

7 June 2024

SEAPEX EVENING TALKS

Melbana Energy Limited (ASX: MAY) (**Melbana or the Company**) is pleased to advise that its Chief Commercial Officer, Dr Chris McKeown, will be presenting information on the Company's Australian offshore exploration opportunities at the SEAPEX Evening Talks being held in Singapore tonight.

A copy of the presentation is attached and can be found on Melbana's website at <https://melbana.com/site/investors/recent-presentations1>

ENDS

**For and on Behalf of the Board of
Directors:**

Mr Andrew Purcell
Executive Chairman

Ends -

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Australian offshore exploration opportunities

AC/P70, NT/P87 & WA-544-P

SEAPEX

Singapore

7 June 2024



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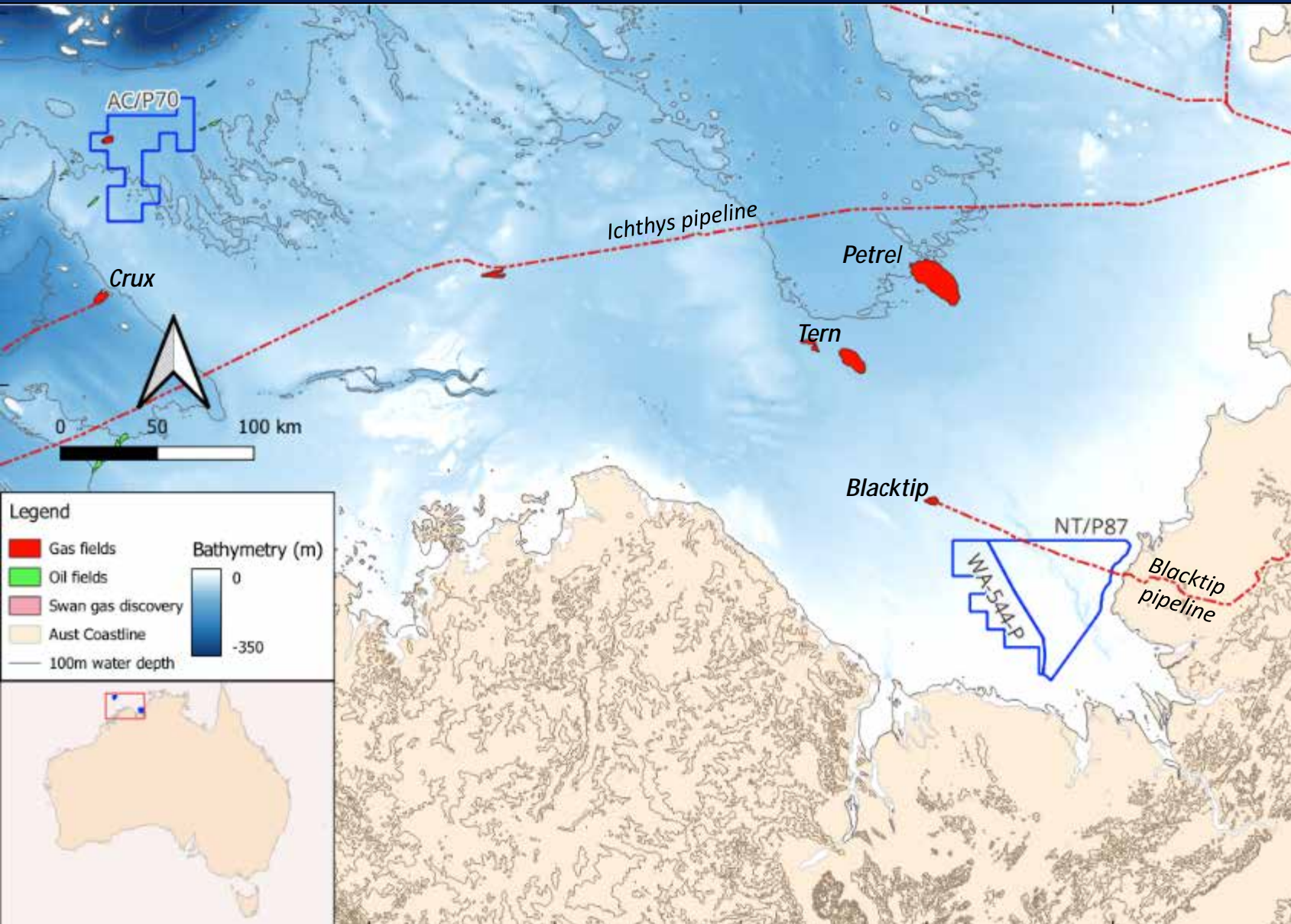
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Contingent and Prospective Resources: Unless otherwise specified, the information that relates to Contingent Resources and Prospective Resources for Melbana is based on, and fairly represents, information and supporting documentation compiled by Mr. Peter Stickland, who is a Director of the company and has more than 30 years of relevant experience. Mr. Stickland is a member of the European Association of Geoscientists & Engineers and the Petroleum and Exploration Society of Australia. Mr. Stickland consents to the publication of the resource assessments contained herein. The Contingent Resource and Prospective Resource estimates are consistent with the definitions of hydrocarbon resources that appear in the Listing Rules. Conversion factors: 6 Bscf gas equals 1 MMboe; 1 bbl condensate equals 1 boe; "MMstb" means million stock tank barrels of oil.

Prospective Resources Cautionary Statement (PRCS): The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Future exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

Melbana Energy exploration permits



Attractive domestic gas market in Western Australia, driven by tightening gas supply.

Australian Energy Market Operator (AEMO) recently predicted gas supply to run short of domestic demand throughout the next decade.

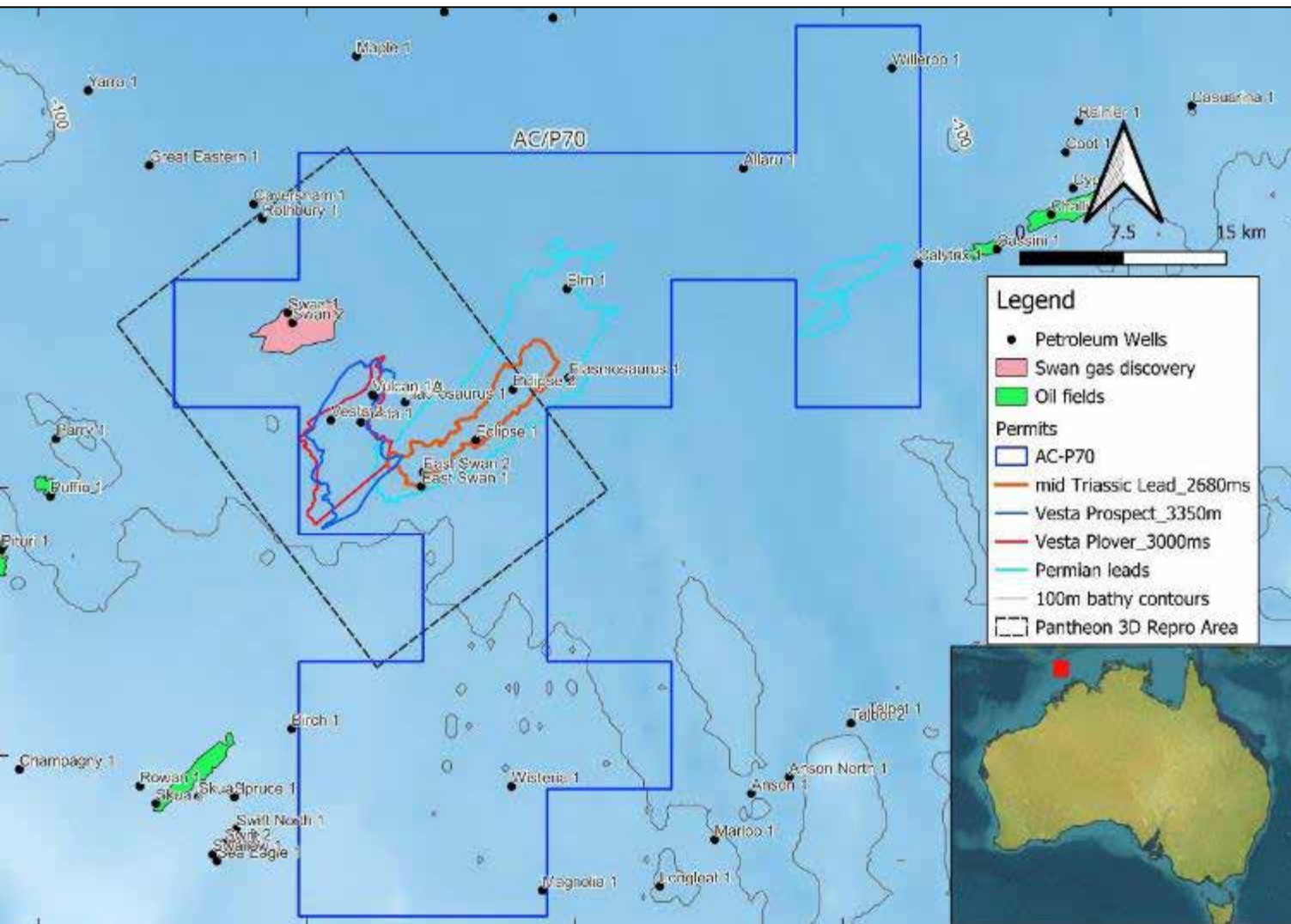
Offshore Australian gas is part of the global LNG trade.

Melbana Energy is currently 100% equity holder and operator of three exploration permits located in the prolific Bonaparte Basin and Northwest Shelf.

- All permits are located within less than 100m of water, close to existing infrastructure.
- Numerous leads throughout both the Paleozoic and Mesozoic have been matured and prospective for gas.
- Opportunities a mixture of proven fairways and new play concepts, not historically exploited.
- Seismic reprocessing is close to complete in AC/P70 and seismic acquisition is planned for NT/P87 & WA-544-P to mature & rank leads.

Opportunity for early-stage farm-in to AC/P70 and maturing preferred leads in NT/P87 & WA-544-P to drill-ready status.

