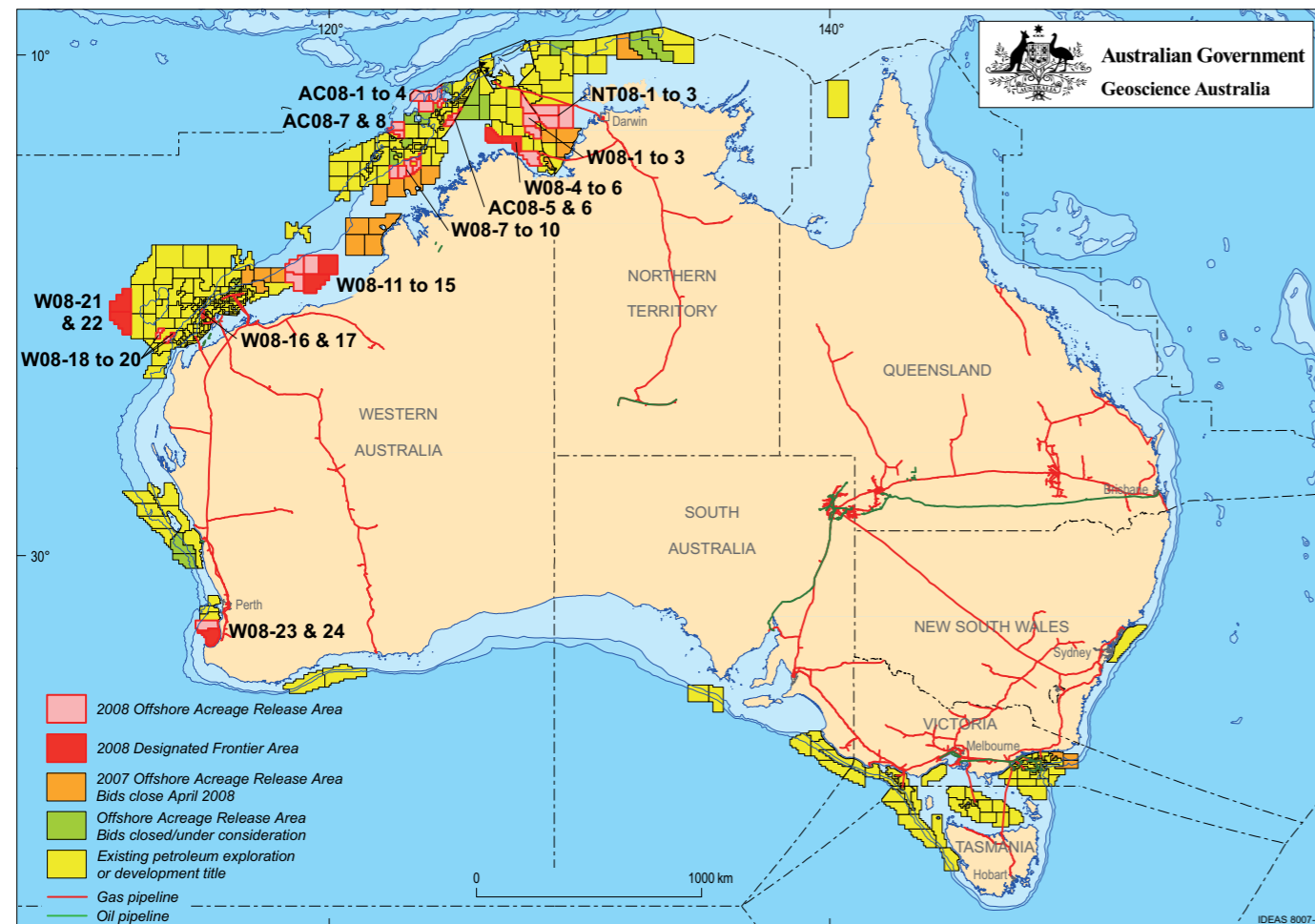


## 2008 Release of Offshore Petroleum Exploration Areas

The 2008 Offshore Petroleum Exploration Acreage release comprises 35 Release areas, located across five basins. The Release areas range from frontier to mature status and offer opportunities for exploration companies of all sizes.

