

# THE PROSPECTIVITY OF THE WALLAL GRABEN

A UNIQUE CANNING BASIN OPPORTUNITY

PESA Deal Day – Melbourne 2015

**DILEX**LTD

# INTRODUCTION

## OPPORTUNITY IDENTIFICATION

### Oilex has identified a deep, undrilled half graben in an overlooked area of the Canning Basin

- SPA 17 AO awarded over area of potential half graben extension
- Adjacent gazettal blocks to capture entire play fairway awarded

### 2D seismic data clearly images deep half graben and large structures

- Conventional and unconventional plays identified
  - Stacked objectives able to be tested with a vertical well

### Proven organic-rich Ordovician source rocks in adjacent wells

- Potential for increased organic richness due to confined environment of deposition

### Recent high value farm-in activity involving major international companies



# WALLAL GRABEN

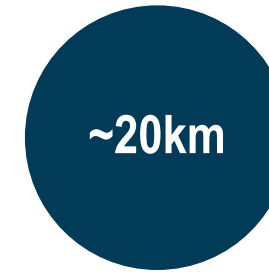
## SEISMIC DATA TELLS THE STORY

### Jump correlations with regional seismic infer:

- A near complete Ordovician sequence is preserved
- Possible organic-rich Goldwyer and Bongabinni Formations present
- Numerous play-types
  - Structural and stratigraphic
  - Conventional and unconventional



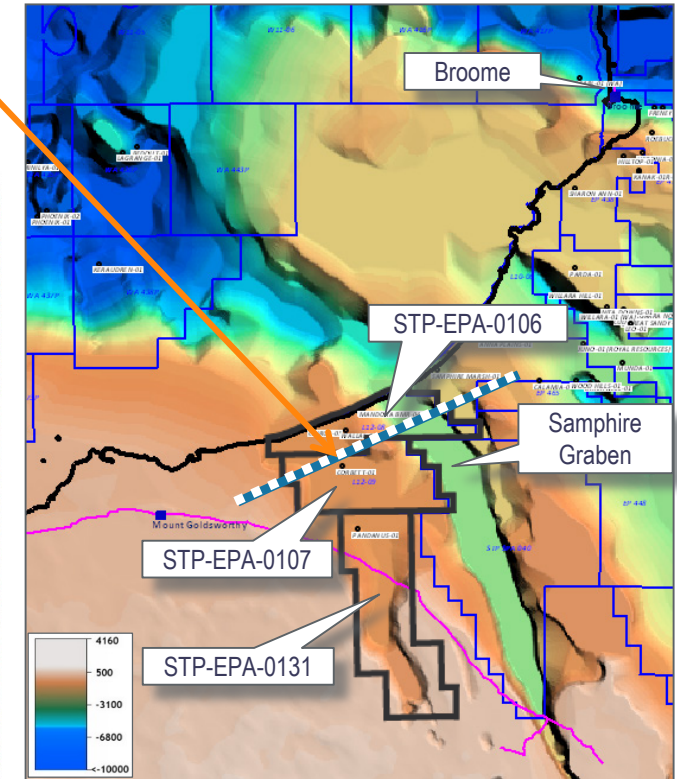
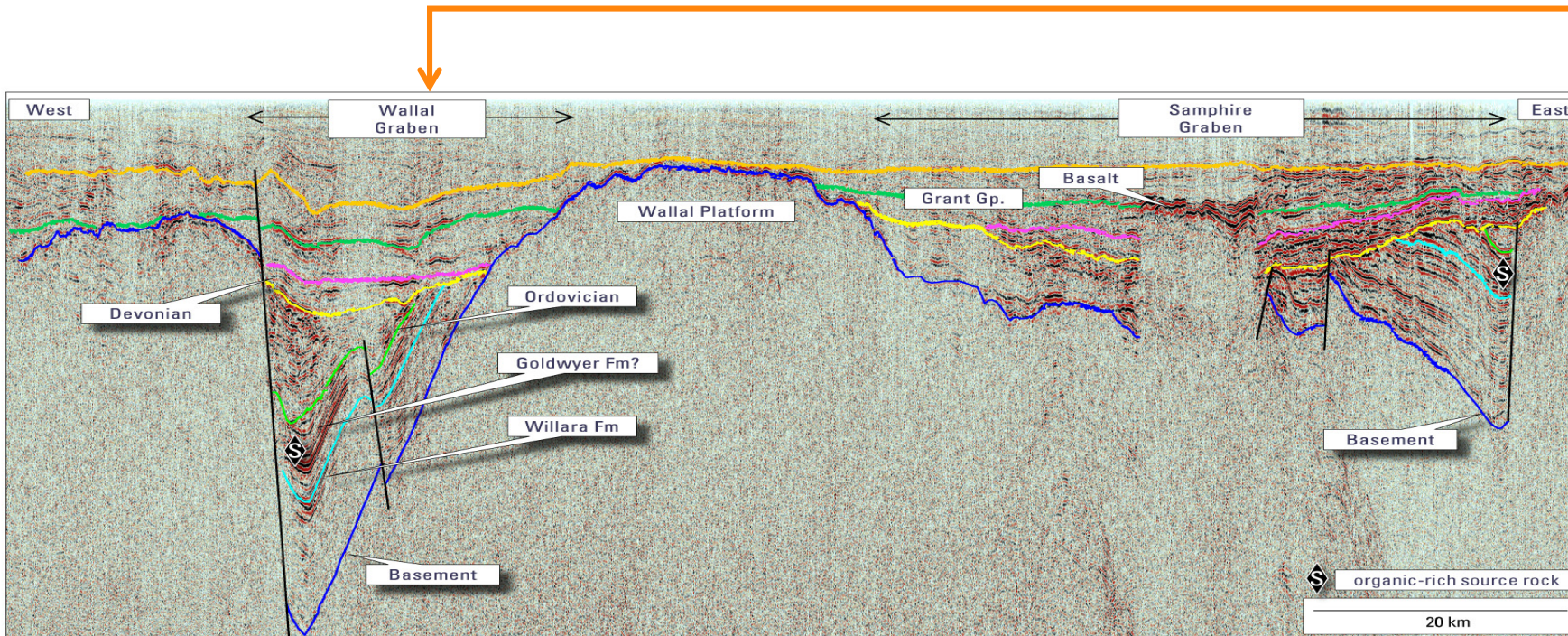
Depth to Basement



Narrow half graben



Extends inland



# GRAVITY GRADIOMETRY/MAGNETIC SURVEY

## RESULTS AND INTERPRETATION

4060 line-km of high resolution data acquired by CGG in 2014

Confirmed Wallal Graben extends into SPA area

- ~200km long

Series of grabens and half-grabens separated by structural highs

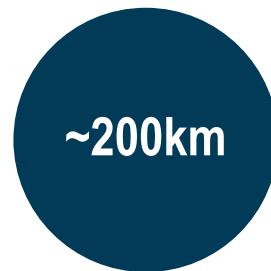
Sufficient depth for hydrocarbon generation