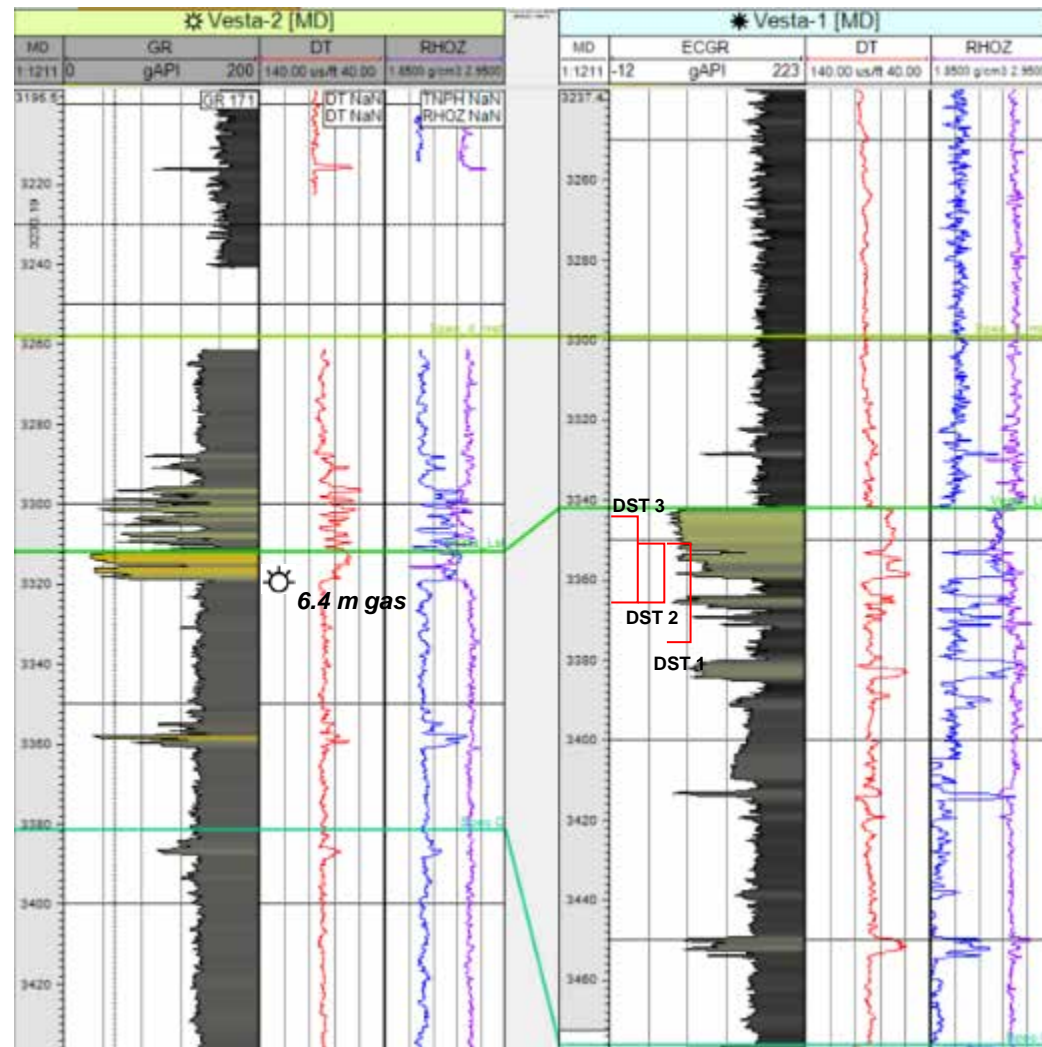
AC/P70: Permit Setting



- AC/P70 is located in the Territory of Ashmore and Cartier Islands, in offshore Northwest Shelf, Australia.
- Adjacent to multiple oil and gas discoveries including Challis, Cassini, Puffin and Skua.
- Hosts multiple proven and prospective petroleum systems
 - **Swan-1** recovered 72.6 cubic ft gas and 625 cubic cm condensate on FIT.
 - Vesta discovery (Could host significant gas with liquids upside).
 - **Vesta-1** proved moveable hydrocarbon with a flow rate of up to 160 bopd and 10.9 mmscfd.
 - Numerous other oil and gas shows throughout the Jurassic and Cretaceous.
- Significant additional potential is proposed.
 - Up-dip of the Vesta wells.
 - Possible stratigraphic traps along the eastern flank of the Vesta structure.
 - The deeper, untested Plover section.
 - Adjacent to the Vesta structure, further uplift is recognised in the un-tested Triassic and Permian sections.
- Permit is in good standing all permit commitments fulfilled.
- The current expiry of the primary term is 14 Feb 2027, by which time one exploration well must be drilled.

• Recently completed reprocessing of the Pantheon 3D MSS shows significant uplift in imaging the Vesta structure, additional near-field stratigraphic traps and the Swan Discovery.

Vesta-1: oil discovery in late Jurassic syn-rift reservoir

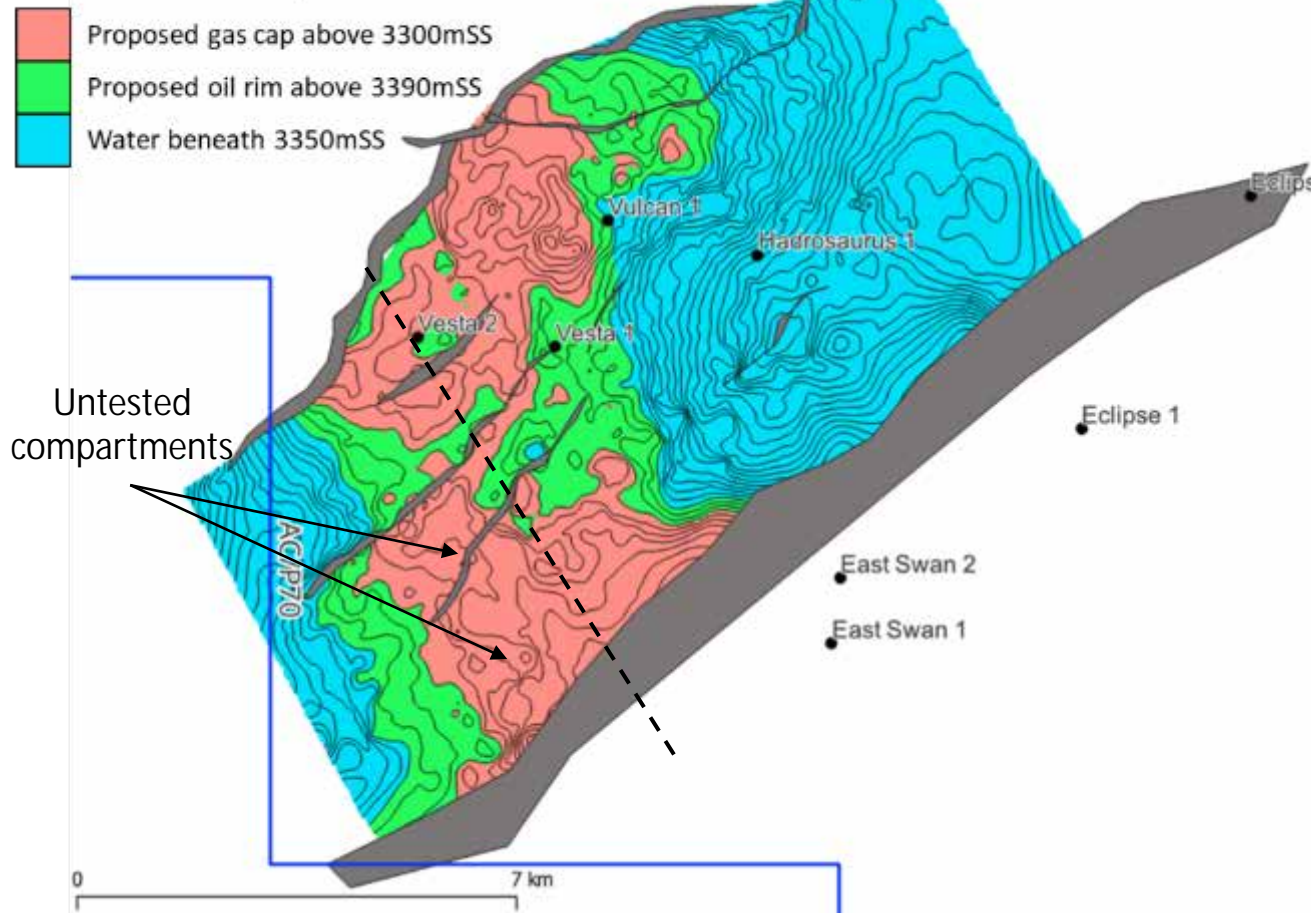


- Vesta –1 drilled by ENI in 2005 to a TD of 3342mD.
- Objective was to test the oil potential of the ‘Near Callovian Unconformity’ (Plover).
- Well TD ~200m short of the Callovian target due to high geo-pressure and failure to stabilise the well.
- Hydrocarbon bearing sands were encountered within the Oxfordian Lower Vulcan Formation (Vesta sandstone) between 3342-3365mD.
- DST results confirm oil deliverability from the reservoir with significant associated gas.
- Vesta-2 drilled in 2008 also by ENI encountered 6.4m net gas within reservoir sands of the same age.

DST	GTS (mmscfd)	OTS (bopd)	WTS (bwpd)
1 (3349-3367m)	9.15	120	53
2 (3349-3361.5m)	8.54	105	39
3 (3343-3348, 3349-3361.5m)	10.9	160	66

