

## Andy Wight sends talk to Committee.....



## With Grateful Acknowledgments to:

My grateful thanks to Pertamina's PHE OSES, Dwandari "Andar" Ralanarko and his enthusiastic GGRP team, from the Talangakar Special Interests Group in 'Subsurface Development Planning', for providing updated, recent data on the progress of the (amazingly) still-active Yvonne field.

Thanks also to Andy Butler of SundaGas, Ian Cross and all the present SEAPEX Conference Committee for making the mistake of inviting me here to spout a load of ancient history about times when seismic lines were 2D, interpretations done with coloured pencils and 'modelling' (basin history, reservoirs and field history) was something for fashion shows rather than our industry!

I wish also to thank my many work colleagues and friends, some sadly now missing, over my 38 or so years in Asia, for their companionship, banter, competitive spirit and sense of adventure that makes the oil industry such an exciting career to have experienced.

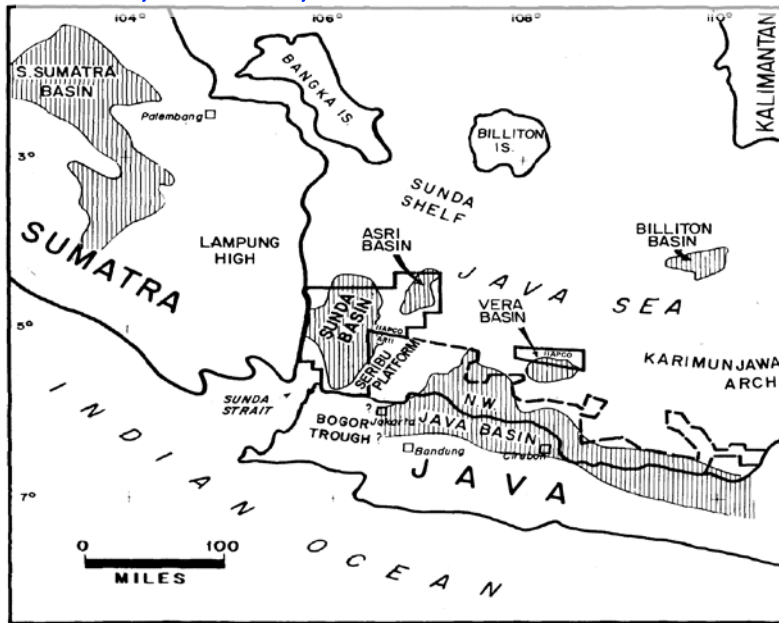
Last, but not least, we should all raise our hats to the indomitable series of SEAPEX Committee members who have, remarkably, kept the Society going through thick and thin over the last 50 years!!





# Birth of IIAPCO - 'The Billings Cowboys'

The extent of our 'ken' in 1971: Tertiary basins, Sumatra, west Java

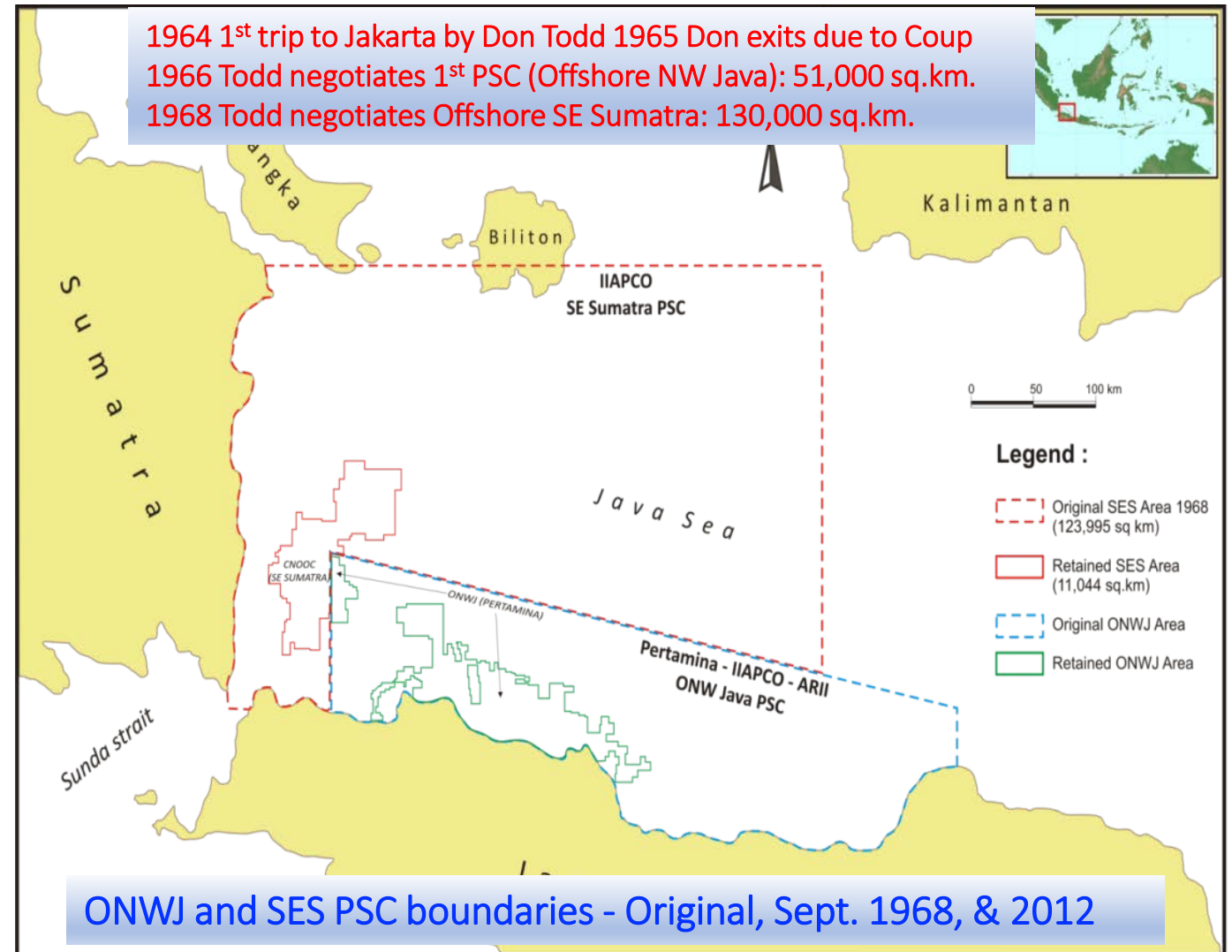


**KEY**  
BASIN  
IIAPCO CONTRACT AREA

**LOCATION MAP  
PERTAMINA-IIAPCO  
S.E.SUMATRA PSC**  
(after Todd and Pulunggono, 1971)



Nancy & Don Todd  
(Late 1960's).



# IIAPCO from Cinta-A, 1970

L > R: Don Todd - President Suharto - Maj. Gen. Ibnu Sutowo - Mines Minister Soemantri - US Ambassador Frank Galbraith.



Cinta dedication L > R: IIAPCO's Don Todd (RIP), Ed Engelhart (GM), Larry Barker, (Pres)

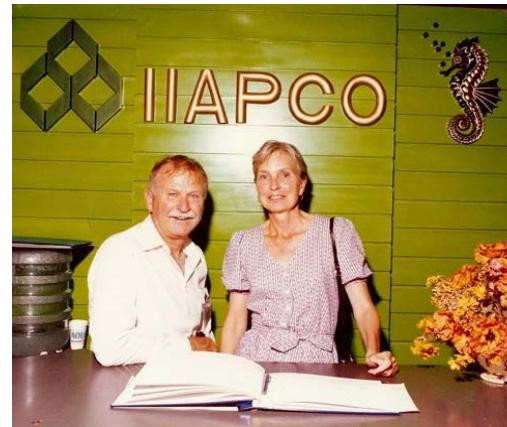


Pabelokan Is. IIAPCO staff L > R: Jim Cesarani, Prod. Mgr., Nancy & Don Todd, Harlan Friestad

Cinta-1 Discovery Aug.1970: 76m net oil pay, DST 6000 BOPD. Temporary platform Cinta 'A' installed, with Dedication Ceremony in October, only 26 months after PSC signed!



Test barge and Cinta-1 temporary platform



Don & Nancy Todd, *Pelepor* ceremony, 1985. Note iconic IIAPCO seahorse logo, top right.



2013: Friday Island, Washington Don Todd's retirement home (RIP 2021)



# 'Heavy Metal'

1970's



*Cinta field platform*



*D.M. Saunders barge-assisted rig*

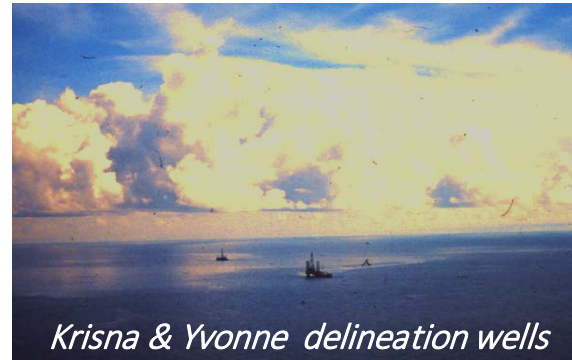


*'Cinta Natomas'  
storage tanker, field  
platform in distance*

1980's



*Pabelokan Island production facility*

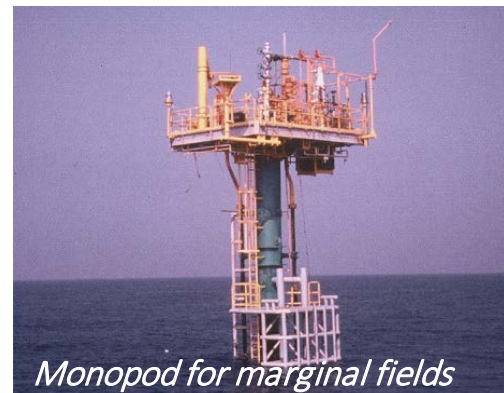


*Krisna & Yvonne delineation wells*

1990's



*BIMA Drilling Vessel &  
Widuri "D" Platform*



*Monopod for marginal fields*



# JAKARTA LIFE IN THE 80's .....



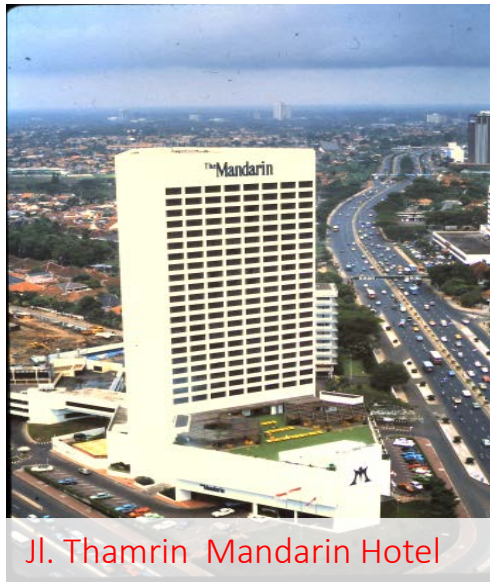
Kuningan Village



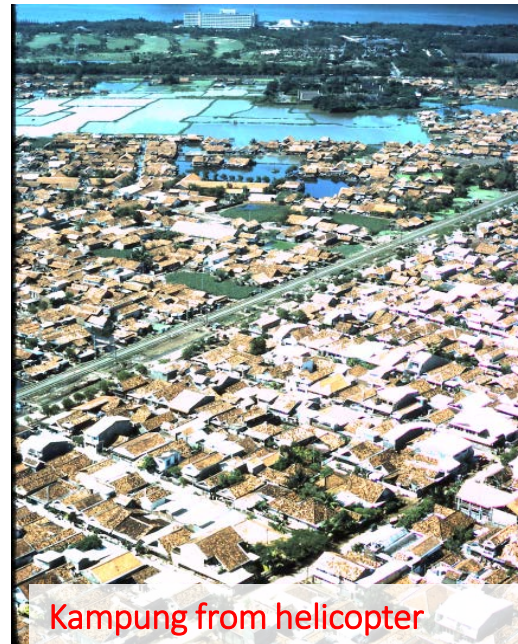
Pulau Putri Besar (IIAPCO R&R)



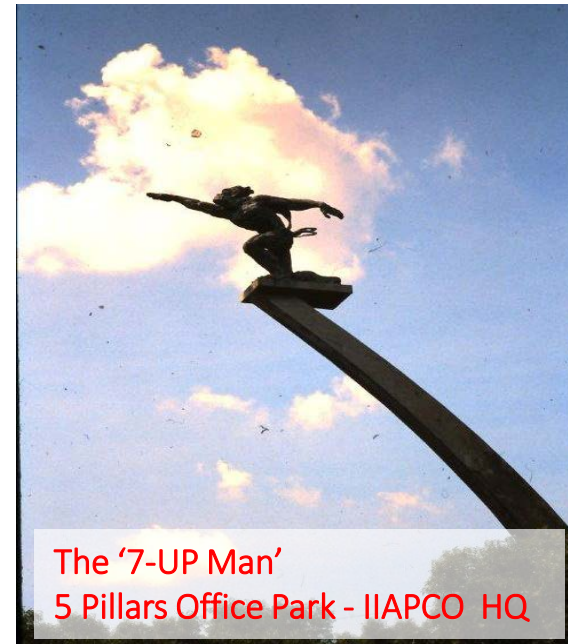
Kerupuk seller (prawn crackers)



Jl. Thamrin Mandarin Hotel



Kampung from helicopter



The '7-UP Man'  
5 Pillars Office Park - IIAPCO HQ



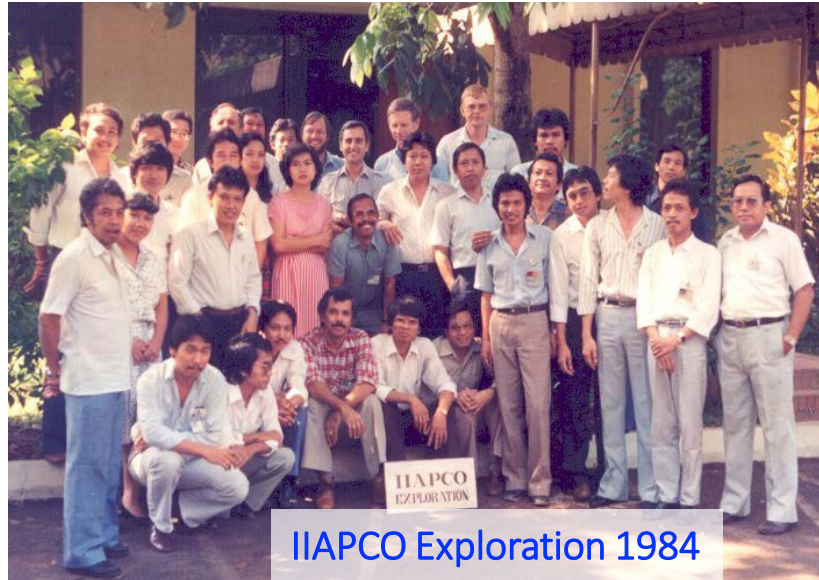
How we found  
Prospects!!



# .....A FEW ECLECTIC, 'OLEAGINOUS' *DRAMATIS PERSONAE*



IIAPCO Exploration Staff, 1980



IIAPCO Exploration 1984



Early 1980's: John Wilson (RIP)



1980: Fred Inch (Phillips) & AW



1980's L>R: Peter Cockroft, John Wilson (RIP), AW, Kuswinda, Gerry Burgon (RIP), Wicaksono & Harlan Friestad



# NOW, BACK TO WORK....

*Aru Island Field Work, 1983  
IIAPCO NEW VENTURES*



3 Men in a Boat - Kai Island, 1983





# Aru Island Field Work, 1983



*ONE OF THE 'SUNGEIS', ARU ISLAND*



*SHARKS AHOY!*



*SUNDAY SERVICE?.....*





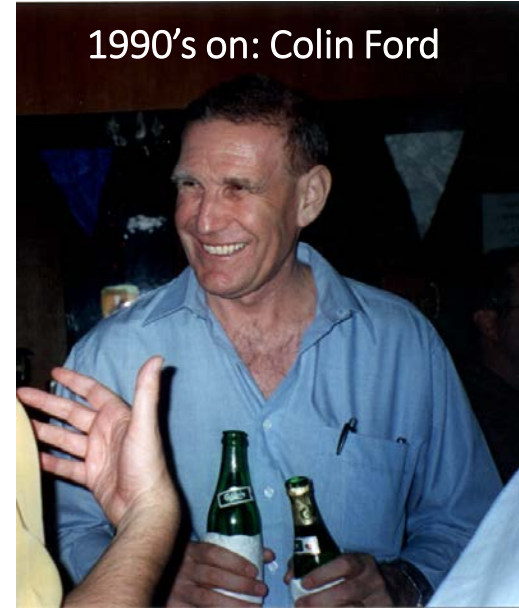
# ...AND A FEW MORE OVER THE YEARS.....(ORIGINAL PLAN, TO STAY 2 YEARS AT THE MOST!)



