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Trigg-1
Pre-drill Predictions

April 2023

Trigg-1 (drilling April 2023)

DJGeoscience

1. Location
2. Perth Basin Stratigraphy
3. Play Elements
4. Local Wells & Results
5. Trigg-1 Prediction
6. Additional Slides

Locations

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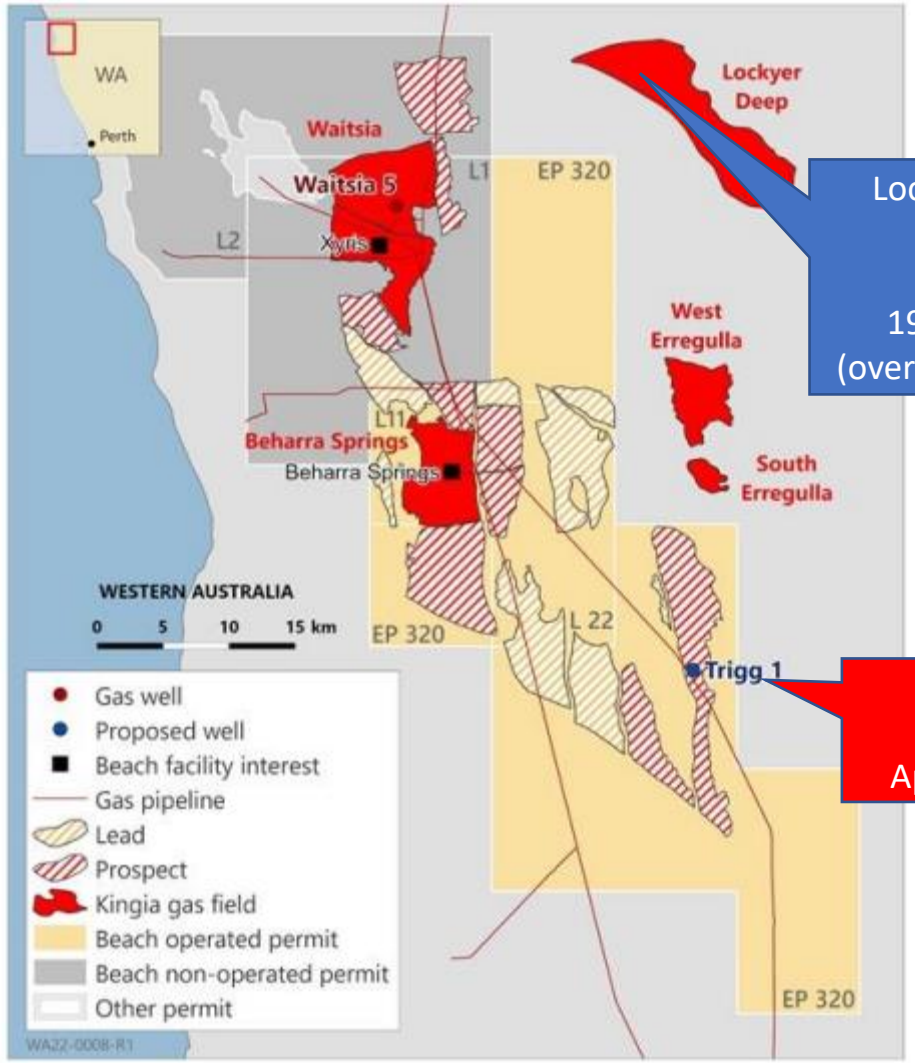
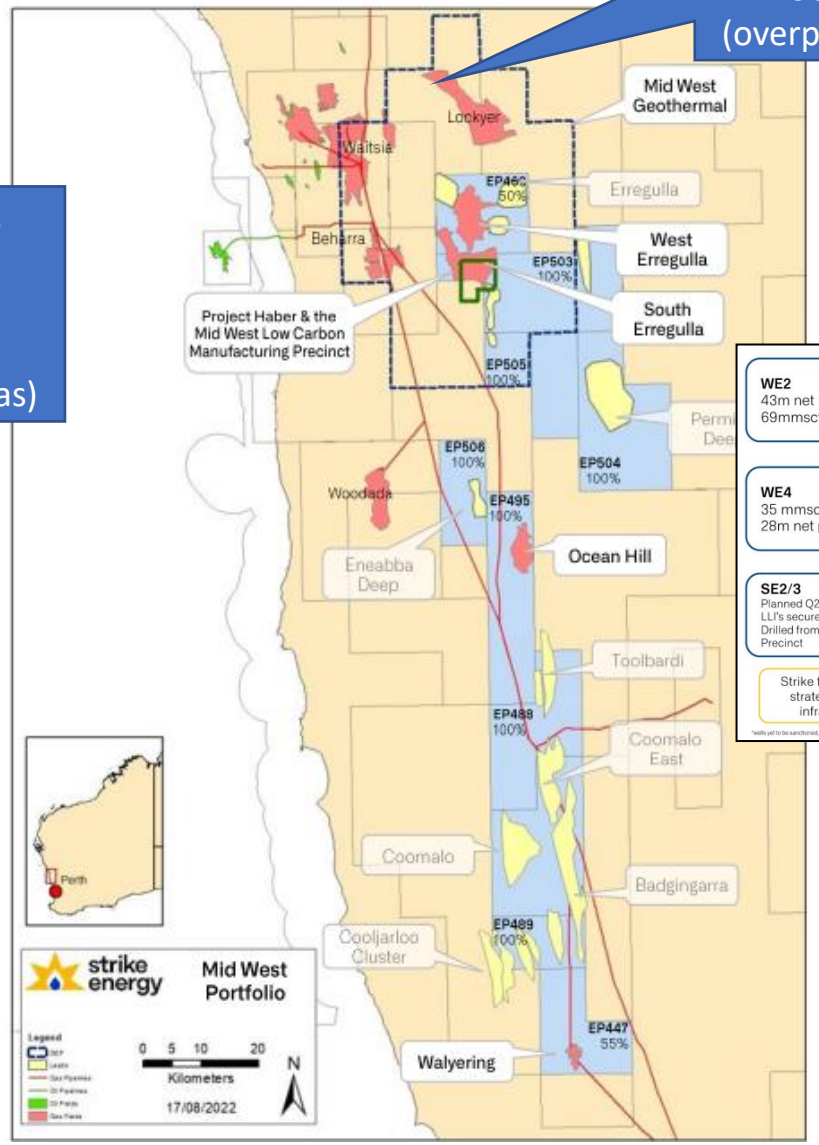
Beach



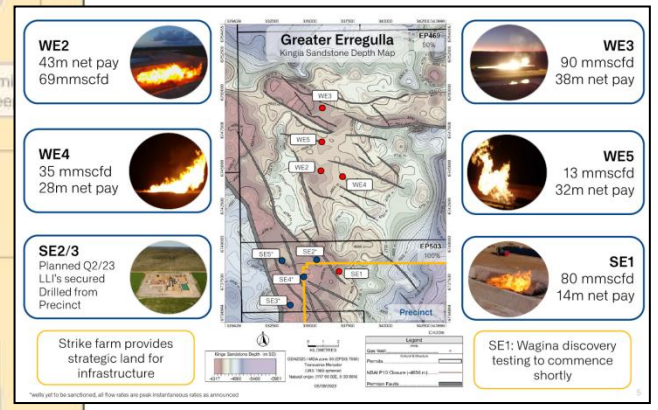
Lockyer Deep-1
Drilled in
2021
190 MMscf/d
(overpressured Gas)

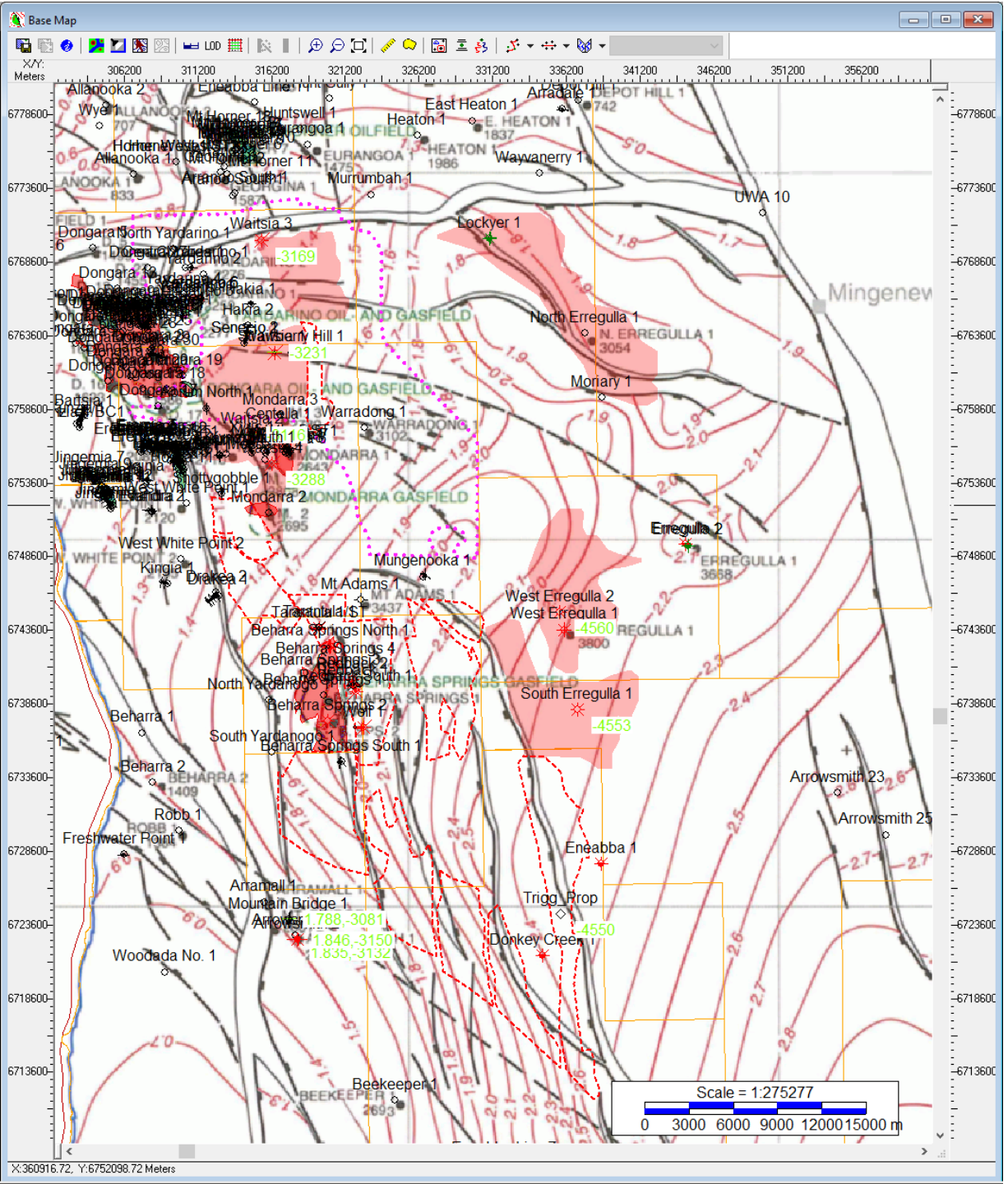
Trigg-1
Drilling
April 2023

Strike



Lockyer Deep-1
Drilled in
2021
190 MMscf/d
(overpressured Gas)





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Seismic Interpretation DMIR, 19..

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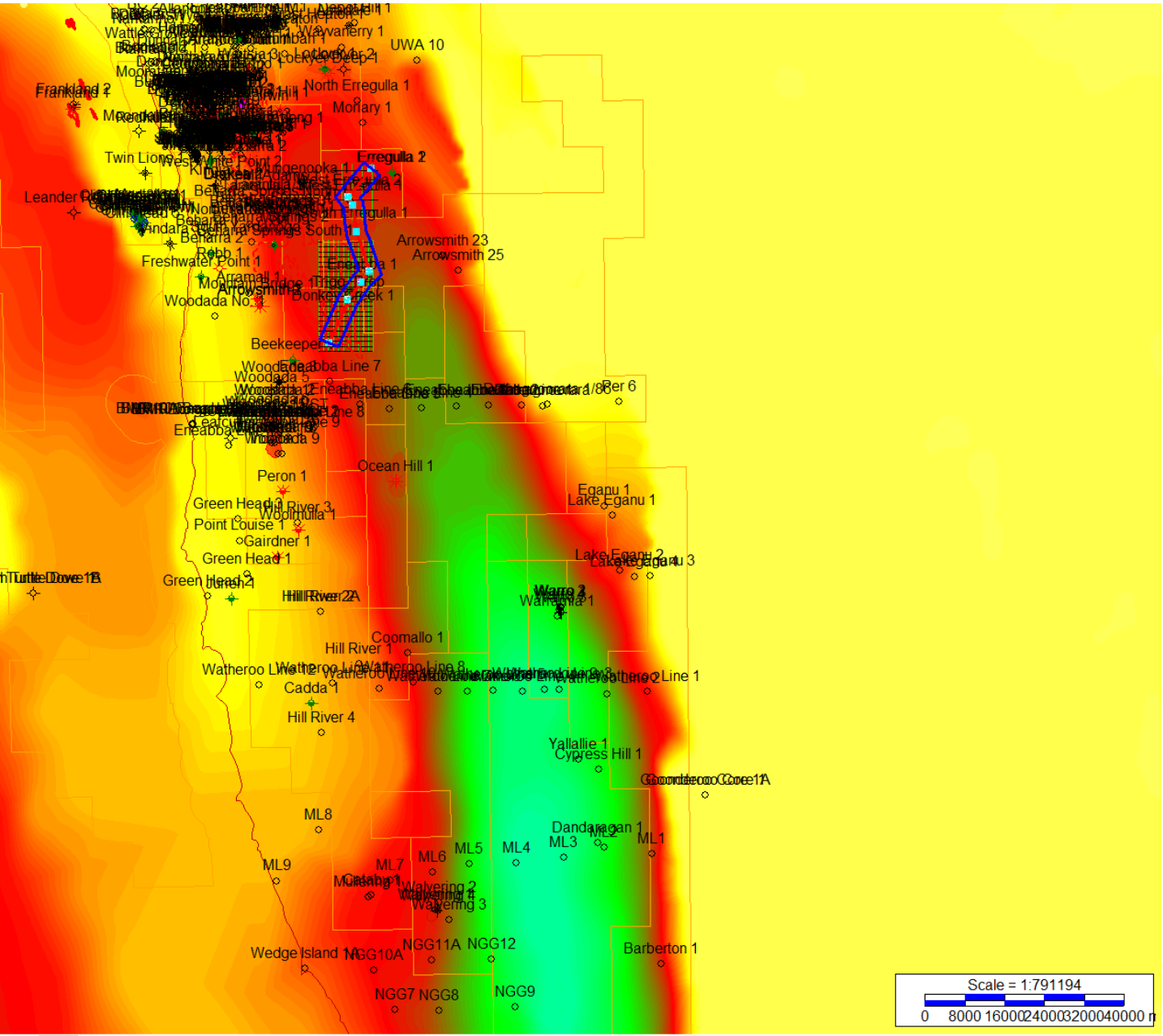

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Perth Basin Stratigraphy

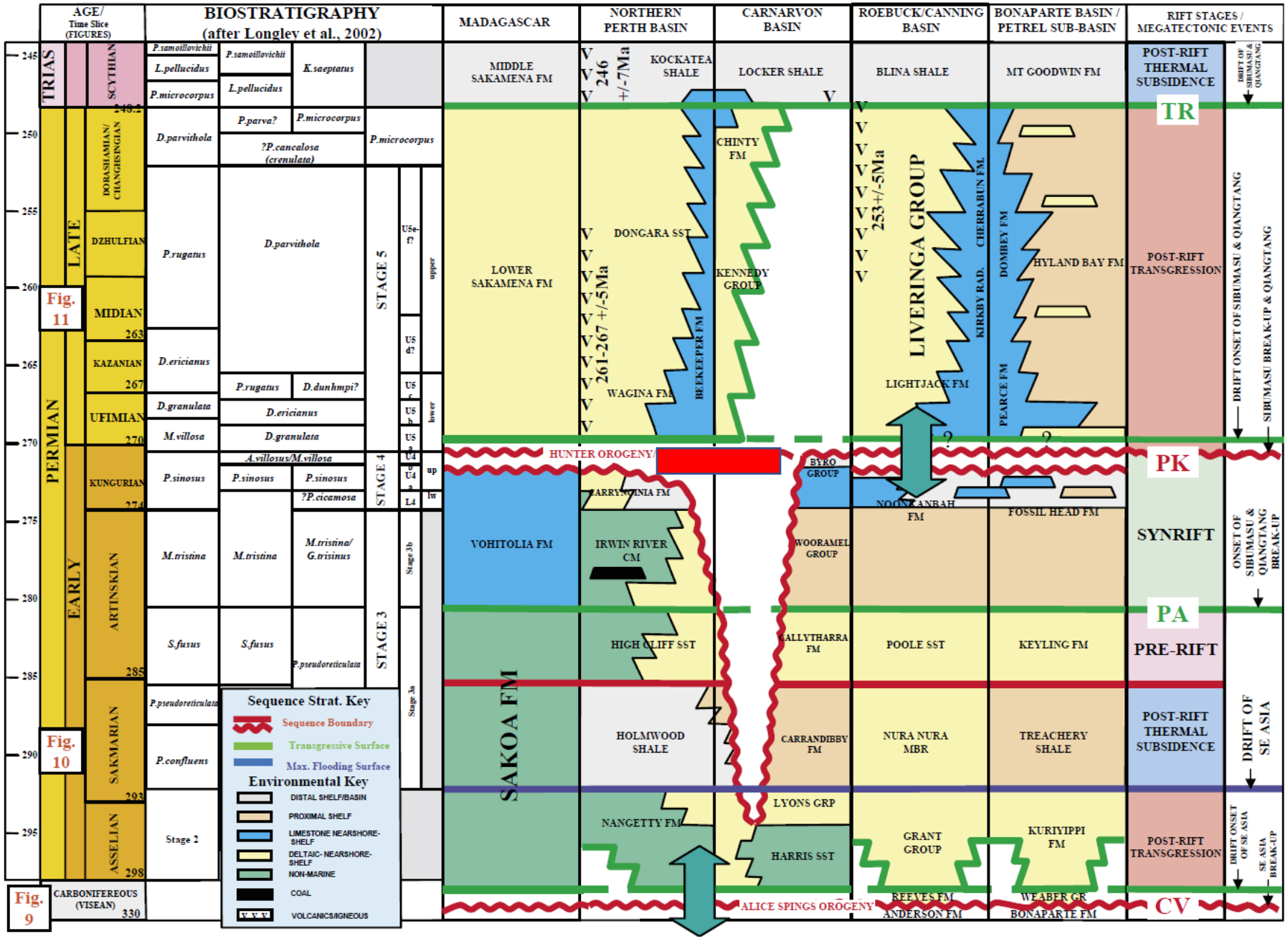


Figure 3b . Generalised Permian stratigraphy of middle palaeolatitude Gondwana Basins.