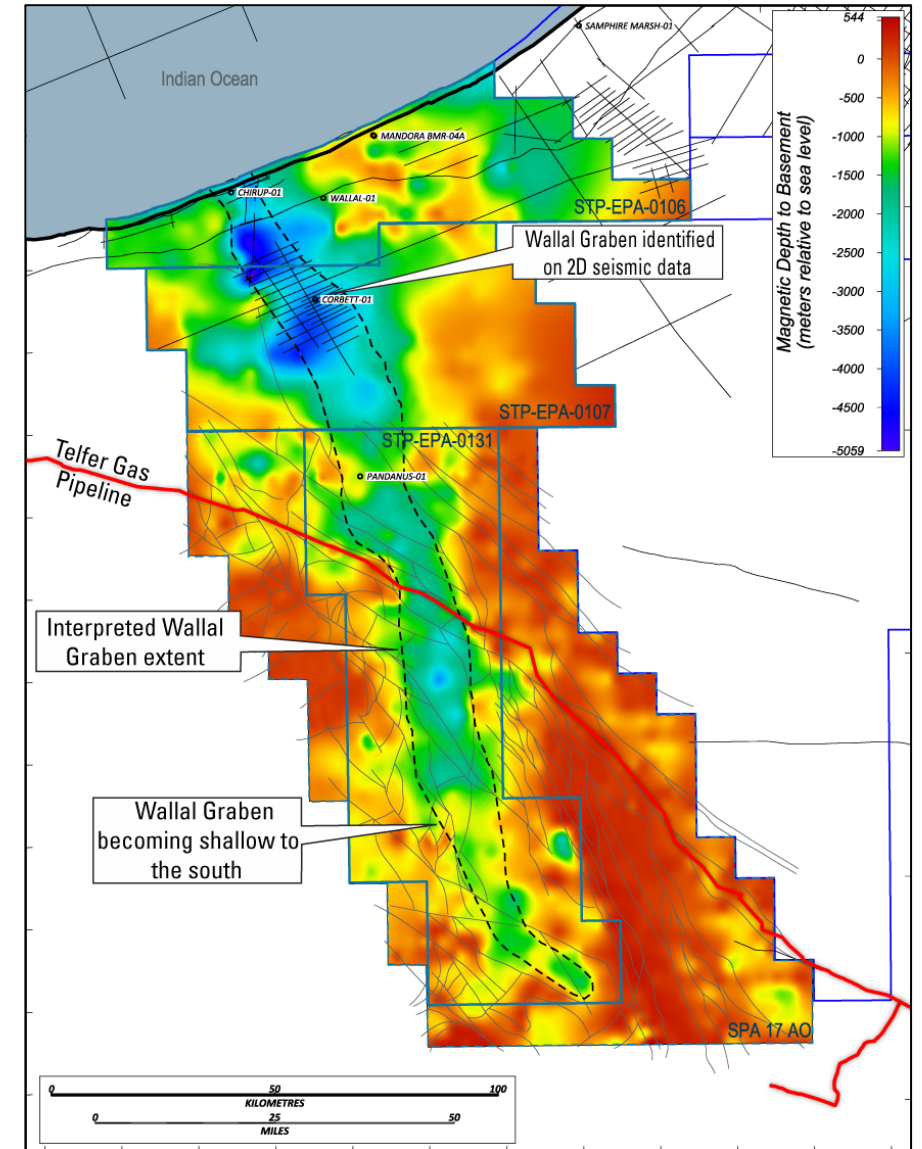
Depth to Basement



Narrow half graben



Extends inland



# MAGNETIC DEPTH TO BASEMENT

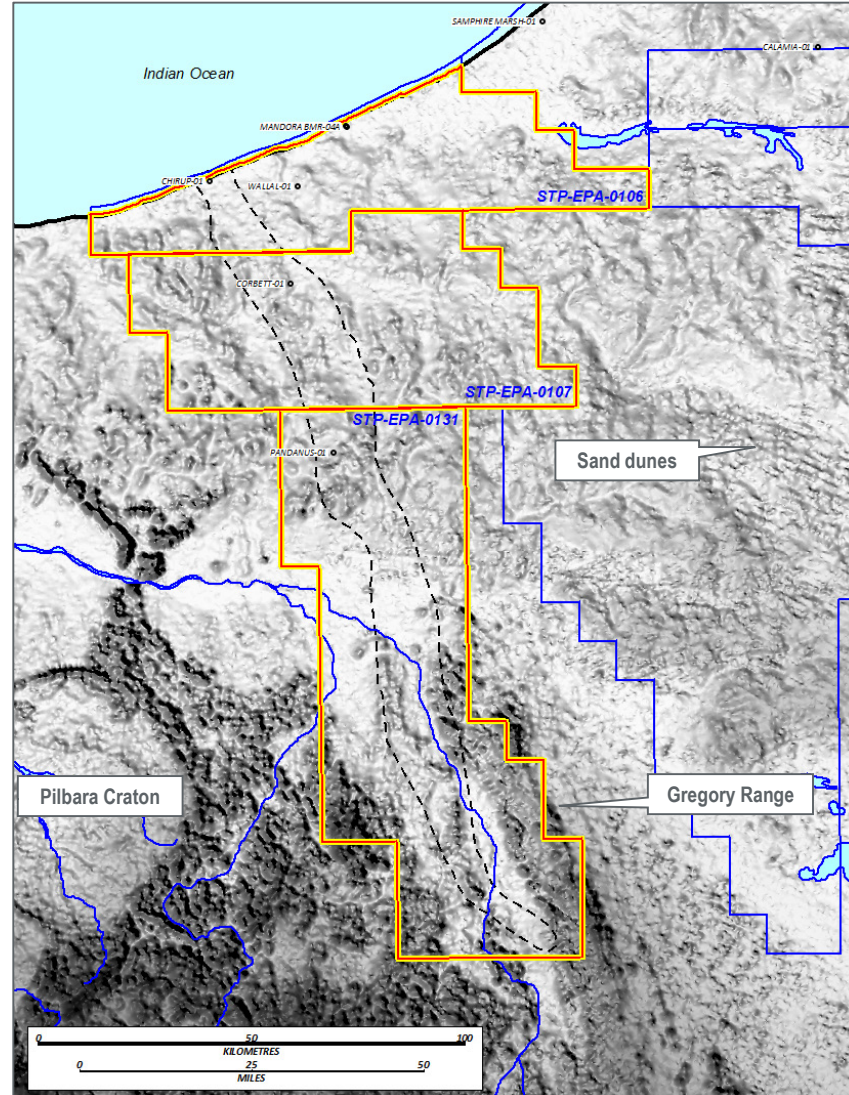
## PRESENT-DAY EXPRESSION

### Oakover River located in syncline axis

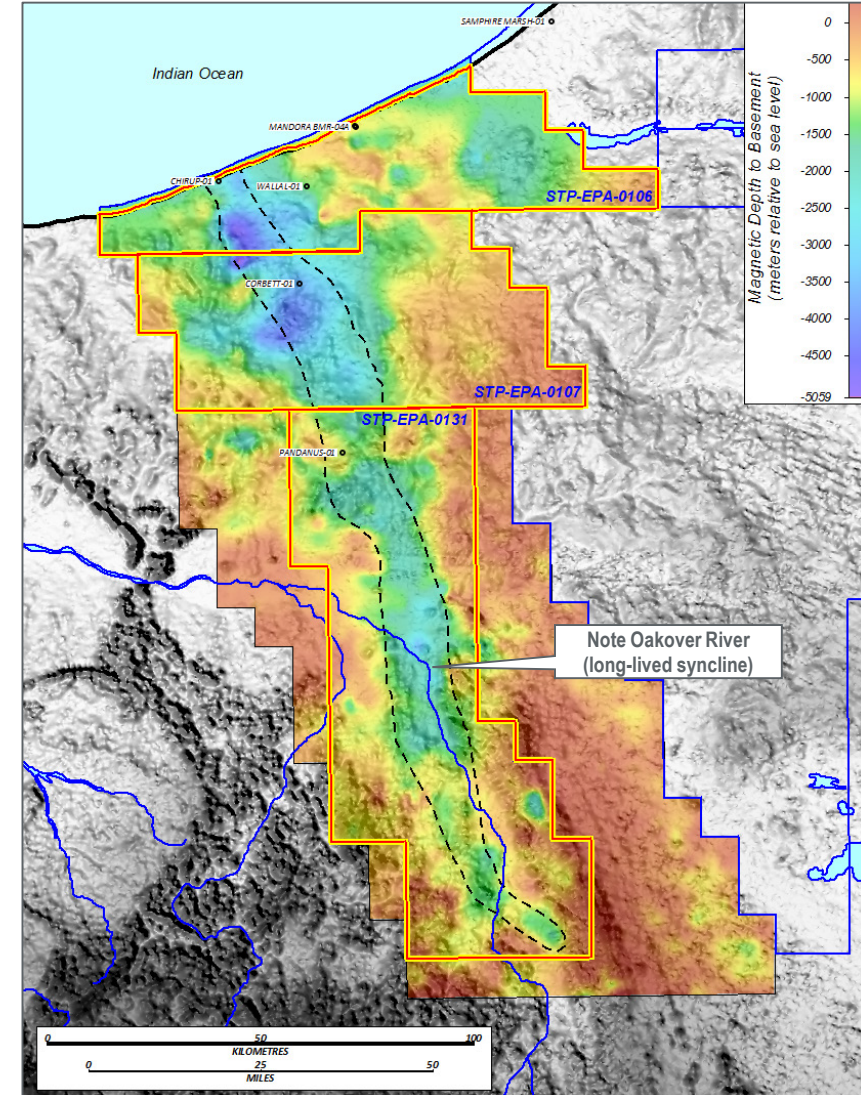