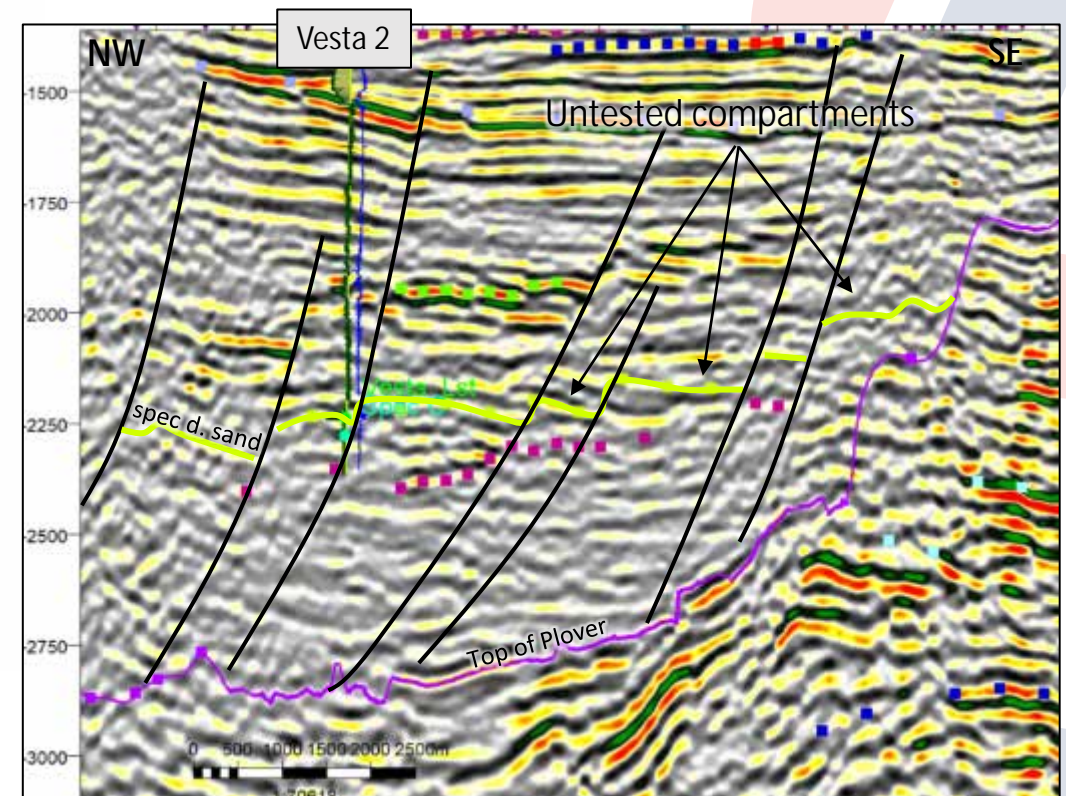
Vesta Discovery

spectabilis di: Depth Structure



** Official probabilistic resources to be estimated after interpretation of reprocessed seismic data

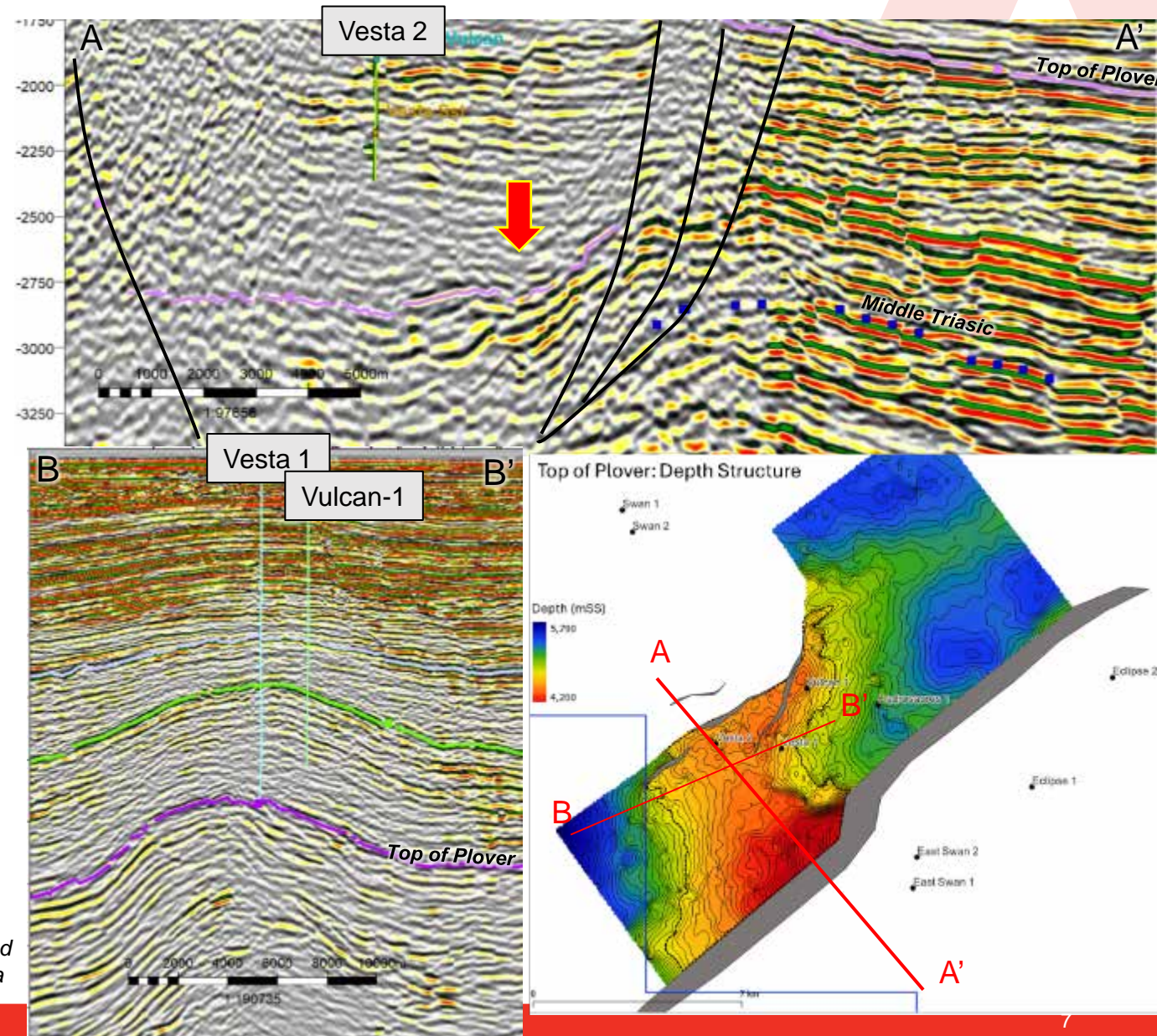
- Recent mapping and depth conversion indicates that the Vesta *spectabilis.d* oil sand closes across a structure of ~43 km².
- A series of tilt-blocks are located up-dip from the Vesta wells where considerable additional resources may be present.
- Drilling results and preliminary petrophysical analysis suggests an oil rim and gas cap, likely to continue up-dip.



Vesta Deep (Plover)

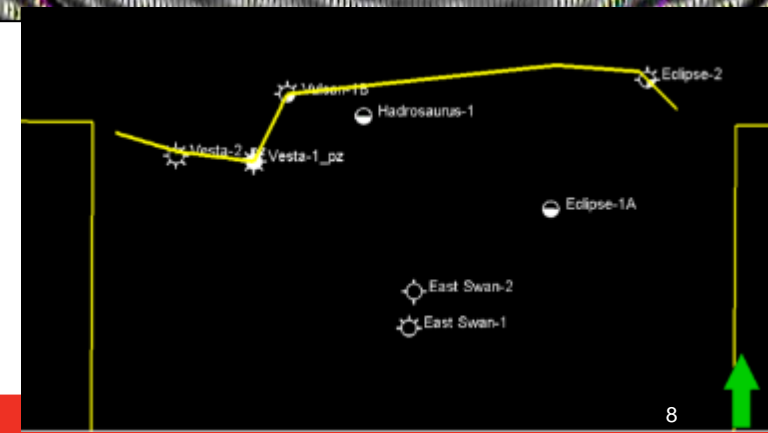
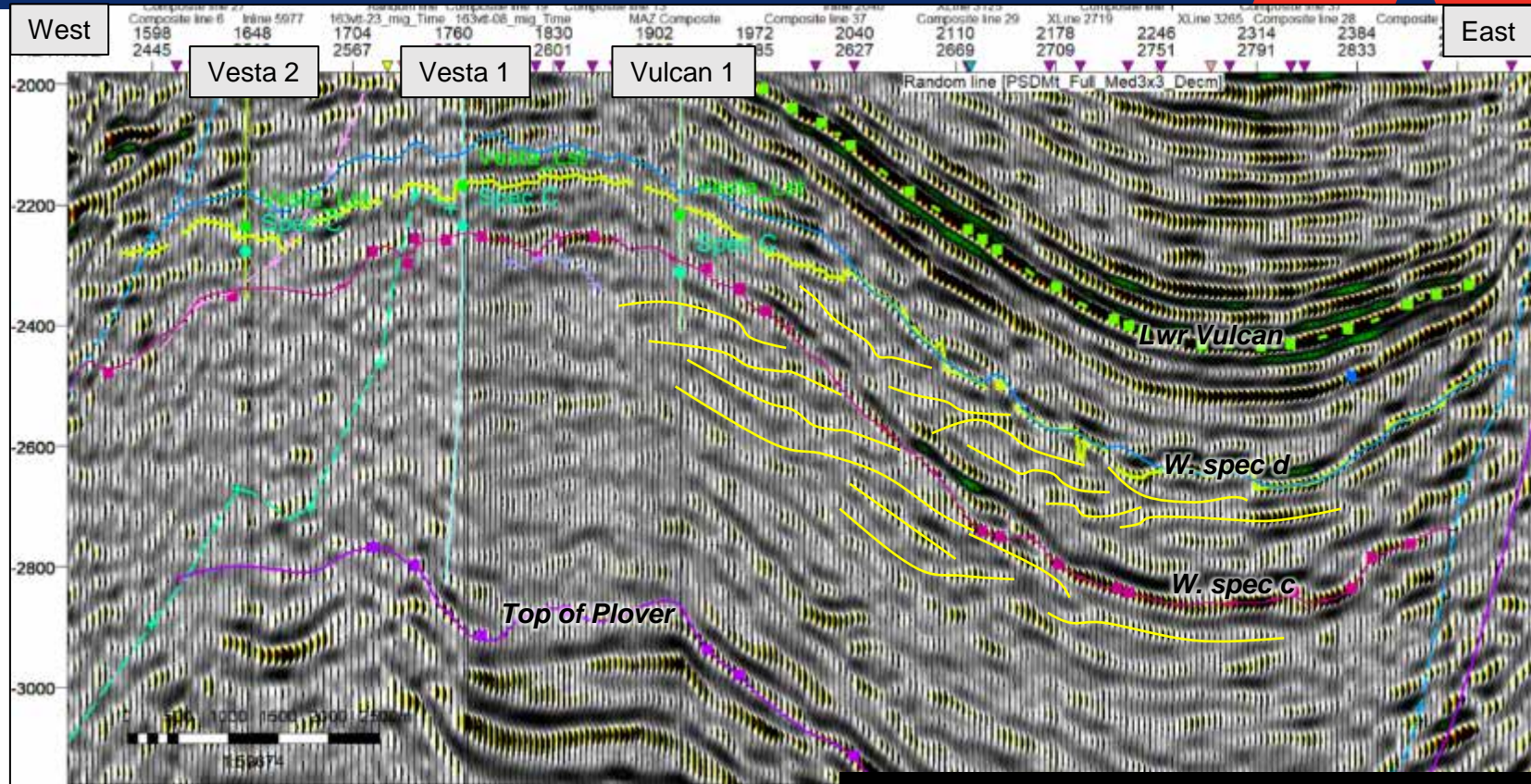
- The Plover reservoir hosts numerous nearby giant gas fields including Sunrise/Troubadour, Ichthys, Brecknock, Calliance, Torosa and others.
- The Plover section was the original target of Vesta-1 but has never been successfully tested at the structure.
- Plover may be associated with strong reflectors ~200m beneath the TD of Vesta-1, where it would be face-loaded by proven source rocks of the Lower Vulcan Formation.
- Structure has a similar areal closure to that of the shallower Vesta structure, but with less segmentation by faulting.
- Due to depth of burial and source rock maturity, large gas volumes could be present.
- Recently completed reprocessing of the Pantheon 3D MSS, and QI geophysics studies will assist with characterising the reservoir and associated fluid content at this level.
- Elsewhere, in and around AC/P70, there are numerous hydrocarbon shows within the Plover section, encouraging further exploration of the play.