DJGeoscience Terminology

DJGeoscience

251M TR

273S

275T

282T

LITHOSTRATIGRAPHIC BOUNDARIES
SEQUENCE BOUNDARY
MAXIMUM FLOODING SURFACE
TRANSGRESSIVE SURFACE

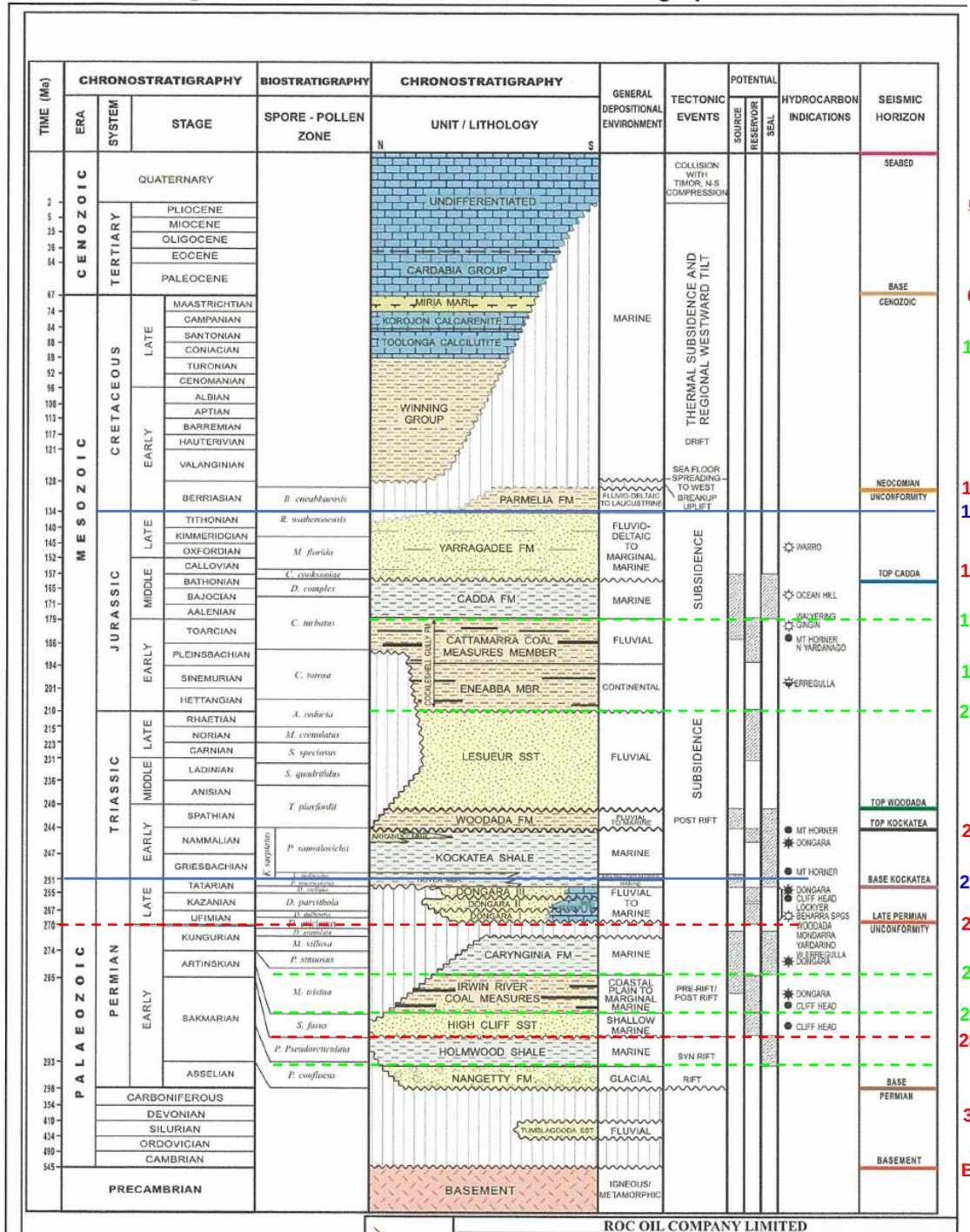
325S (Meda Transpression)

Permian to Lower Cretaceous plate tectonics and its impact on the tectono-stratigraphic development of the Western Australian margin

Permian to Lower Cretaceous plate tectonics and its impact on the tectono-stratigraphic development of the Western Australian margin

Article in The APPEA Journal · January 2004

Figure 2-2. North Perth Basin General Stratigraphic Chart



DJGeoscience Terminology

DJGeoscience

1.6S

10.5S & 12.5S
16.5S

32S_TO

5.5S

39T

55S
56T

65S_T

67.5S

123T_KA

79S_KS/C

94S_KC

139S_KV

145M_K

157S_JO (Argo Separation from Australia)

172T

197T_JS

210T_TRR

244S

251M TR (Asteroid Impact)

273S (Sibumasu Separation from Australia)

275T

282T

283S

325S/415S

478S

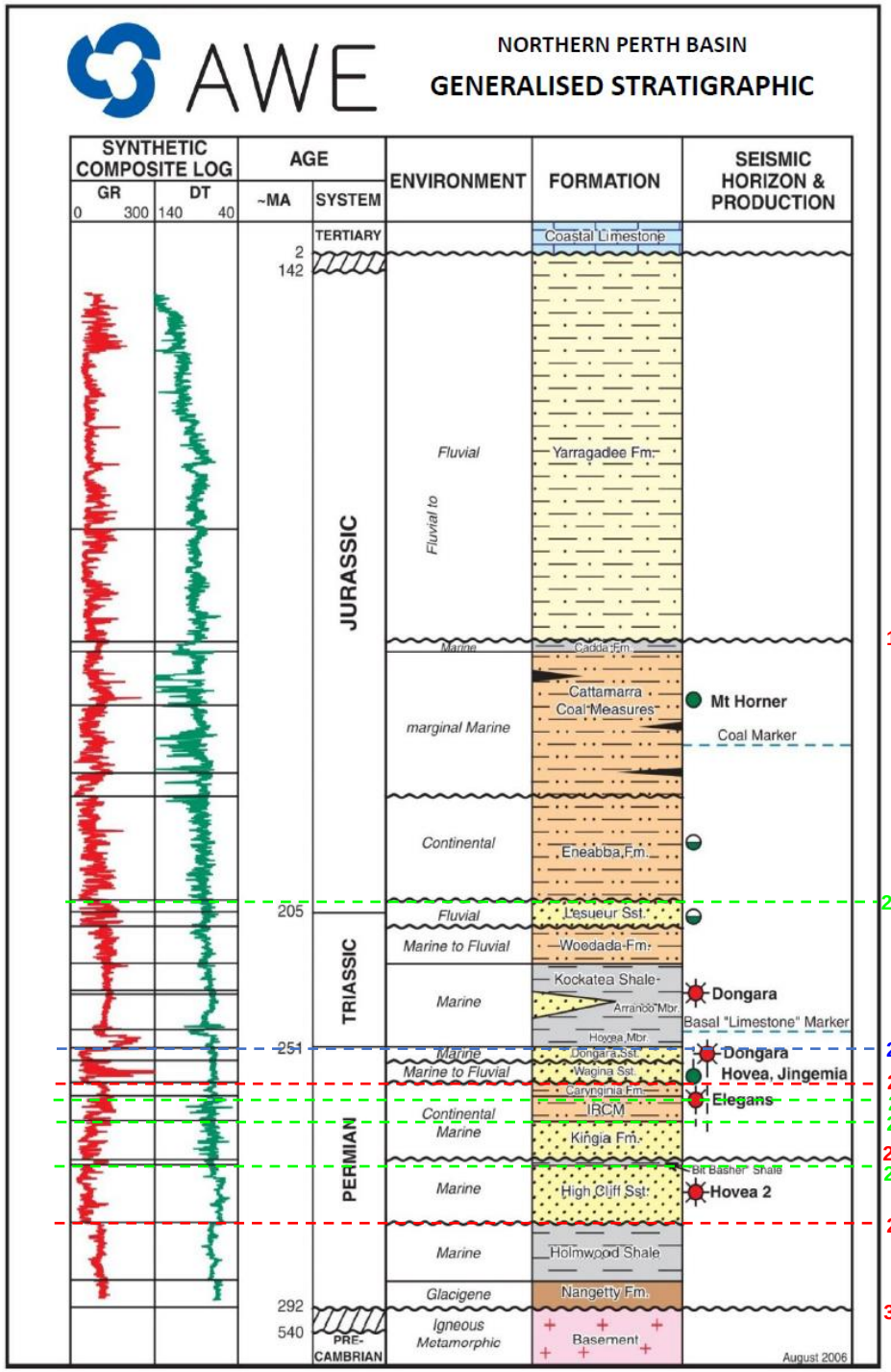
B/560S

LITHOSTRATIGRAPHIC BOUNDARIES

SEQUENCE BOUNDARY

MAXIMUM FLOODING SURFACE

TRANSGRESSIVE SURFACE



LITHOSTRATIGRAPHIC BOUNDARIES

- SEQUENCE BOUNDARY
- MAXIMUM FLOODING SURFACE
- TRANSGRESSIVE SURFACE

DJGeoscience

157S_JO (Argo Separation from Australia)

210T_TRR

251M TR (Asteroid Impact)

273S (Sibumasu Separation from Australia)

275T

281T

281.5S

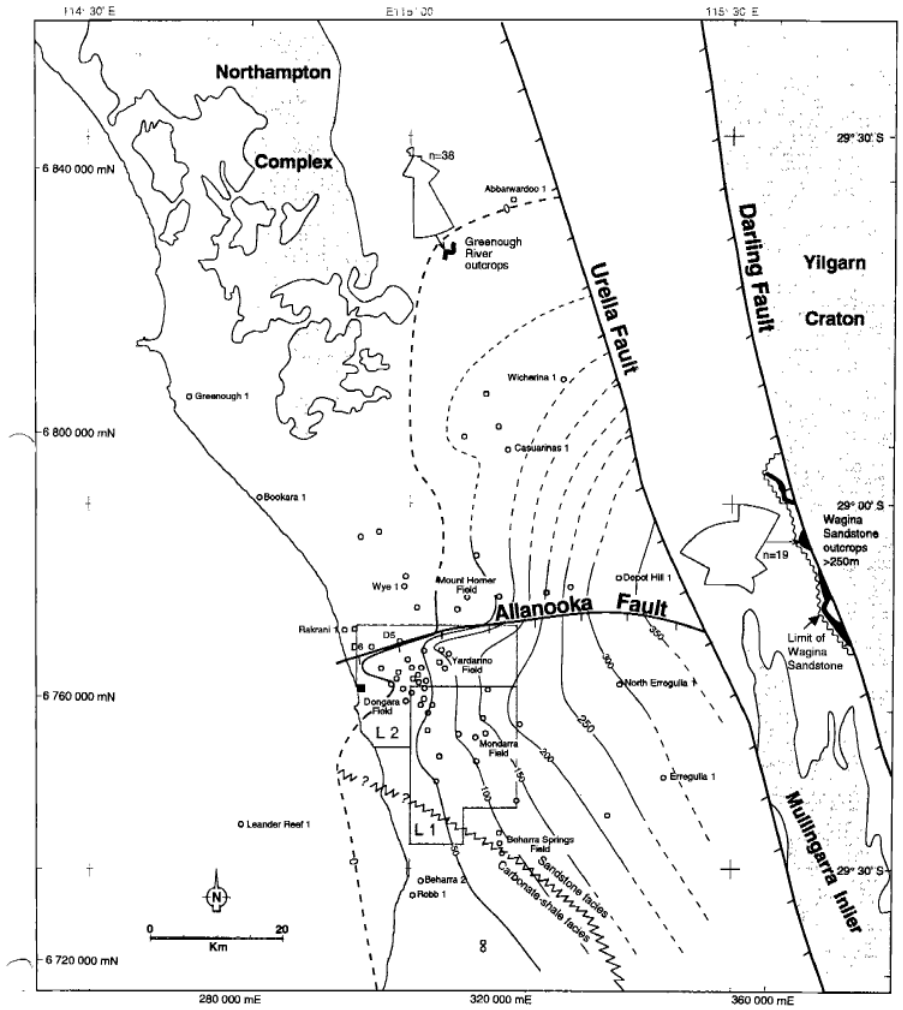
282T

283S

325S

DJGeoscience

DONGARA SANDSTONE, BEEKEEPER FORMATION AND WAGINA SANDSTONE - THICKNESS AND PALAEOCURRENTS

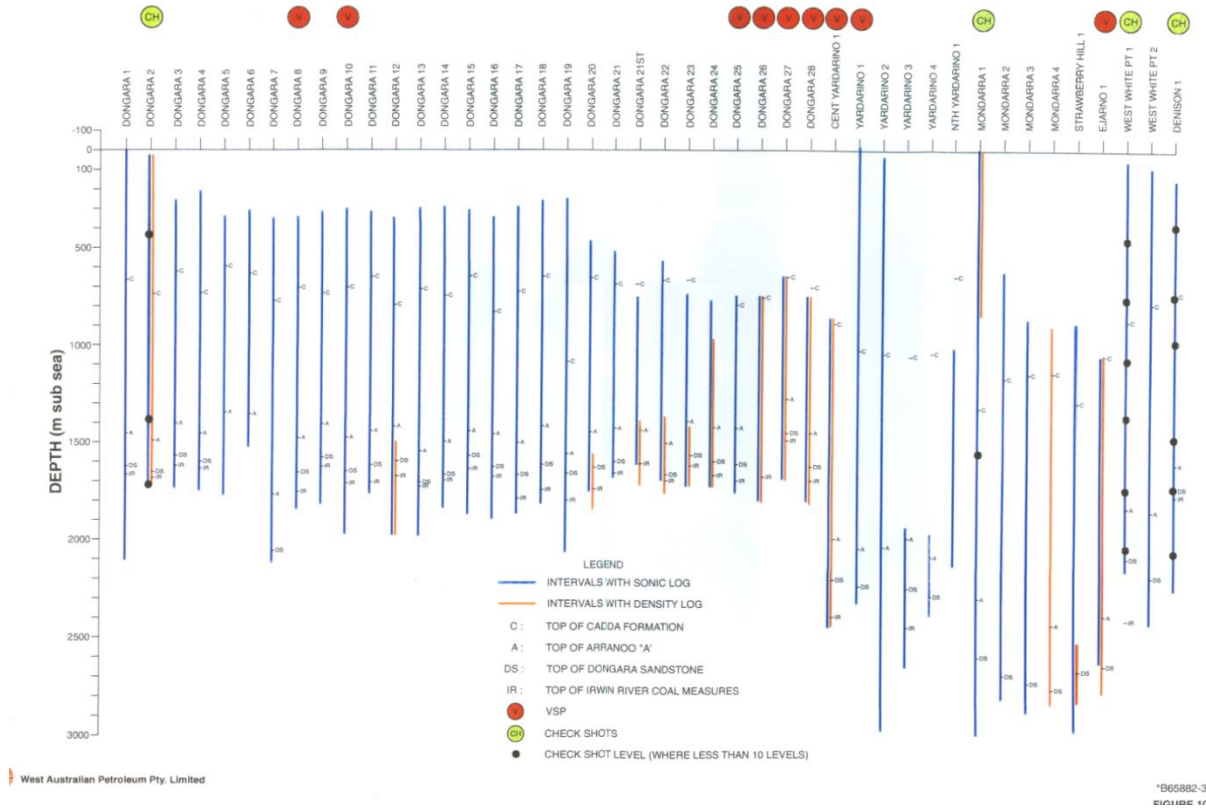


West Australian Petroleum Pty. Limited

*B84477

FIGURE 85

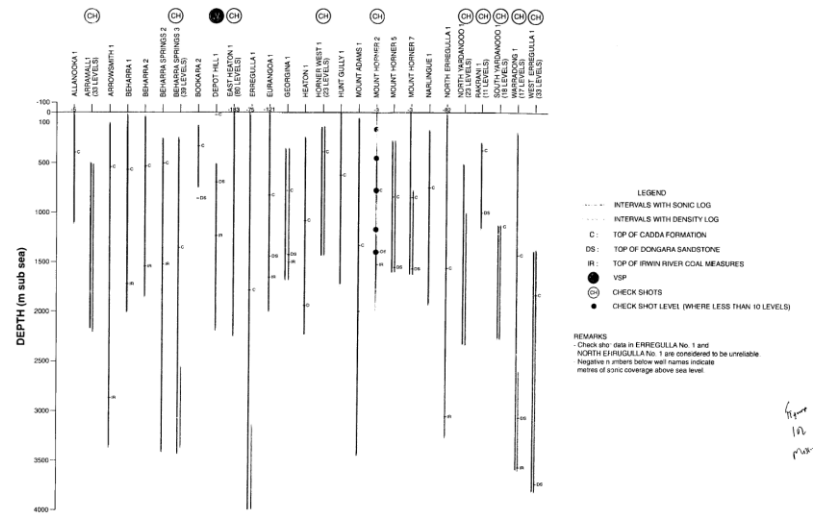
SONIC AND DENSITY COVERAGE IN WELLS IN L1 & L2