MAXUS: Tim Murphy (RIP), Ron Pate, Howard Thomas



1990's - MAXUS Asset Teams: Imron Asjhari, AW, Thomas Budiyo



1990's on: Colin Ford



Larry Danahey, Indah, Wynn Gajkowski, Jim Shon



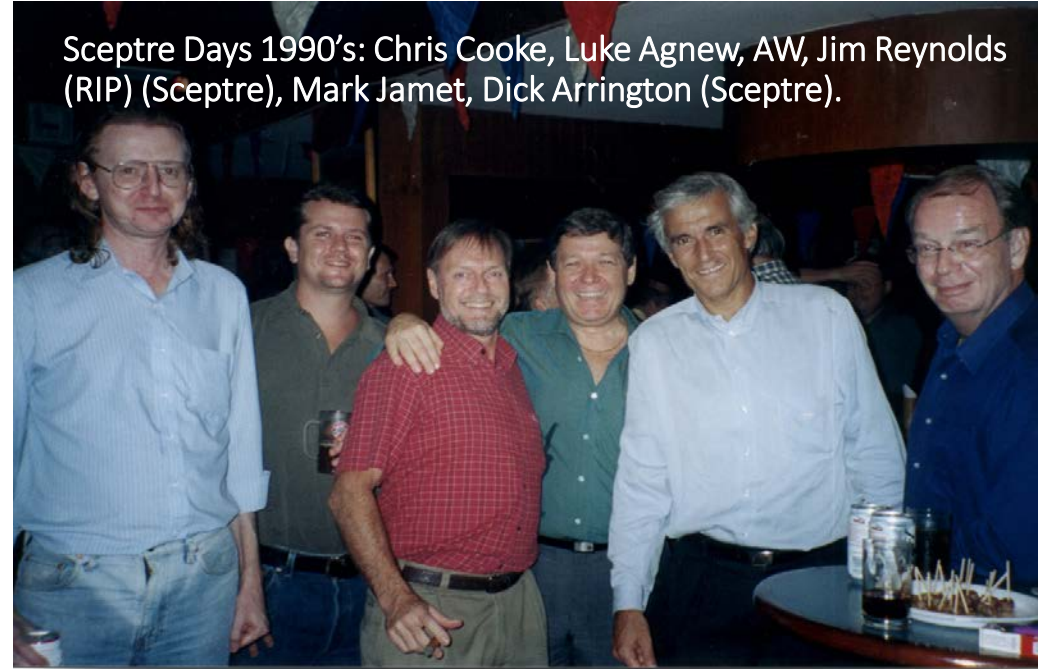
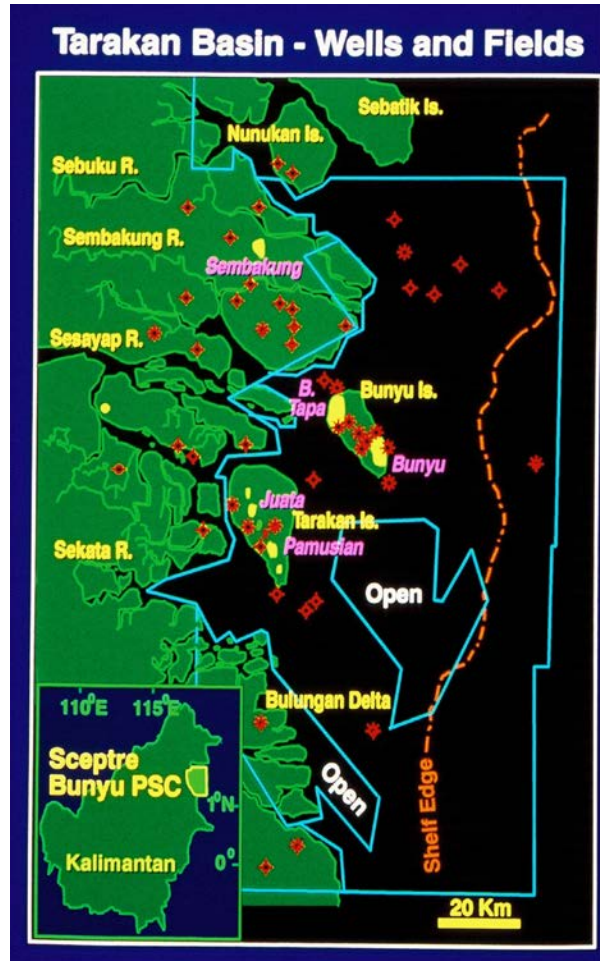
1996: IIAPCO Explo. Billionth Barrel Produced



2000's: Rear: Chris Whitmee, Geoff Edwards (RIP) Front: Bob Pile, Mark Harris



# Sceptre interlude (Bunyu etc.)



1990's: Gerry Fletcher, Sceptre



Bunyu Fieldwork (find those boots?)



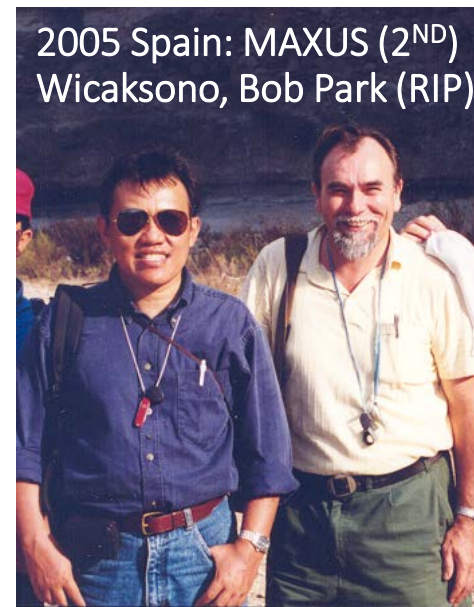
# 1990's & 2000+ Sceptre, Petrocorp, Maxus (2), Mitra Energy



Farewell to Jakarta 2002: Alan Fenwick, Richard Lorentz, John Grant, AW, Chris Newton (P'corp)



2000's: Luke Agnew, Ian MacMahon



Mitra Energy 2012: With Paul Ebdale



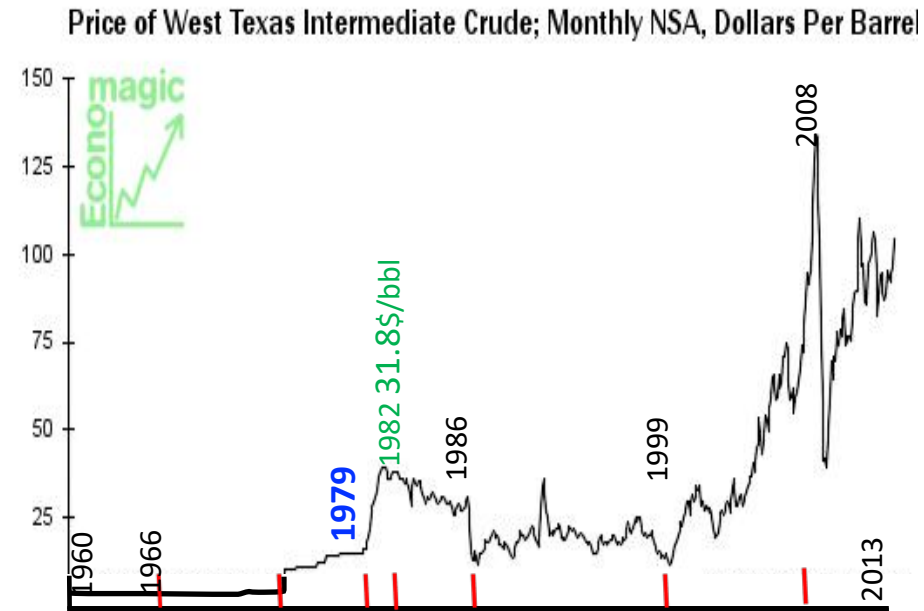
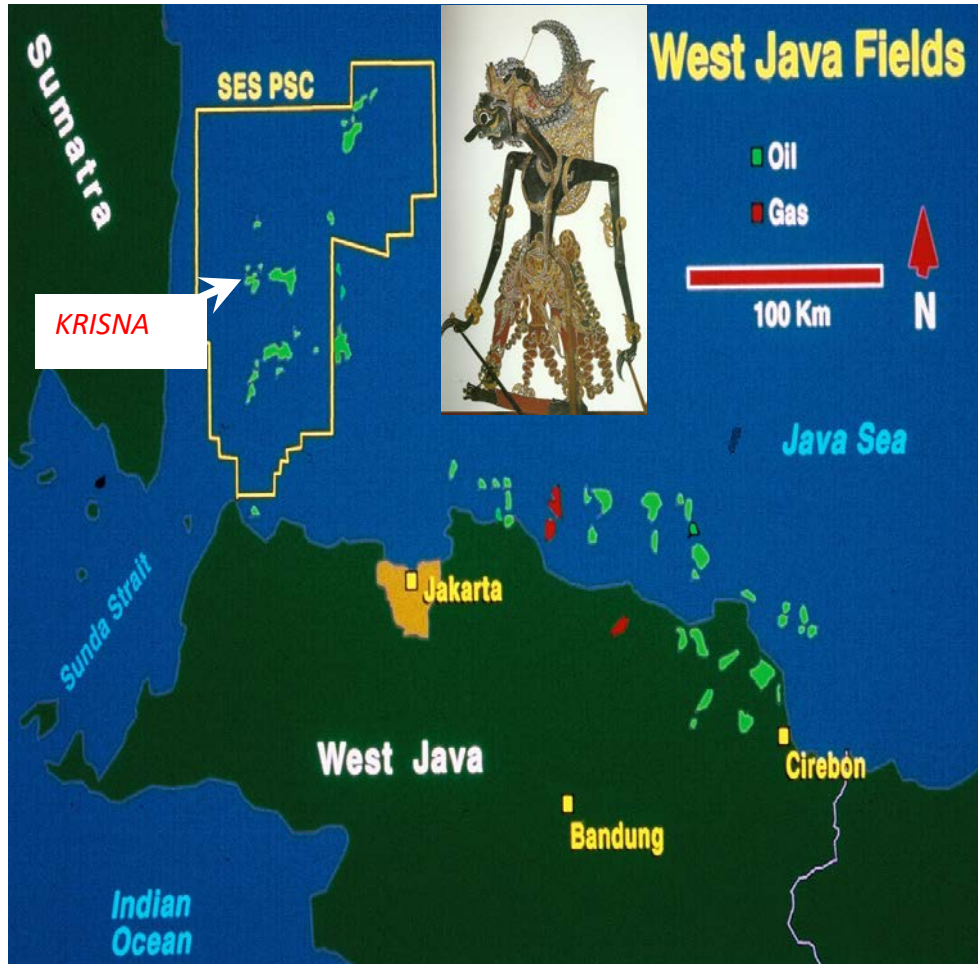
Mitra Energy 2012: 'SWAT' EXPLO TEAM: AW, Santa, Ian Lilly



Mitra Energy 2012: Rob Herries, Will Mathers, Colin Murray, Dave Goulding, Paul Ebdale



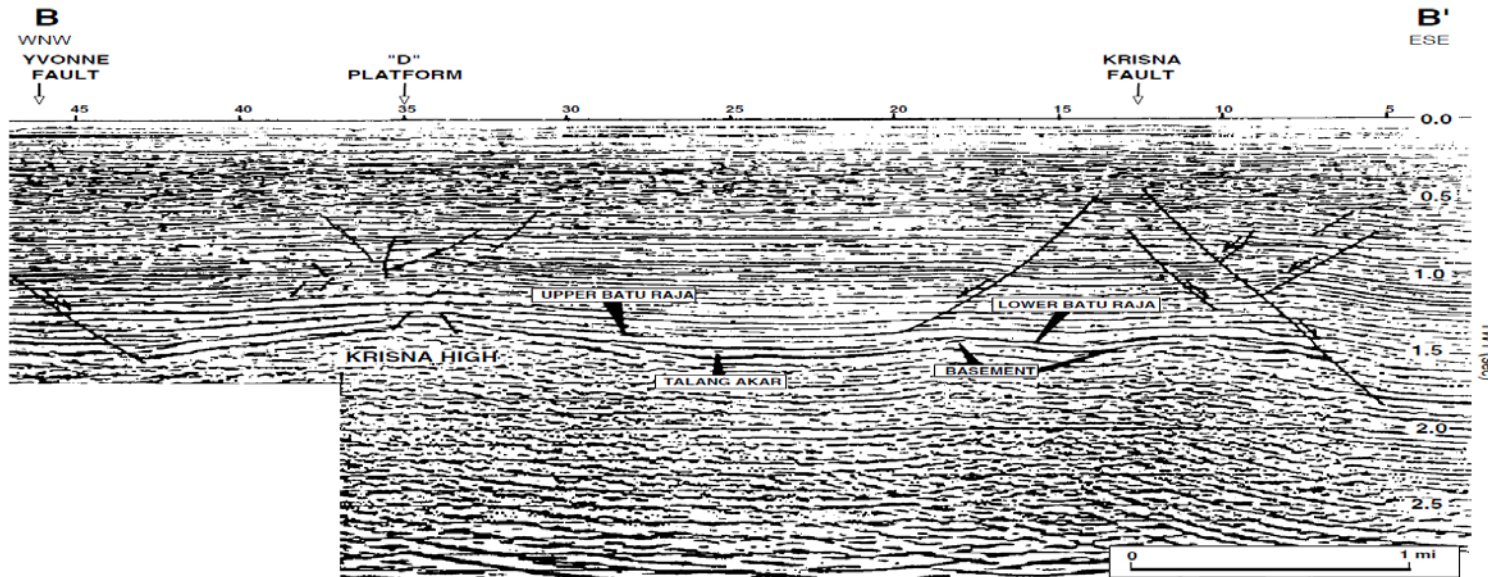
# Location - Krisna & Yvonne Fields, Sunda Basin



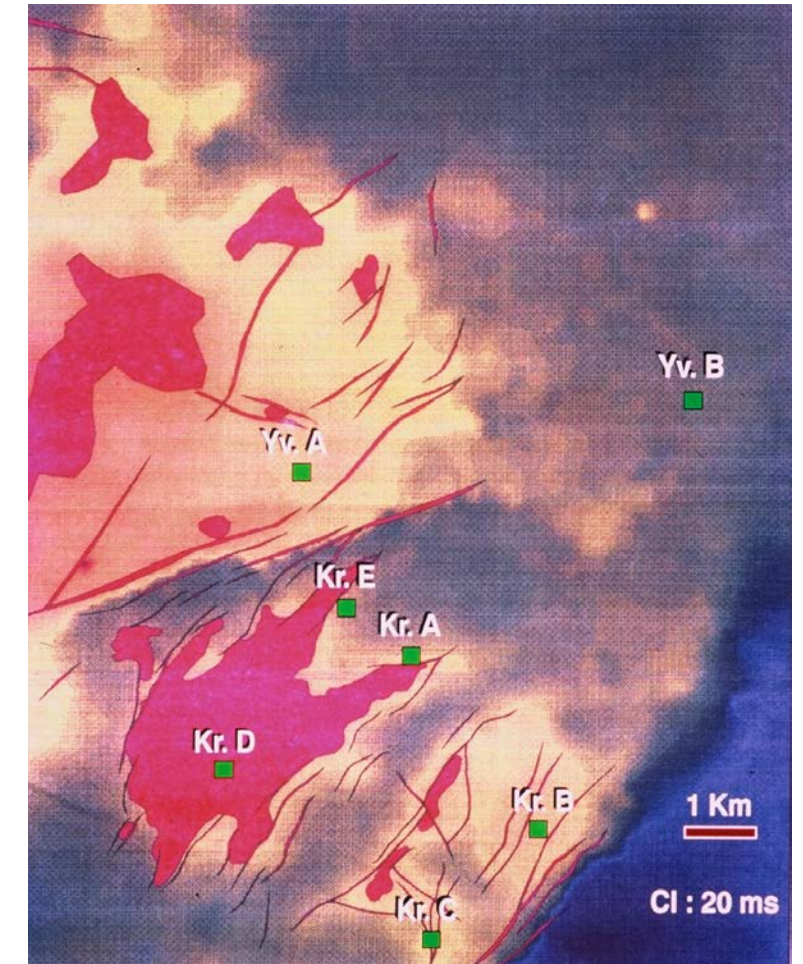
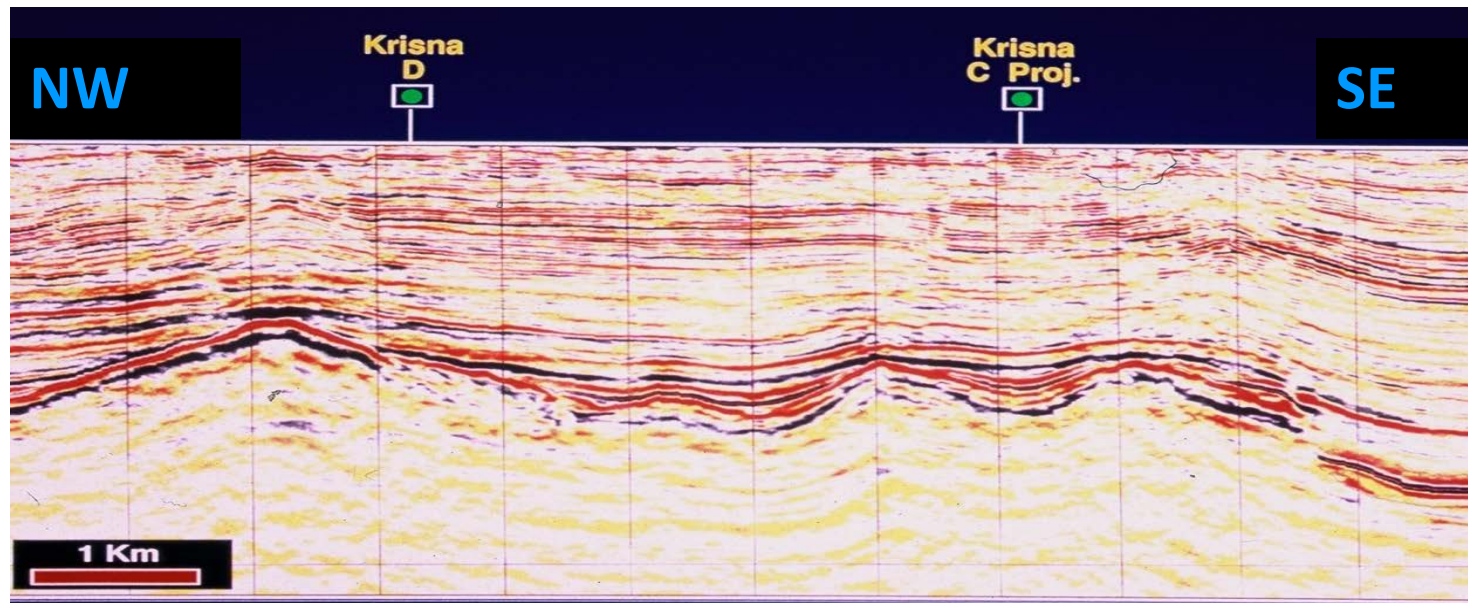
W. JAVA	KRISNA
Discovery Year	1980
Depth reservoir m	1329
Production area km2	19
Hydrocarbon column ht.	181
Net pay average m.	9
Porosity average %	23
Permeability av. mD	99
In Place Oil eq. MMBOE	120
Recoverable Oil eq. MMBOE	52.6
Recovery Factor	0.44