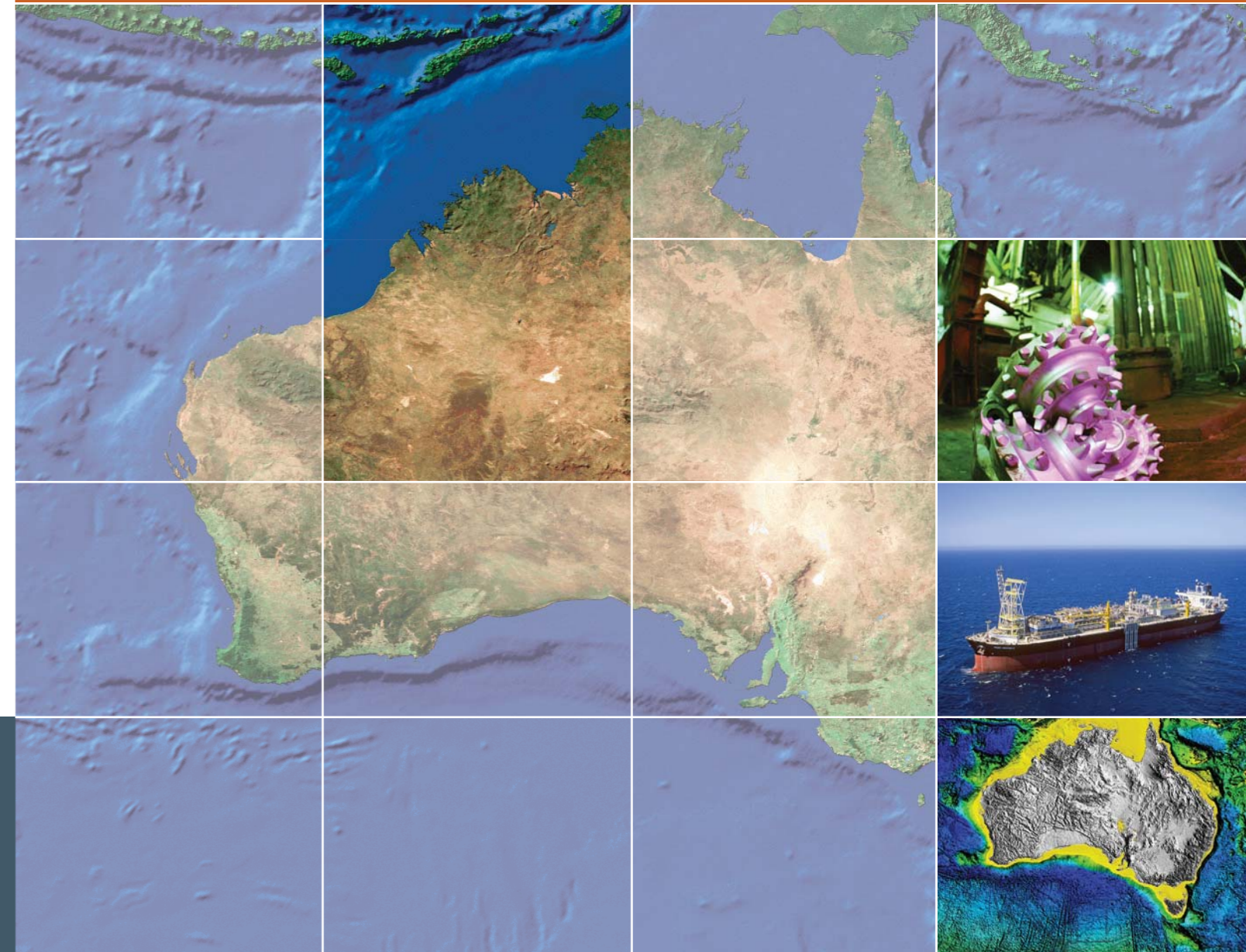
Comprehensive acreage release information packs can be obtained (free of charge) by emailing contact details to: [petroleum.exploration@ret.gov.au](mailto:petroleum.exploration@ret.gov.au)



# EXPLORE AUSTRALIA

## LONDONDERRY HIGH-BERKLEY PLATFORM BONAPARTE BASIN, WESTERN AUSTRALIA

Release areas W08-4, W08-5 and W08-6



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## BIDS CLOSE 9 APRIL 2009



Australian Government  
Geoscience Australia

# Current Exploration Opportunities in the Londonderry High–Berkley Platform, Bonaparte Basin Western Australia, Offshore Australia. Open for bids until 9 April 2009