West Australian Petroleum Pty. Limited

*B65882-3

SONIC AND DENSITY COVERAGE IN WELLS OUTSIDE L1 & L2



West Australian Petroleum Pty. Limited

*B65882-4

FIGURE 103

Play Elements

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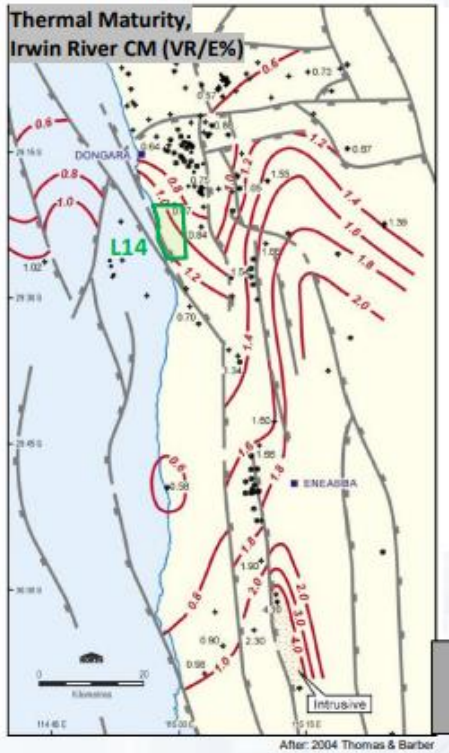
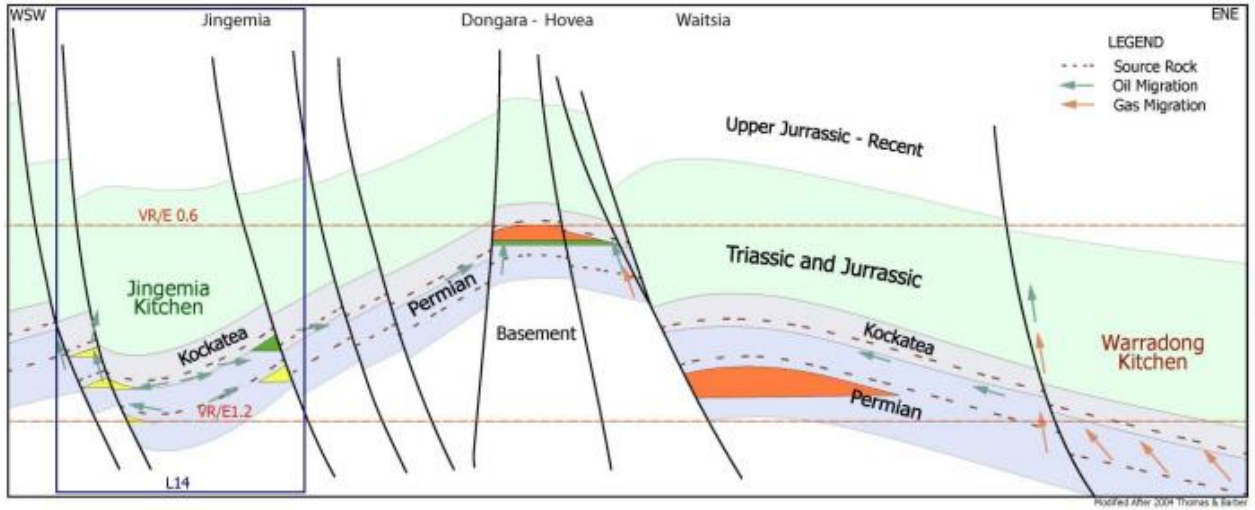
- **Reservoir** - Onshore, most commercial fields produce from Permian-aged sandstone reservoirs. Two of the major reservoir units are the Dongara & Kingia Sandstones
- **Source** - Oil is believed sourced from marine shales of the Early Triassic Kockatea Formation (Hovea Member) whilst gas is sourced from multiple carbonaceous shales & coaly sequences of Permian, Triassic & Jurassic age.
- **Migration** – the mature Warradong and Eneabba Kitchen (Dandaragan Trough) have expelled gas into the Dongara, Beharra Springs, West Erregulla and Waitsia structures. The Oil at Hovea, Jingemia, and Eremia is more likely to be charged from the oil prone Jingemia Kitchen.
- **Trap Types**
  1) Early Permian horsts and tilted fault blocks, lateral seal dependent against Kockatea and Holmwood shales, or Basement
  2) Triassic-Jurassic roll-over anticlines on the downthrown side of faults.
  3) Large anticline fold closures of Early Cretaceous age, typically juxtaposed to larger faults





Migration into a valid trap, depends on the right Juxtaposition between source & reservoir, either locally or along the way at a downdip location

L14 contains IRCM source rock in oil window maturity

Play Elements Reservoir

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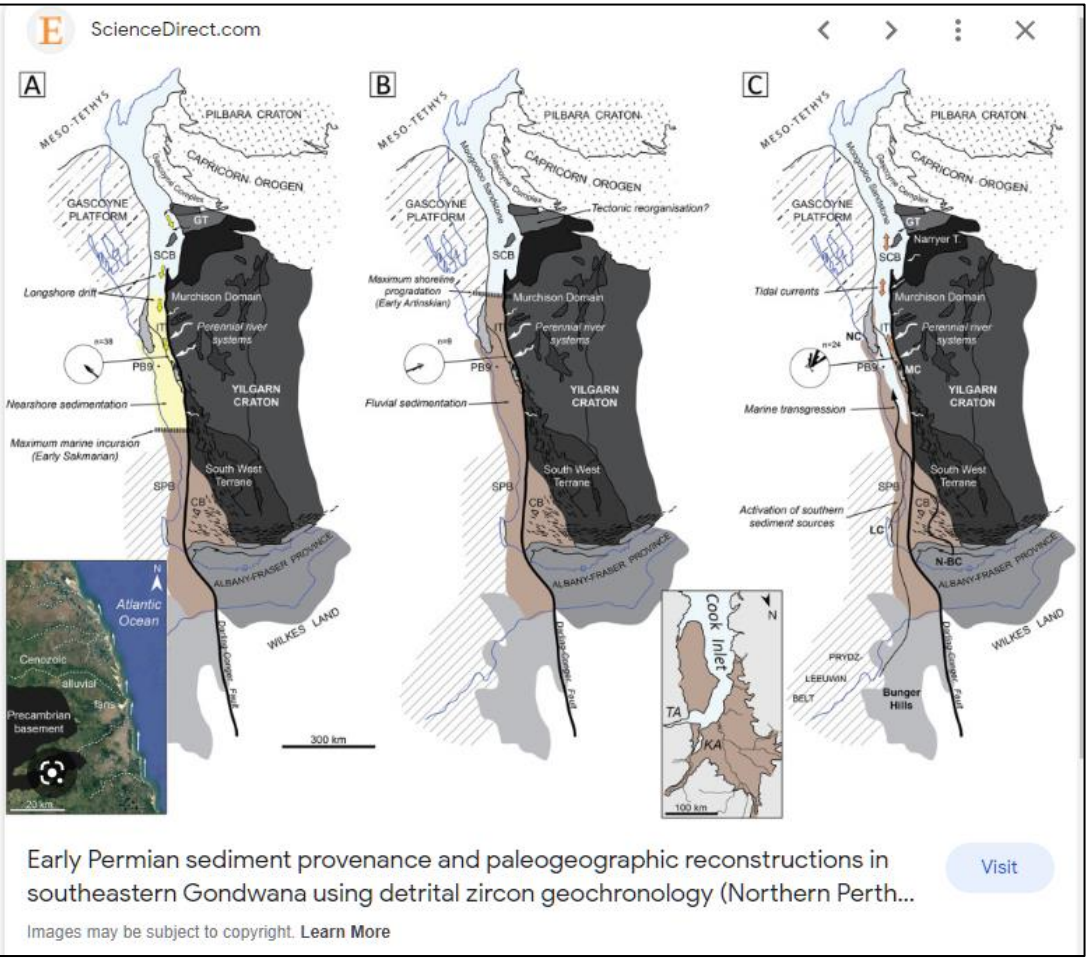
Most reservoir is coming from the south

Zircons from the south (not Yilgarn Block)



The Waitsia Field, onshore North Perth Basin, Western Australia

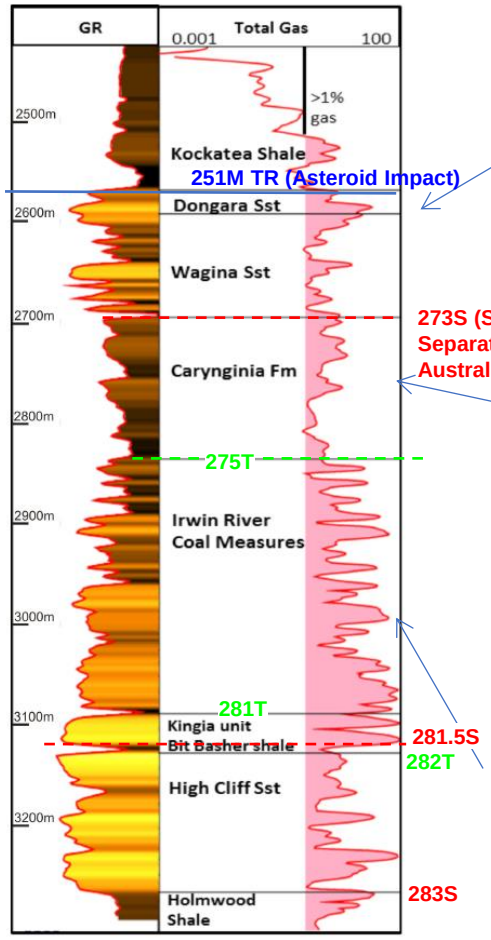
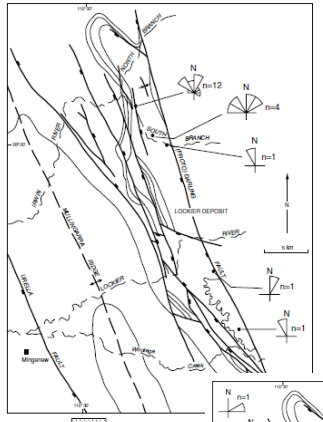
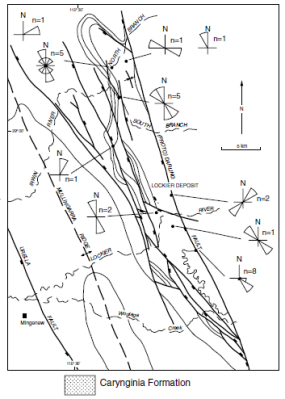


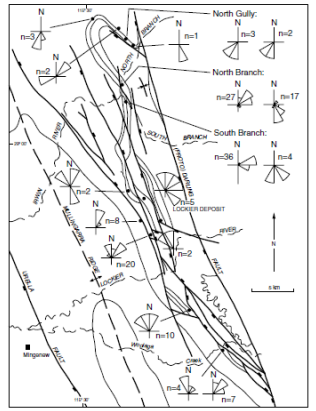
Figure 4. Senecio–3 gamma ray log and gas show profile showing the Dongara/Wagina (Senecio Field) and Kingia/High Cliff (Waitsia Field) reservoirs.



Wagina Shallow Marine progradation from the south



Carynginia Marine transgression-bio-direction



Irwin River CM Non-marine progradation from the south

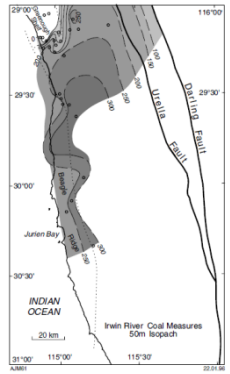


Figure 11. Isopach map, Irwin River Coal Measures (Early Permian)

Play Elements Reservoir – Kingia local from N?

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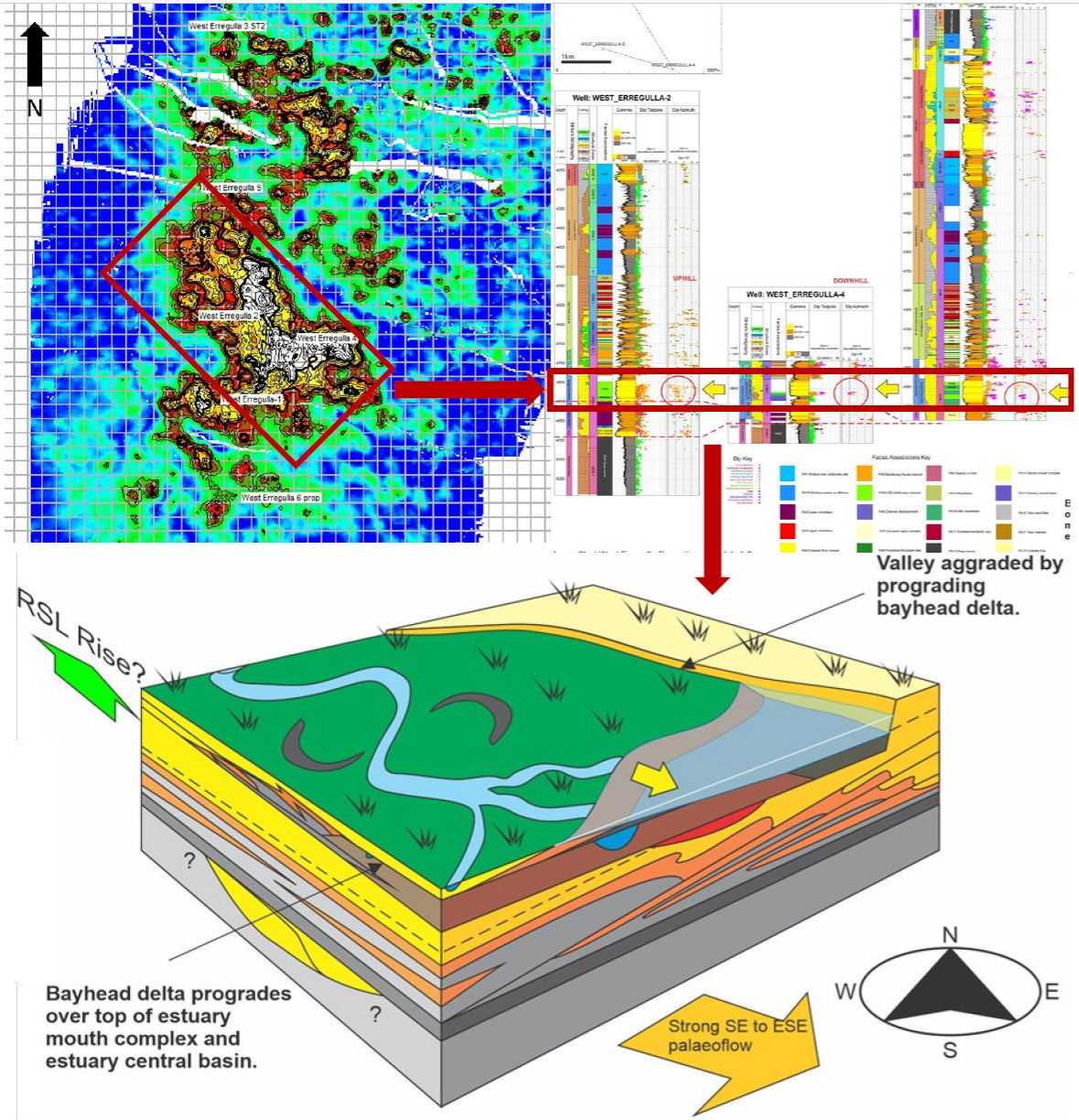