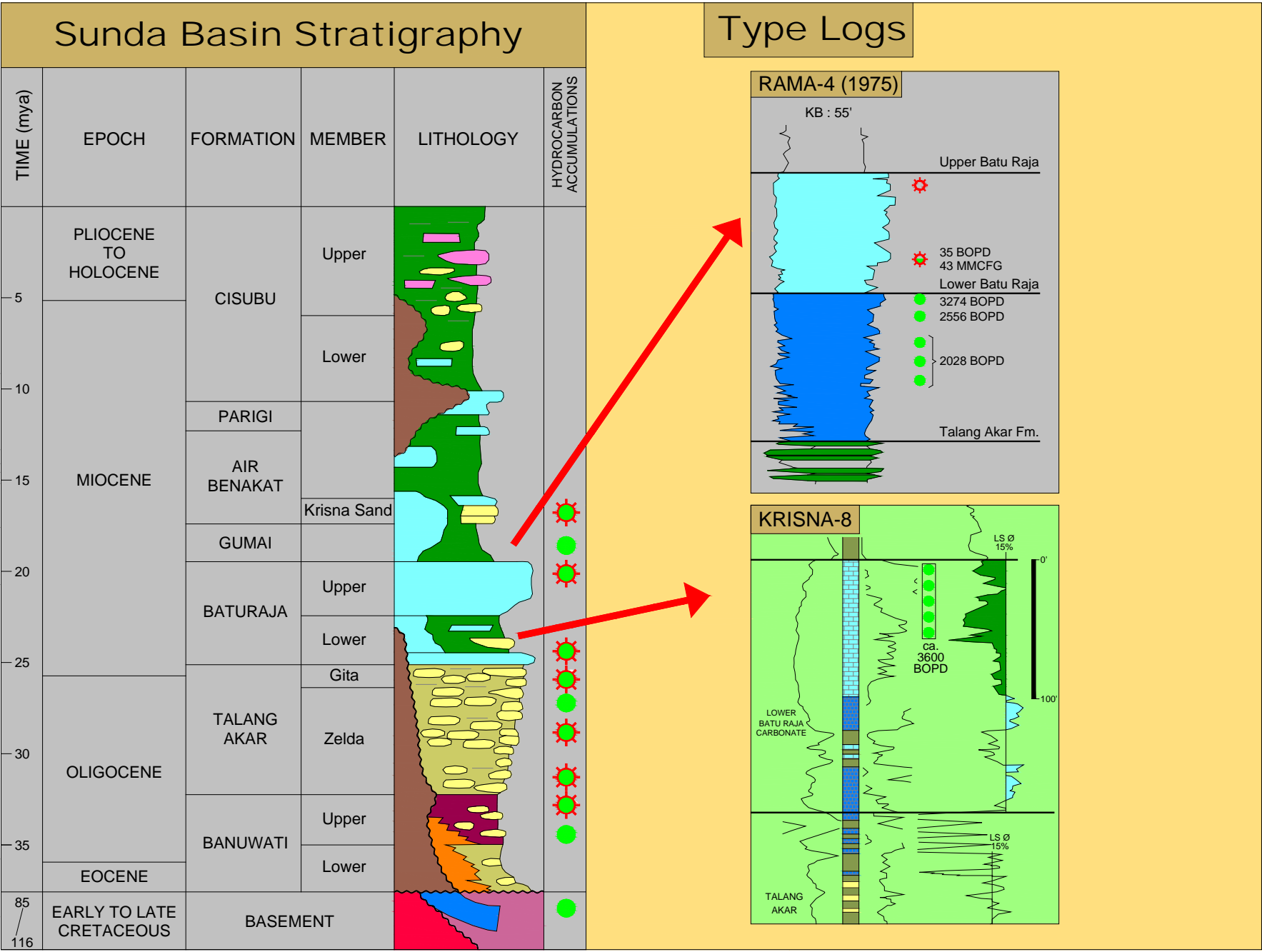
# Krisna Field 'Re-Discovery'



Krisna & Yvonne Fields:  
3D Structure, Top L. Batu Raja Fm.







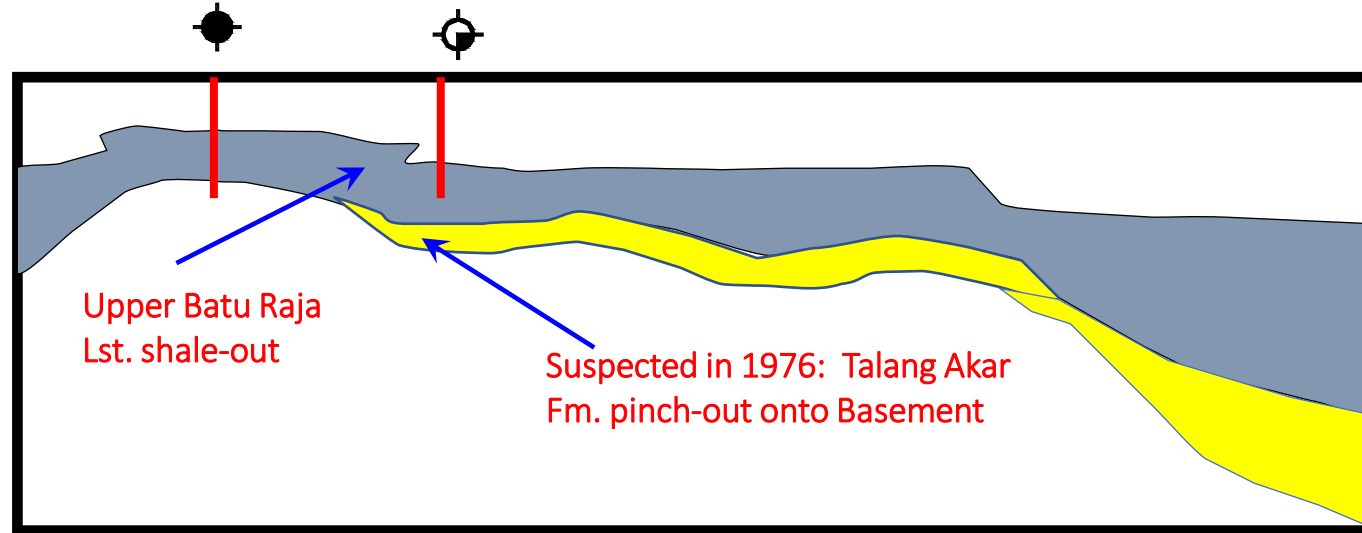


# A Bit of Serendipity.....

Krisna-1 Upper BR Lst.  
Oil discovery, 2686 BOPD

Krisna-2  
P&A, shows

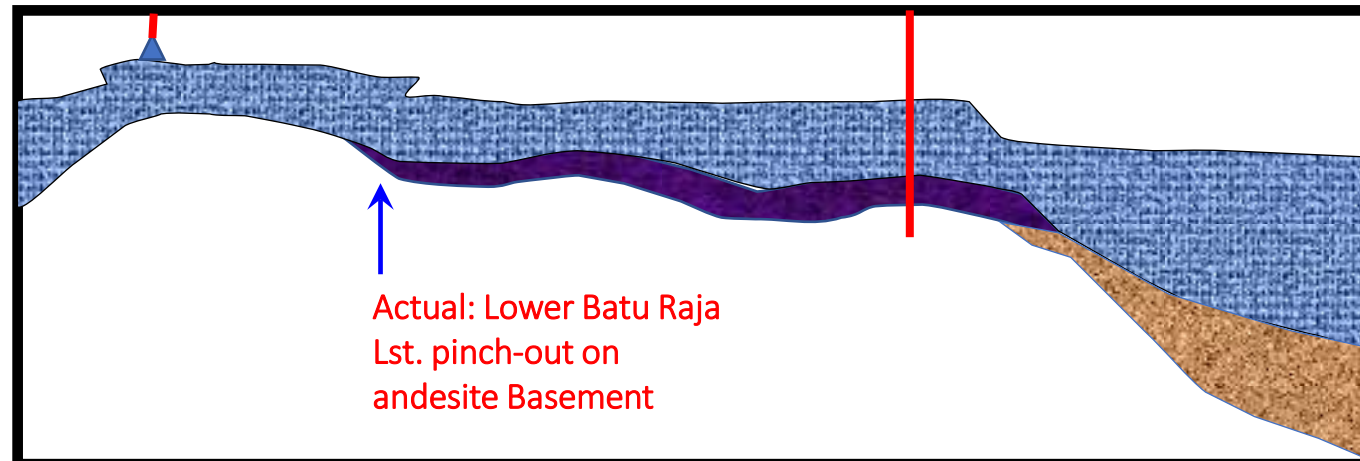
1976



Krisna-26 Gumai Pinnacle reef  
Oil discovery, 3300 BOPD

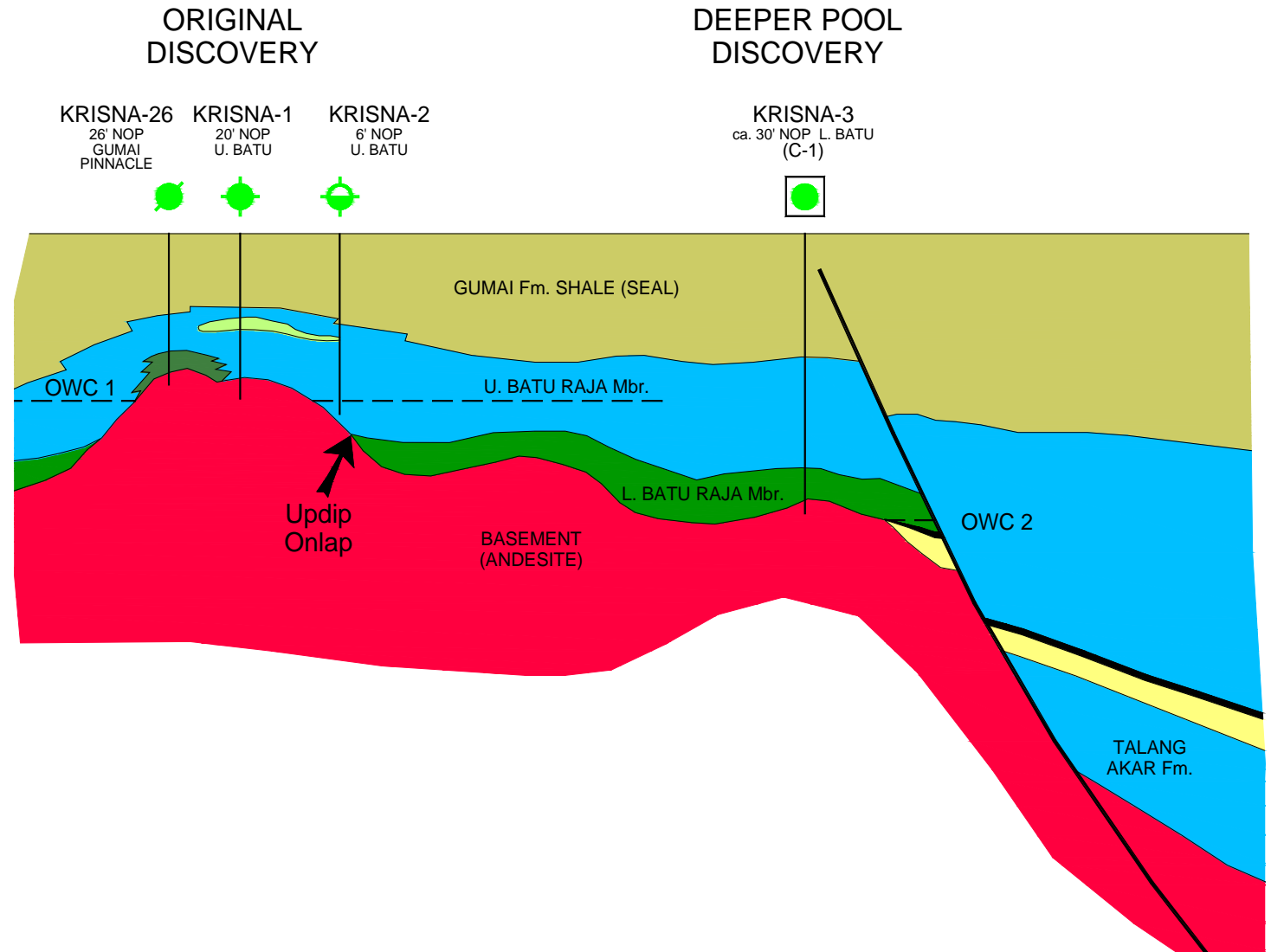
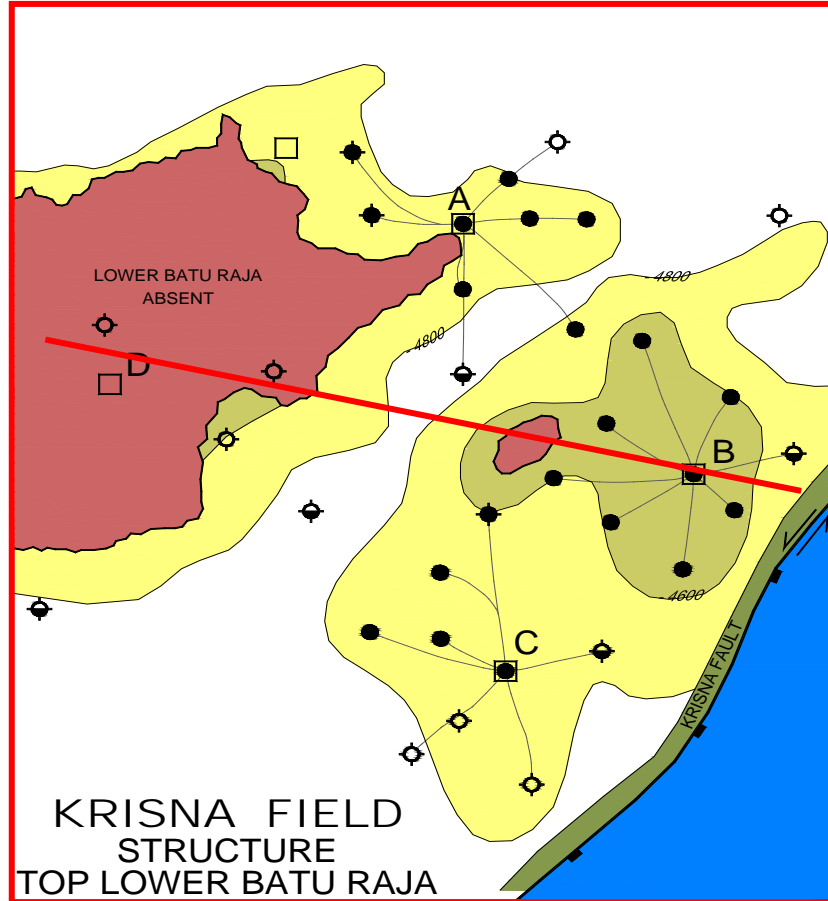
Krisna-3 Lower BR Oil discovery