- Long-lived feature

### Basement outcrops along edges

- Surrounded by mining activity



Present Day Terrain



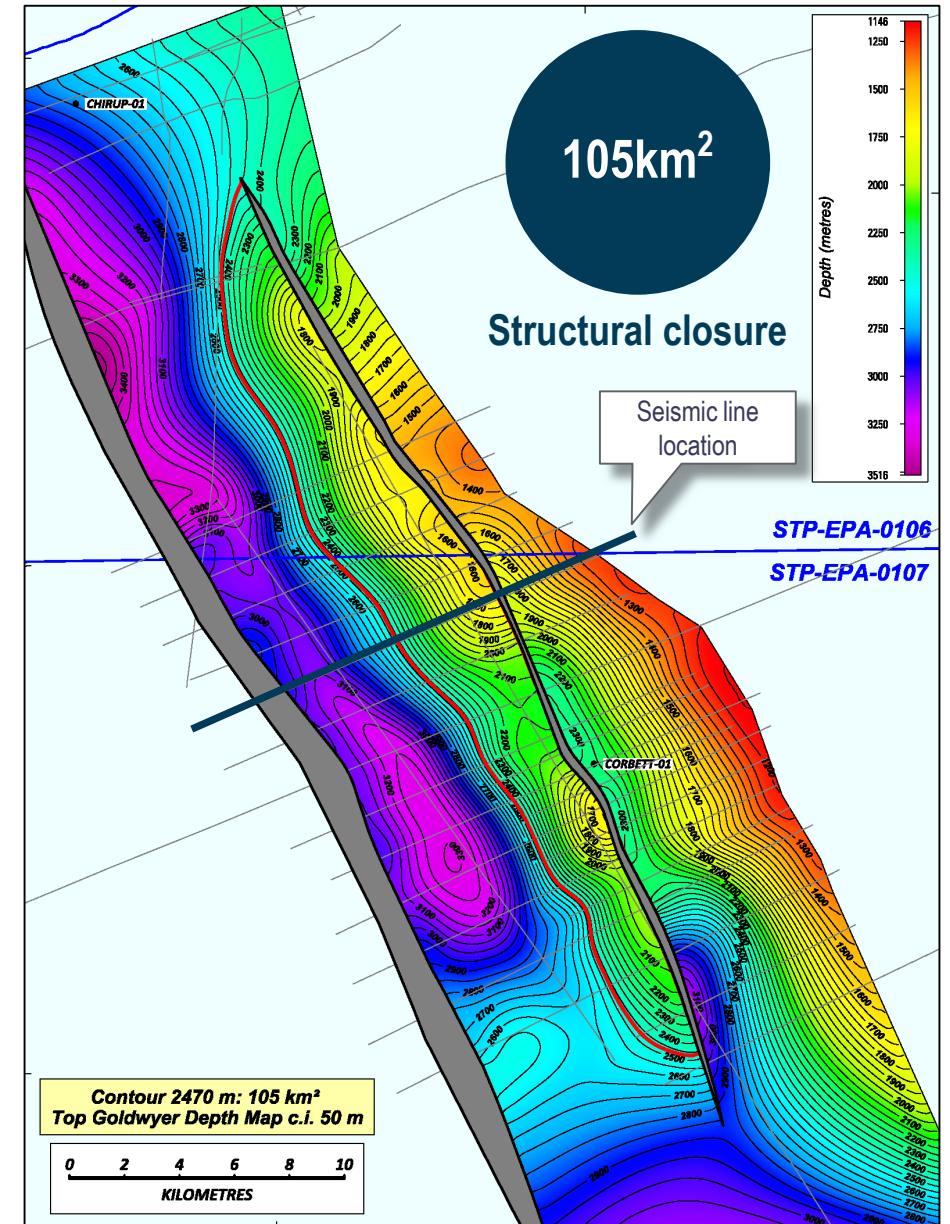
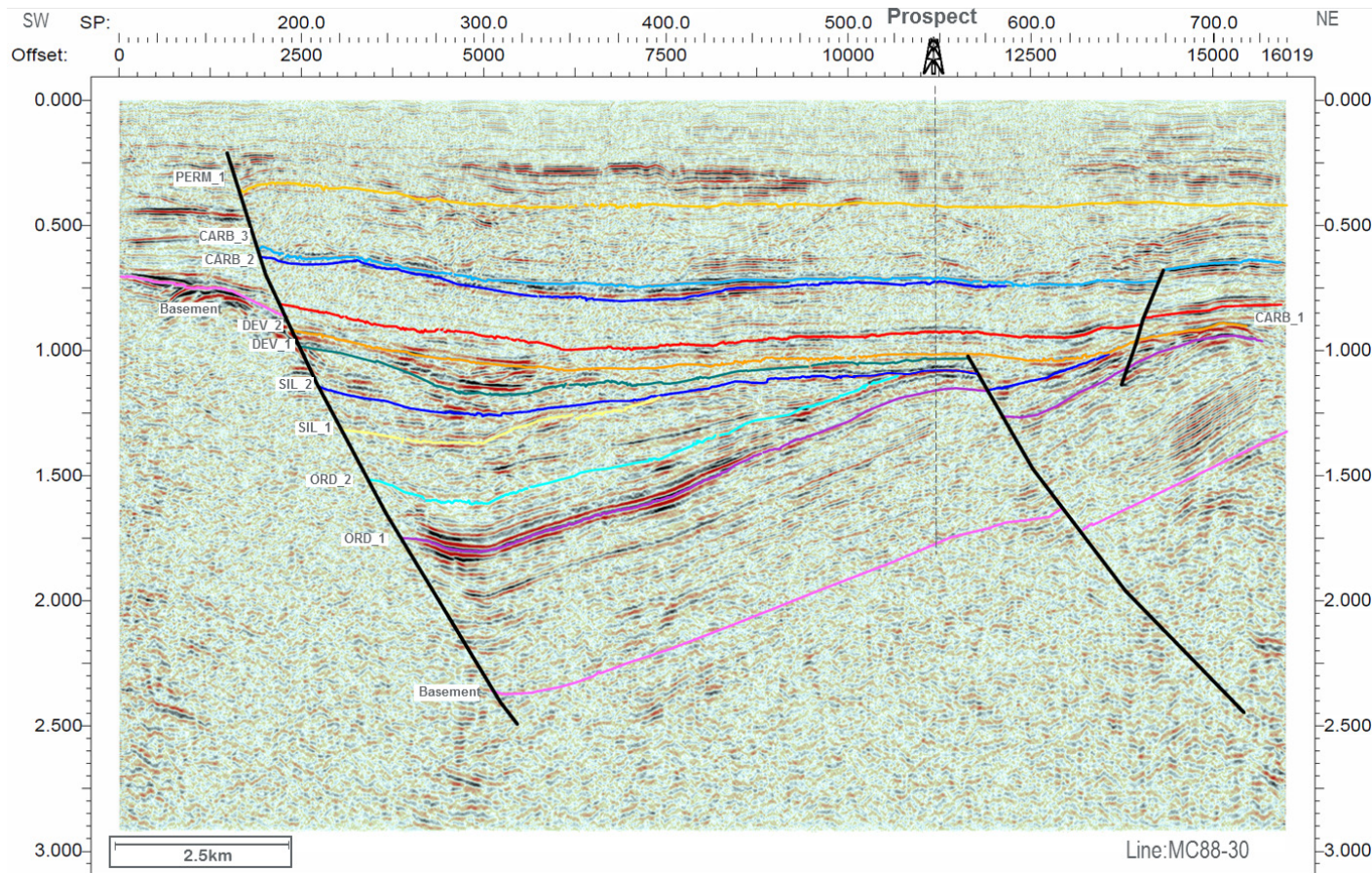
Magnetic Depth to Basement