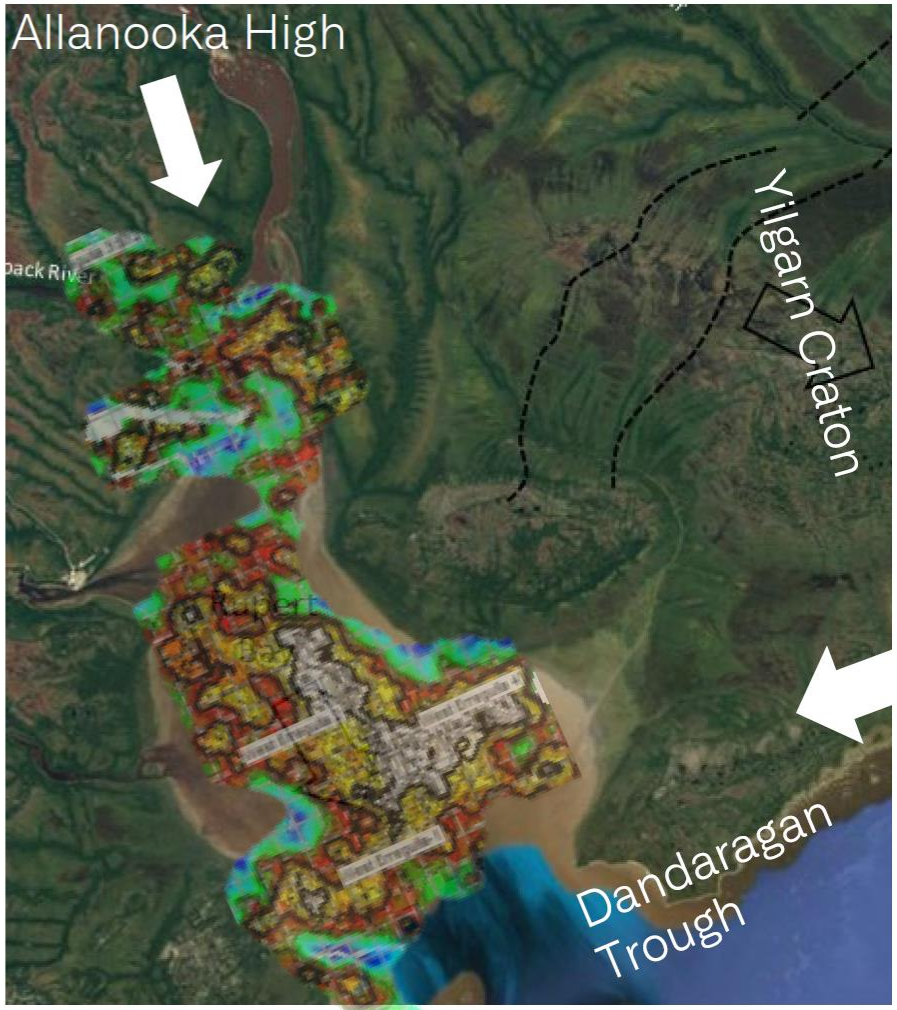

Strike Energy Limited

APPEA Conference Brisbane 2022

May 17, 2022

strike

Play Elements Charge

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Waitsa-2 WCR interp. 2016 (Casey Edwards)

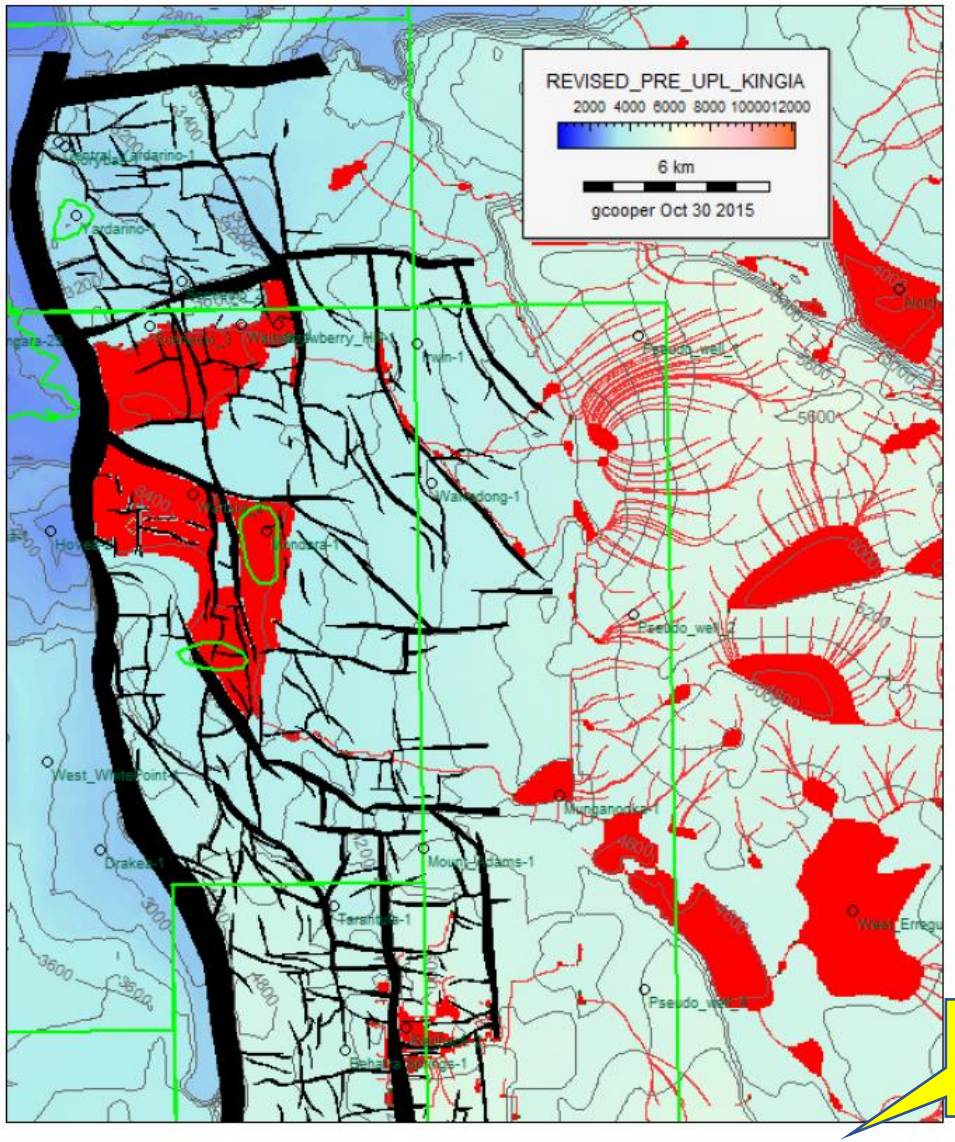


Figure 17 Map of Initial Charge from the IRCM and Carynginia Source Rock into a Kingia Pre-Uplift Reservoir

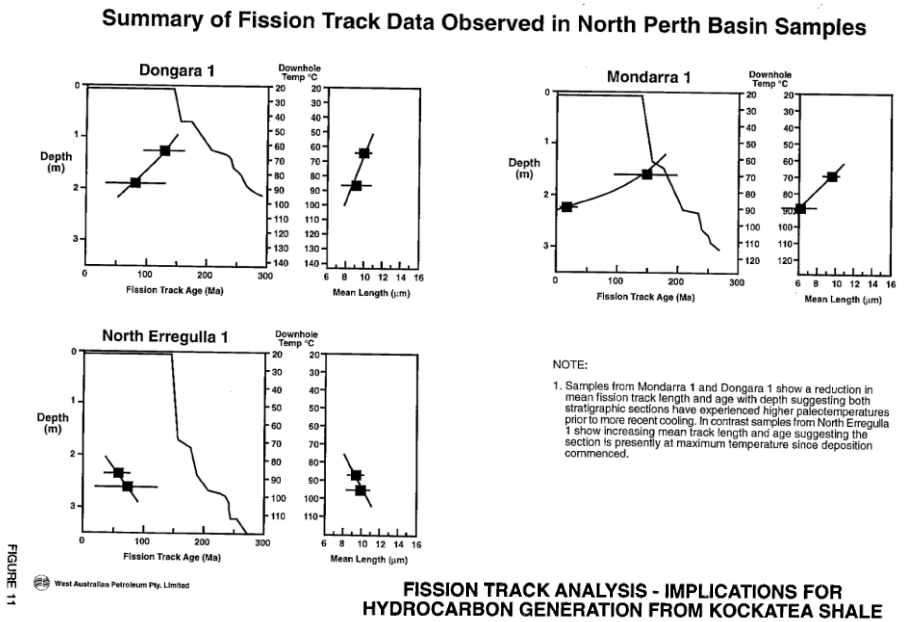
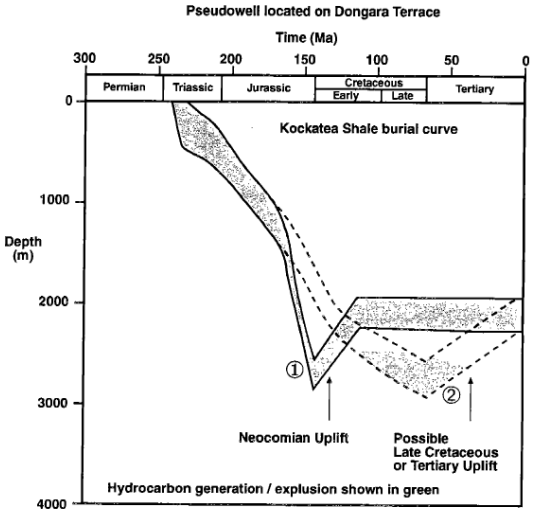


FIGURE 11

FISSION TRACK ANALYSIS - IMPLICATIONS FOR HYDROCARBON GENERATION FROM KOCKATEA SHALE



BURIAL HISTORY CURVES - TWO SCENARIOS:

Play Elements - Charge

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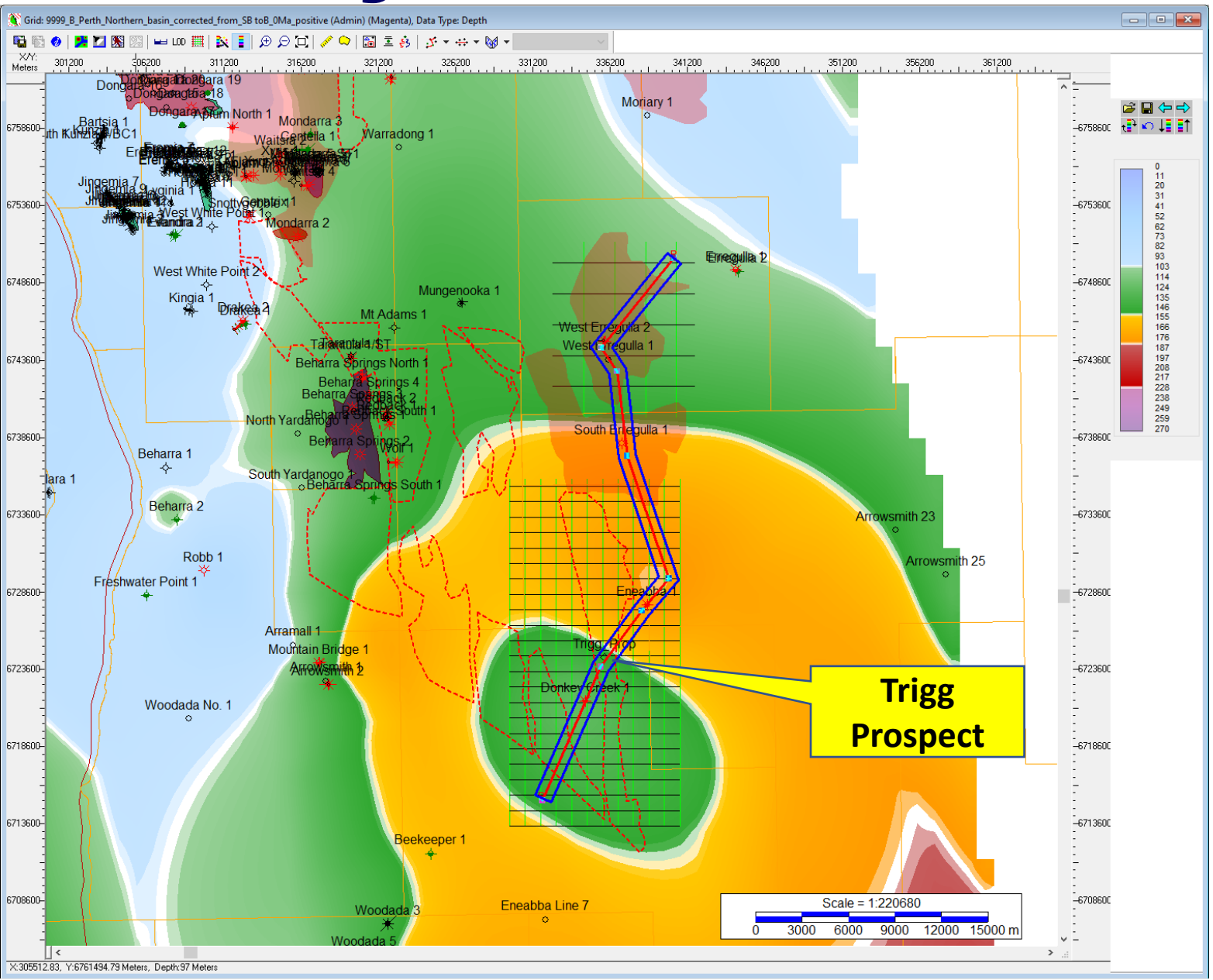

Basement Temperature Map at 0My

Sould be corrected for missing section at 139S_KV

(uplift associated with Greater India separation)