1979





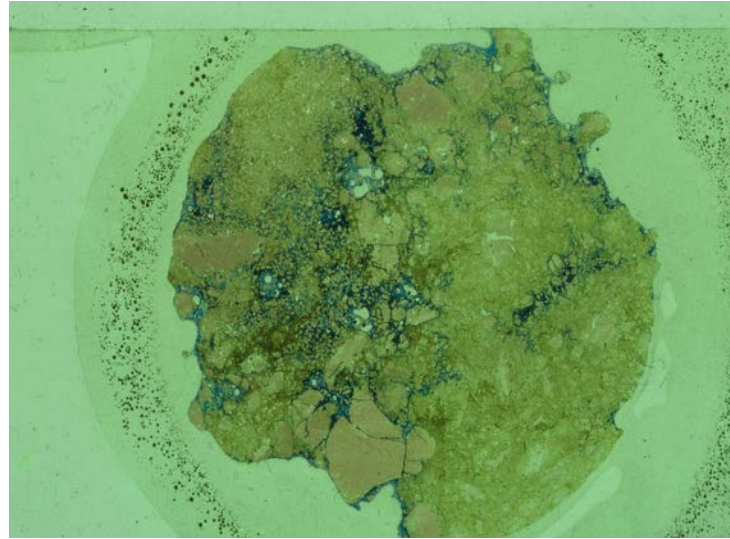
# Krisna Field Schematic Cross-Section



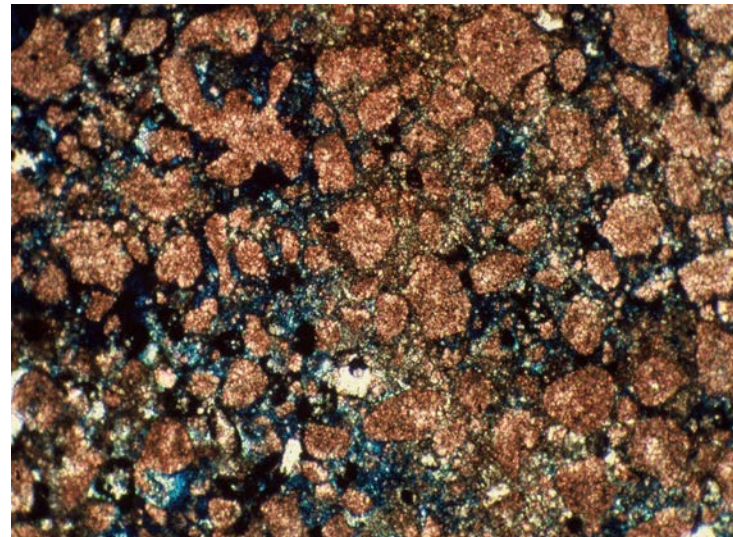


# Packstone-Wackestone Power!

Earthy texture  
in SWC is literally  
**'Pay Dirt'!**  
(Por.32% Perm.30mD)

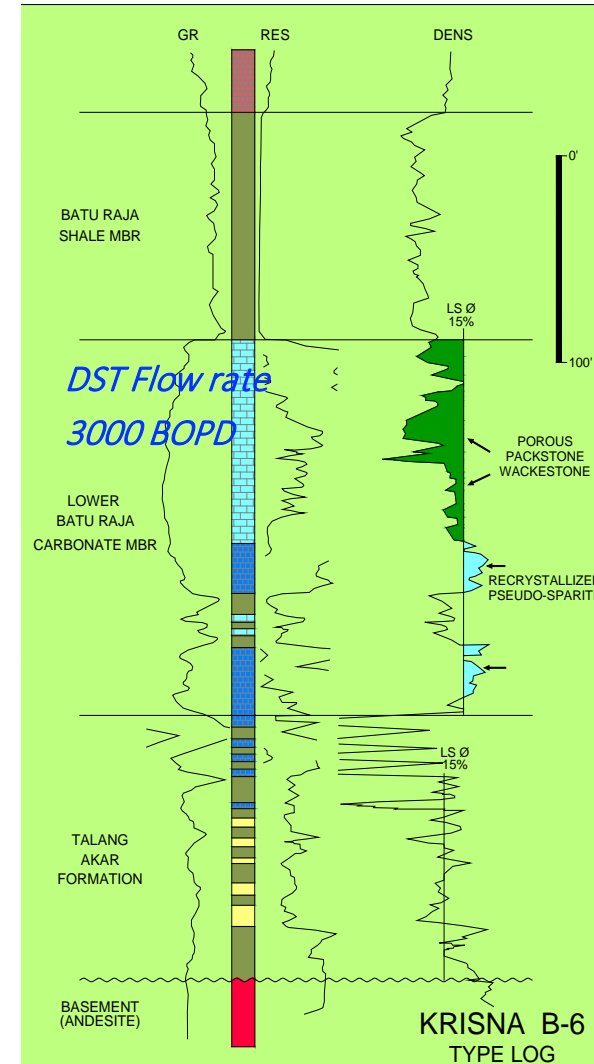


TS - high porosity (blue) in  
packstone/wackestone,  
back-reef facies



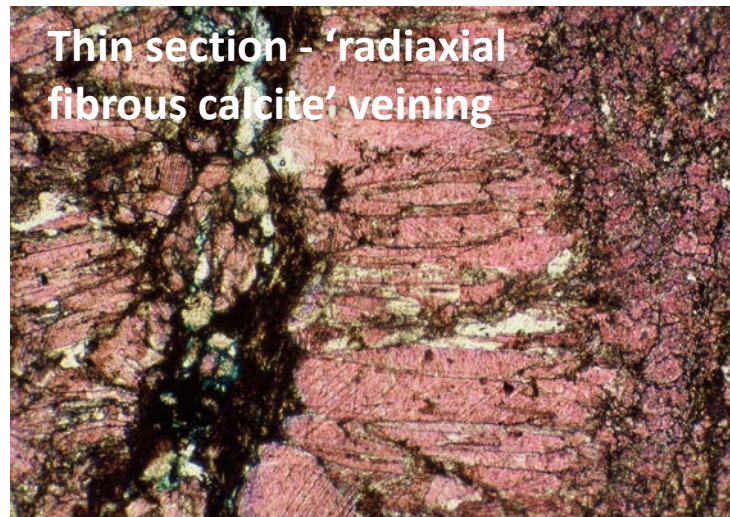
*L. Batu Raja Fm.*

*Porosity distribution*



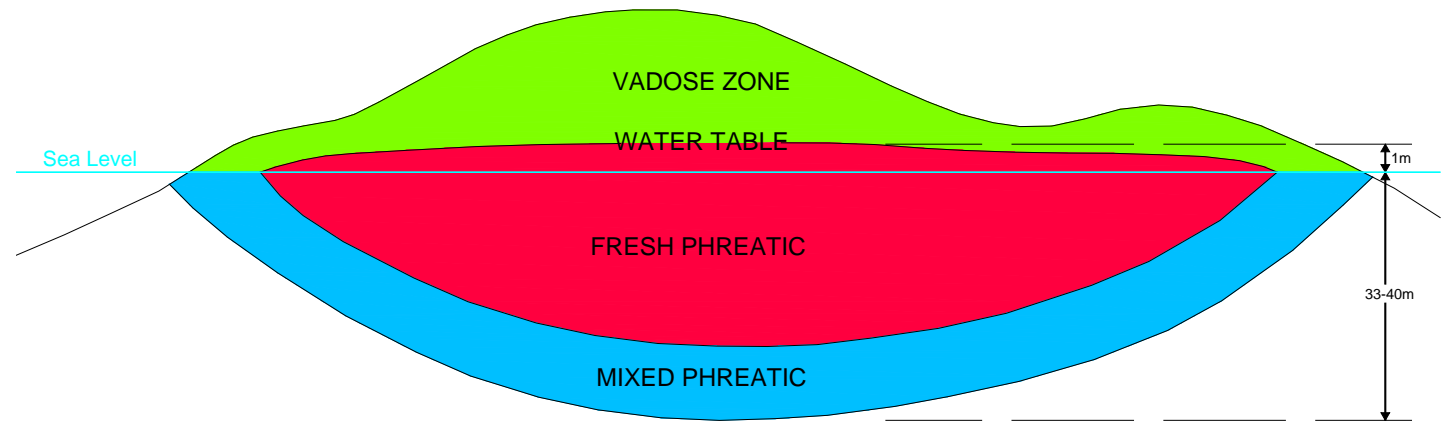
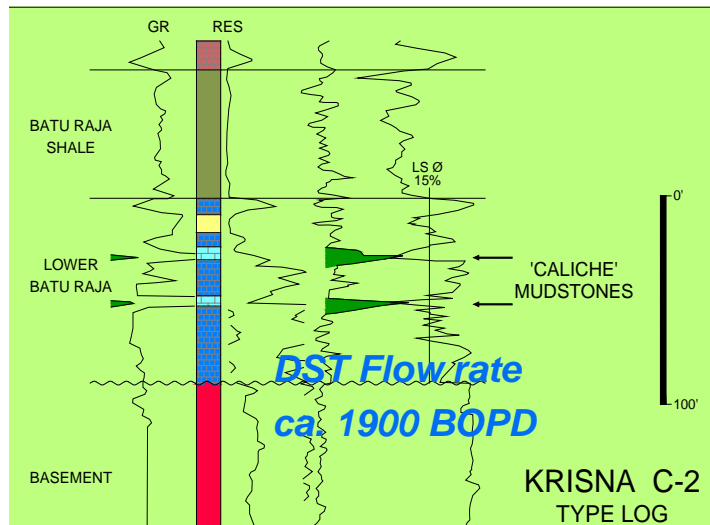


# Caliche - Evidence of subaerial exposure and leaching



'Beefy calcite mudstone' is a caliche, formed in a sub-aerial, leaching environment

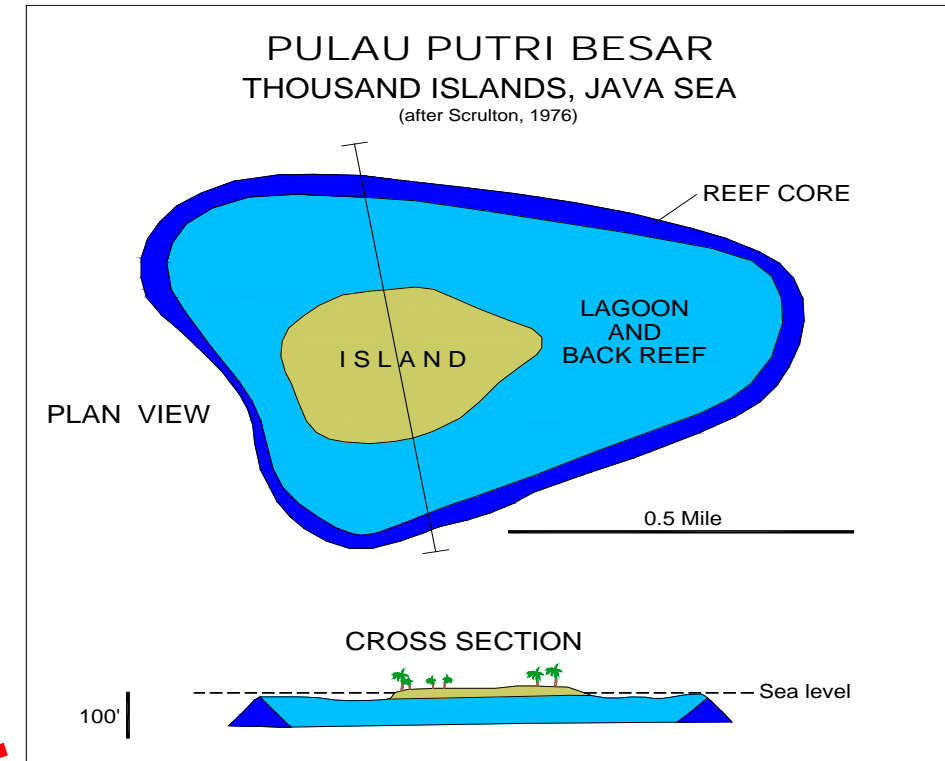
Logs - Very high GR makes excellent correlation marker, straddling high porosity zones



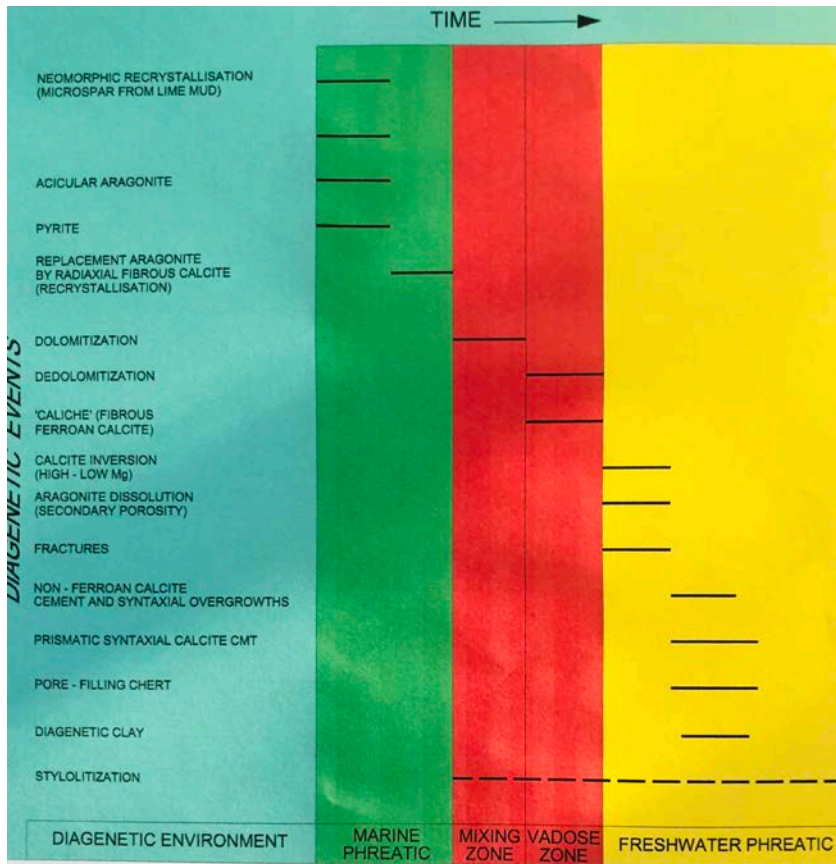
**Ghyben-Herzberg Principle 1:40**



*'Reef'? Only the thin red line (Ca. 90% of this photo comprises back-reef facies)*

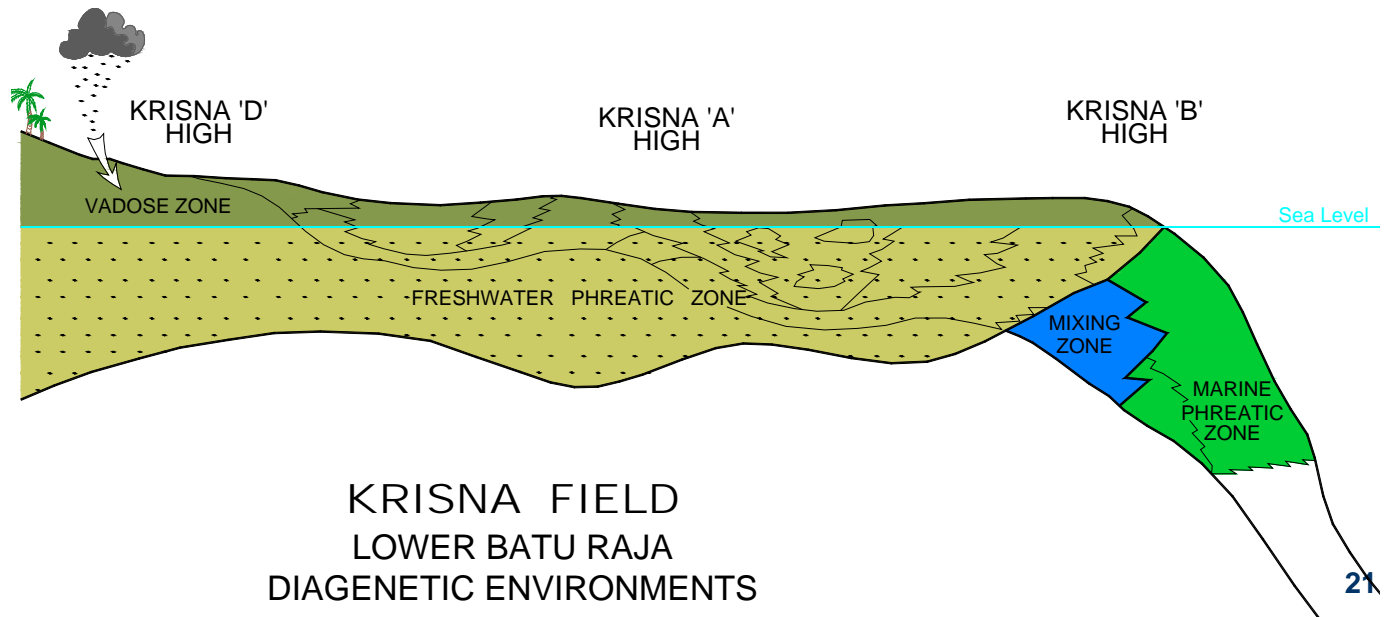
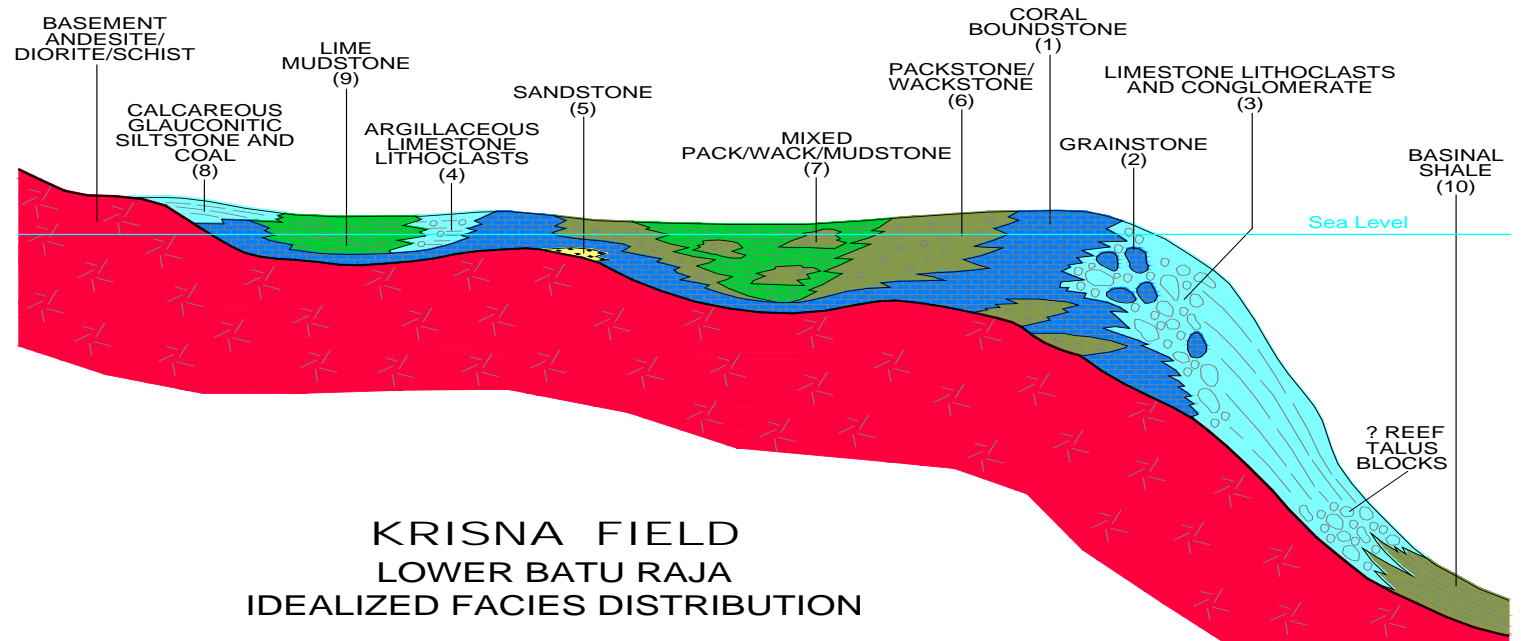