***Official probabilistic resources to be estimated after interpretation of reprocessed seismic data*

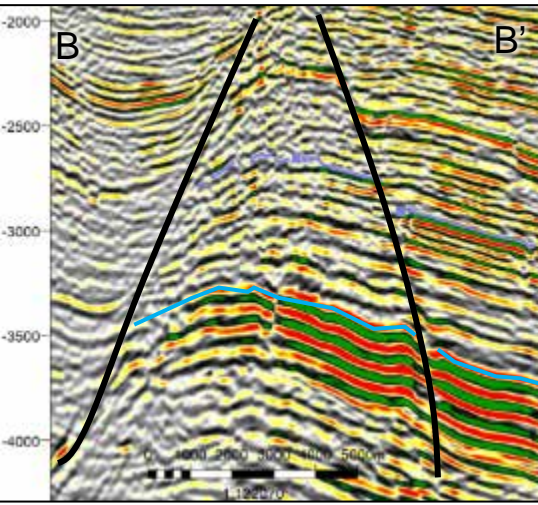
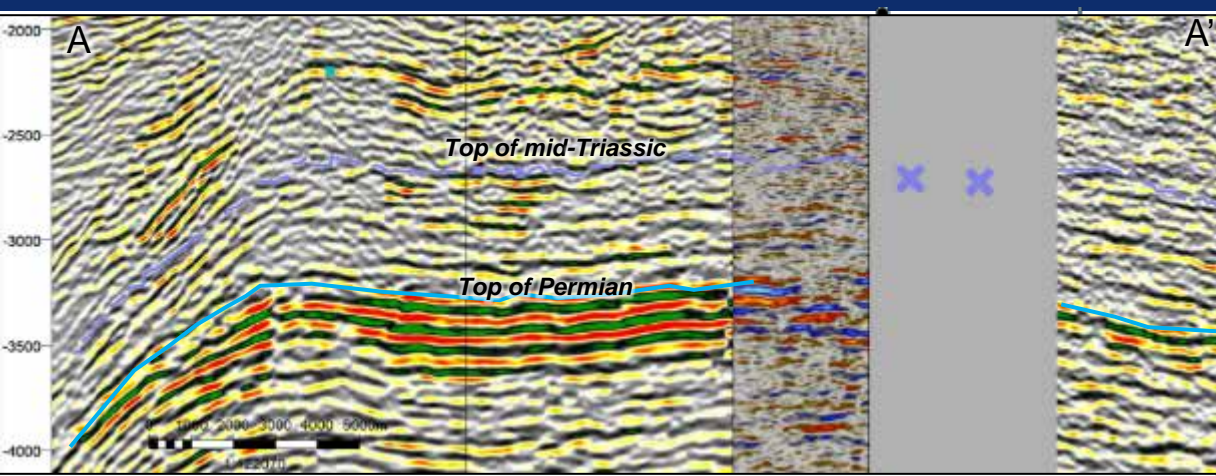


Near field potential: stratigraphic traps

- In the section to the right, reflectors highlighted in yellow indicate geometries that could be associated with good reservoir conditions.
- These reflectors are 'tipped-up' into the eastern side of the Vesta structure where they may form stratigraphic traps of considerable size.
- These are recognised at multiple levels indicating stacked opportunities throughout the Late Jurassic section.
- Further uplift is recognised at the Top of Plover which we interpret to be associated with strong reflectors ~200m beneath the TD of the Vesta-1 well.
- Reprocessing and QI studies will assist with charactering the play at these levels.



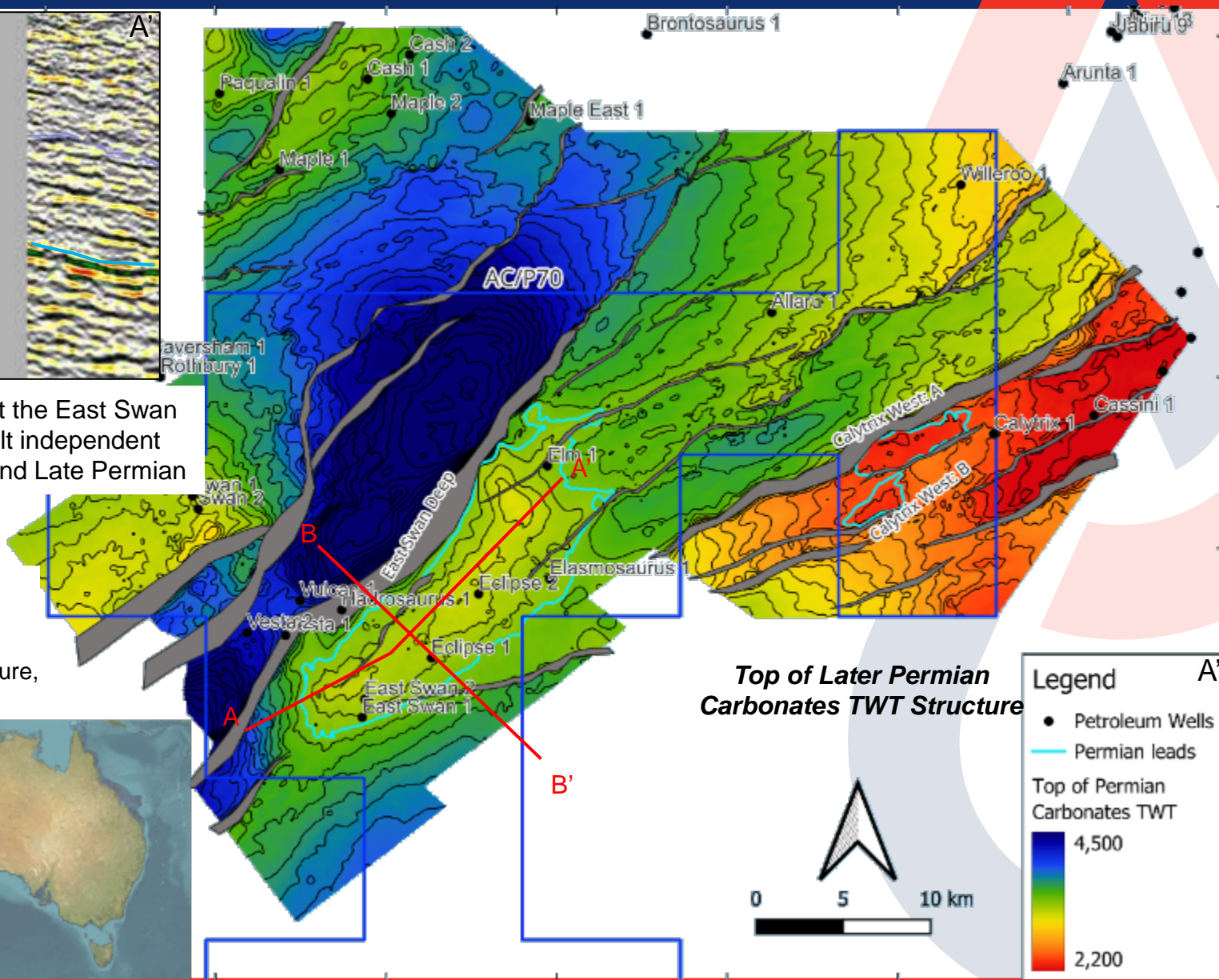
East Swan Deep lead



Additional potential recognised at the East Swan Deep Lead, which could host fault independent closure throughout the Triassic and Late Permian

Permian:
120 km² areal closure and, up to 400m of vertical closure

Mid-Triassic:
30 km² fault independent areal closure, ~200m vertical closure

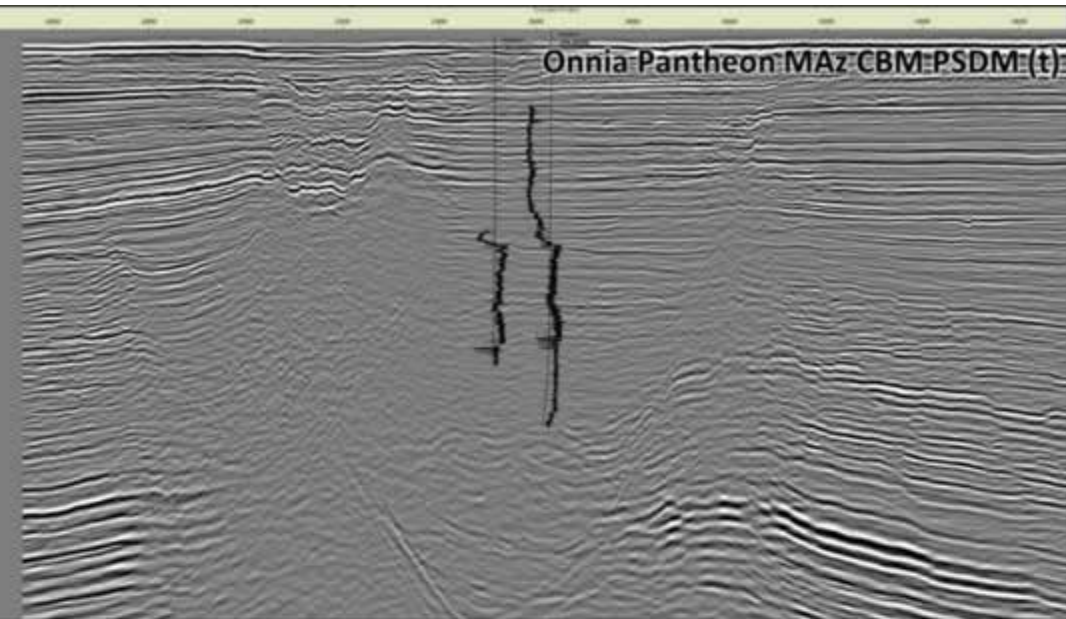


The combined areal and vertical closures across the Permian and mid-Triassic, make this lead larger than the nearby Tern/frigate and Petrel gas fields which together host ~1.4Tcf of recoverable gas.