N-S faults are closed (under compression) – downthrown side should work

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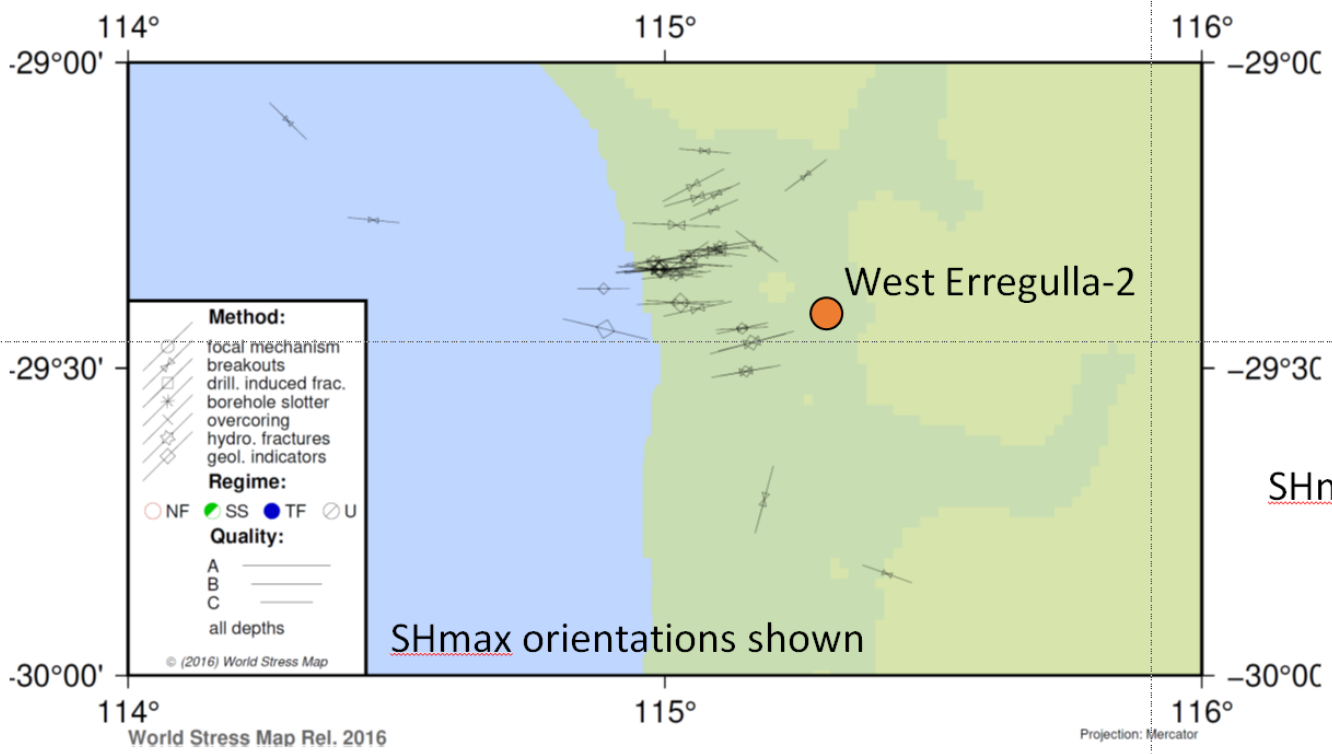
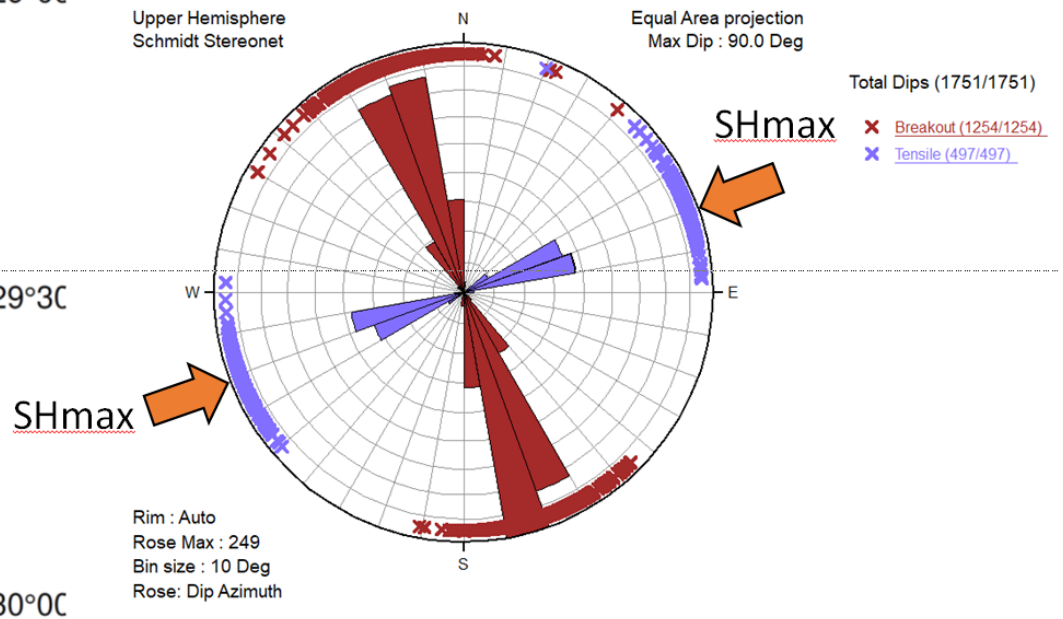
World stress map comparison



http://www.world-stress-map.org/

West Erregulla-2



In-situ stress features in West Erregulla-2 are consistent with records from the region.

Existing Targets – Waitsia

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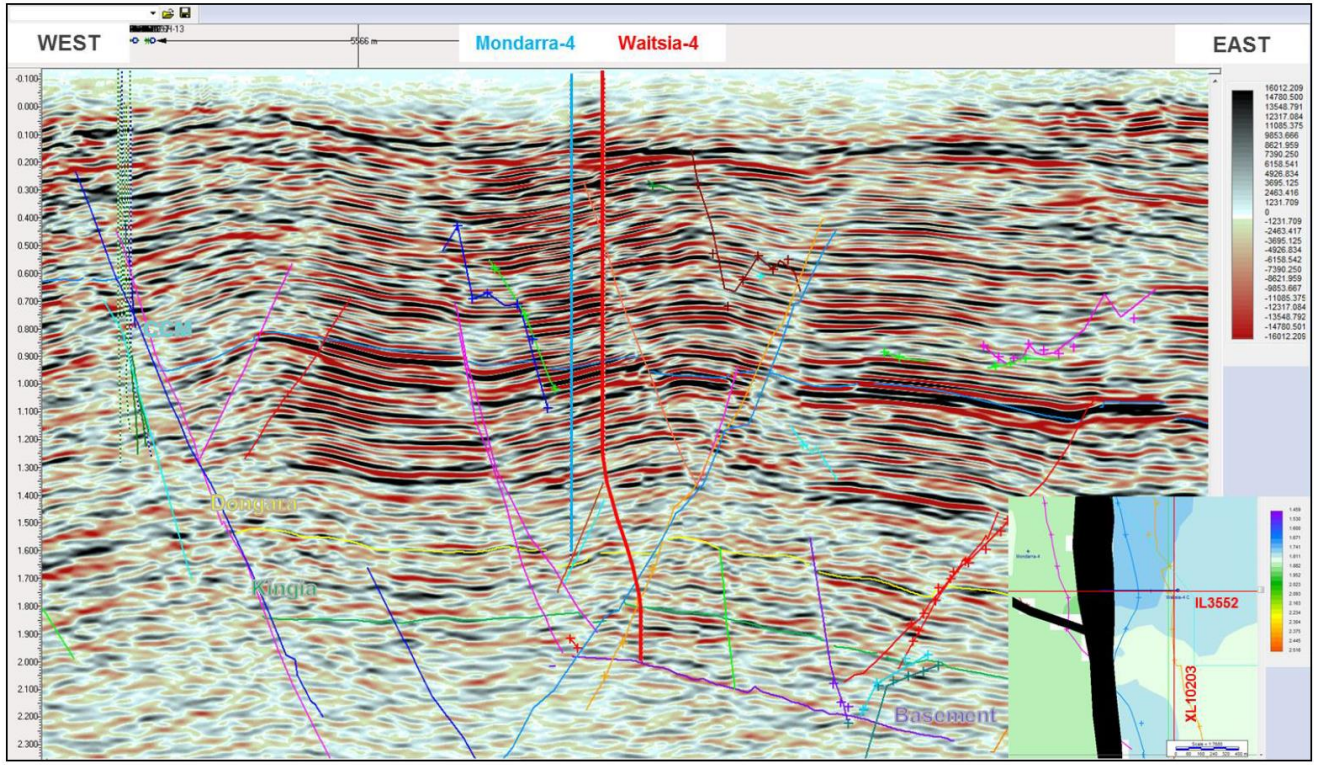

Figure 4 Inline 3552 on CGG 2016 Repro Merge with Proposed Waitsia-4 Well Path

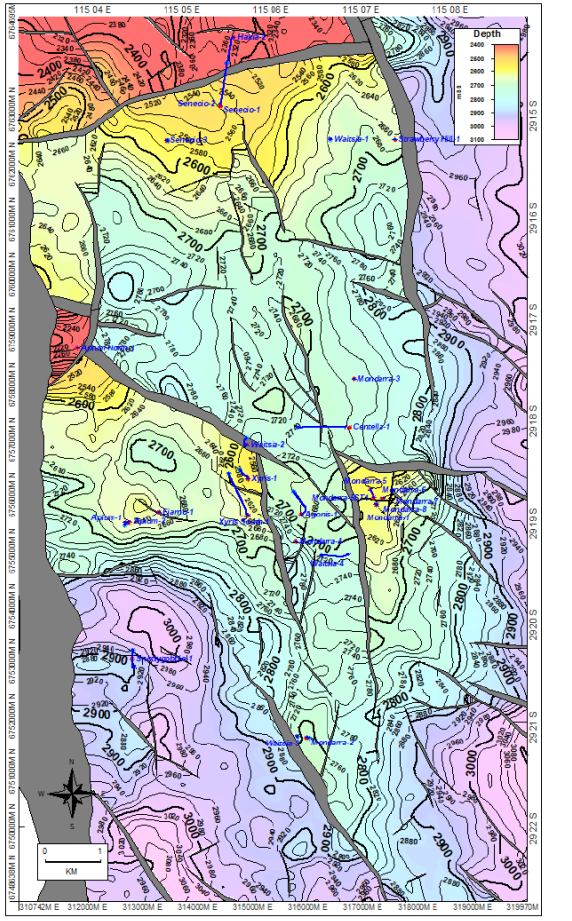

Figure 18 Post-drill Dongara Depth Structure Map from CGG 2016 Repro Merge

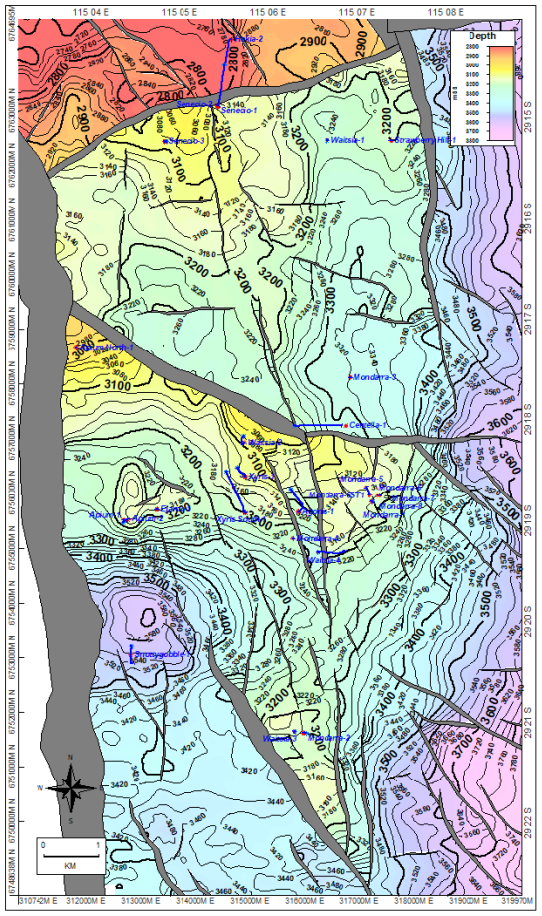

Figure 19 Post-drill Kingia Depth Structure Map from CGG 2016 Repro Merge

Trigg-1 (drilling April 2023)

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1. Location
2. Perth Basin Stratigraphy
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6. Additional Slides

West Erregulla-2 Amazing Success

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RESEARCH ARTICLE (Non peer reviewed) Previous Next Contents Vol 6

The West Erregulla gas discovery. Implications for an extensive Permian play fairway across the onshore northern Perth Basin, Western Australia

A. Cortis [A], A. Farley [A C], D. Lewis [A], S. Cheong [A], A. Chia [B] and W. Zhang [A]

+ Author Affiliations

The APPEA Journal 61(2) 594-599 https://doi.org/10.1071/AJ20034

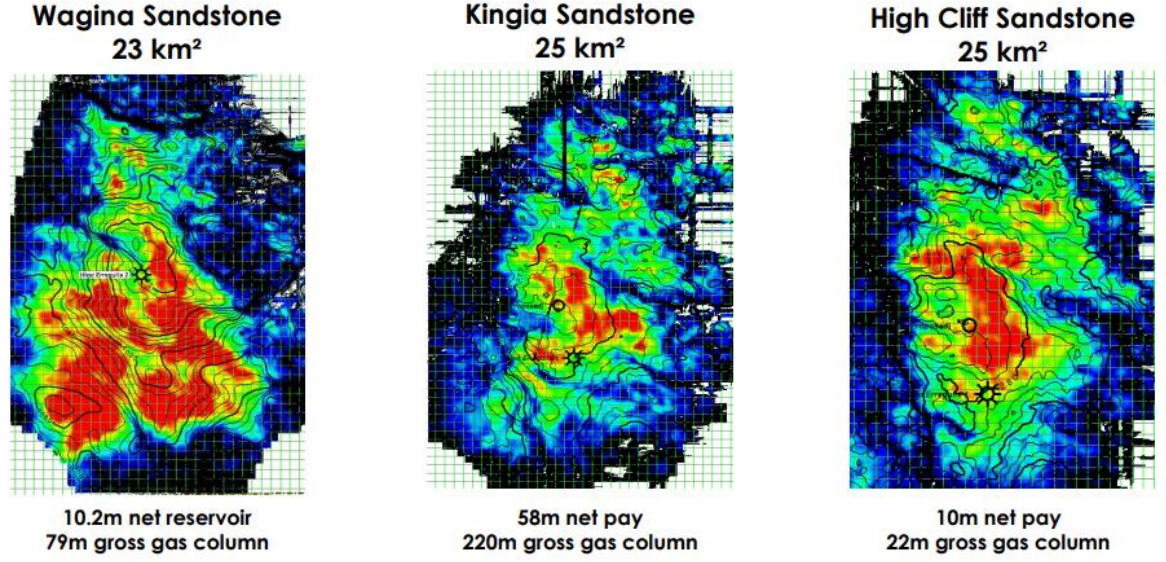
Accepted: 12 March 2021 Published: 2 July 2021

Abstract

The West Erregulla field is a significant new discovery in the northern Perth Basin that expands the play fairways for the basal Triassic/late Permian sandstones of the Dongara/Wagina formations and early Permian sandstones of the Kingia/High Cliff formations. The 2019 discovery well, West Erregulla-2, targeted three stacked seismic amplitude anomalies interpreted to be gas-charged conventional sandstones at depths between 4100 m and 5000 m. Gas charge is confirmed in all three units. Gas is hosted in linked, reactivated Permian-aged fault blocks located in the axial part of the Dandaragan Trough. They represent a down-dip analogue to the Waitsia gas field NW of West Erregulla. Only the Kingia sandstone was tested in West Erregulla-2. It contains good to excellent quality reservoir with >55 m of pay averaging 12.6% porosity and gas saturations of 65%. Despite deep burial, porosity of the reservoirs was retained by a combination of syndepositional clay coatings and early burial gas charge. Testing of this zone achieved a maximum sustained flow rate of 69 mmcf/day. Wireline logs and seismic mapping suggest the presence of a large gas field with gross gas column height of >200 m over an area of ~40 km^2. Scoping volumetric estimates using a range of possible gas water contact (GWC) suggest a P50 in-place original gas in place (OGIP) of ~1182 Bcf for the Kingia formation (informal name). The West Erregulla, Waitsia and Beharra springs deep fields contain significant gas resources. Their spatial distribution suggests the existence of a deep, regional Permian fairway that could cover a large portion of the Perth Basin.

The West Erregulla Trifecta

Strike Energy



- Excellent correlation between Strike geological and geophysical model predictions
- High amplitude corresponds to porous hydrocarbon charged sands
- Strike now has the recipe for success to delineate high confidence Permian targets

Page 4

West Erregulla-2 – Kingia thickening to the south

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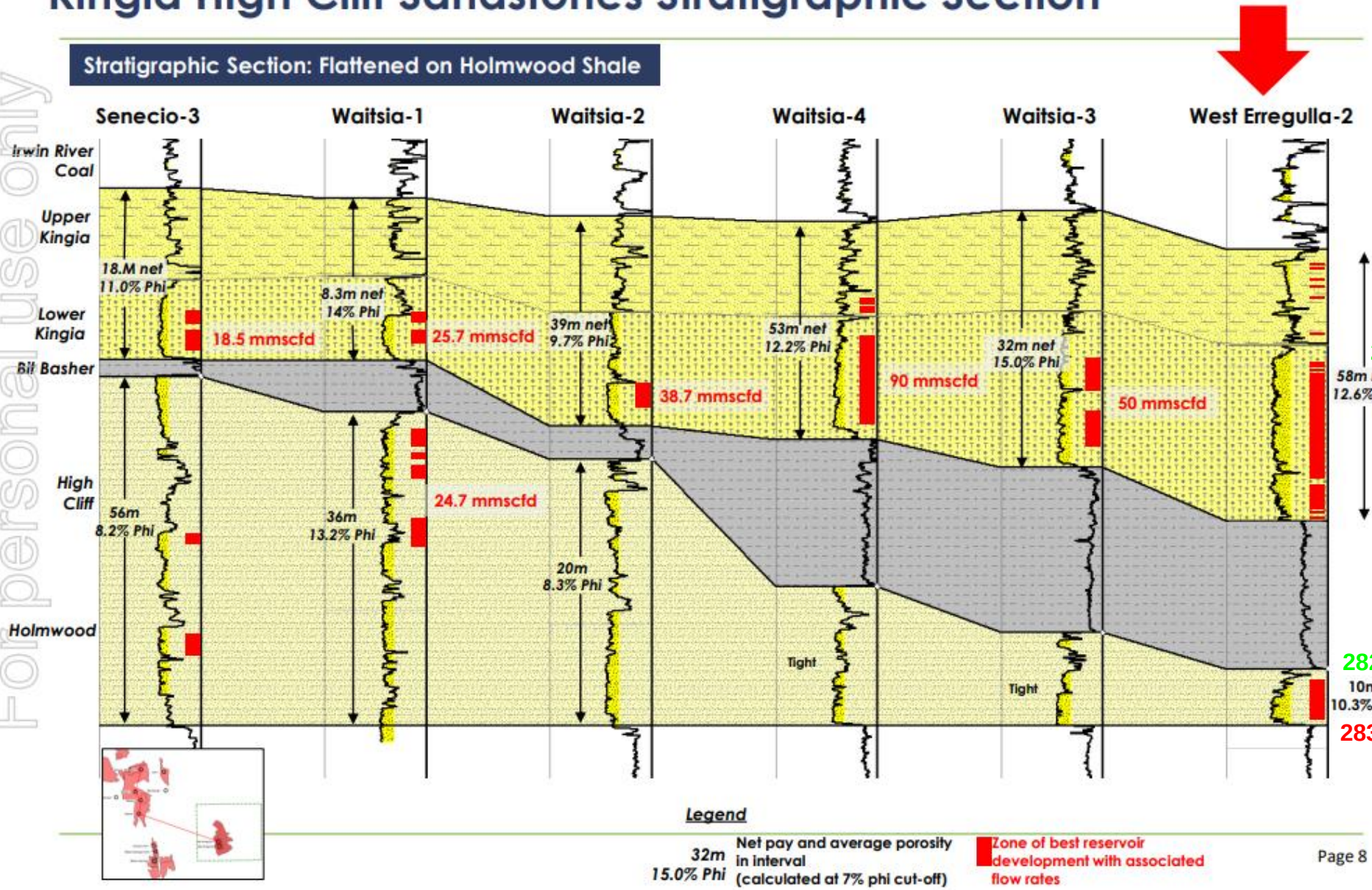
Kingia High Cliff Sandstones Stratigraphic Section