## L. Batu Raja Mbr. Diagenetic Sequence



**BTW: Re Carbonate petrography** - This is to salute to my friends/colleagues for their invaluable help with their arcane art:

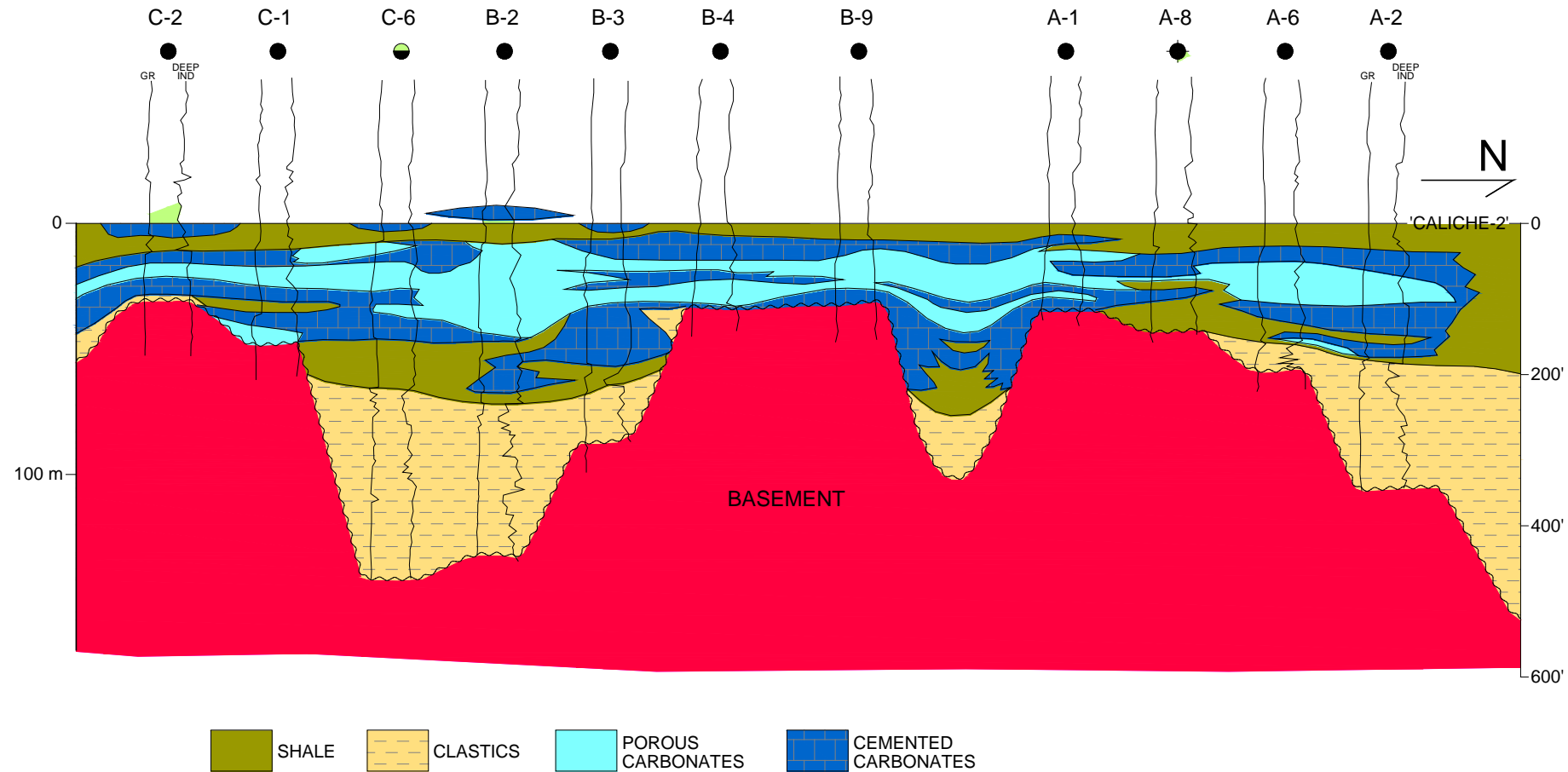
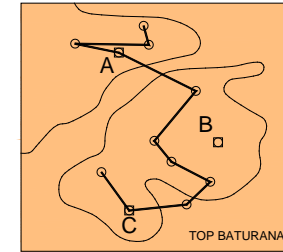
Steve James (Robbo's, for L. Batu Raja water injection study), Bob Park (Maxus) RIP, Richard Netherwood (Vanda) & Dave Schiller RIP



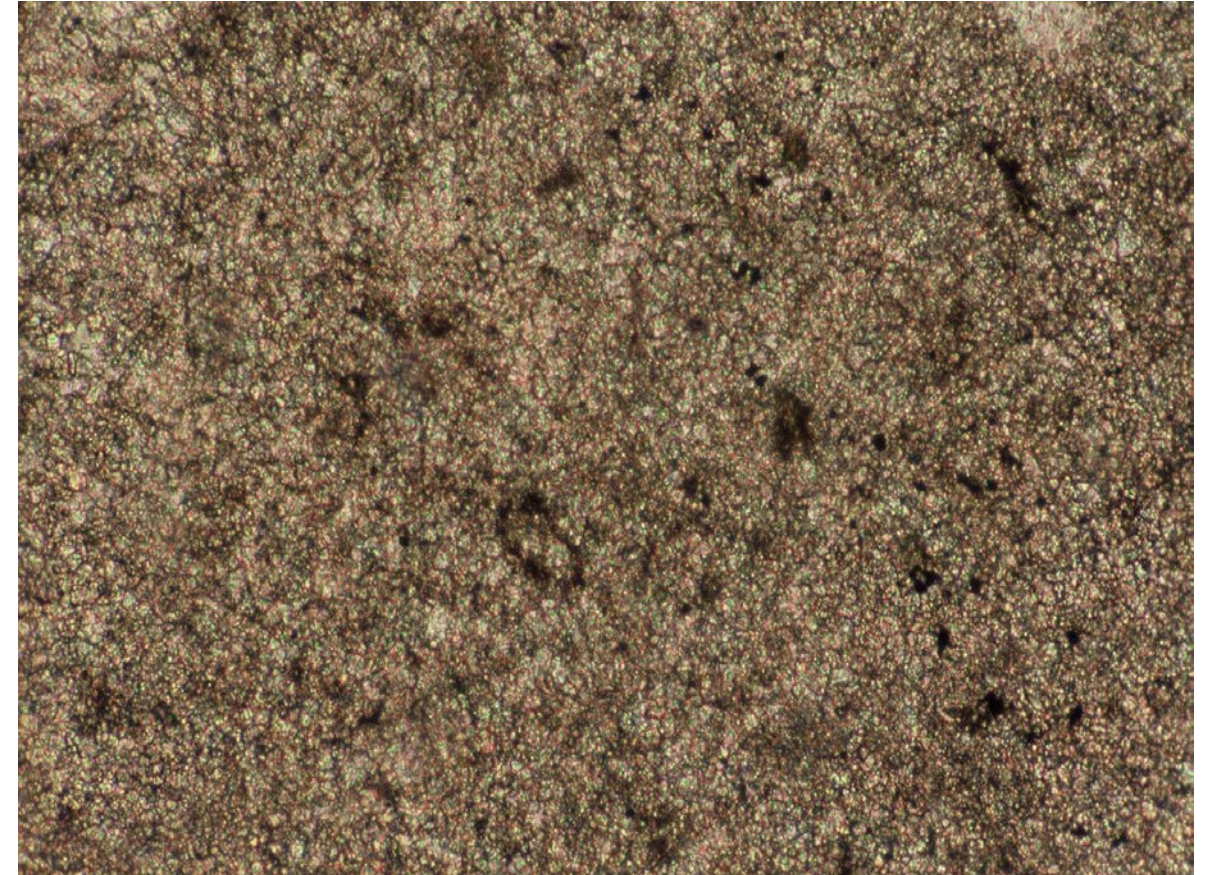
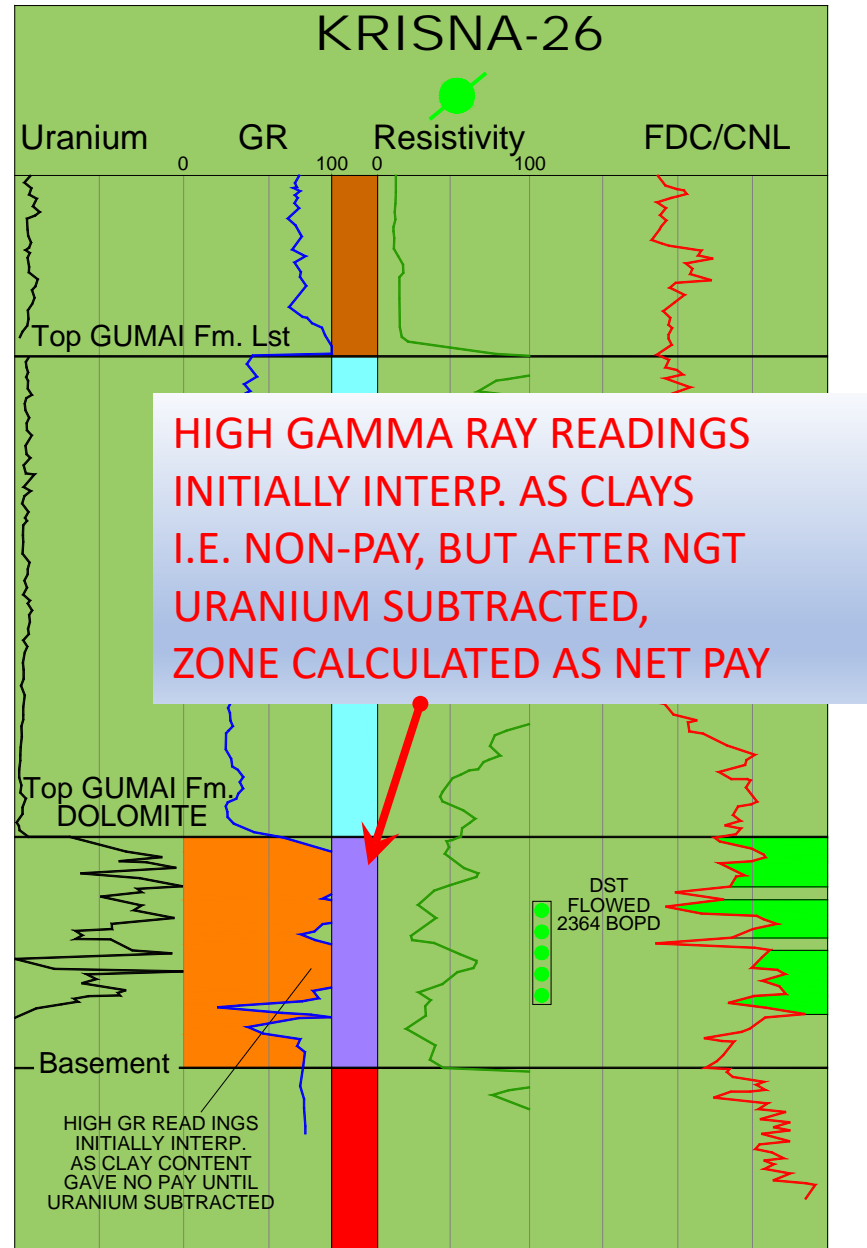


# Krisna L. Batu Raja porous zones - stratigraphic section

## KRISNA FIELD STRATIGRAPHIC SECTION (Showing porous carbonate distribution) Datum : CALICHE 2 (PALEO - WATER TABLE ?)



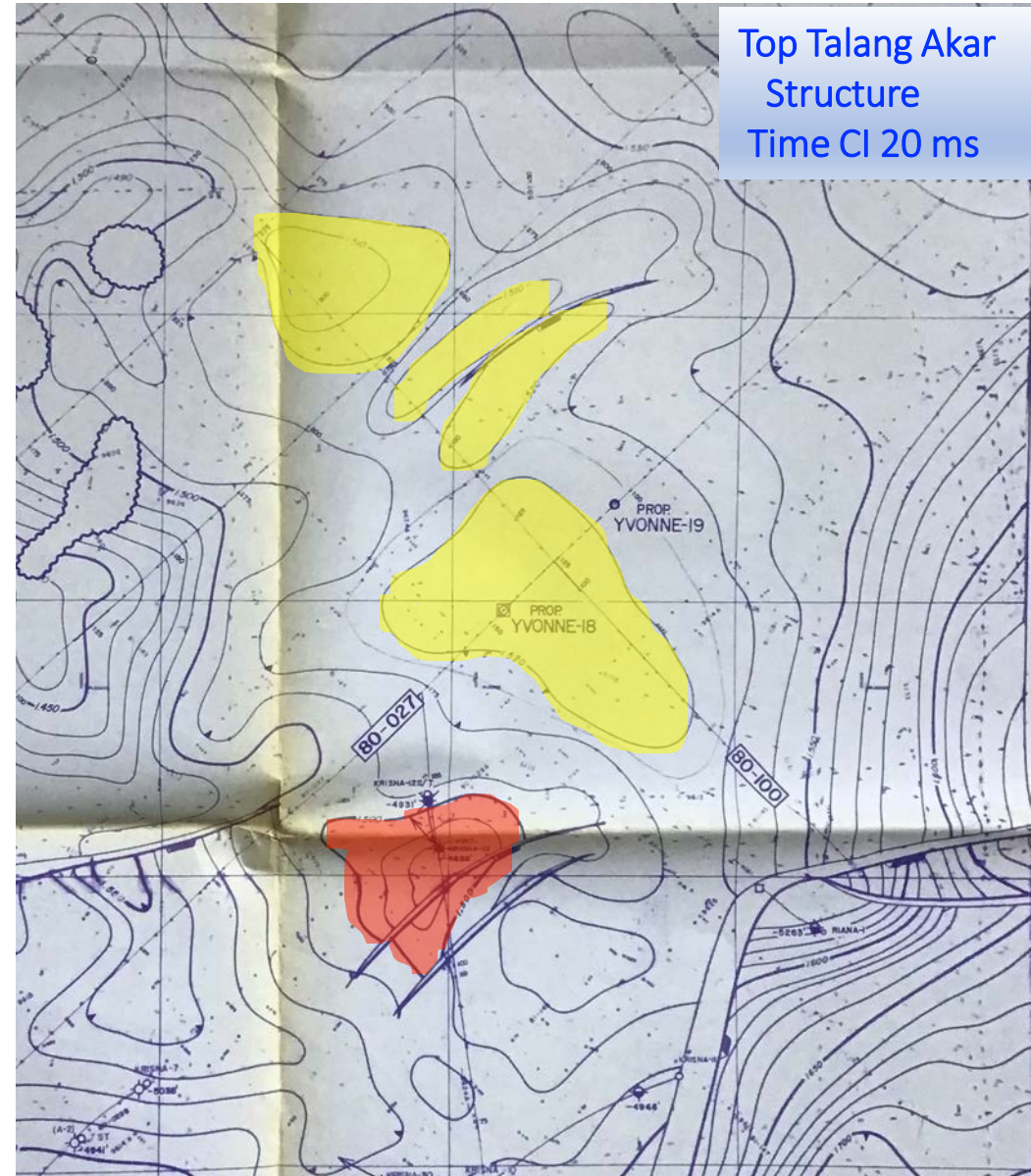
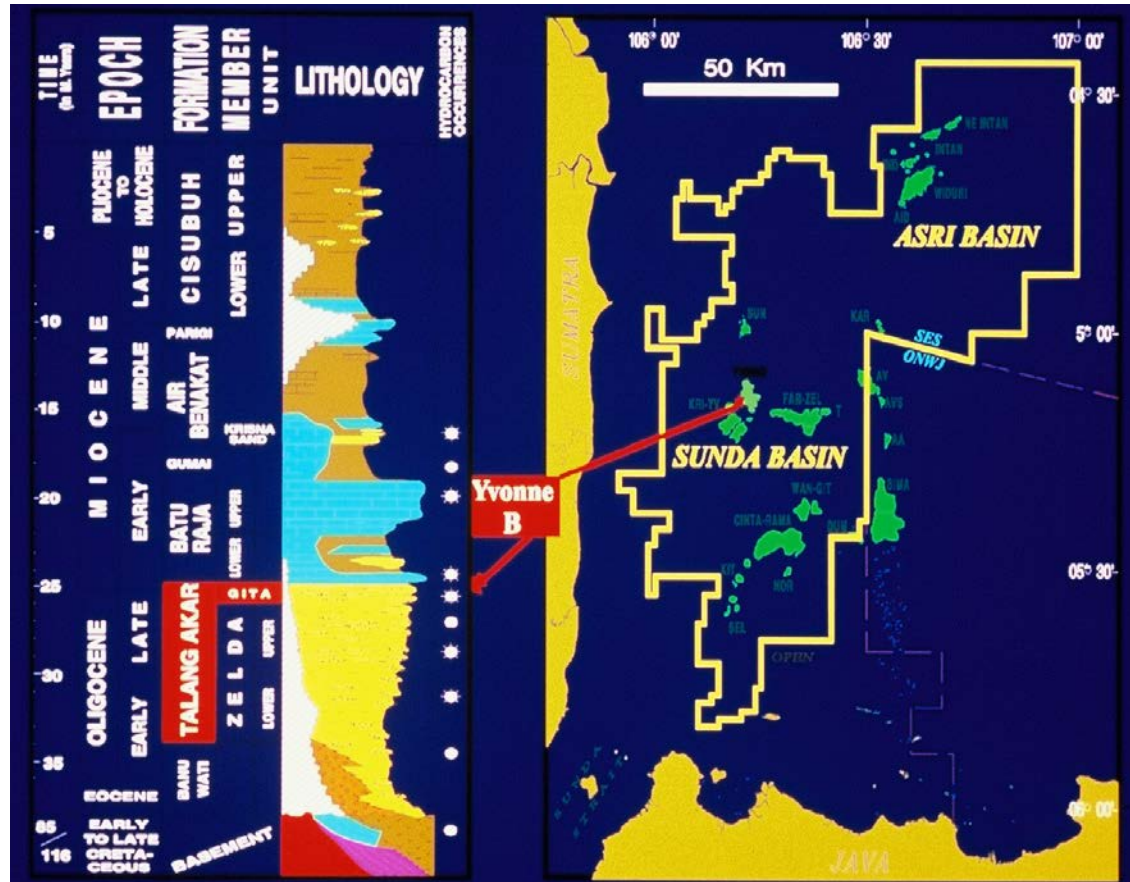
# 'A Different Animal' - Gumai pinnacle reef vs Batu Raja atoll