# LARGE STRUCTURAL CLOSURES

ONLY 20% OF WALLAL GRABEN IS COVERED BY SEISMIC DATA

## Closures at multiple levels

- Tilted fault blocks with overlying drape

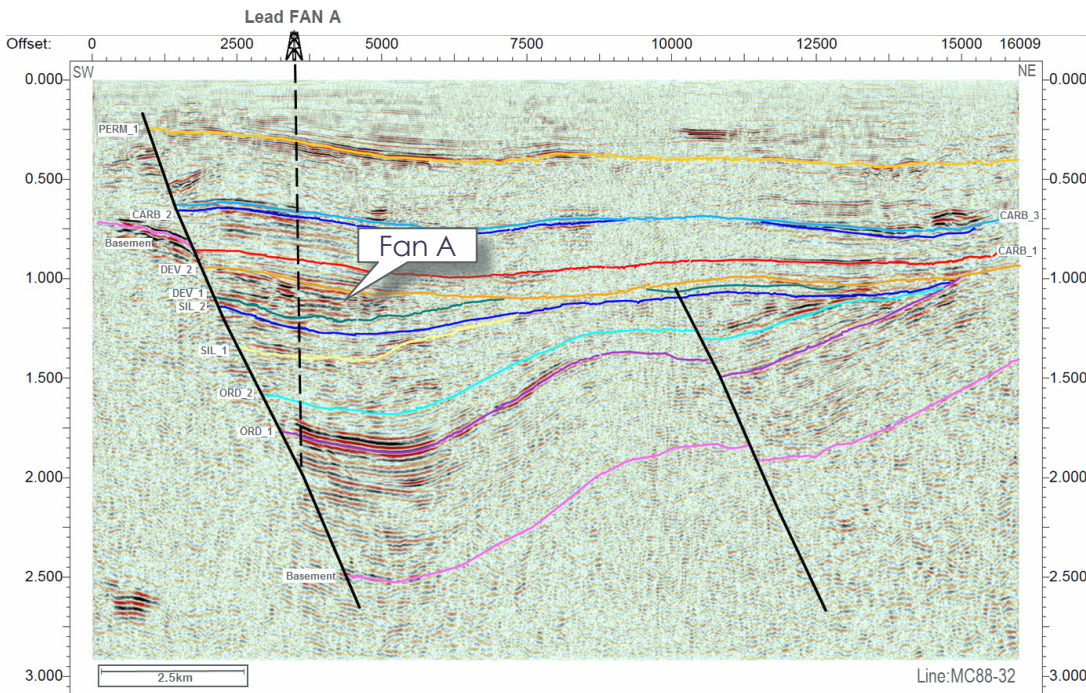
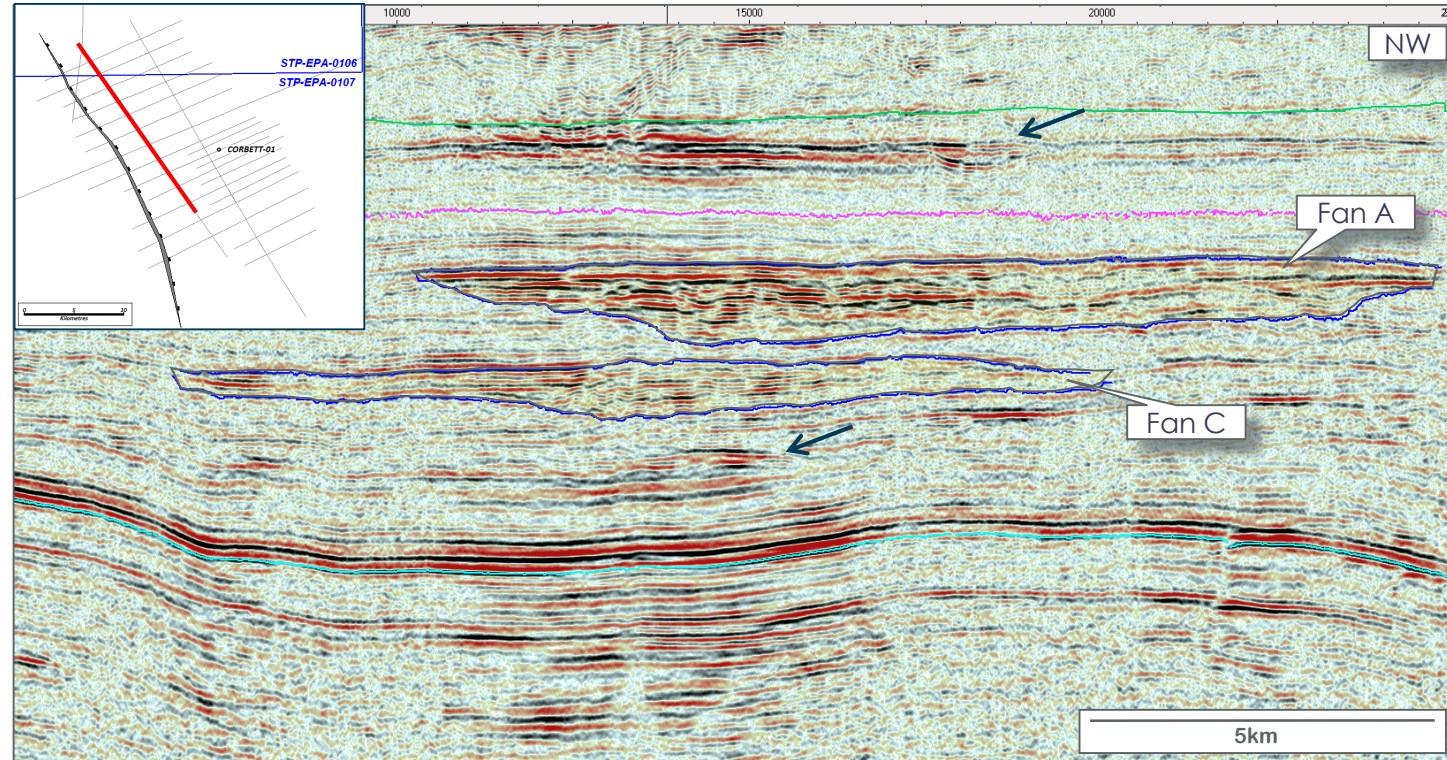


