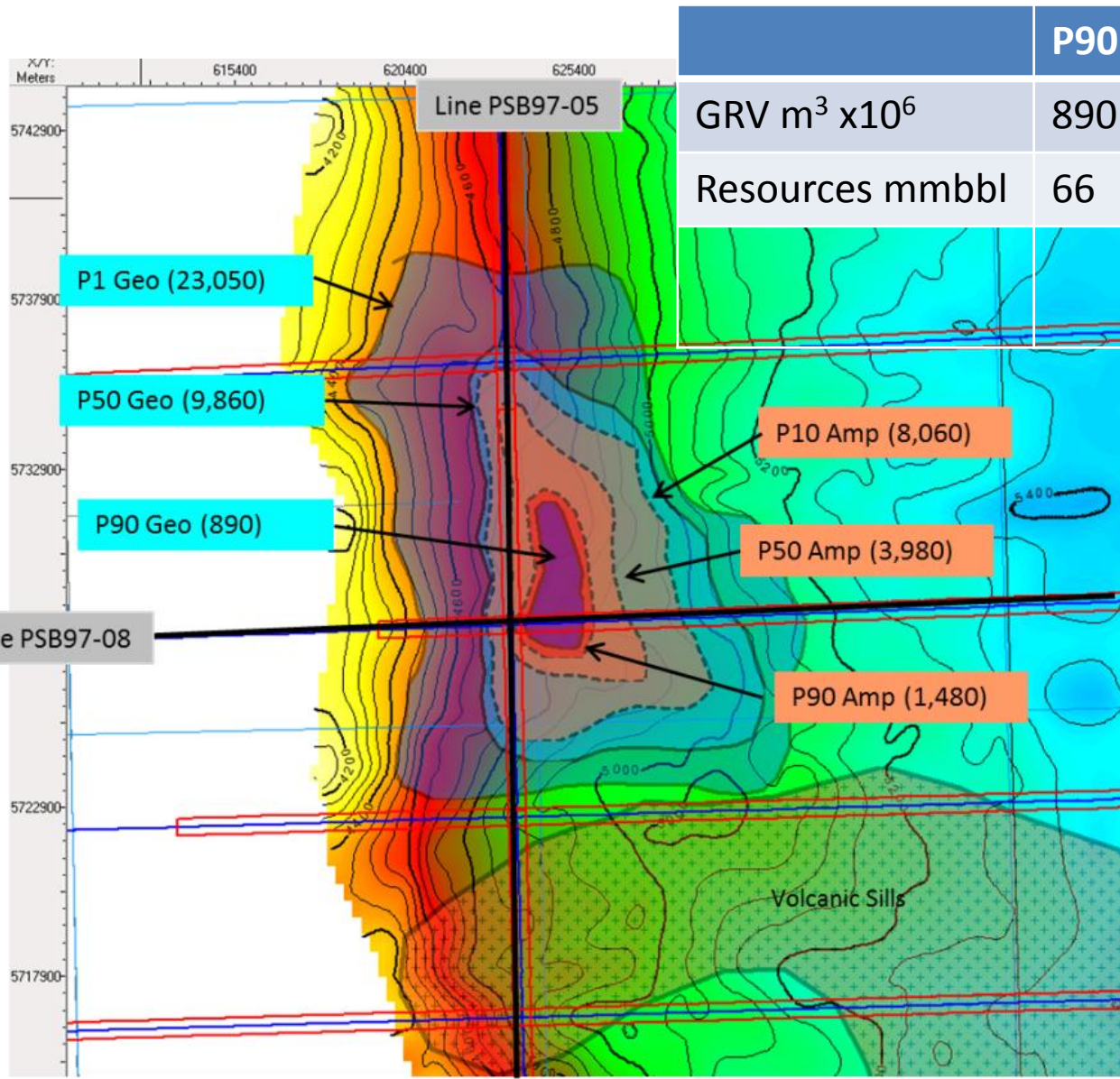
Mid Aptian Unconformity  
and correlative conformity