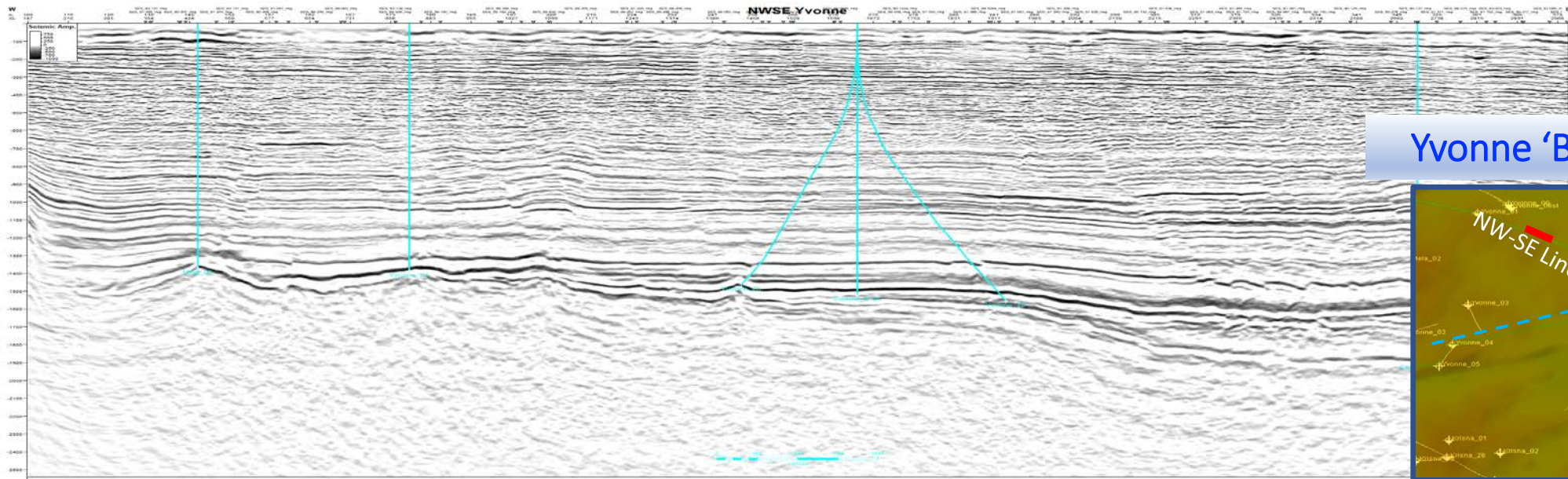
TS Gumai Fm. - Highly porous, microcrystalline dolomite (with high GR on NGT log)



# YVONNE 'B' discovery - A series of fortunate coincidences!



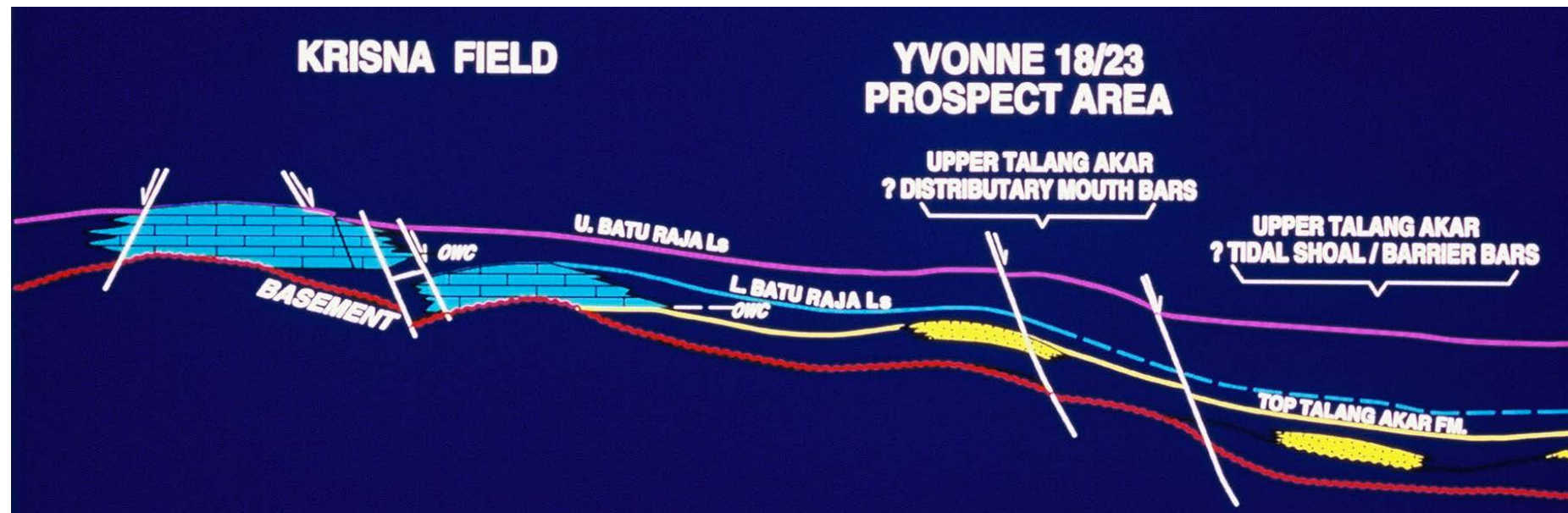




Yvonne 'B': NW-SE Seis Line



Original play concept -  
onlapping shallow  
marine, youngest Talang  
Akar Fm. facies with a  
central distributary  
mouth bar & flanking  
barrier bars

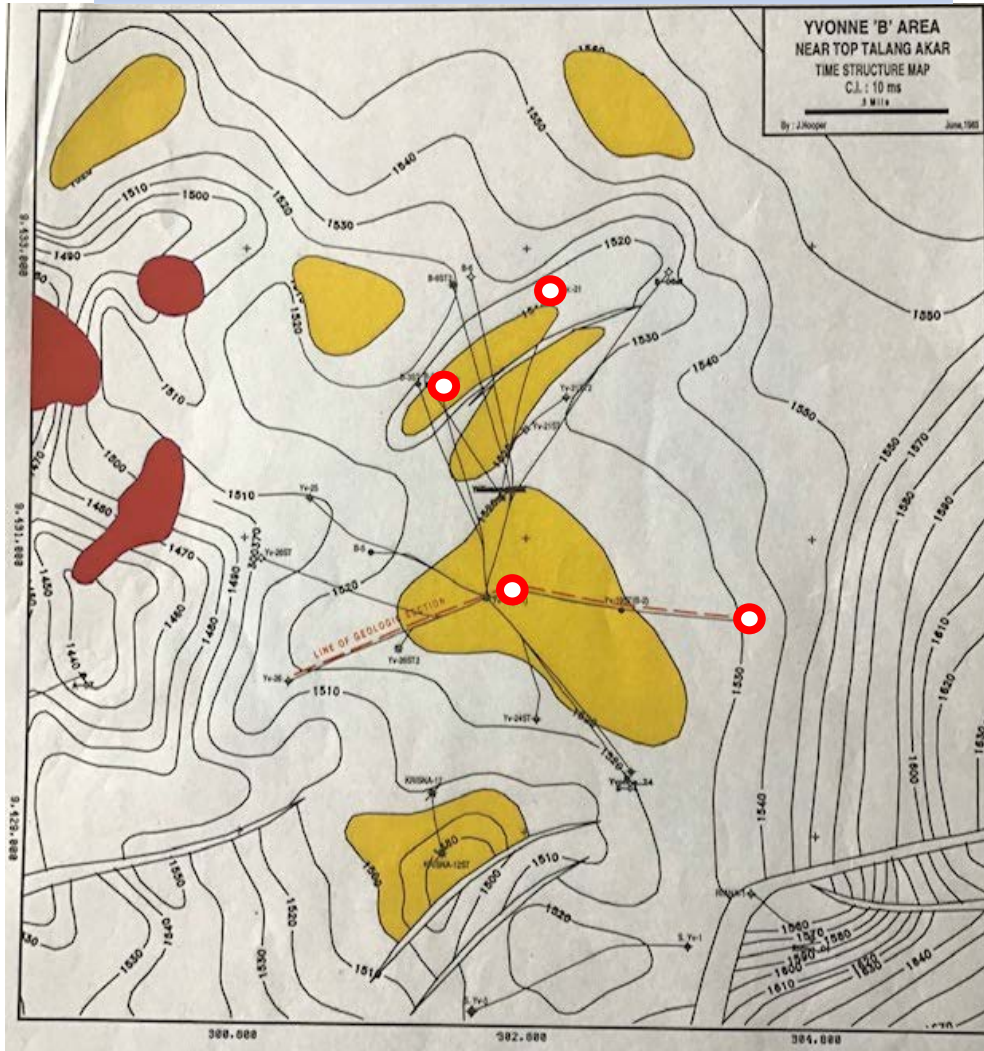




## Yvonne 'B' area mapping

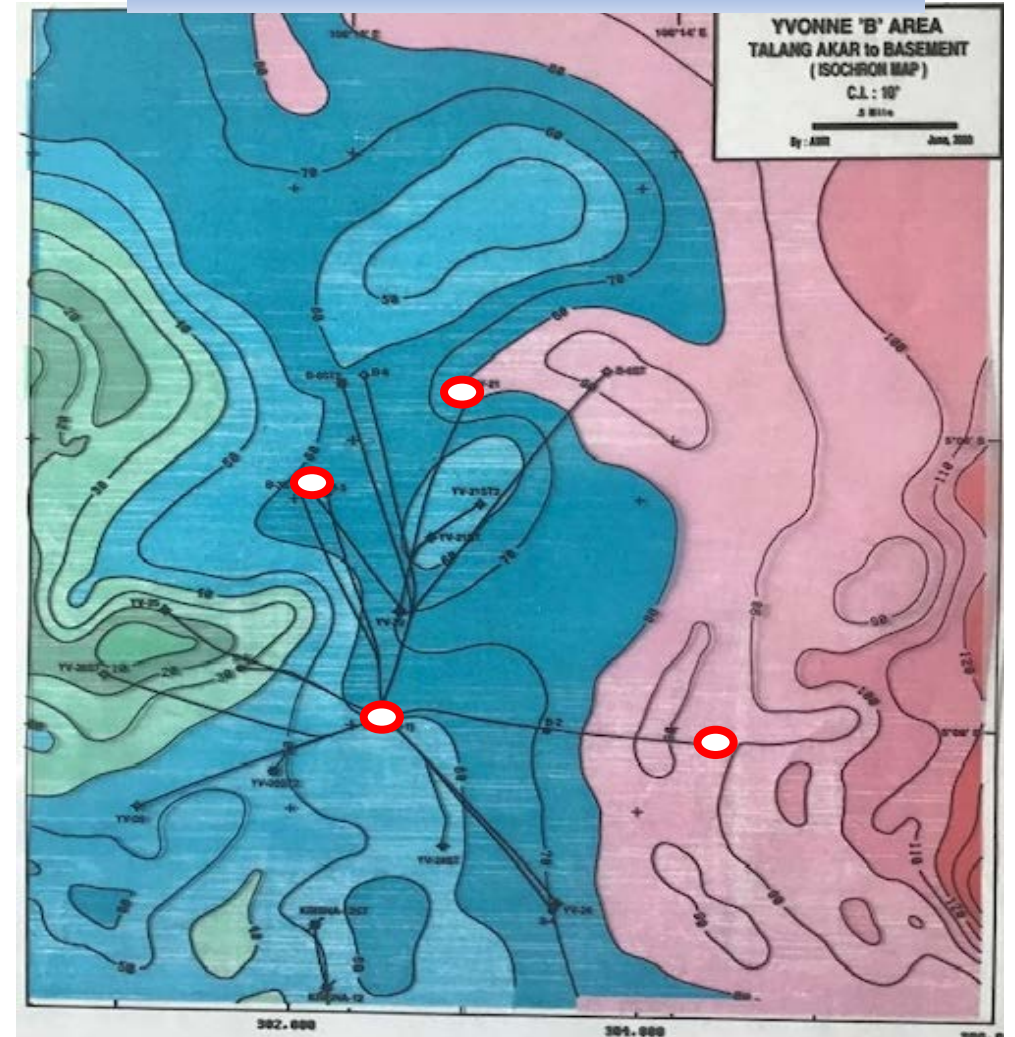
Structure map, note highs are  
roughly mutually perpendicular