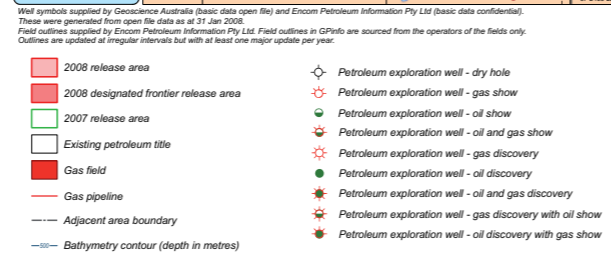
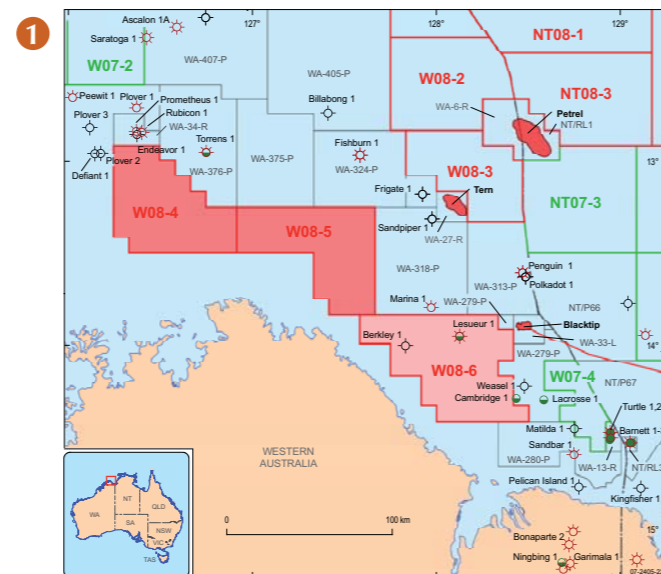
## Release areas W08-4, W08-5 and W08-6

- Designated Frontier Area Tax Concession applies to areas W08-4 and W08-5
- Under-explored, shallow water area adjacent to significant hydrocarbon discoveries
- Evidence of oil and gas generation, migration and accumulation
- Potential Palaeozoic petroleum system on the Londonderry High and along the margin of the Berkley Platform and Lacrosse Terrace
- Play types include horst blocks, rotated fault blocks, anticlines, stratigraphic traps, pinchouts and unconformity truncations
- Special Notices apply, refer to Guidance Notes.

## Geoscience Australia Reports/Products

- Oils of Western Australia II: Regional petroleum geochemistry and correlation of crude oils and condensates from Western Australia and Papua New Guinea. (2005) Geoscience Australia and GeoMark Research
- Source rock time-slice maps (TOC, HI, VR), offshore northwest Australia —1:3,000,000 scale. (2004) GeoCat # 61179
- Line drawings of Geoscience Australia's regional seismic profiles, offshore northern and northwestern Australia. (2001) GeoCat # 36353
- Interpretations of Geoscience Australia's regional seismic data, survey 98, 100, 116, 118, 119 and 130, (2001) — digital horizon and fault data in ASCII format. (2001) GeoCat # 35237, 35239, 35249, 35243, 35244, 35248 respectively
- Northwestern and northern Australia margins stratigraphic chart showing Geoscience Australia's interpreted regional seismic horizons. (2001). GeoCat # 36454
- Northern Bonaparte biozonation and stratigraphy chart 15. (1998). GeoCat # 24222
- Petrel Sub-basin biozonation and stratigraphy chart 1. (1996). GeoCat # 23333
- Bonaparte Basin biozonation and stratigraphy chart 32. (2008). GeoCat # 65649
- Characterisation of natural gases from West Australian basins: Bonaparte Basin module. (2000) AGSO and Geotechnical Services non-exclusive study
- Petrel Sub-basin geohistory modelling CD. GeoCat # 39676. GA Record 2002/17
- Petrel Sub-basin study 1995-1996:
  - Summary report. AGSO Record 1996/40
  - Gravity modelling. AGSO Record 1996/41
  - Organic geochemistry of oils and source rocks AGSO Record 1996/42
  - Geohistory modelling. AGSO Record 1996/43.