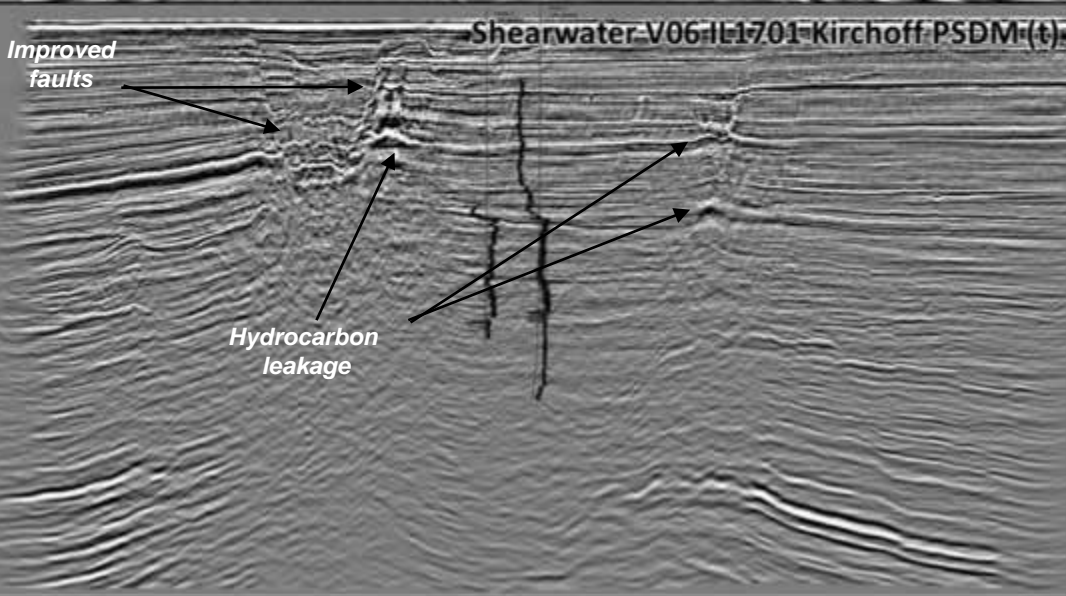
***Official probabilistic resources to be estimated after interpretation of reprocessed seismic data*

Pantheon 3D Reprocessing

Onnia-Pantheon-MAZ-CBM-PSDM (t)



Shearwater-V06-IL-1701-Kirchoff-PSDM (t)



- Shearwater was contracted to reprocess entire 660 km² Pantheon 3D MSS.
- The primary objective is to improve imagery of the depositional geometries of the Vesta reservoir section and facilitate QI studies to characterise fluid content and reservoir distribution.
- Uplift was also expected at the Swan gas discovery, where QI studies will help better characterise gas distribution.
- Melbana has received the reprocessing products and is currently reviewing the results:

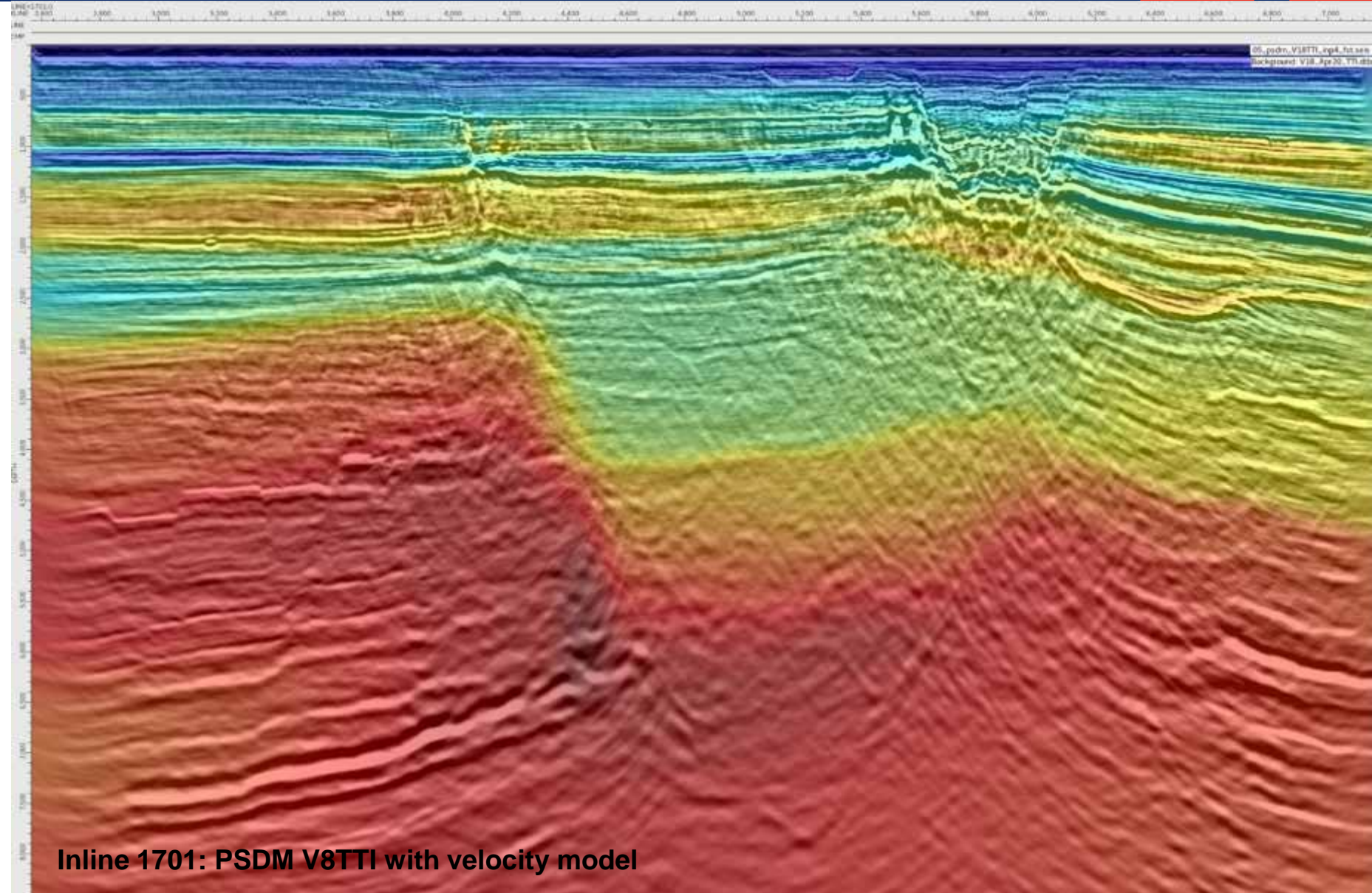
- Strong sea-floor multiples have been addressed.



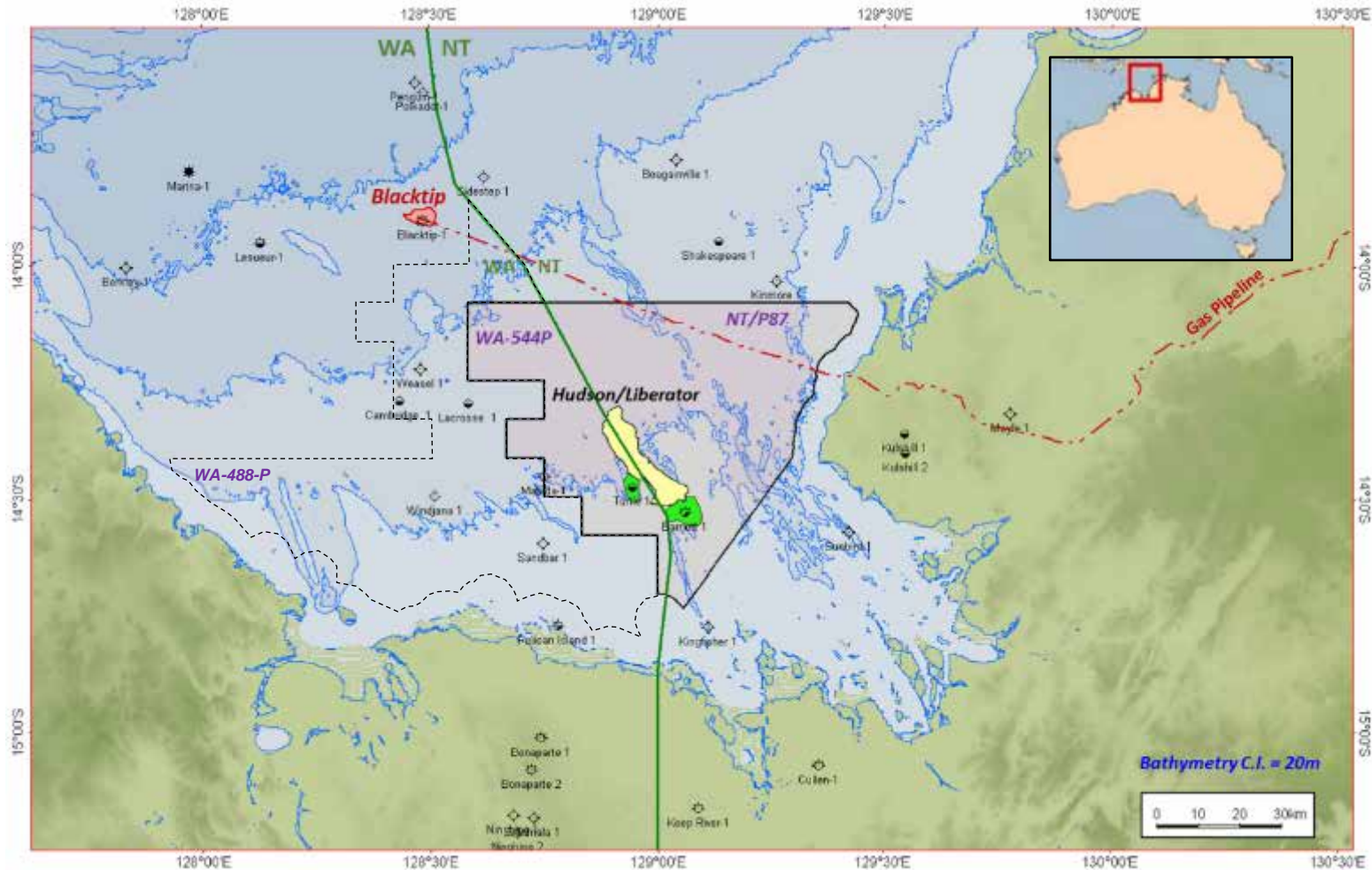
- Improvement to broadband character, faulting and shallow hydrocarbon indicators.
- In the deeper Jurassic section, there are improved expressions of onlaps & unconformities associated with the prospective section.
- Carefully guided velocity modelling updates, sensitivity on migration algorithms and Q tomography addressed image loss in the deeper section.