Top Talang Akar Structure CI: :10ms

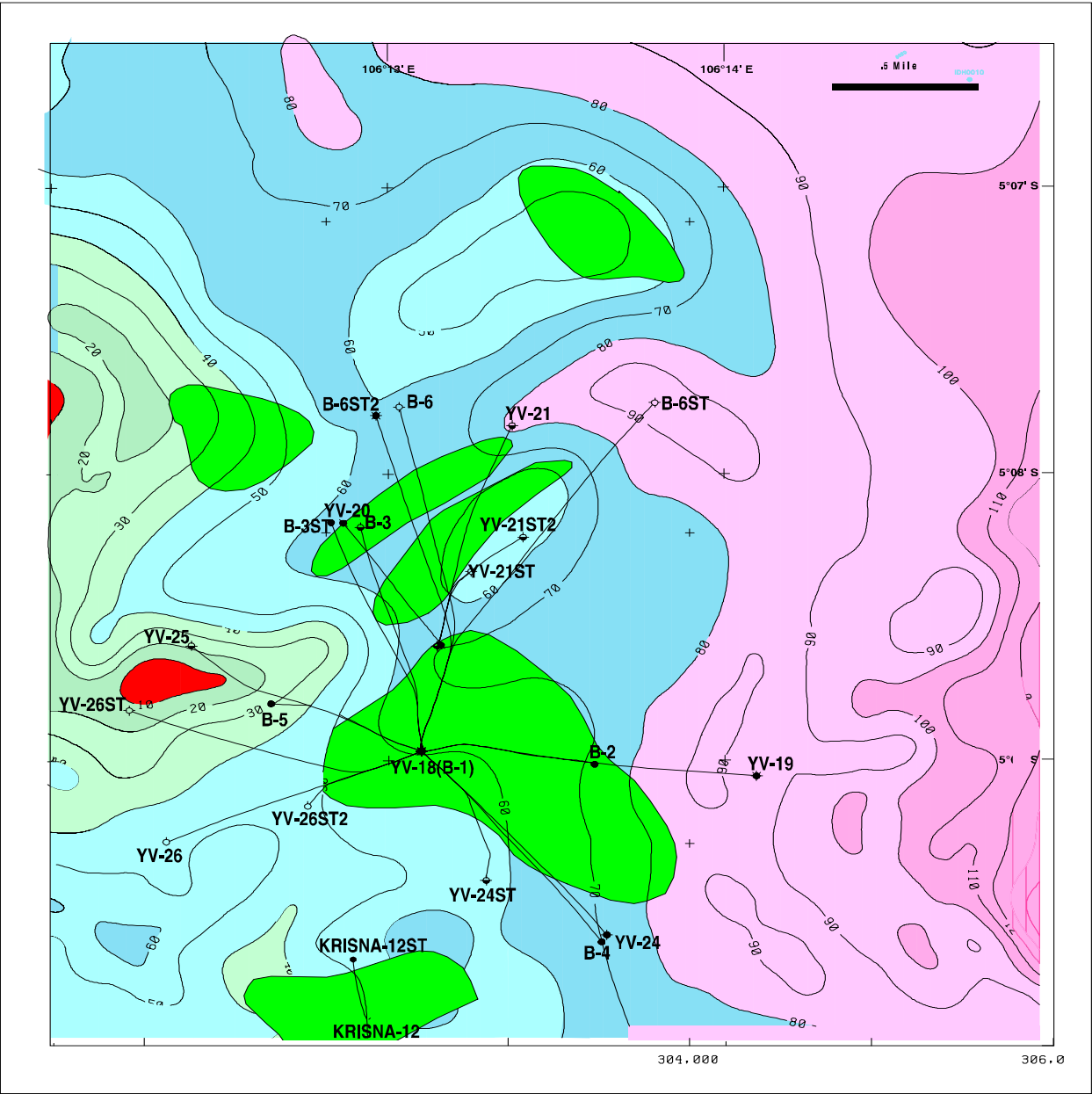


Luckily, this isochron map was made, despite  
the urgency to make structure maps only! Note  
dark blue 'thicks' underlie and match highs

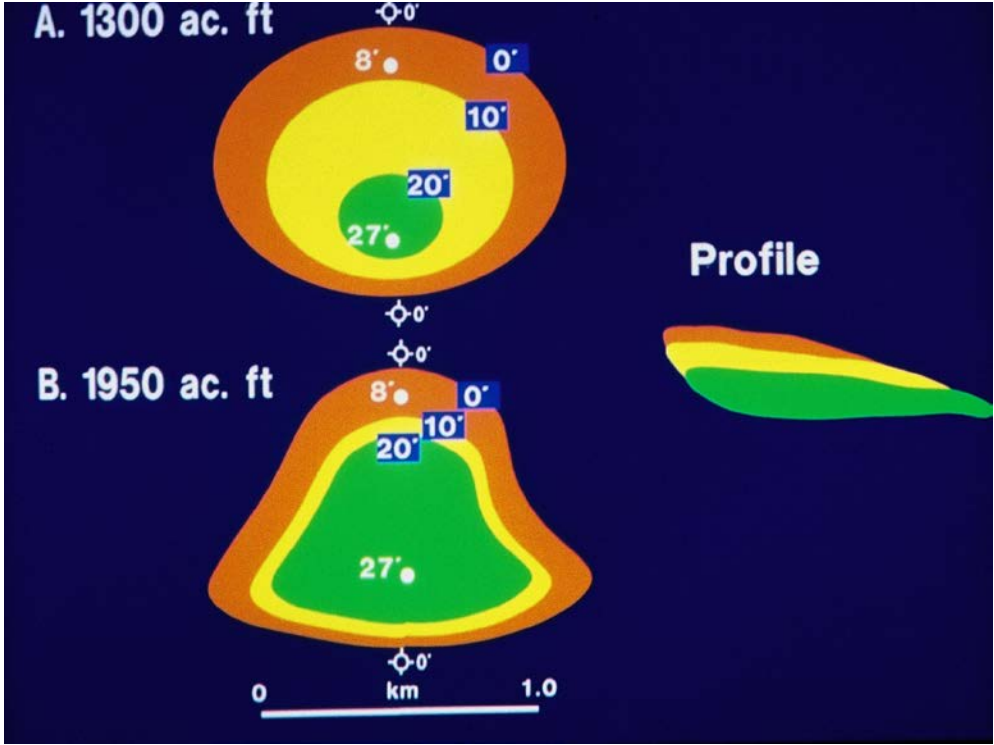
Talang Akar Isochron CI: 10ms



# Structure and Isochron maps overlaid



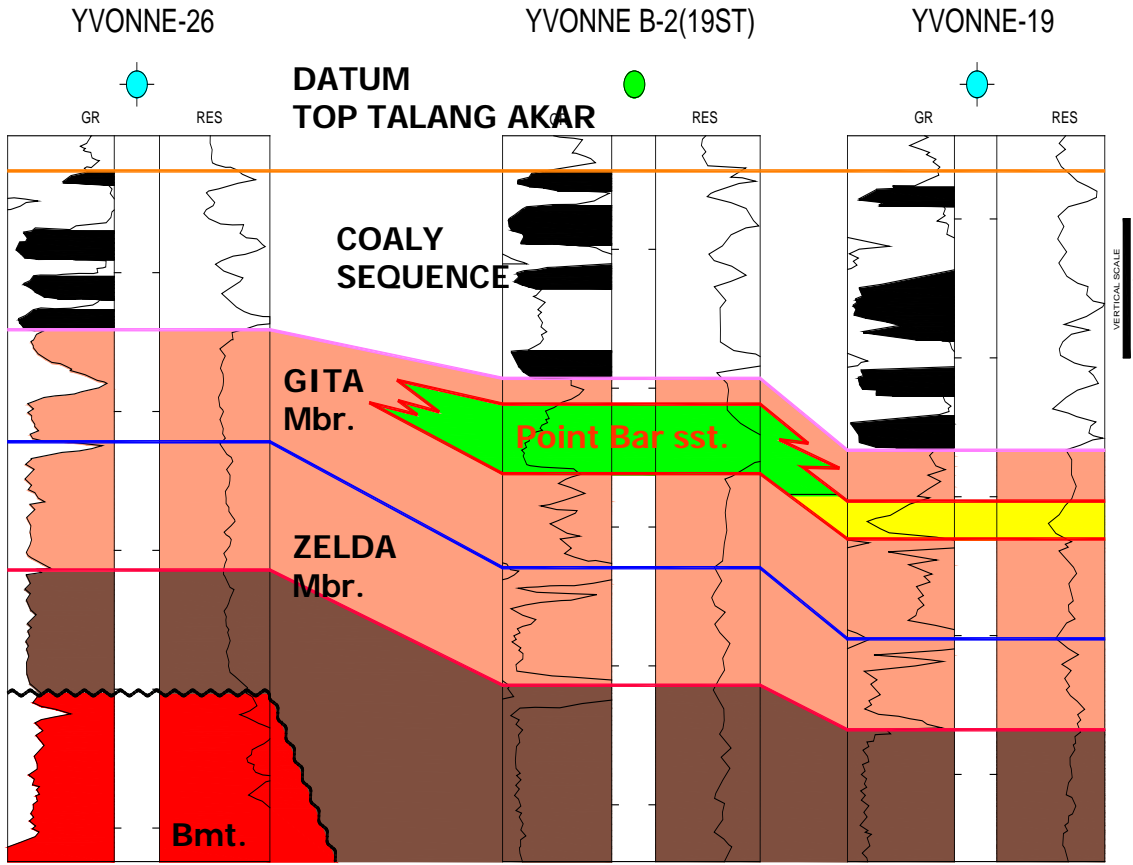
## Correct way to map point bar net sand





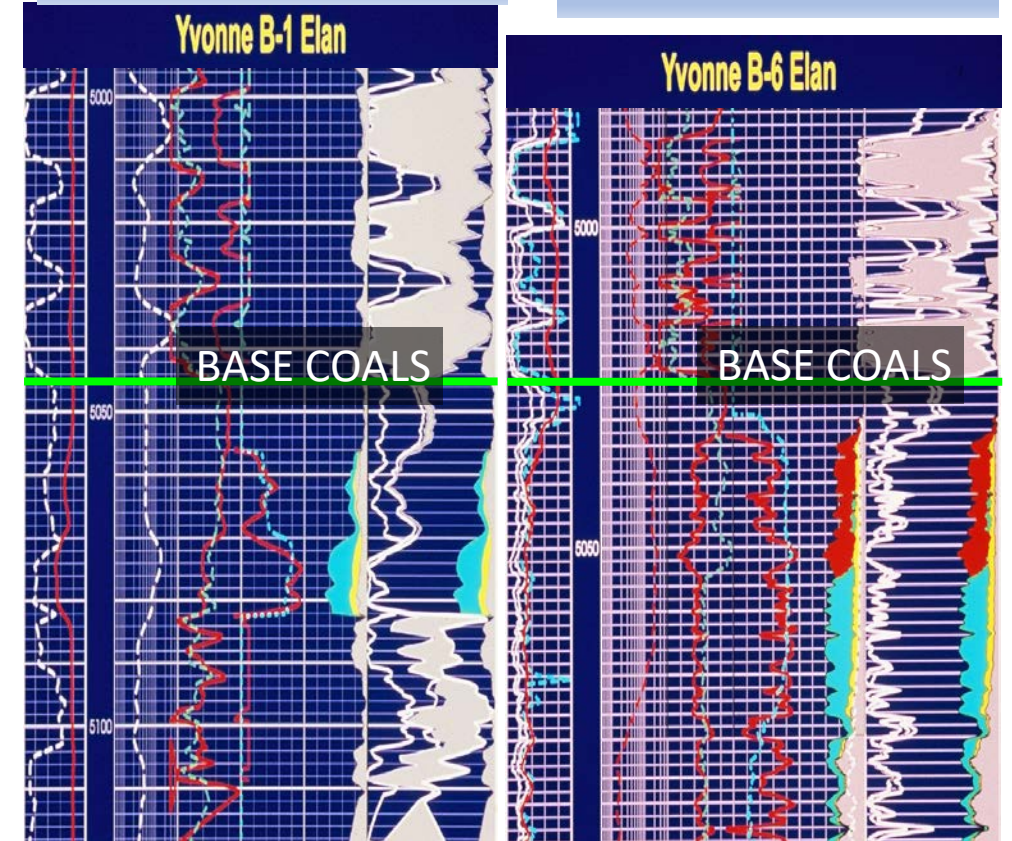
# Stratigraphic Cross Section

## YVONNE - B STRATIGRAPHIC TRAP



DISCOVERY WELL 1983

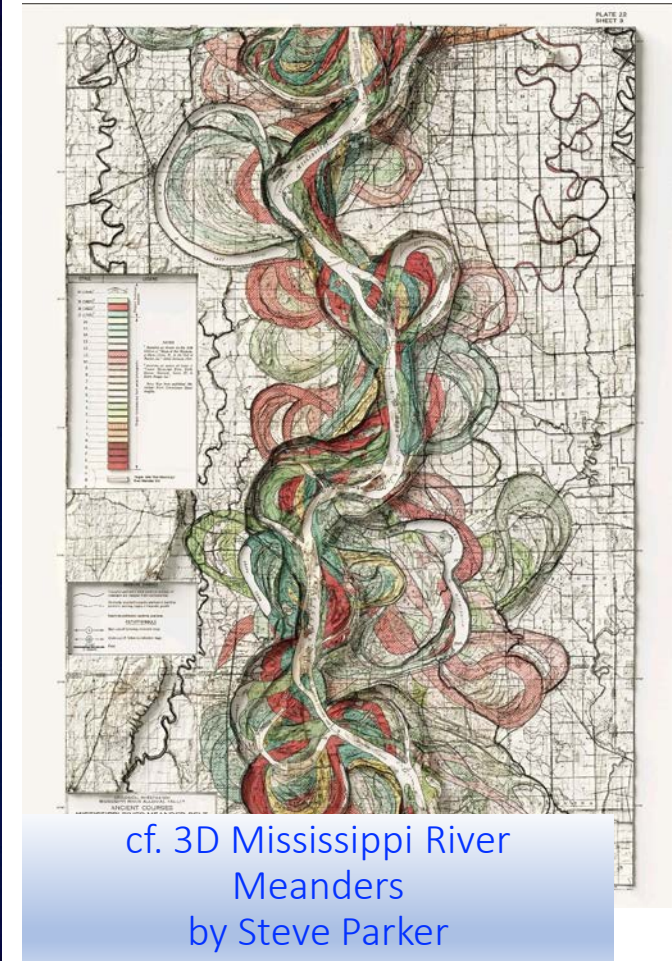
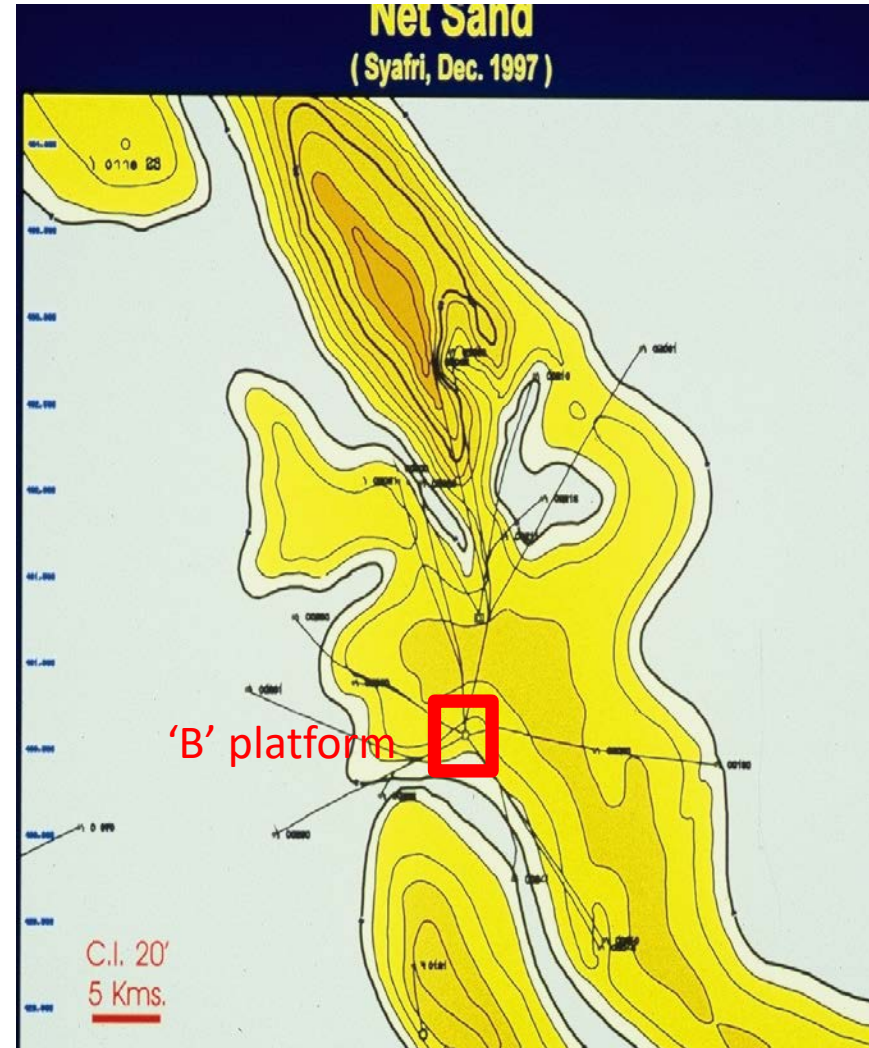
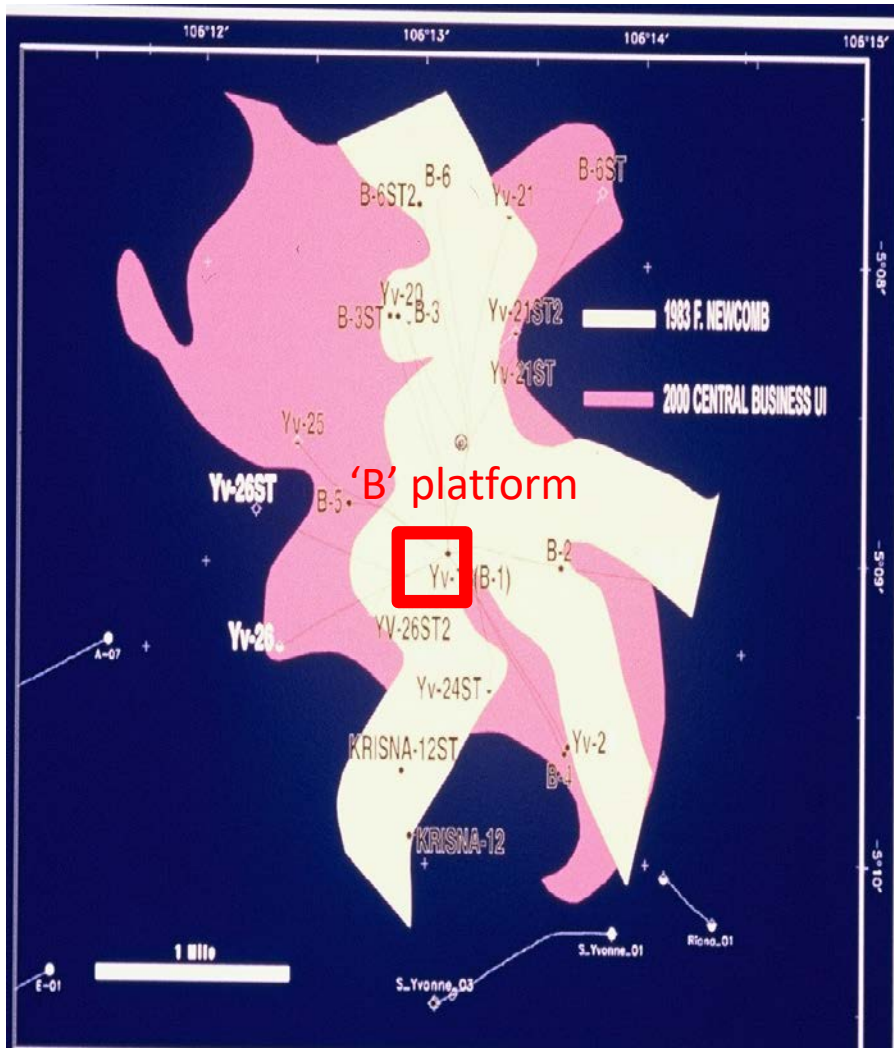
LATE DEV. WELL 2001



**NICE SURPRISE!!** Most wells had ca.10-25ft of net sandstone (eg. discovery well Yvonne-18 = B-1), the last well, drilled >10 years later (B6 st2) encountered a surprising 66 ft of net sandstone!