# EXTENSIVE FAN SYSTEMS

## CLEARLY-DEFINED

### Located along rift-bounding fault system

- Individual fan packages ~ 400 m thick
- Basal incision, differential compaction and internal channel bodies
- 3 way dip-closure against basin margin fault (~20 km long)
- Large stratigraphic upside



400m

Thickness

Stacked

Multiple systems

127km<sup>2</sup>

Areal extent

# SOURCE ROCKS

## ORDOVICIAN - GOLDWYER FM.

### Goldwyer Formation

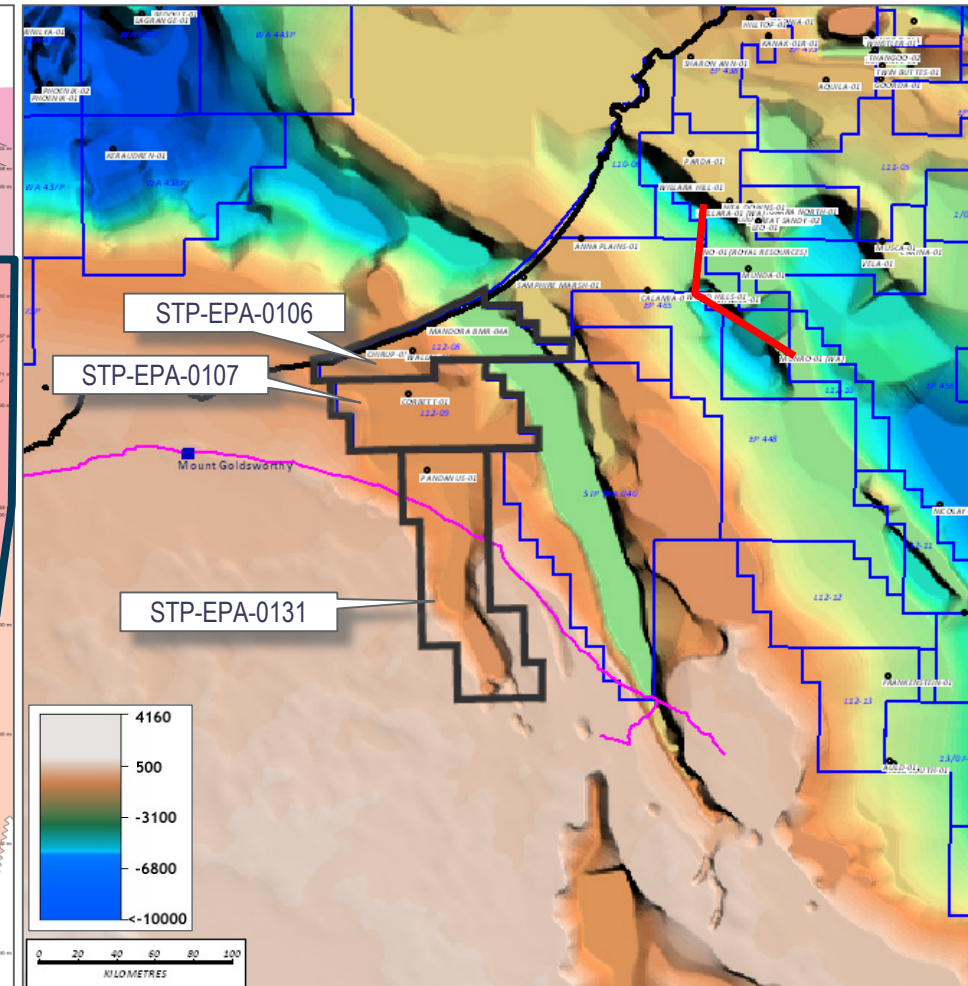
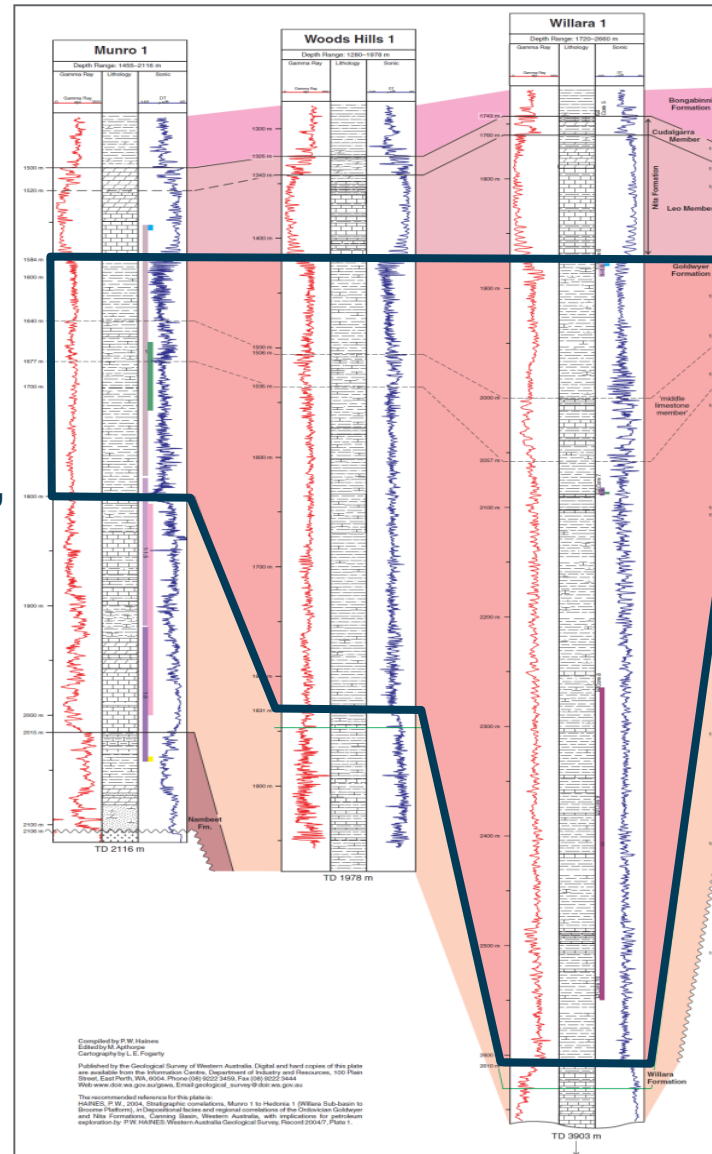
- >700m thick in nearby wells (150km)