Proposal

- AC/P70 farm-out process beginning in Q3 2024, targeting close late 2024.
- Melbana goal is for farminee to fund drilling of exploration well.
- High equity and operatorship are available to suitably qualified companies.



WA-544-P and NT/P87: permit setting



- Gas Field
- Oil Field
- Hudson/Liberator Lead

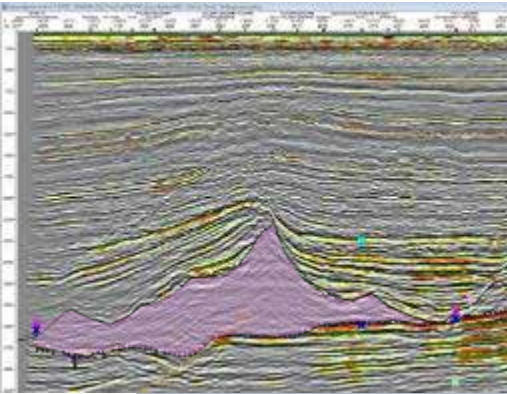
18-month suspension and extension to Year 3 has been granted, extending the expiry of the primary exploration term until 25 May 2025.

- Farm-out process underway, targeting close late 2024.
- Permits located in shallow water (20-40m) offshore.
- Approximately 40km from the Blacktip gas pipeline which can access either Darwin LNG or east coast gas market via the Northern Gas Pipeline (NGP).
- Easy access to Port of Darwin for drilling support.
- Currently in Year 3 in both Permits, satisfied all commitments including seismic reprocessing for primary term.
- Both Permits are covered by 2D seismic of varying quality and vintage.
- New 3D seismic needed to mature Hudson to drillable status.
- Secondary term commitment of 700 km² 3D seismic to be distributed between the permits (300 km² in WA-544-P and 400 km² in NT/P87).
- Hudson/Liberator potentially 2TCF if gas / 395 mmbbl if oil *.

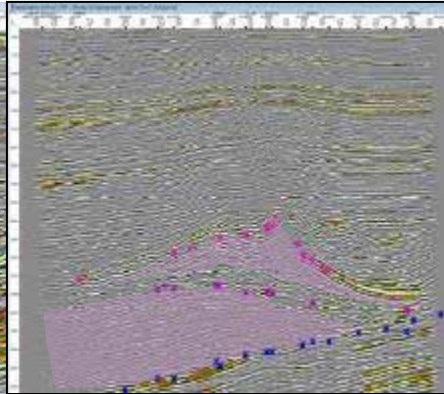
* 100% Gross Mean Recoverable number calculated by Melbana's technical team and competent experts. Volumes are the best estimate and represent the whole platform with weighting applied to Gross Rock Volume (GRV) distributions based on lead ranking

Play setting: multiple salt related structures observed on seismic

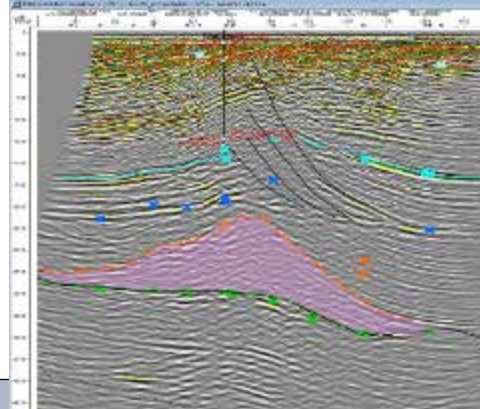
Breakwater WA454



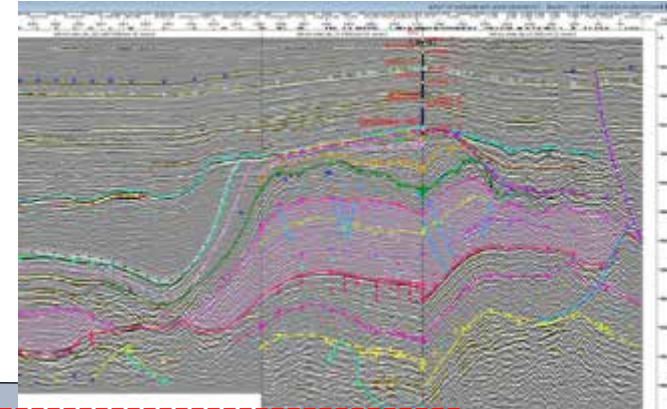
Blacktip Salt withdrawal



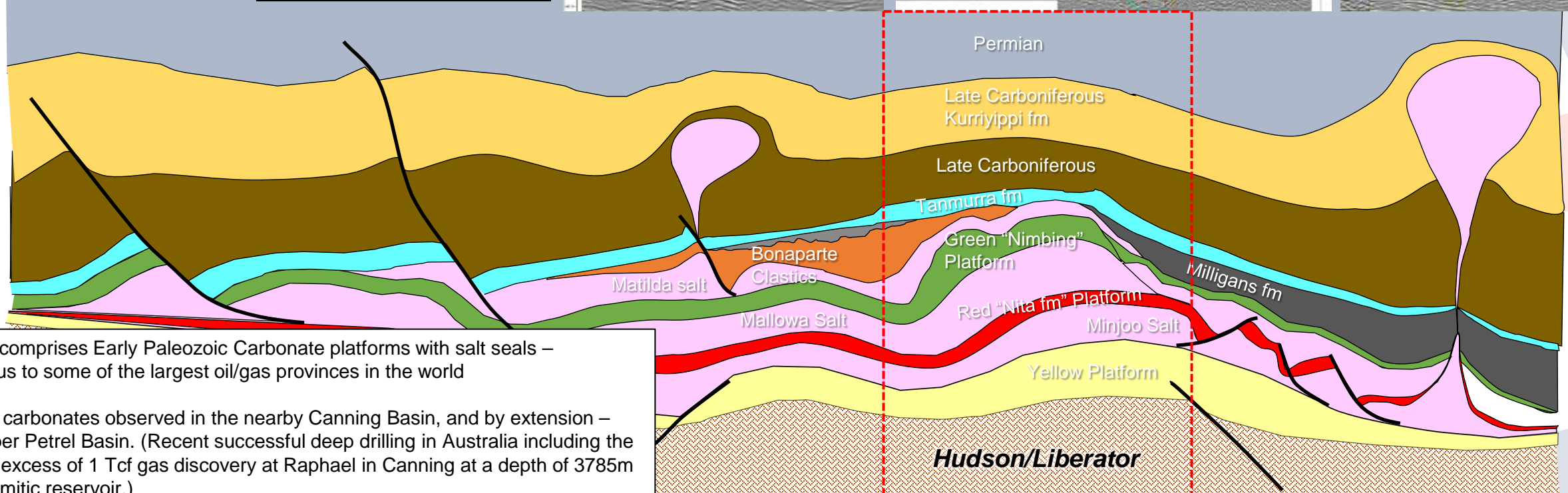
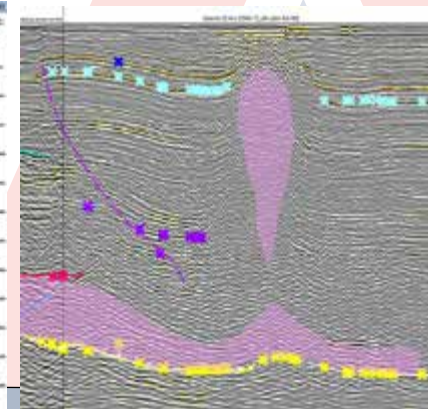
Matilda Diapir