# Analogues- African transform margin



Cretaceous turbidite sandstones in stratigraphic traps

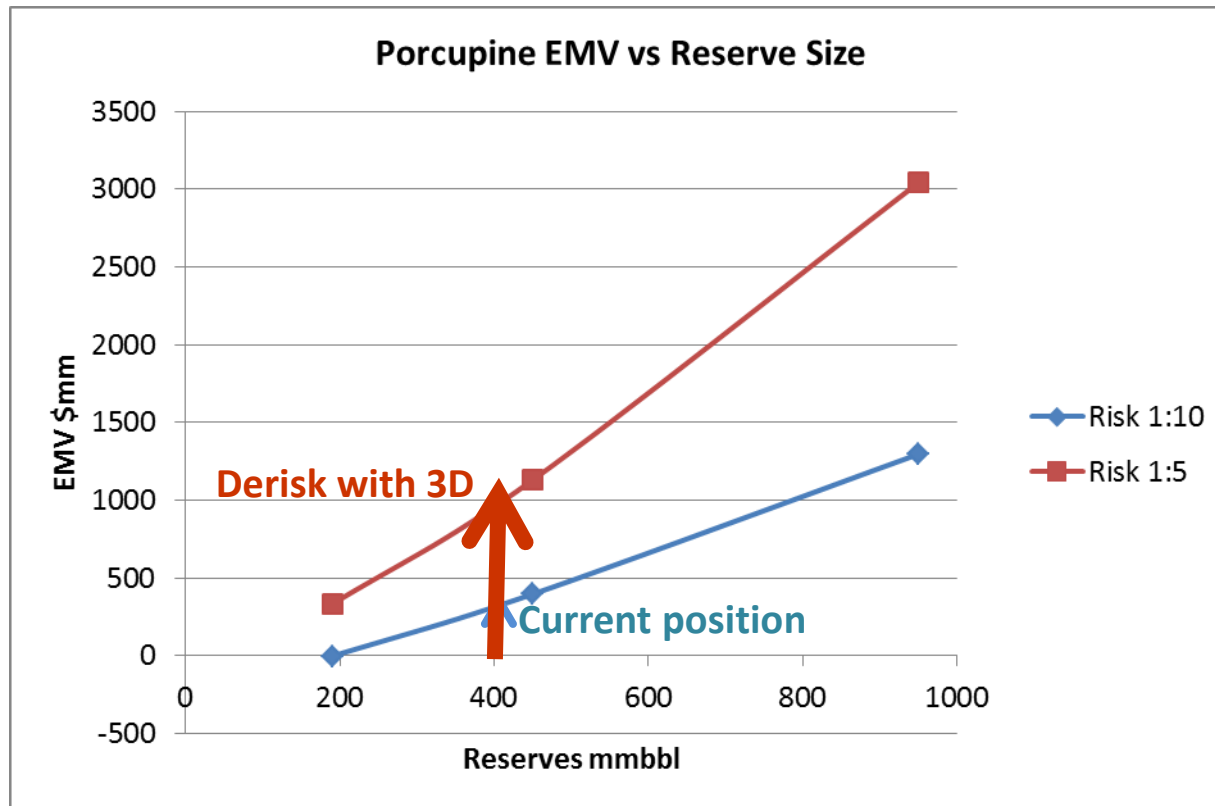
# Mullen Volumetrics and Resources



Closure defined by structural and stratigraphic mapping

Amplitude supported closures

# Prospect Reserve Size Cut-off for Porcupine Basin



Basin immaturity (and risks) suggests minimum drillable prospect size is around 200 mmbbl despite lenient fiscal regime

# De-risking

- Objective – mature prospect to drillable status
- Current work integrate 2D reprocessed data
- Further work:
  - Undertake more reprocessing to support geophysical studies
  - Rock physics and AVO studies
  - Build business case for 3D survey
  - Aim to de-risk prospect through conformance, flat events and AVO.
- Other sources
  - Technical success at Dunquin may help de-risk source rock elements
  - Drilling of Cretaceous stratigraphic traps elsewhere in the Atlantic region may contribute new insights

# Farmout

- Europa has 100% equity in L0 11/7 and 11/8
- Objective is to accelerate exploration in both licences
- Seeking a joint venture partner to share seismic acquisition and (if justified) drilling
- Data room opens in January

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