281T

Transgressive prograding mostly marine sst

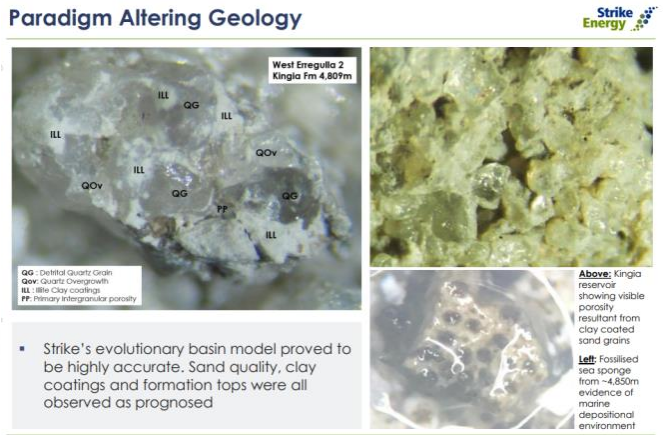
281.5S

Transgressive clst

282T (onset of Sibumasu break-up)

Non-marine

283S



West Erregulla-2

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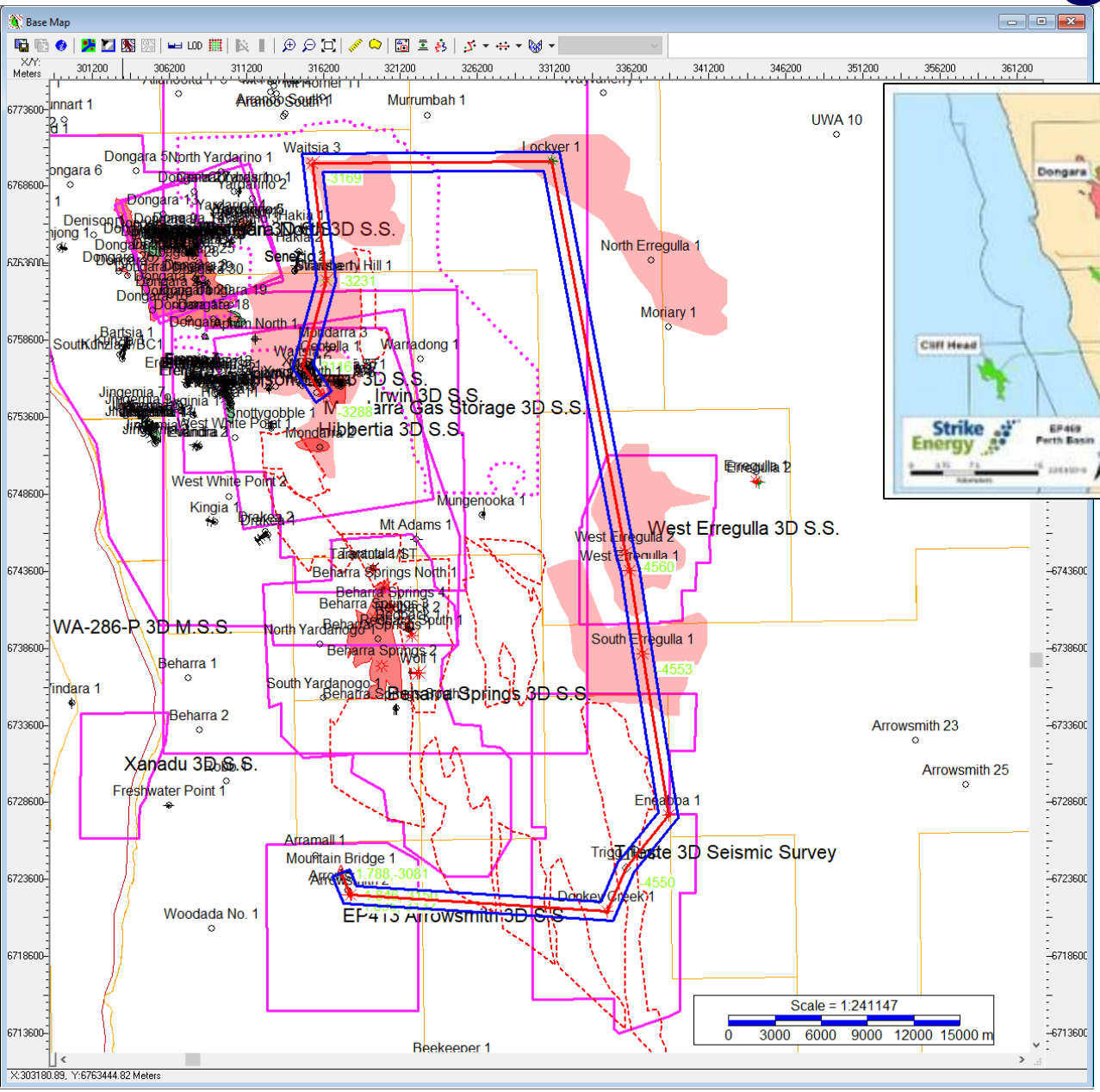

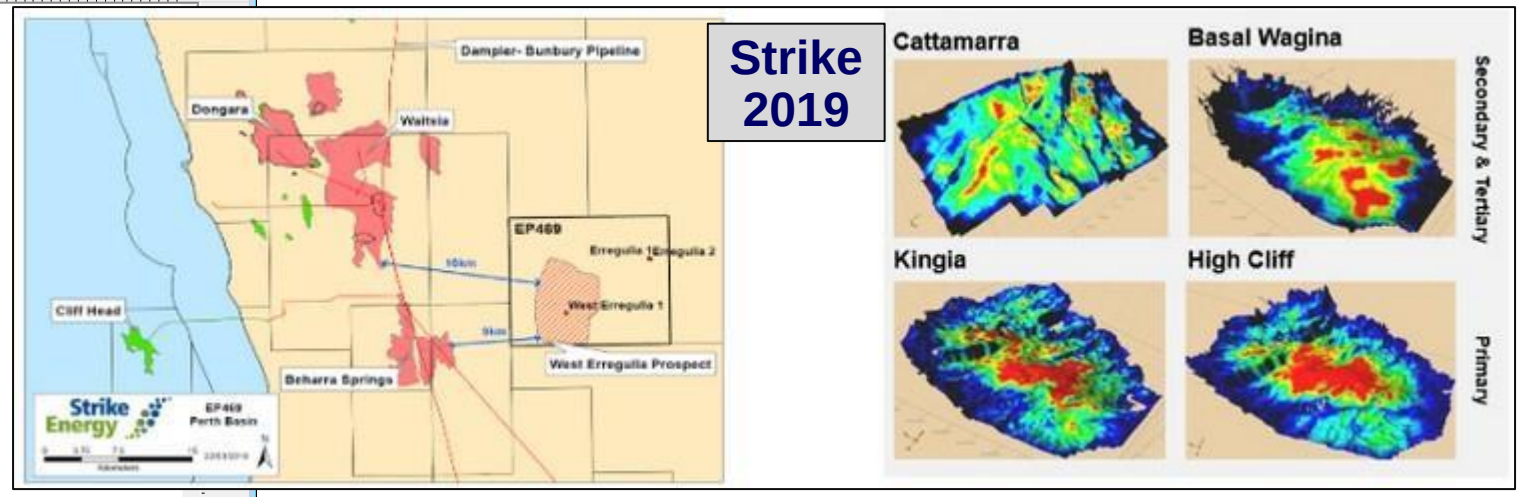

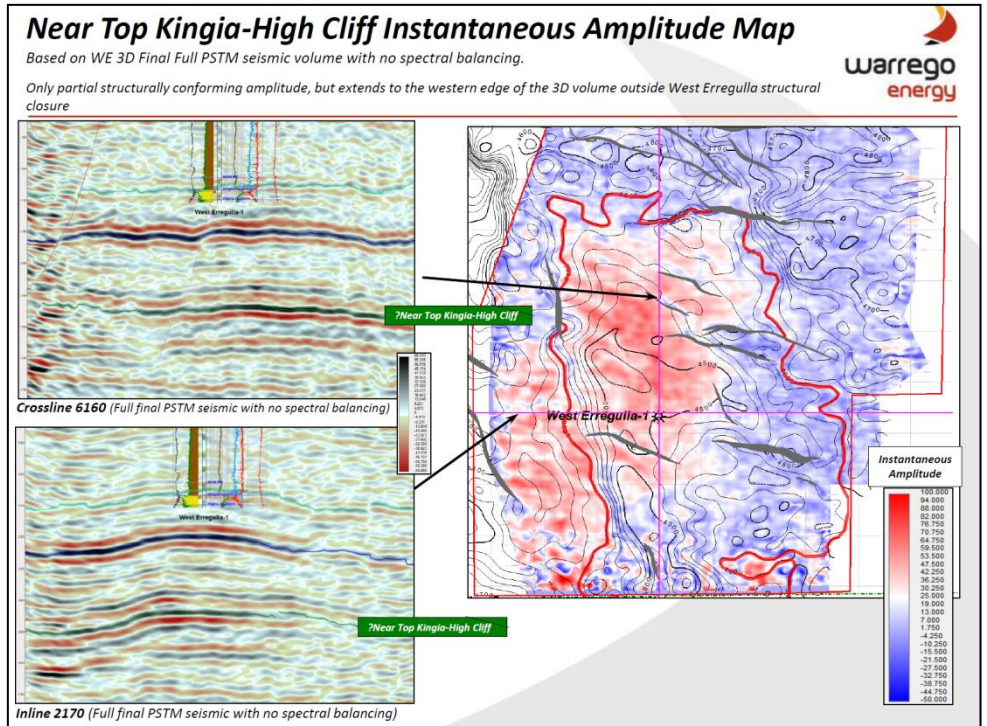

Warrego Energy 2016

Trigg-1 (drilling April 2023)

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1. Location
2. Perth Basin Stratigraphy
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4. Local Wells & Results
5. Trigg-1 Prediction
6. Additional Slides

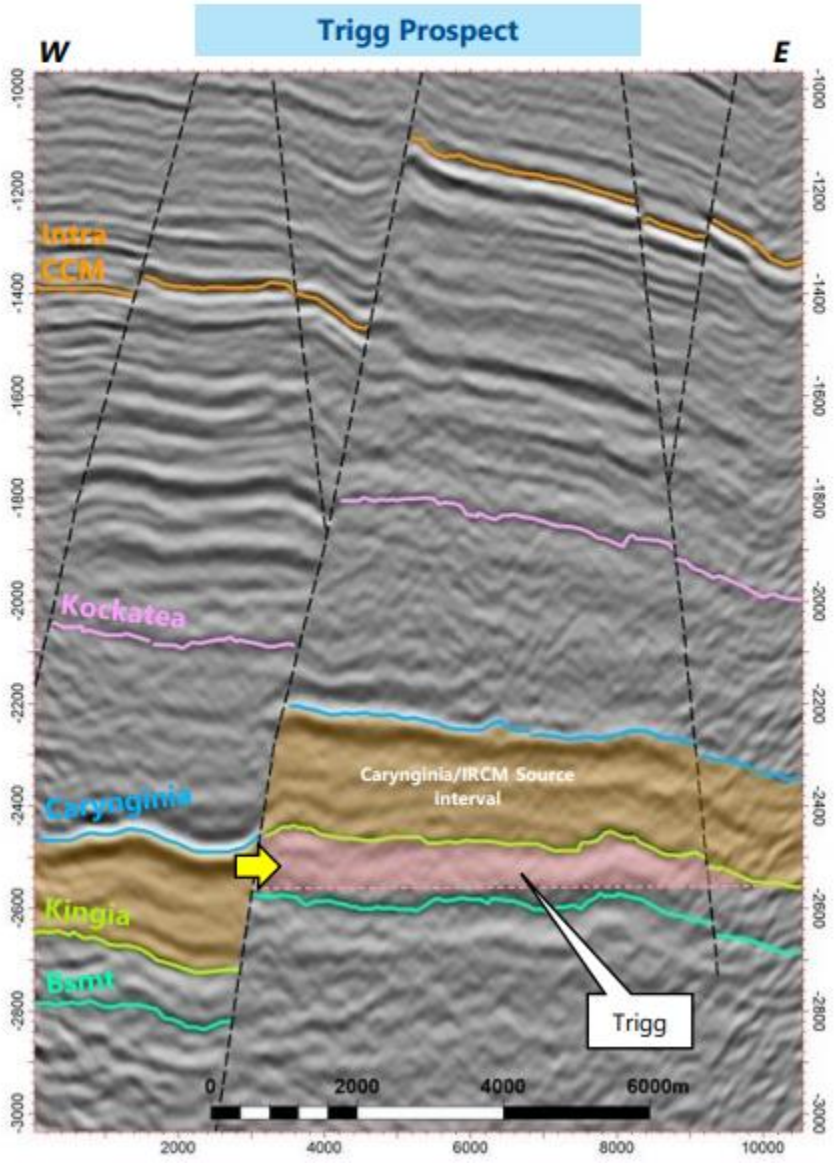
Targets fromBeach

Perth Basin exploration

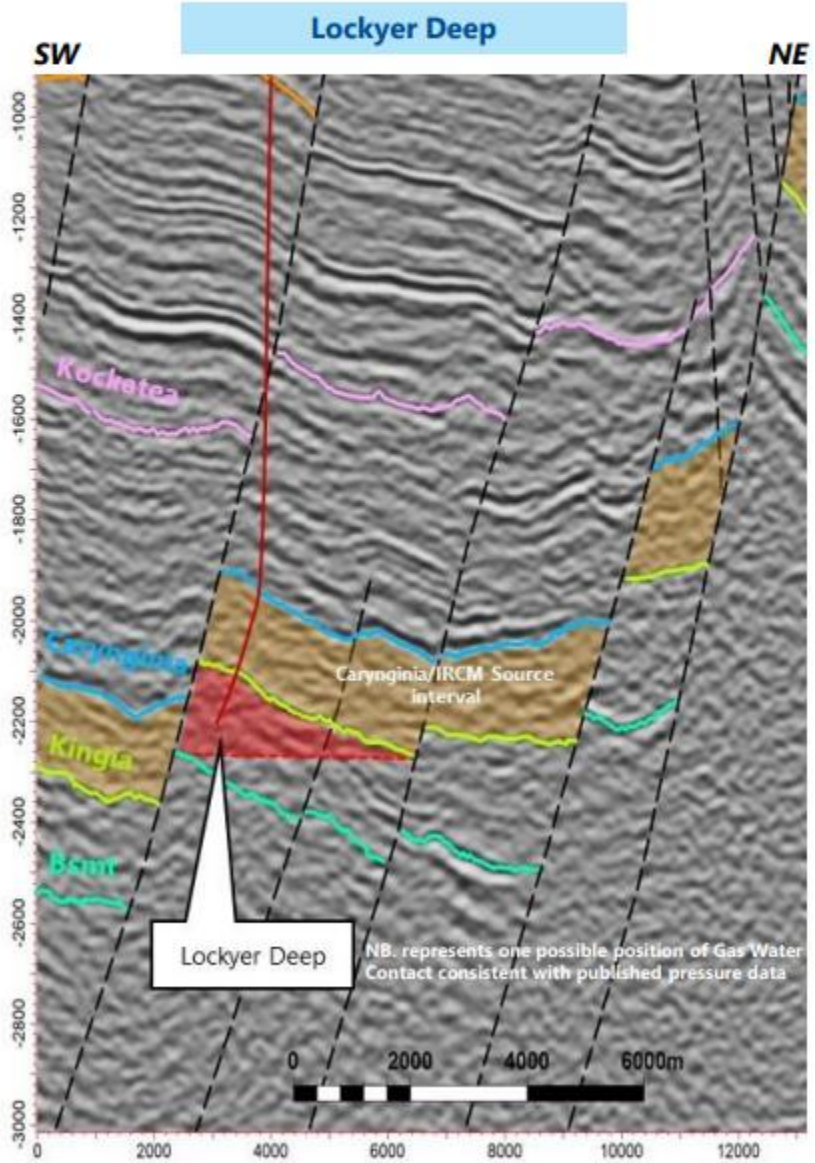
Trigg 1 the first operated exploration well in FY23