Turtle High



Bougainville Diapir

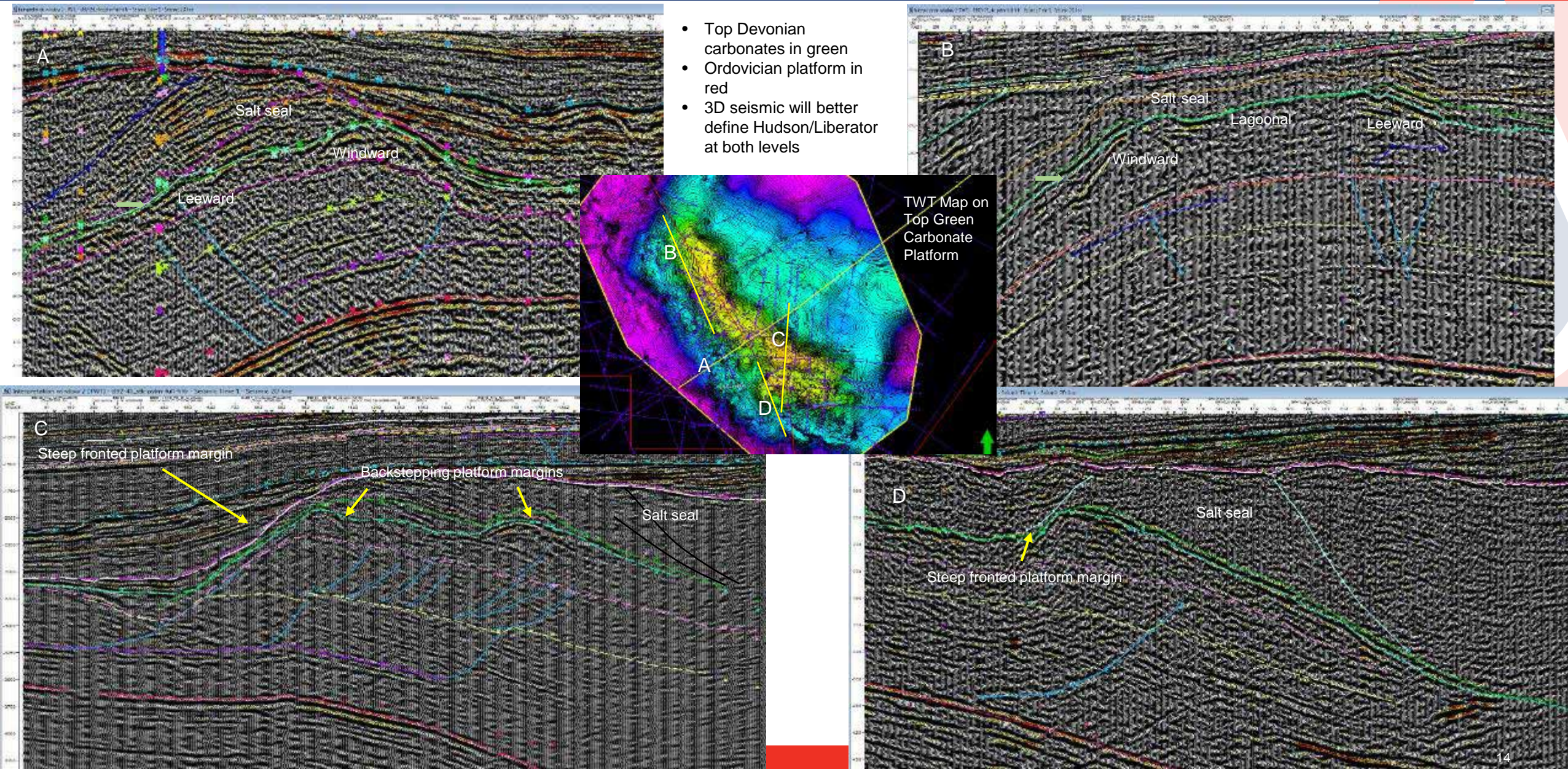


Hudson comprises Early Paleozoic Carbonate platforms with salt seals – analogous to some of the largest oil/gas provinces in the world

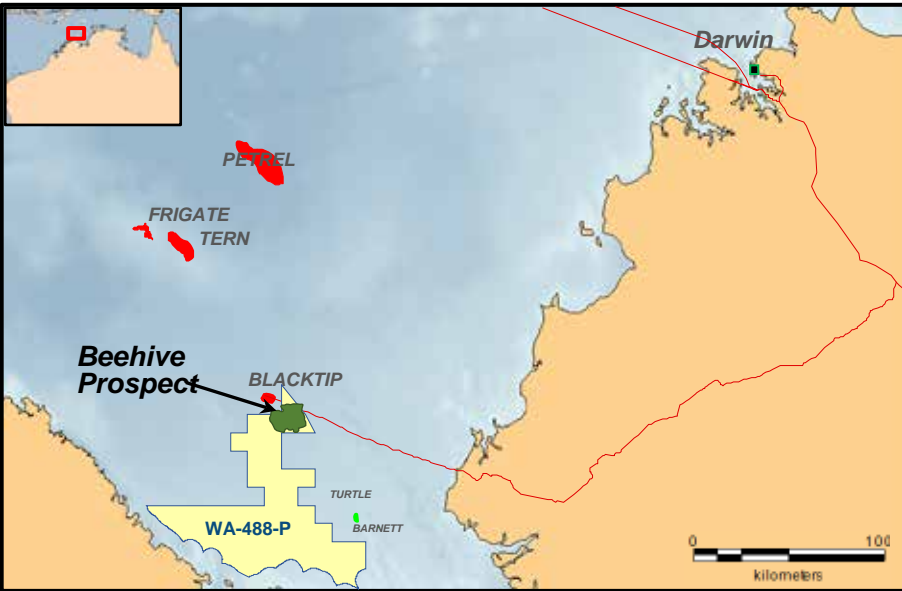
Salt and carbonates observed in the nearby Canning Basin, and by extension – the deeper Petrel Basin. (Recent successful deep drilling in Australia including the large, in excess of 1 Tcf gas discovery at Raphael in Canning at a depth of 3785m in a dolomitic reservoir.)

Hudson/Liberator:

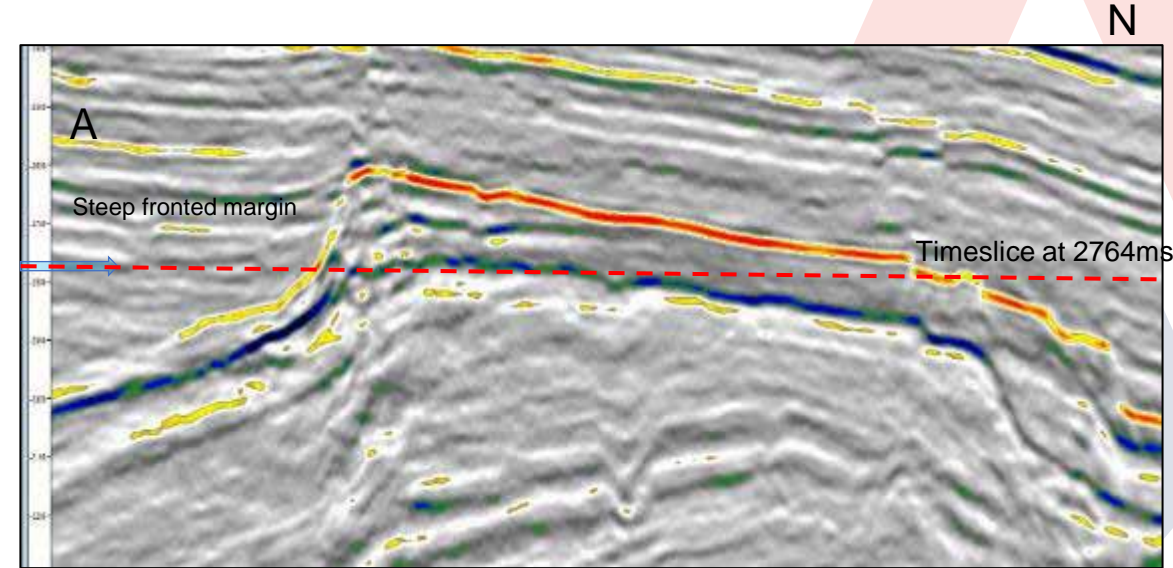
Carbonate platform margin examples from the 2022 2D seismic reprocessing



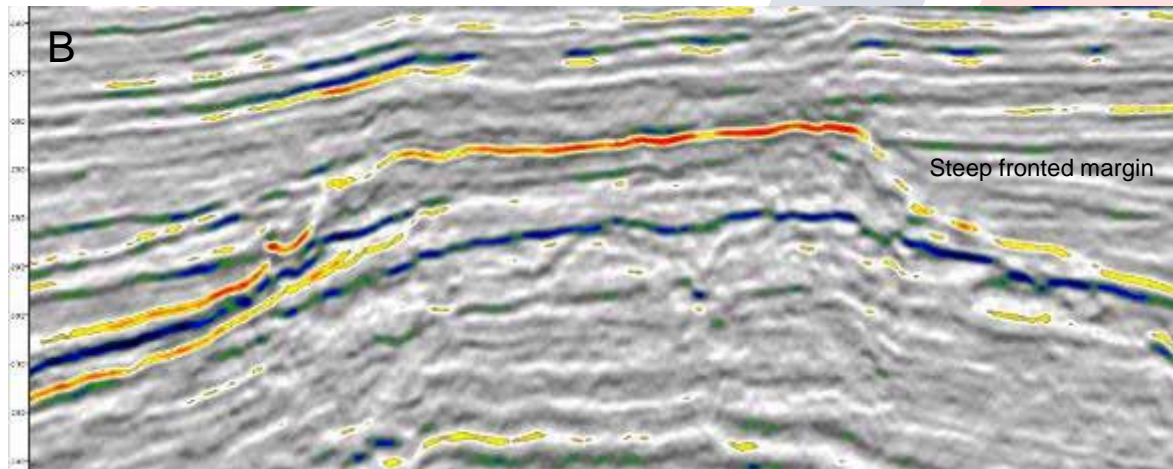
Uplift in data quality from 3D seismic – Beehive 3D acquisition



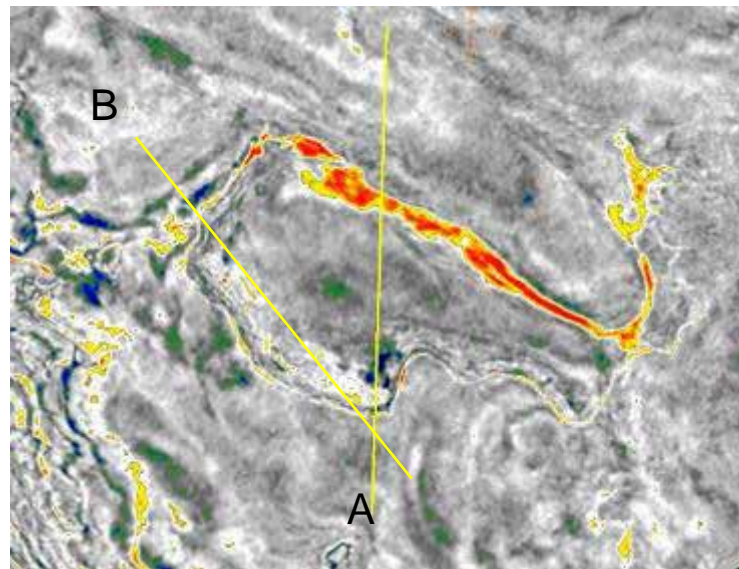
- Nearby Beehive prospect in adjacent WA-488-P sold to EOG resources in 2021.
- Beehive is identified as an isolated carbonate platform.
- Major uplift in seismic imaging achieved with new 3D acquired by Santos/Total.
- Steep reef margin now clearly identified.



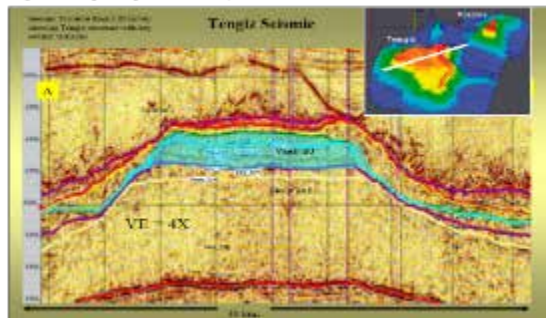
Main Beehive reef closure time-slice and profile views



Tengiz – Caspian Basin Analogue for a large Devonian/Carboniferous carbonate BU like Beehive.