### High concentrations of marine alga *Gloeocapsomorpha Prisca*

- Excellent source rock potential

### This alga also abundant in the Amadeus, Baltic, Michigan–Illinois and Williston basins

- All lay within 5° of the equator during the Ordovician





# SOURCE ROCKS

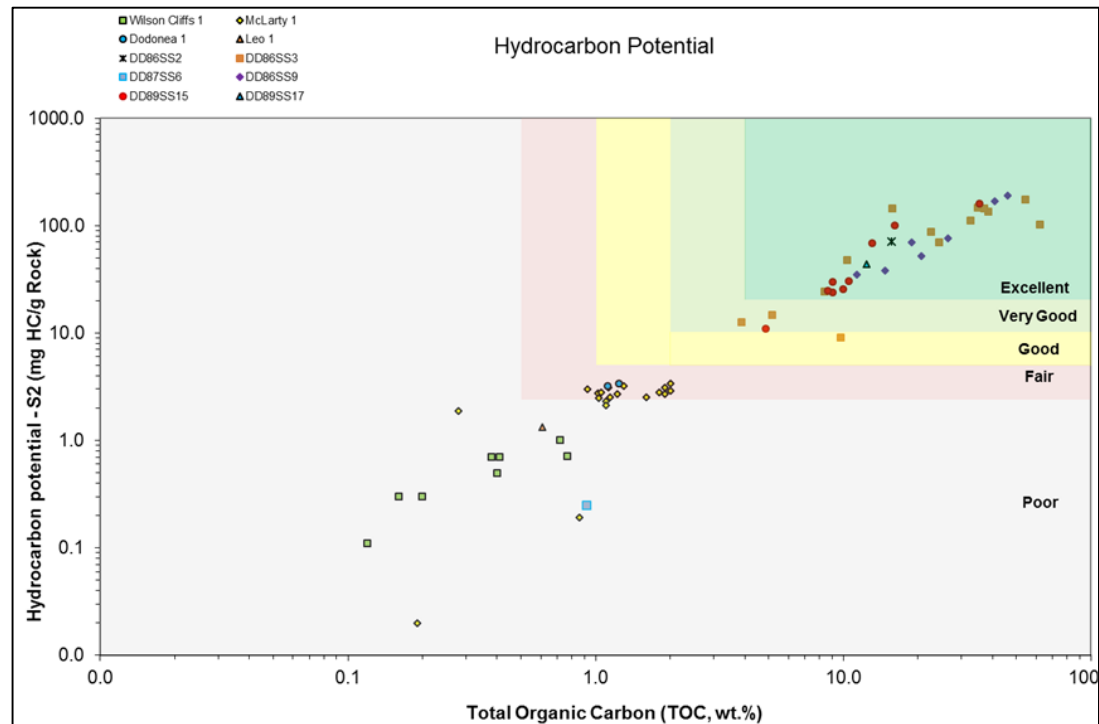
ORDOVICIAN - BONGABINNI FM.

Areas of local subsidence during deposition (e.g. the Admiral Bay Fault Zone and possibly the Wallal Graben)

- Facilitated a local system of restricted lagoons in which chemically-reduced/organic-rich sediments could accumulate

High TOC values with high potential yields

- Excellent source rocks



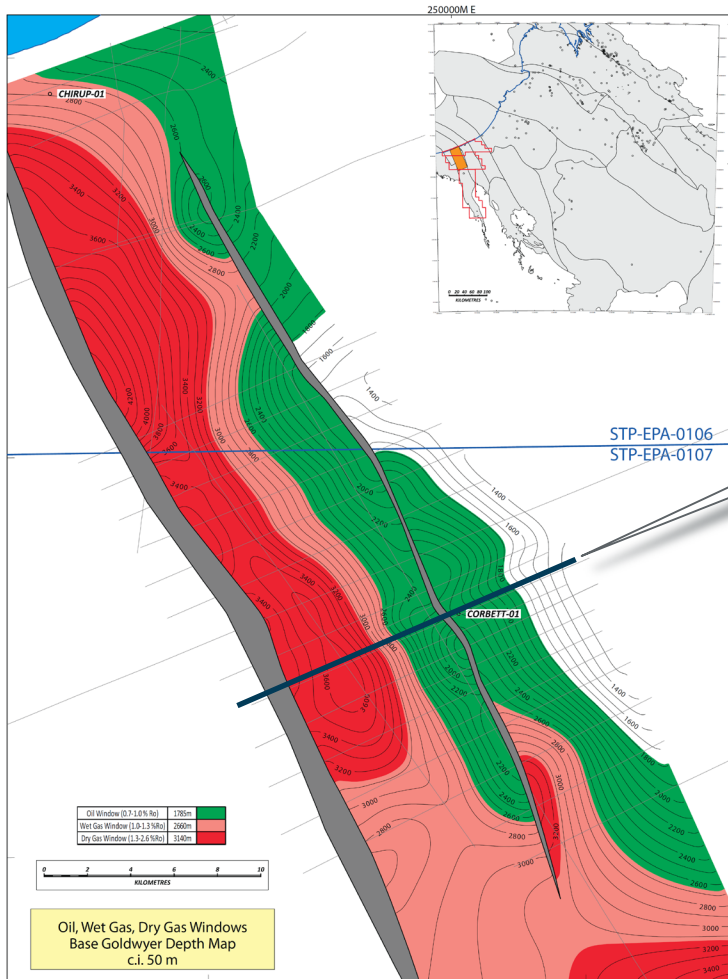
Bongabinni Formation core from mineral hole DD90SS21  
From Finder Exploration Presentation