- Trigg 1 on-trend and up-dip from West Erregulla discovery
- Same Kingia and Wagina reservoirs
- Compelling analogue to Lockyer Deep
- Success would lead to follow-up appraisal
- Success would further de-risk adjacent prospects

Drilled in 2023

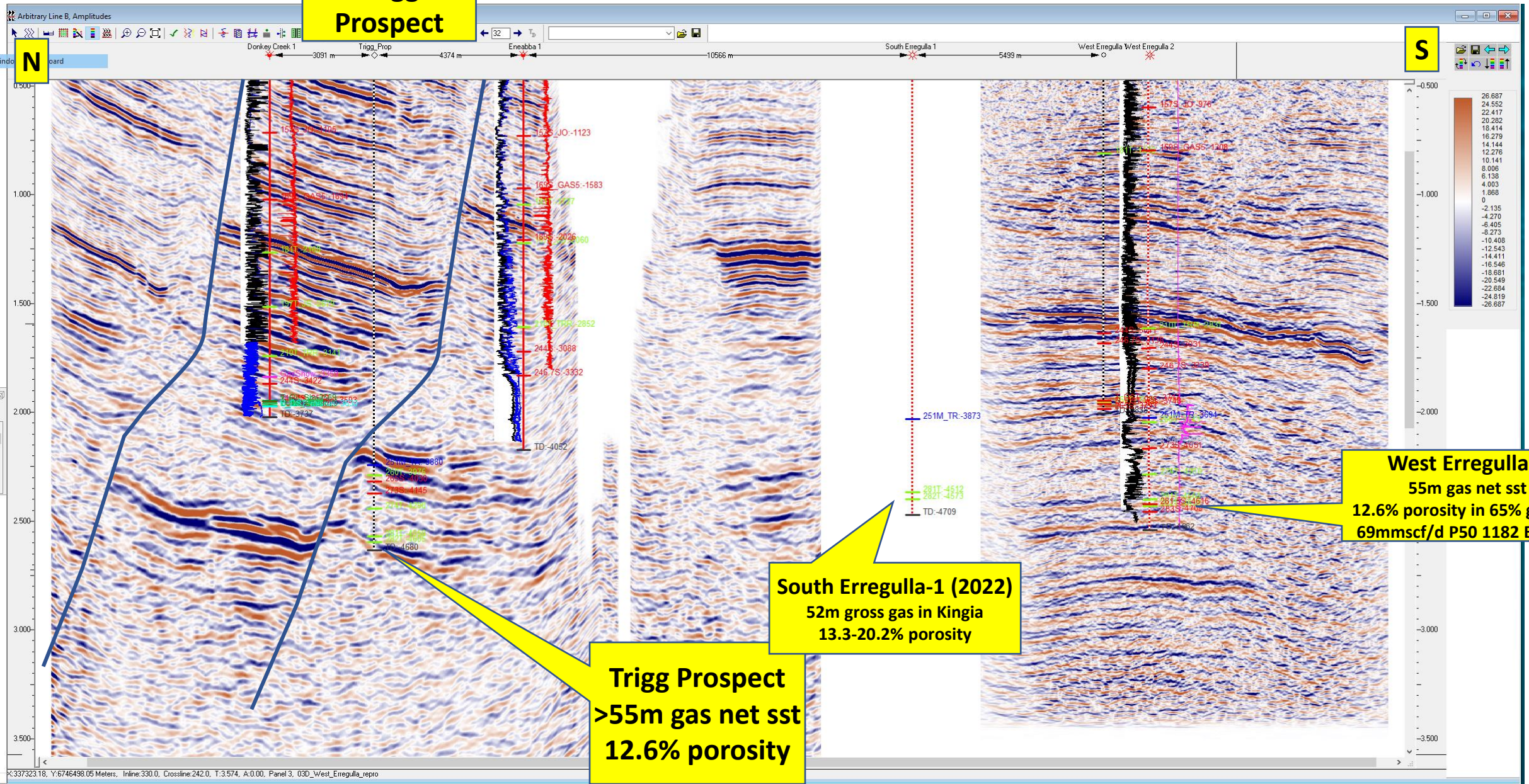


Drilled in 2021



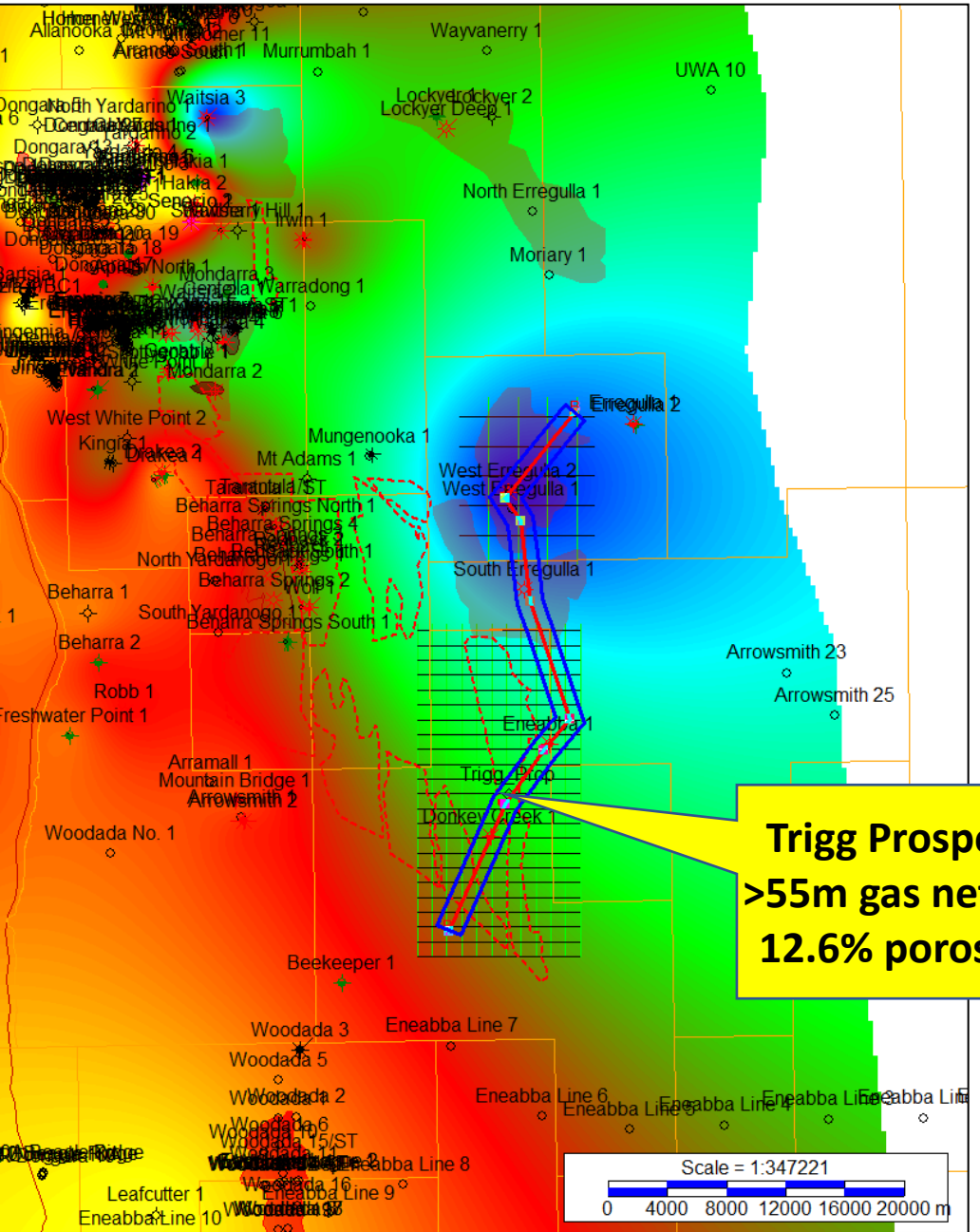
Trigg – West Erregulla-2 – same depth

DJGeoscience

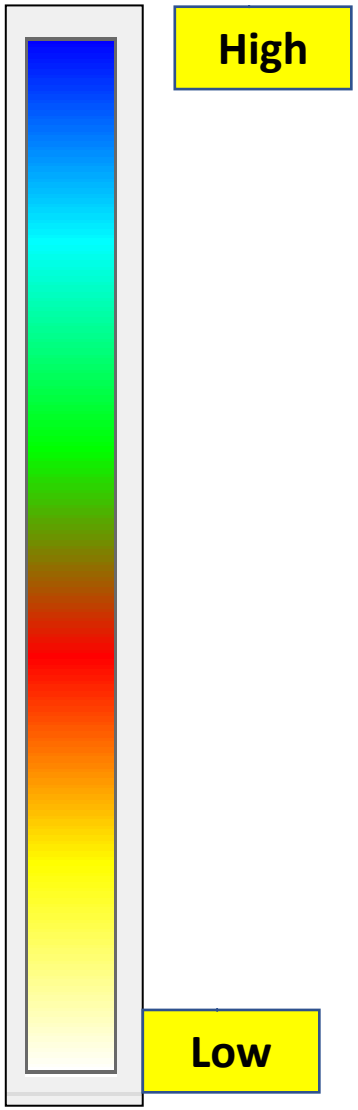


Well Derived Kingia thickness

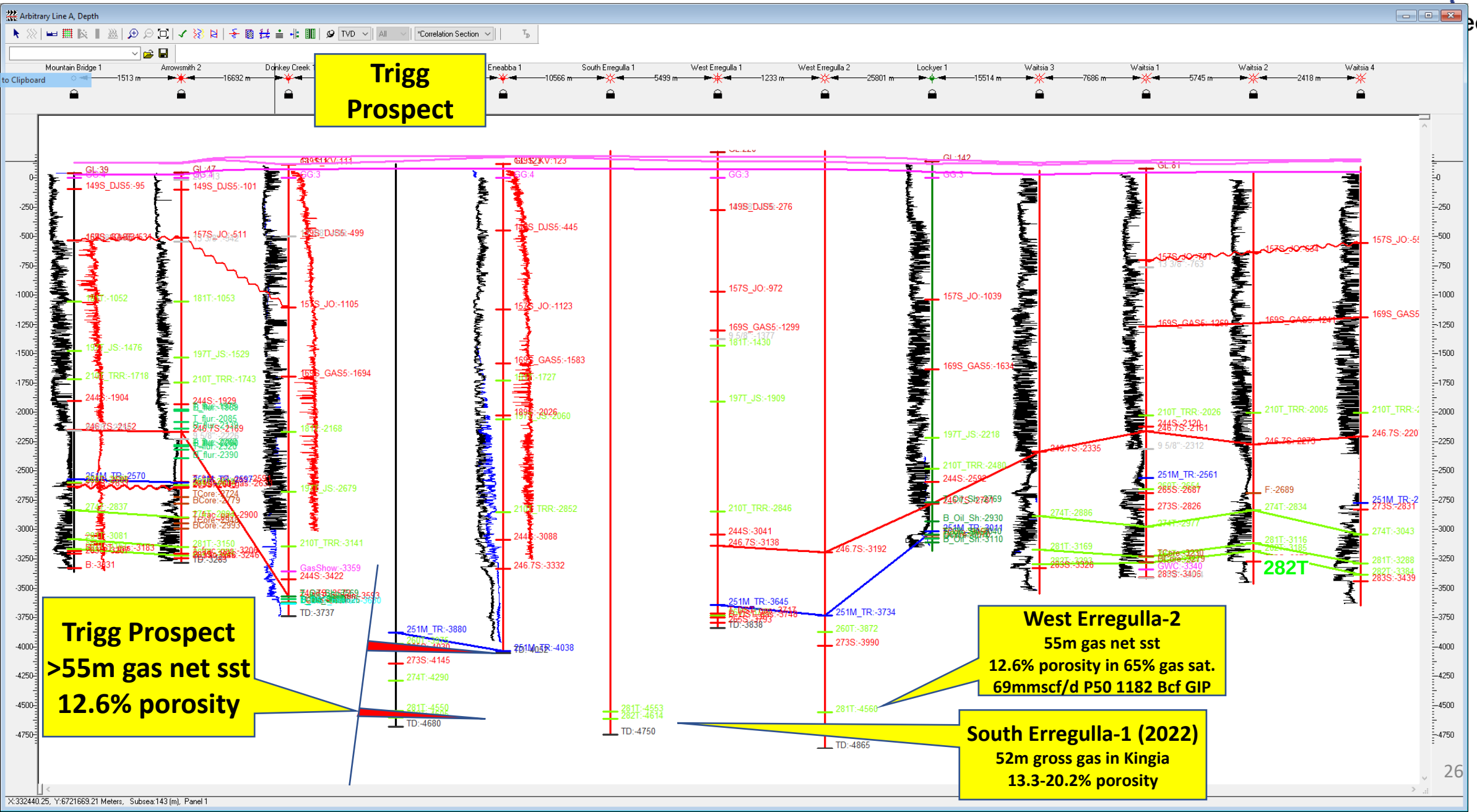
DJGeoscience



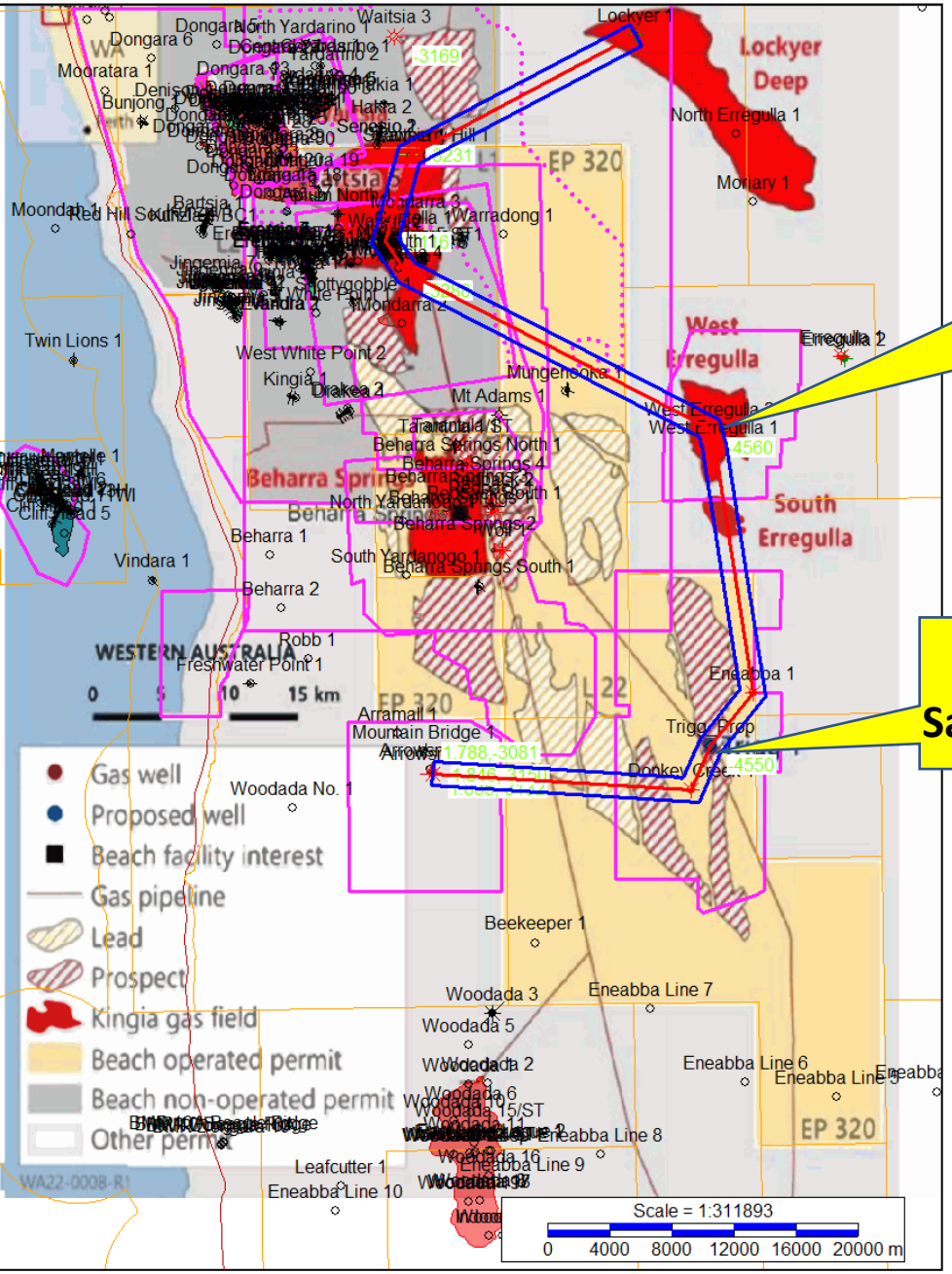
Trigg Prospect
>55m gas net sst
12.6% porosity