Tengiz : analog for age, size and depth



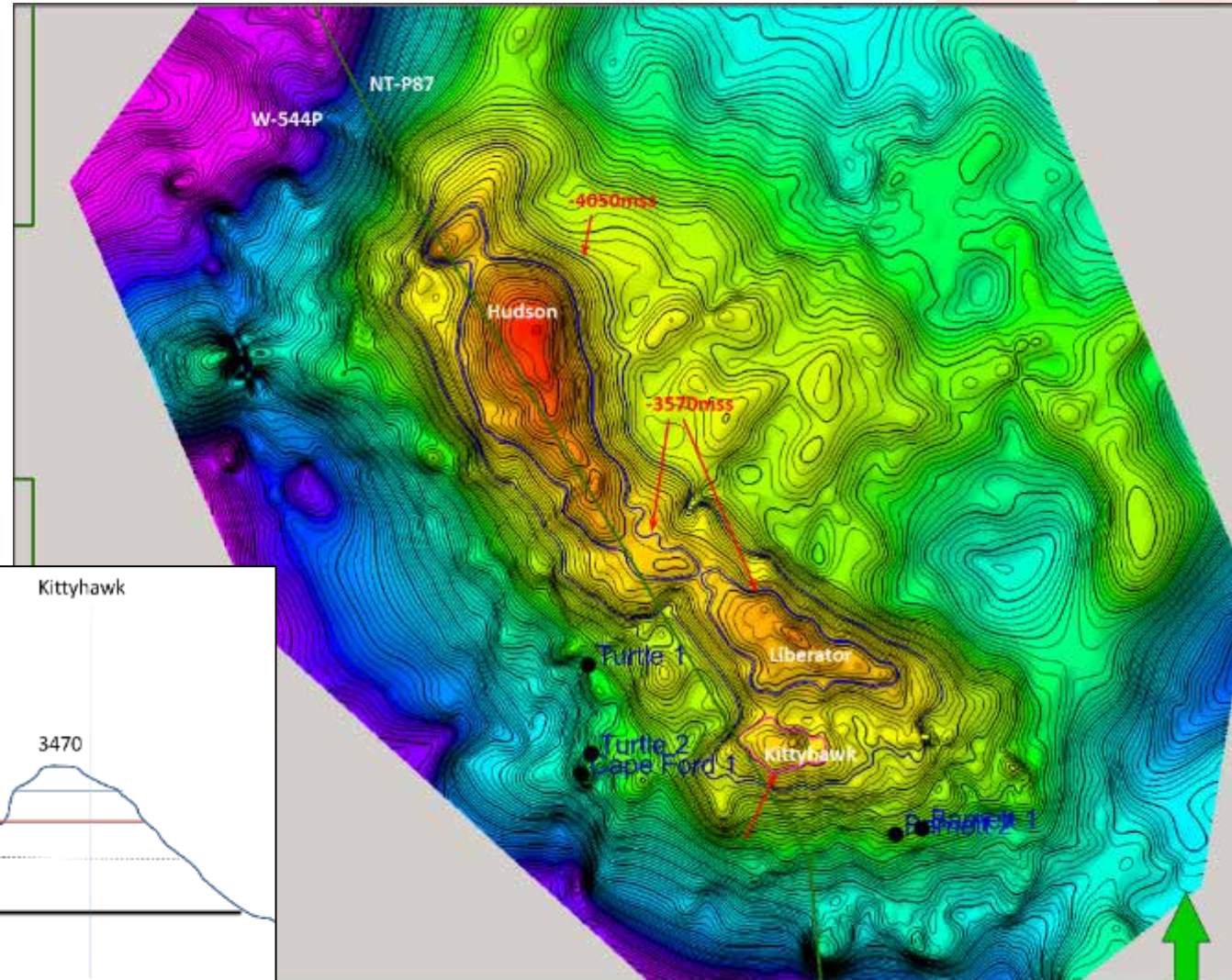
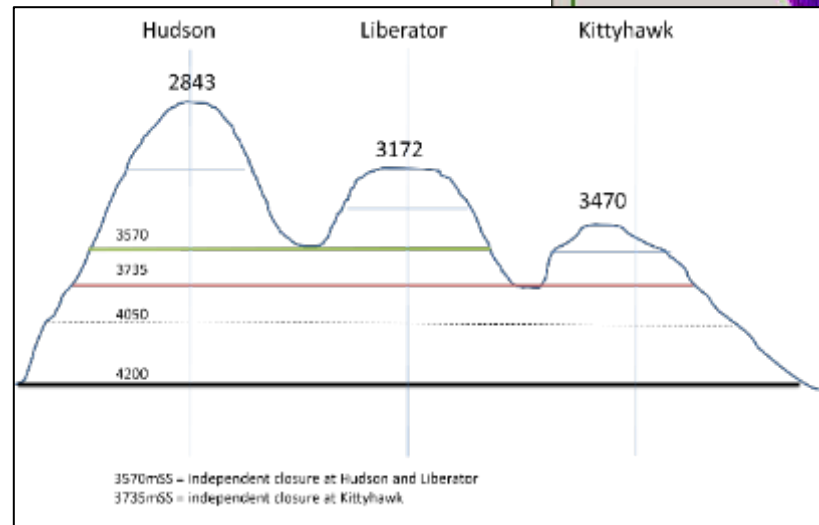
Hudson/Liberator: probabilistic prospective resource estimates

Gas only Case	Mean	P90	P50	P10
GIIP (Bcf)	3,070	16	700	10,097
Rec Gas (Bcf)	2,034	11	466	6,741

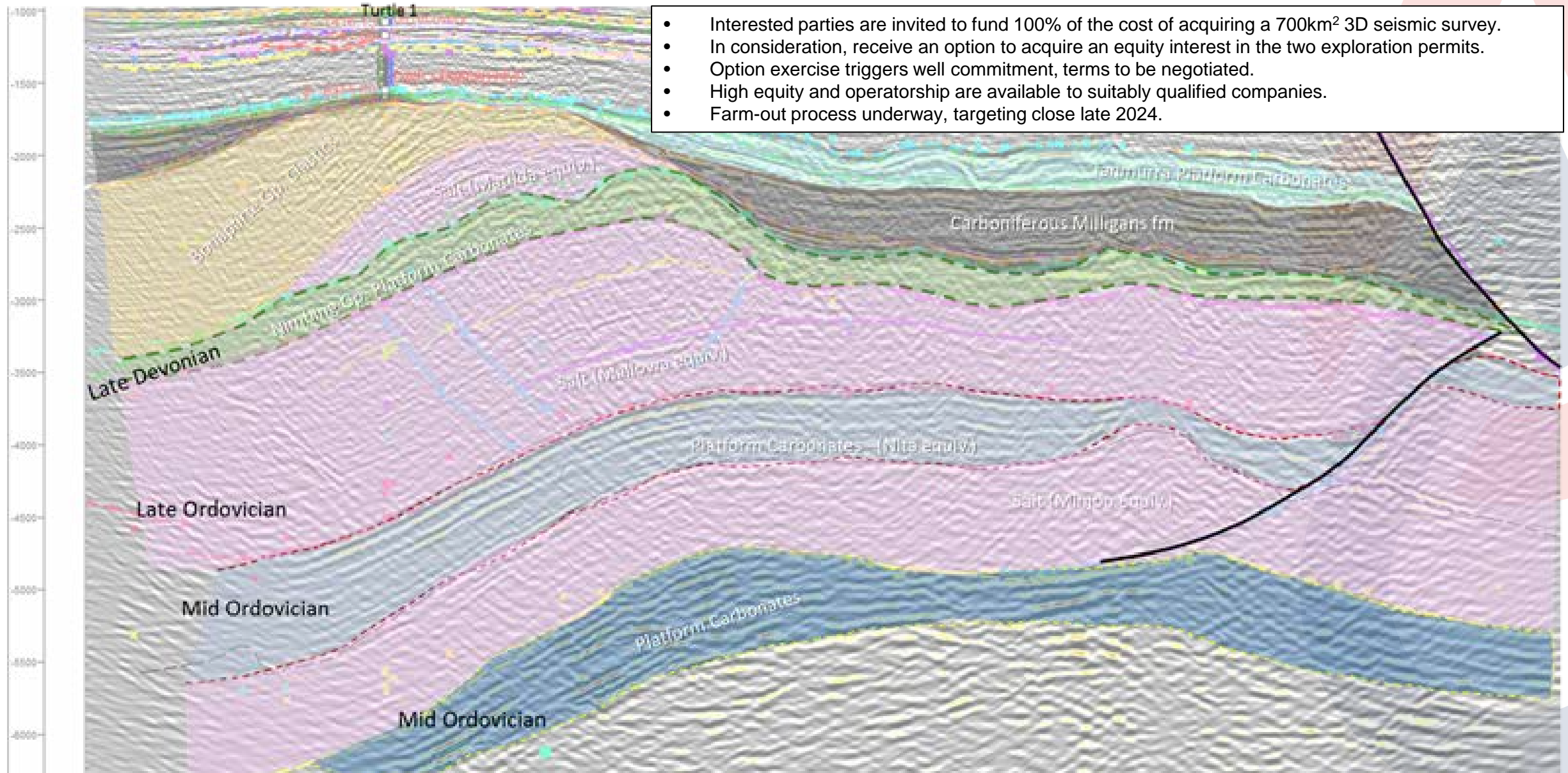
Oil only case	Mean	P90	P50	P10
OIIP (MMbbls)	1,573	9	371	4,845
Rec Oil (MMbbls)	395	2	90	1,184

* MAY ASX announcement, 04 JUL 2023

Column height is the key driving variable – P50 case is equivalent to Hudson-only



Proposal



Summary

All permits offer ideal entry points to the Western Australia domestic gas market

- **NT/P87 & WA-544-P:**

- More than 3 Tcf gas estimated to be hosted by a large, untested Devonian carbonate build-up, with further potential possible in the deeper Ordovician section.
- In exchange for a negotiable level of equity and operatorship, Melbana seeks a partner to carry the cost of ~700 km² 3D seismic acquisition and reprocessing which will mature Hudson/Liberator to prospect status.

- **AC/P70:**

- Contains proven gas discoveries at Vesta and Swan.
- Multiple additional opportunities considered prospective for gas including untested structures around the proven Vesta discovery, and several untested features such as Vesta Deep, and fault independent closures at East Swan Deep.
- Seismic reprocessing has been completed and is currently under evaluation. This will mature leads to prospect status and help determine the most promising drilling location.
- In exchange for a negotiable amount of equity in the permit, Melbana seeks a partner to carry the cost of one exploration well to be drilled on the preferred prospect.

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