# SOURCE ROCK MATURITY

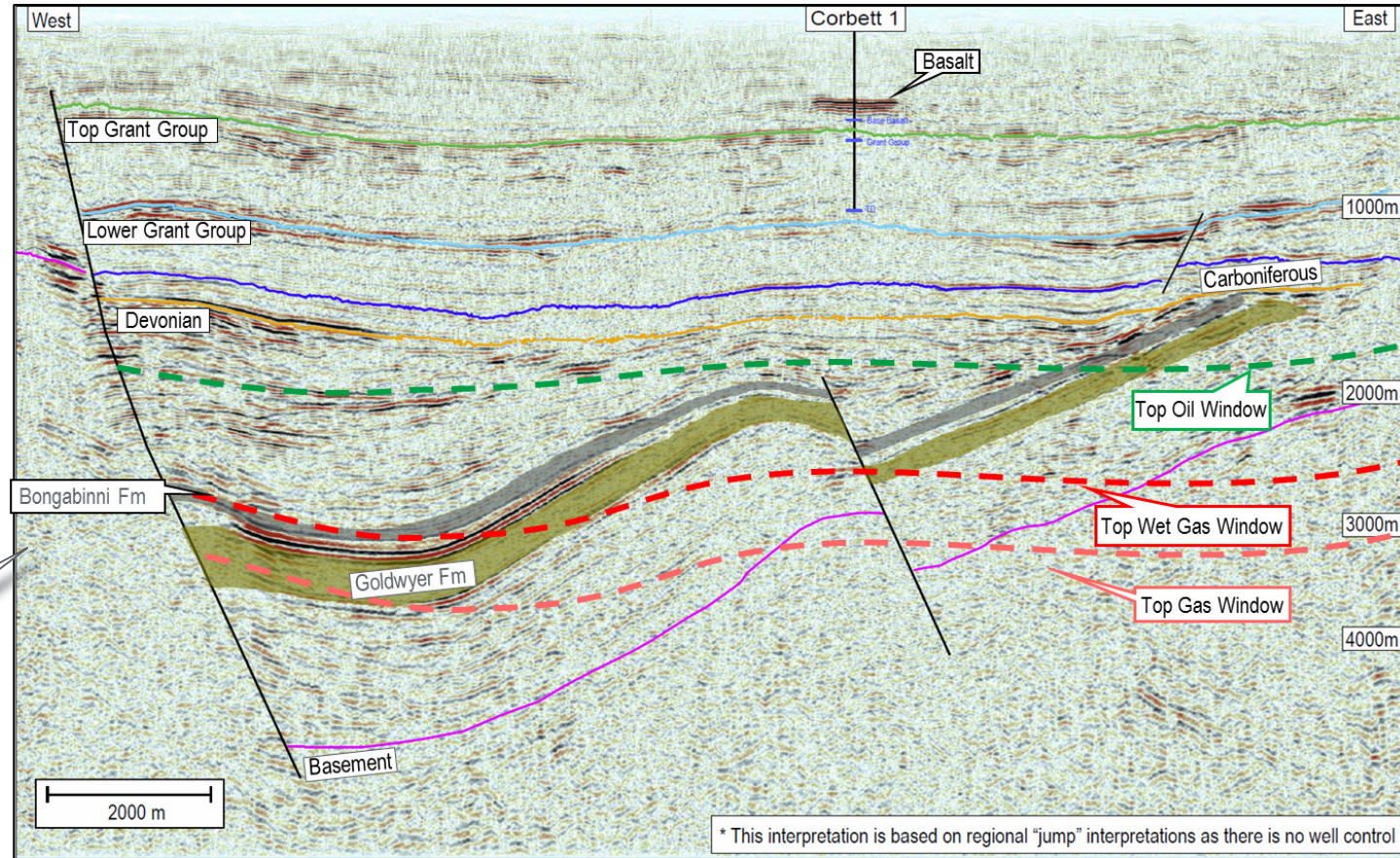
## BASIN MODELLING PROJECT

### Multiple source rocks modelled

- Bongabinni and Goldwyer Formations



Seismic line location



### Sensitivity analysis conducted

- Low, Most Likely and High cases simulated
- All indicate mature source within graben

### Potentially significant petroleum system

- Large areas of thick, mature source rocks

# EAST AFRICA RIFTS VS WALLAL GRABEN

## ANALOGOUS PLAYTYPES

### Tullow Oil – significant success in East African rifts

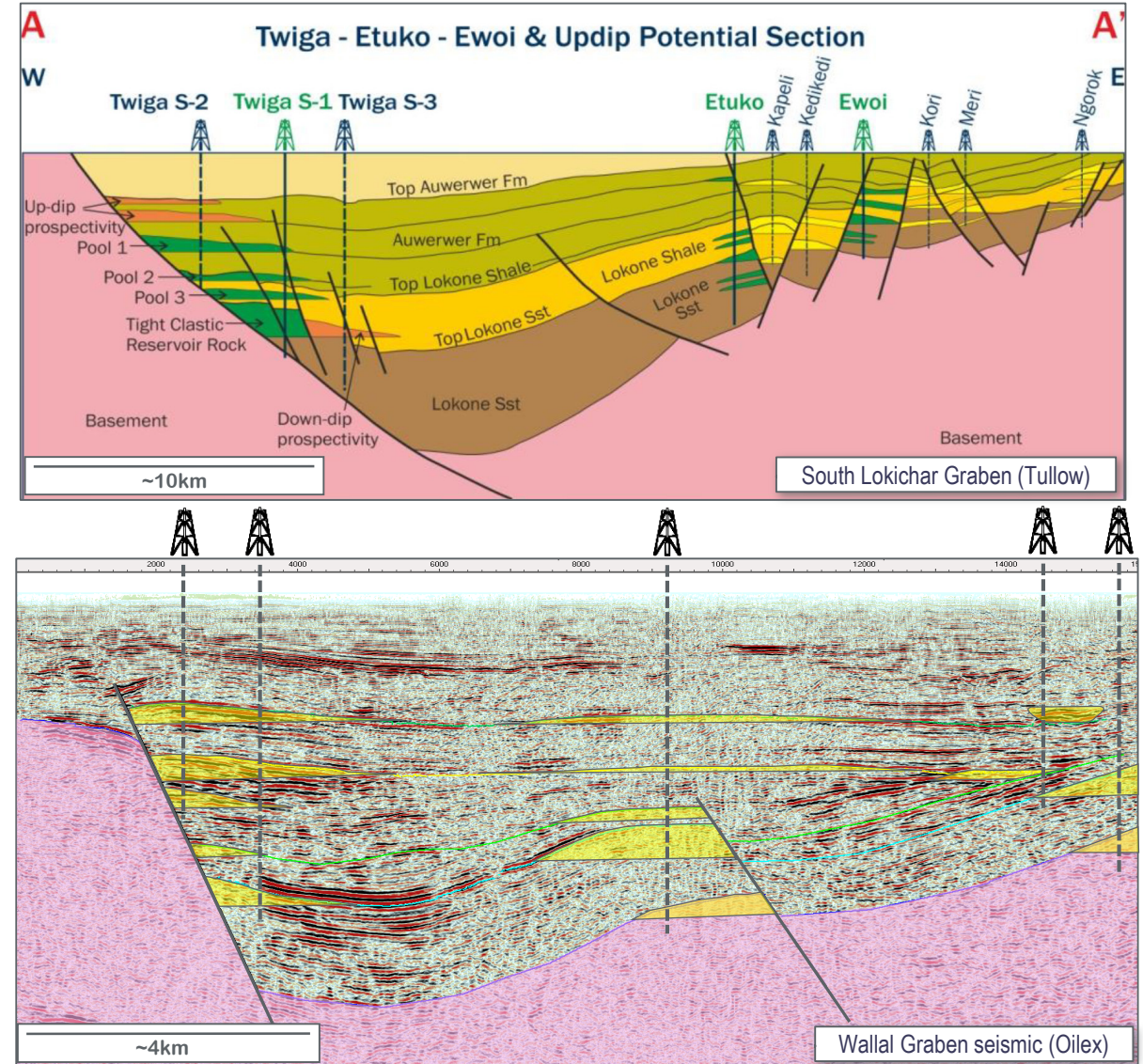
- Lake Albert Rift Basin – Uganda
  - > 1.1 Bbls discovered
- South Lokichar Basin – Kenya
  - 7 wells => 600 MMbbls