Trigg – West Erregulla-2 – same depth



West Erregulla-2 & Trigg – same depth & porosity range

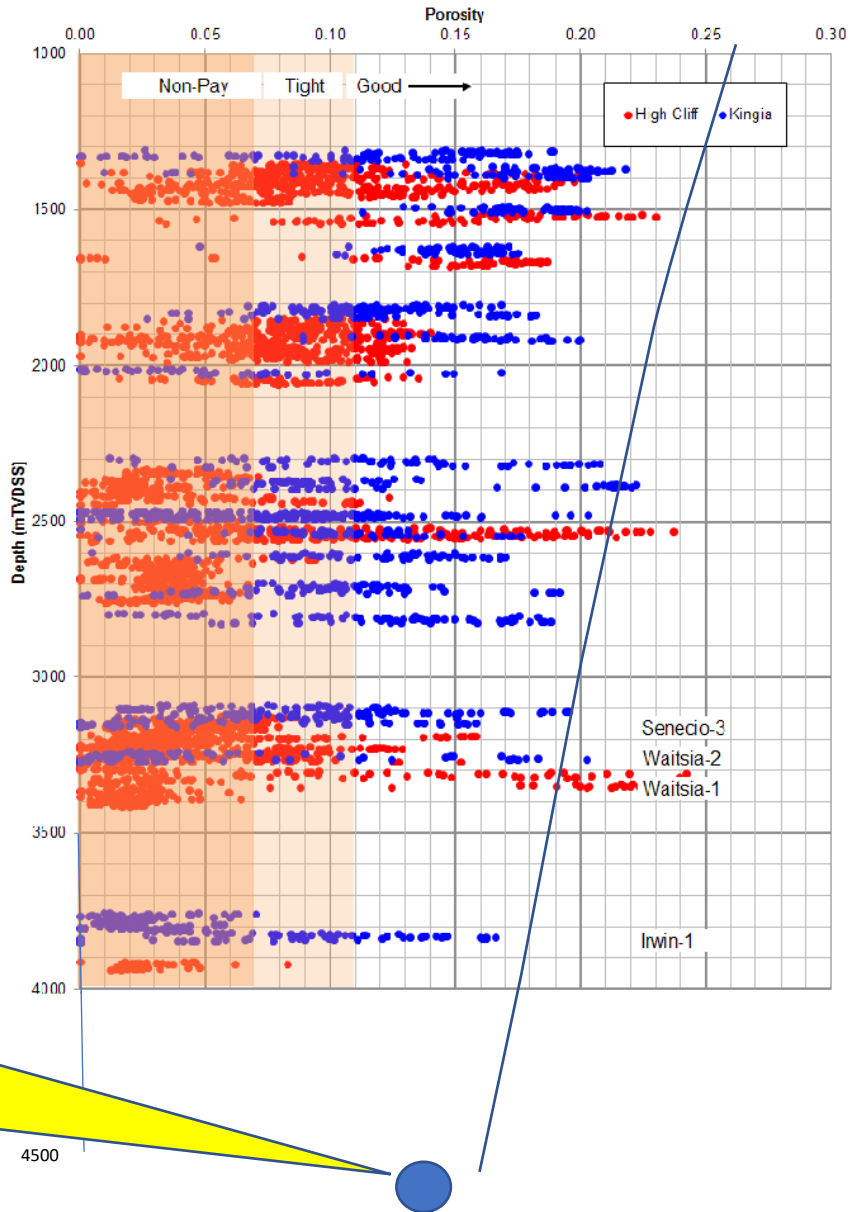


West Erregulla-2
55m gas net sst
Av. 12.6% porosity in 65% gas sat.
69mmscf/d P50 1182 Bcf GIP

Prop. Trigg
Same depth as West Erregulla-1

~4600mss
West Erregulla-2 &
South Erregulla- 1
& Trigg
Av. 12-14% porosity

Figure 12. Porosity versus present-day depth based on log interpretation of Kingia and High Cliff reservoirs from wells in the Waitsia Field and surrounding area .



Trigg Prospect Predictions

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1. Kingia Sst – transgressive sst (mixed to marine) is widespread as marks the onset of Sibumasu stretch at 282My (top Cliff Head Sst) and break-up at 273My (273S-top Carrynginia Fm)-2nd order global tectonics.

2. Kingia Sst – sourced from the south (like all other Permian sst facies in Perth Basin)

3. Kingia Sst – should be thicker in Trigg than in West Erregulla-2 & South Erregulla-1

4. Same depth suggesting similar porosity of av. 12-13% as in WE-2

5. Porosity is likely to be elevated due to chlorite (deposited in marine envir.), early gas charge & overpressure?

6. Trigg-1 should be a gas discovery despite poor seismic quality. Main risk: reservoir effectiveness (if drainage is connected to the Dongara Tough then poor reservoir properties are predicted- see Lynx-1A outcome).

Trigg-1 (drilling April 2023)

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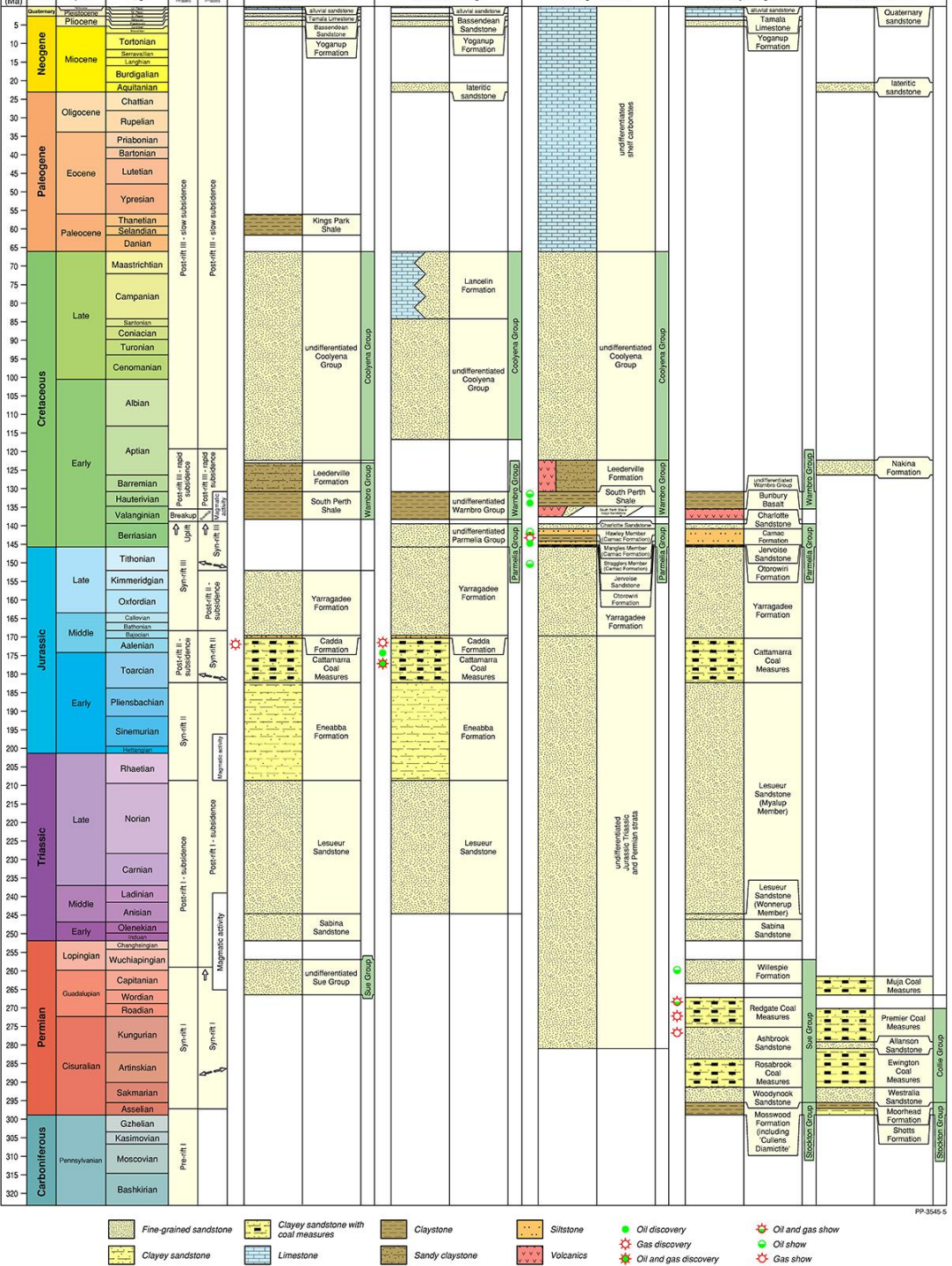
1. Location
2. Perth Basin Stratigraphy
3. Play Elements
4. Local Wells & Results
5. Trigg-1 Prediction
6. Additional Slides



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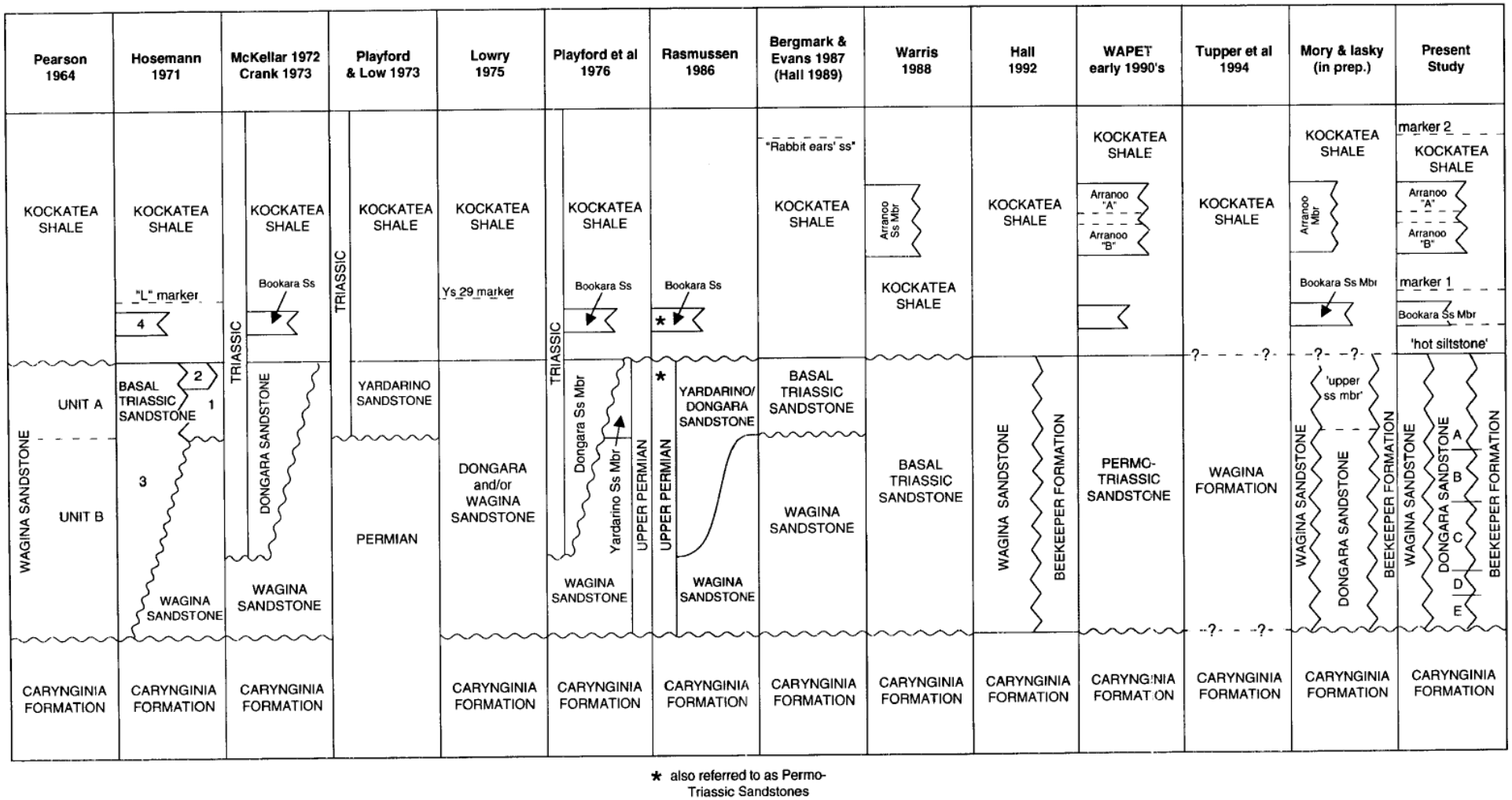
CORRELATION OF PREVIOUS STRATIGRAPHIC NOMENCLATURE FOR THE UPPER PERMIAN - LOWER TRIASSIC OF THE NORTH PERTH BASIN



★ also referred to as Permo-Triassic Sandstones

Geology of West Erregulla-2 FMI image log

ImageStrat

DJGeoscience

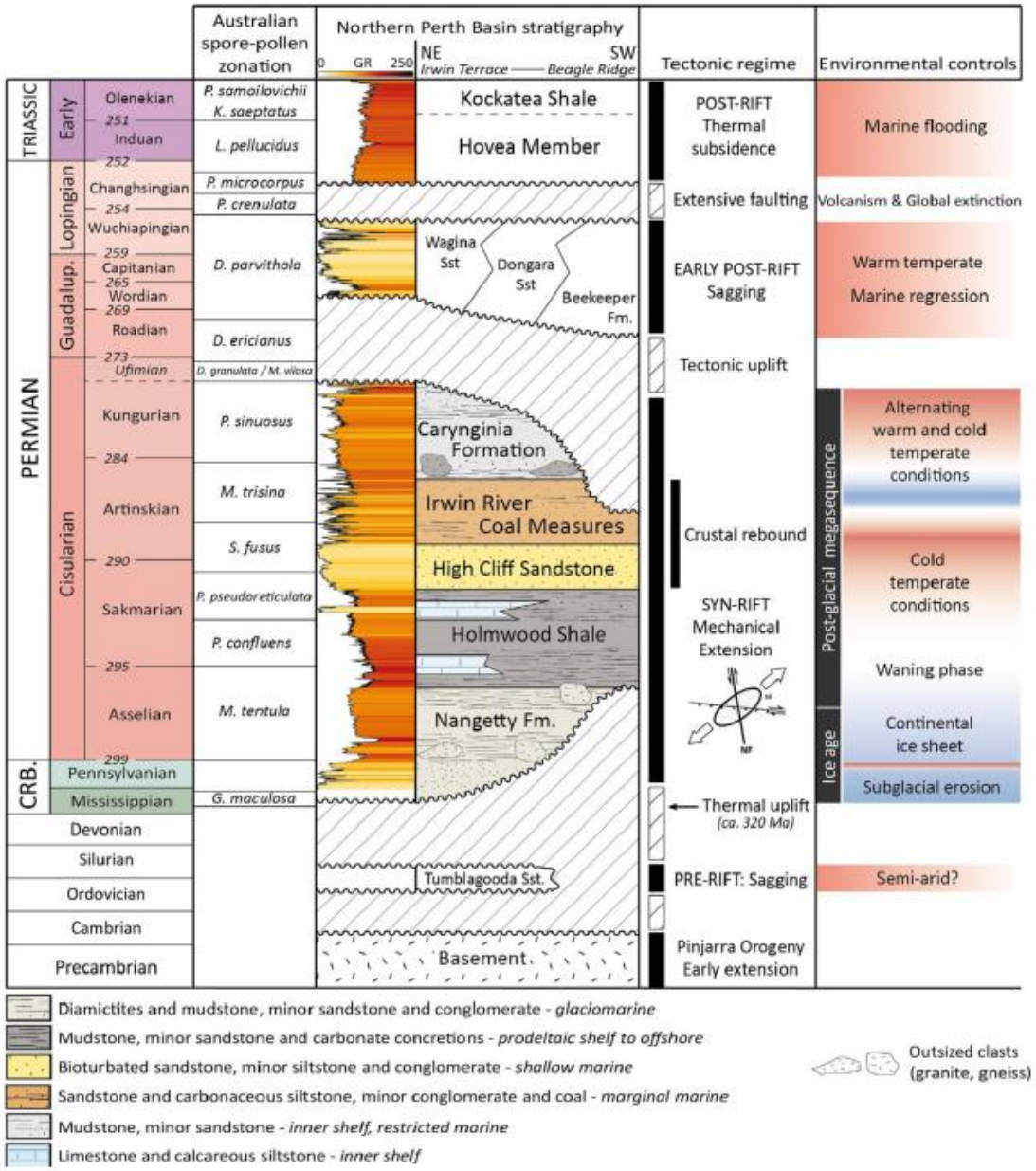


Figure 2. Generalised stratigraphy of the North Perth Basin from Dillinger & George (2019). The West Erregulla-2 FMI image log extends from the Wagina Sst into the Holmwood Shale.