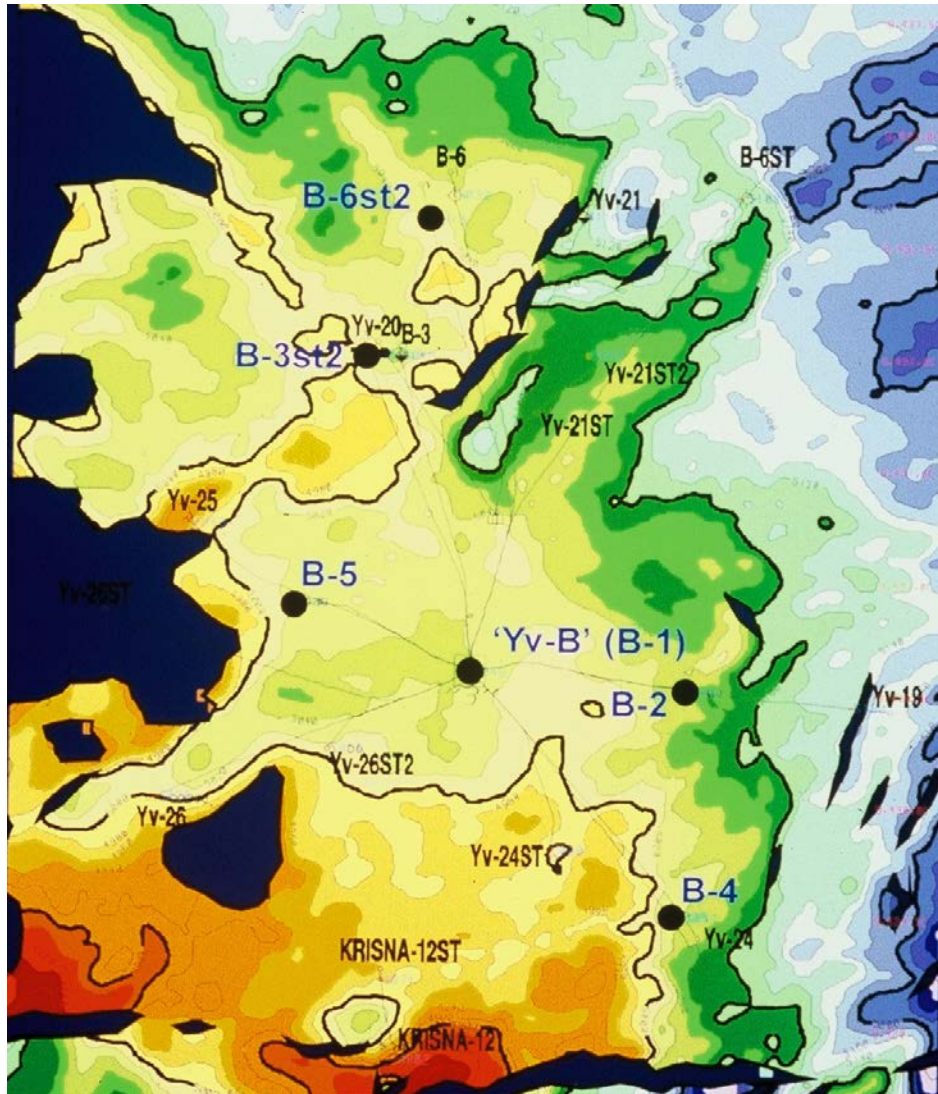


# NET SANDSTONE ISOLITHS THROUGH TIME: 1983, 1997 & 2000

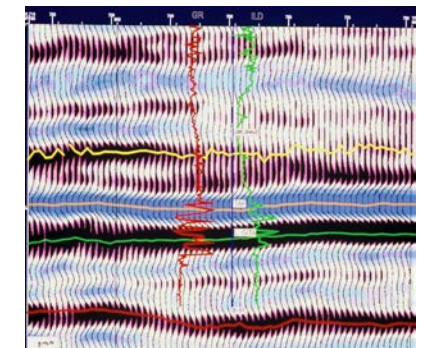
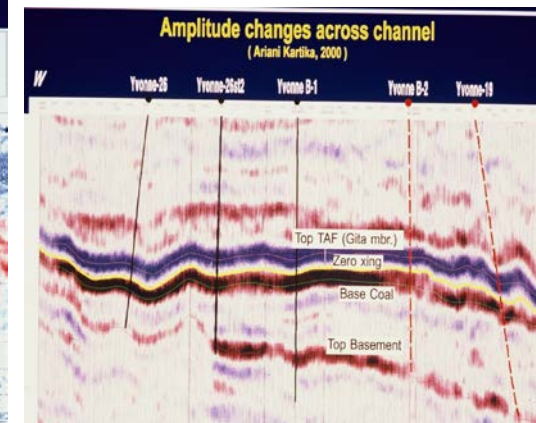
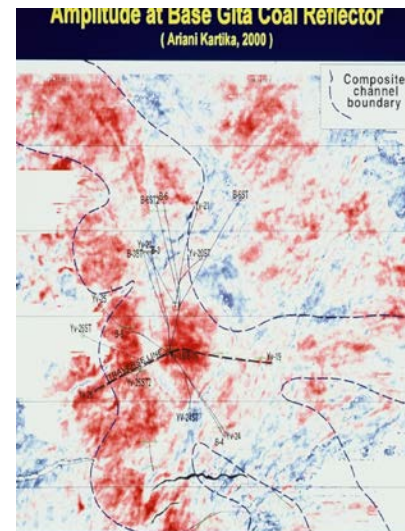
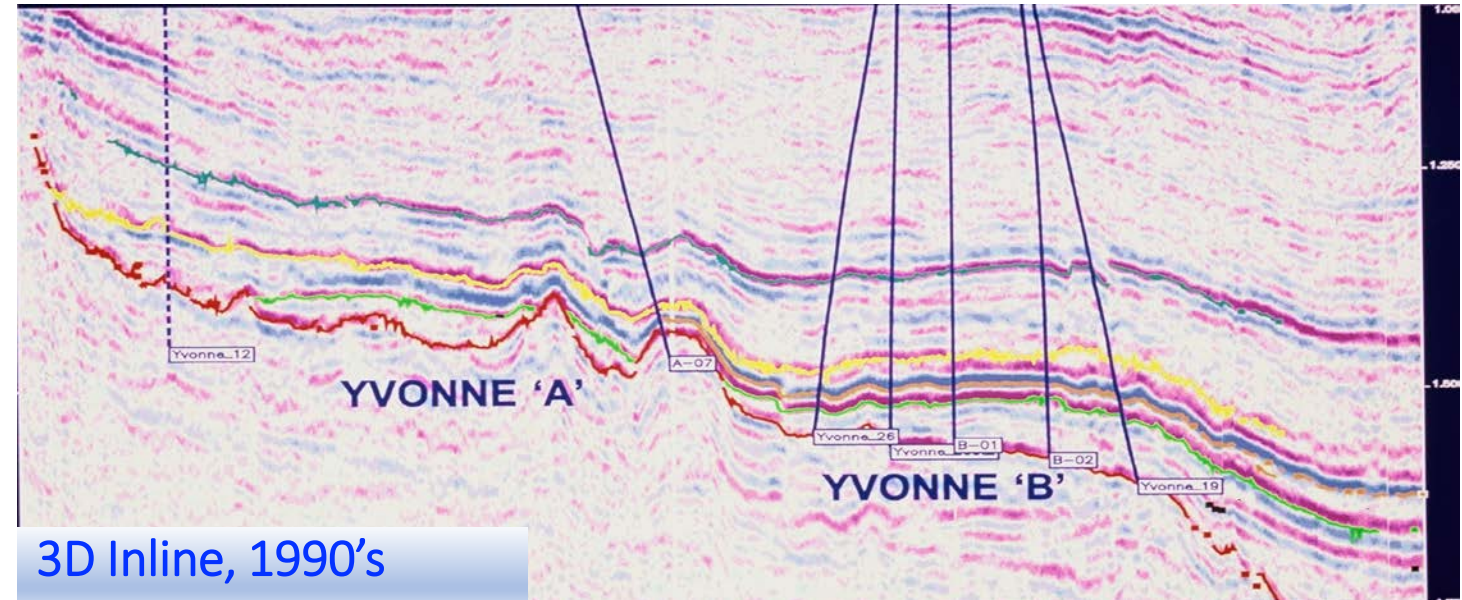




# DEVELOPMENTS IN THE 1990's



At last, 3D is shot in late 1990's - but did it help prospect location?

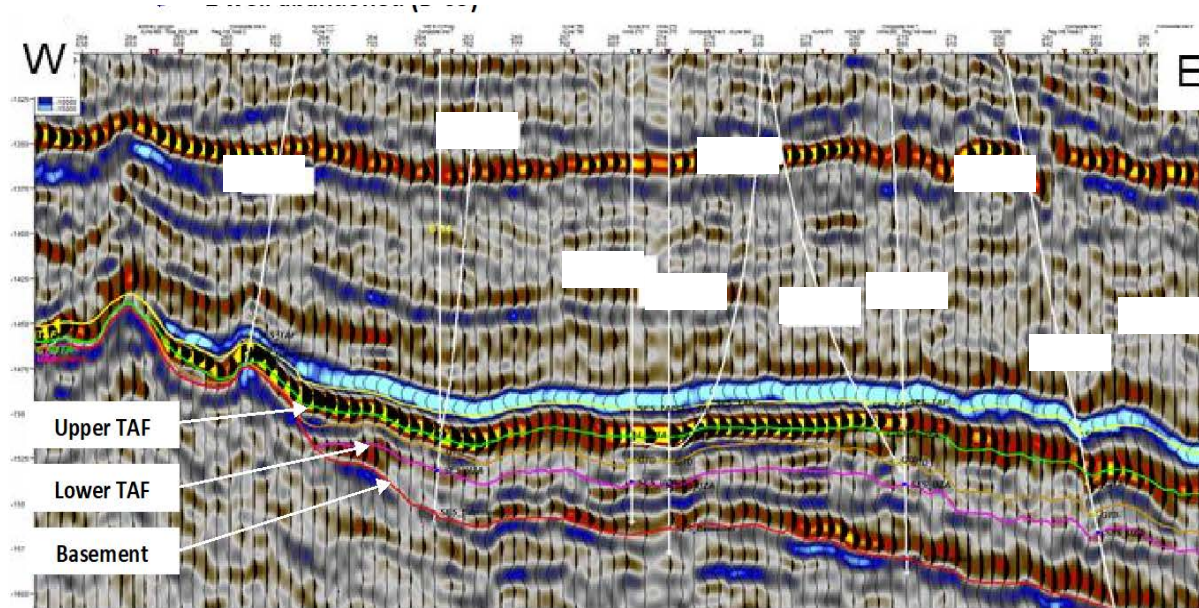


Studies in the 1990's: Attribute and Mass-Balance



# Thirty Years On...YVONNE 'B' in 2023

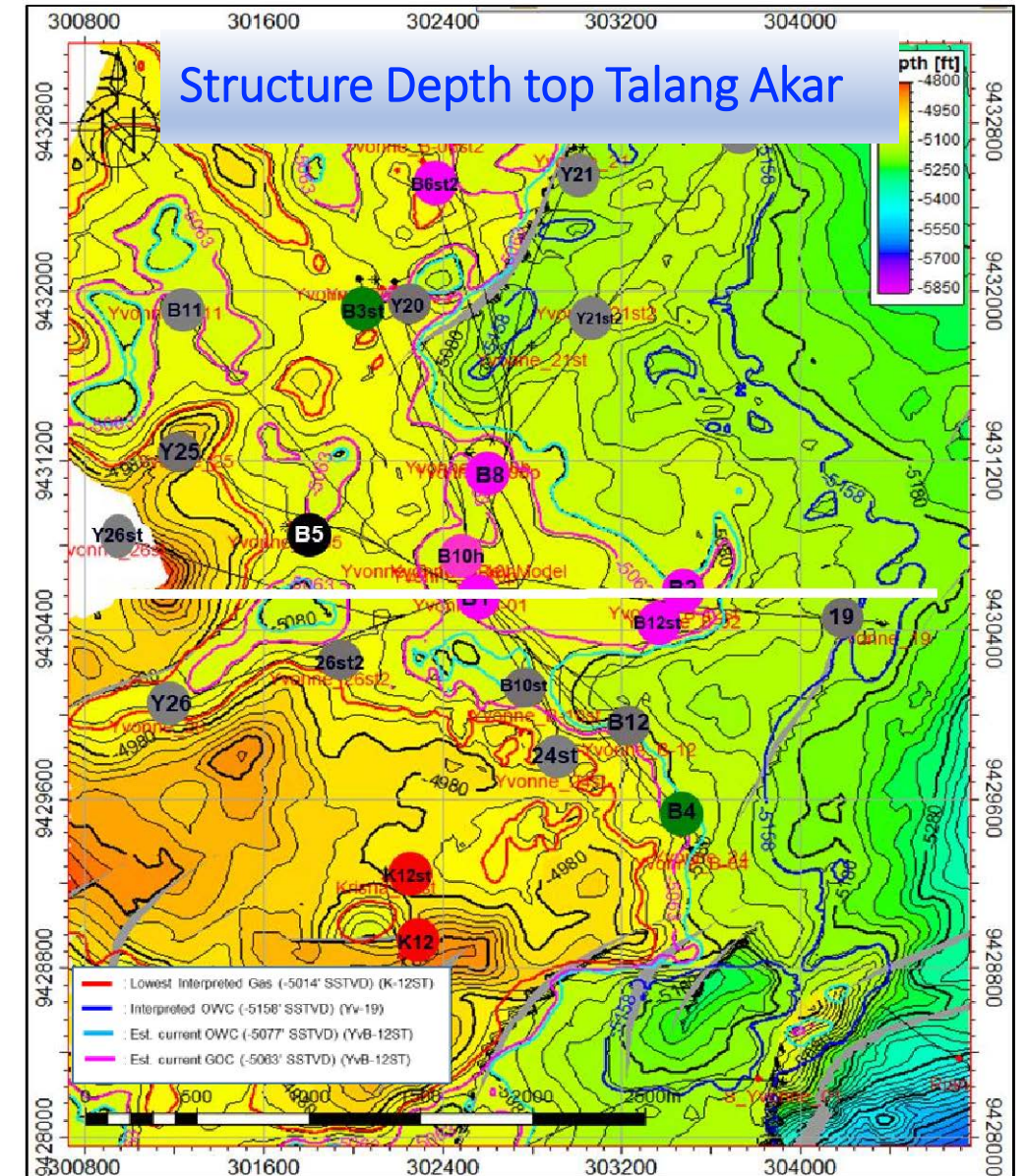
W-E Seismic line



Start-Up: 1984 (produced for 38 years)  
 Current Prod. (Jan. 2023): **728 BOPD**, **2208 BFPD**  
 Cum. Prod.: **18.75 MMSTB**, **3.08 BCF**, **27.61 MMBW**  
 Current Status: Producing from B-03 st & B-04

History of Yvonne B Reserve Parameters, 1982-2023

	Area, ac	OOIP, MMBO	Rec. Res, MMBO	Rec. Factor	Sw, %	Net sst ft	Cum. MMBO	Year
Yv-18+19	750	39	<b>6</b>	15.2		40		1982
Engineers'	<b>574</b>	10.9	<b>2.72</b>	25	<b>31.3</b>	15.3	0	1984
Estimates	1,197	26.7	<b>7.40</b>	27.7	28.9	17.3	5.4	1987
	1,983	55.4	<b>18.09</b>	32.7	33	23	13.6	1999
	<b>2,860</b>	85	<b>18.19</b>	21.4	<b>16</b>	19.5	13.8	2000
							<b>18.75</b>	2023





On Sale Now!! Pioneers of Indonesian Exploration by Han van Gorsel





# Thanks for supporting SEAPEX!

Andy Wight

Mar. 9, 2023