### Comparable identified play-types

- Different aged rocks

### Success aided by world's largest airborne Full Tensor gravity/mag survey

- Similar workflow being implemented



# UNIQUE CANNING BASIN LOCATION

ADJACENT TO GLOBAL RESOURCE CENTRE

## Adjacent to significant activity

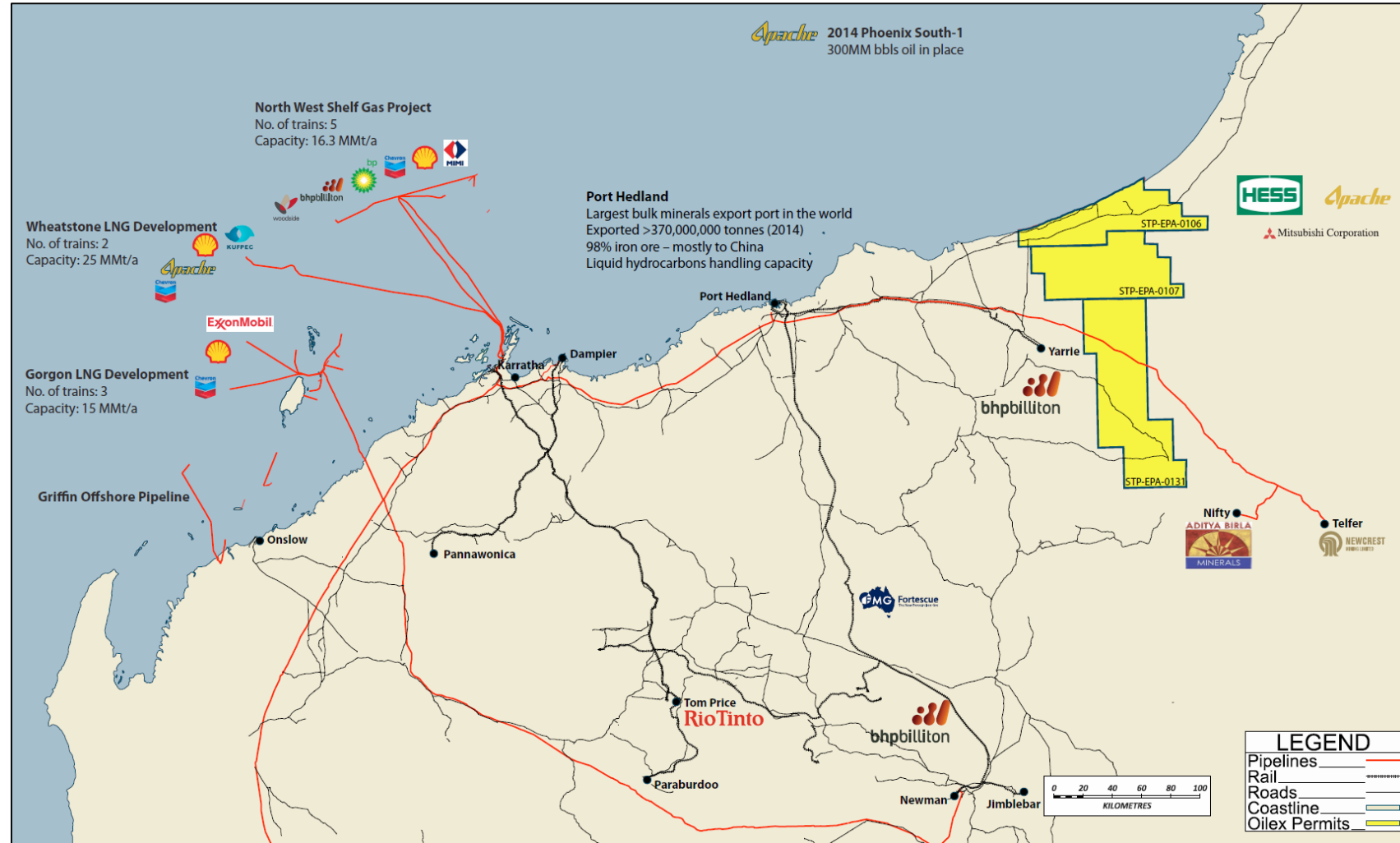
## Access to infrastructure

- Roads
- Pipelines
- Airstrips
- Rail

## Numerous paths to commercialisation

## Access to potential markets

- Surrounded by mining activity
- LNG projects
- Domestic gas obligation offset
- HC liquids easily transported



# OPPORTUNITY SUMMARY

## UNIQUE SITUATION IN CANNING BASIN

Secure equity in a large, undrilled graben

Entire play fairway captured ~3 million acres

Play-rich

- Deep half graben, large structures and fan geometries

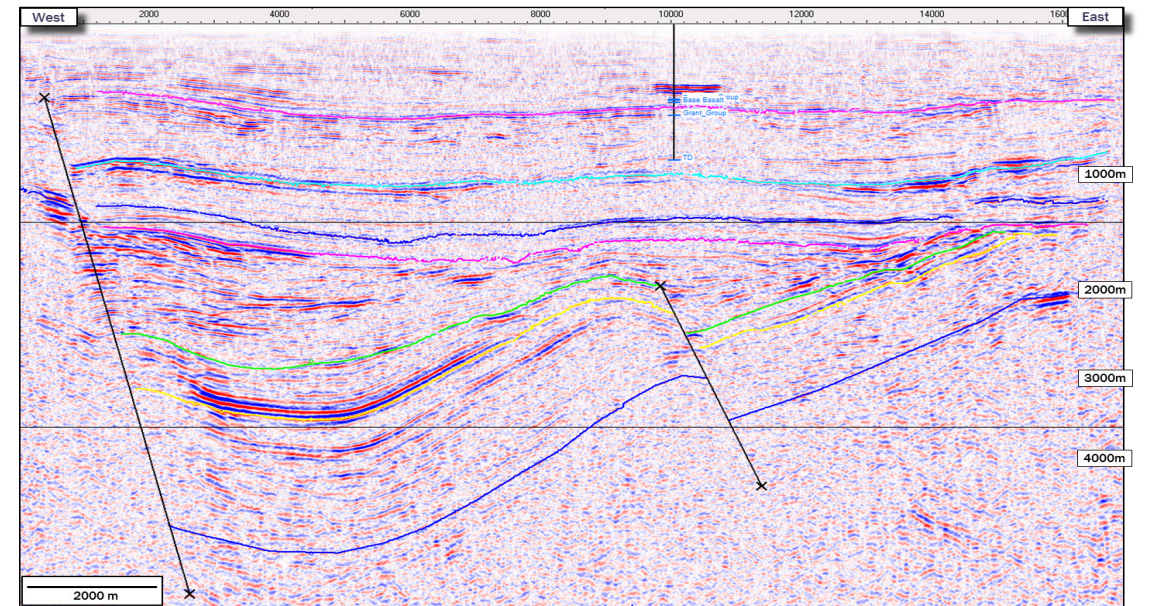
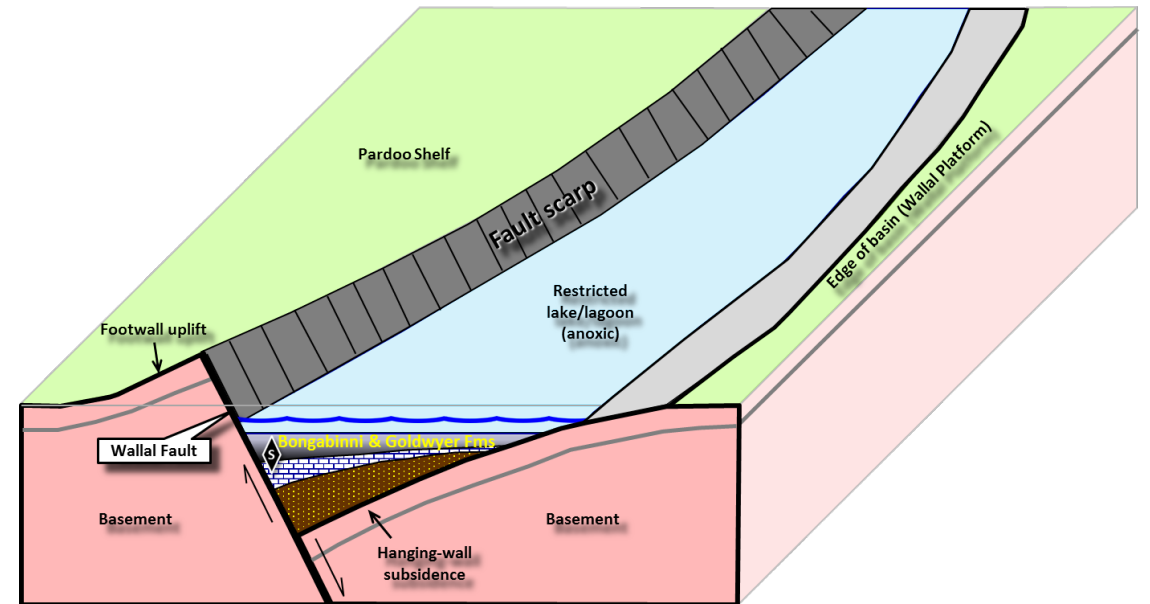
Conventional and Unconventional plays

Source rocks interpreted to be oil/wet-gas mature

Access to infrastructure and potential markets

Up to  
40%

Equity available





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