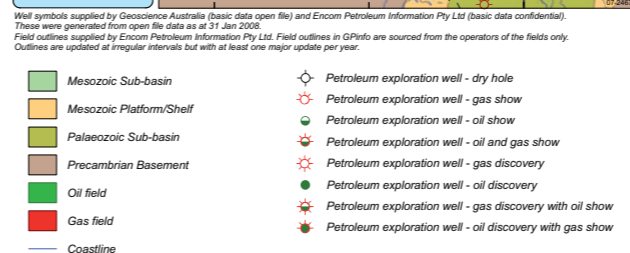
Contact Geoscience Australia's Sales Centre for more information or to order these reports or products, phone 61 (0)2 6249 9966, email sales@ga.gov.au



1. Location map of Release Area W08-4 on the Londonderry High, and Release areas W08-5 and W08-6 on the Berkley Platform, Petrel Sub-basin.
2. Regional setting of the southeastern Londonderry High and Petrel Sub-basin.
3. Stratigraphy of the Petrel Sub-basin and Londonderry High (after Jones et al, 1996; Gorter, 1998).

## Relevant Industry Data

- Australian North West Shelf Digital Atlas, [www.nwsda.com](http://www.nwsda.com)



Age (Ma)	System	Epoch	Group	Formation/Unit		Tectonics	Discoveries
				OFFSHORE	ONSHORE		
0-20	CENOZOIC	Quaternary	Woodroffe	Undt.		PASSIVE MARGIN Collision of Australian plate with Timor Regional Compression	
2-5		Oligocene		Undt.			
5-23		Eocene		Undt.			
23-66	CRETACEOUS	Late	Bathurst Island	Wangaru Formation	RIFTING POST-BREAKUP SEQUENCE	VALANGINIAN UNCONFORMITY	Saratoga 1
66-100		Early		Darwin Formation			
100-145		Early		Sandpaper Sandstone			
145-175	JURASSIC	Middle	Flamange	Frigate Formation	RIFT SEQUENCE	UNCONFORMITY	Ascot 1A Ester 1
175-200		Early		Plover Formation			
200-252	TRIASSIC	Late	Troughing	Malta Formation	NORTHEAST RIFT SEQUENCE	Thermal subsidence	
252-252		Mid		Cape Londonderry Formation			
252-252		Early		Mt Goodwin Formation			
252-271	PERMIAN	Late	Kimmeron	Hyland Bay Sub-group Cape Hay Fm Pearce Fm	PRE-EXTENSION PHASE	Thermal subsidence	Blacktip Petrel Tern Fishburn 1 Penguin 1 Polkadot 1
271-299		Early		Fossil Head Formation			
299-300	CARBONIFEROUS	Late	Nuchill	Treachery Shale Keyling Fm	NORTH WEST RIFTING POST-BREAKUP SEQUENCE	Reactivation of northwest rifting	Blacktip Turtle Tern Lesueur 1
300-323		Early		Kuriyippi Formation			
323-360	DEV.	Mid	Weaber	Saratoga Formation	NORTH WEST RIFTING RIFT SEQUENCE	Major salt diapirism	Turtle Lesueur 1 Lesueur 1
360-360		Early		Milligans Fm			
360-360	DEV.	Late		Langfield Group	NORTH WEST RIFTING RIFT SEQUENCE	BREAKUP Rapid subsidence	Turtle Weaber Waggon Creek 1 Keep River 1 Bonaparte 2 Vieta 1
360-360		Early		Bonaparte Formation			
360-360				Ningbing Group			
360-360				Cookatoo Fm			Garmala 1

## LONDONDERRY HIGH-BERKLEY PLATFORM PETROLEUM PLAY ELEMENTS

Source	Permian Keyling Formation and Hyland Bay Sub-group for gas. Early Carboniferous Langfield Group and Milligans Formation for oil and gas.
Reservoir	Early Carboniferous Milligans Formation, Late Carboniferous–Early Permian Kuriyippi Formation, Early Permian Treachery Shale and Keyling Formation, Late Permian Cape Hay and Tern formations of the Hyland Bay Sub-group, and the Early Triassic Mount Goodwin Formation.
Seal	Regional seals are provided by the Early Permian Treachery Shale, Early–Late Permian Fossil Head Formation, and the Early Triassic Mount Goodwin Formation. Intraformational seals include the Early Carboniferous Langfield Group and Milligans Formation, Middle–Late Carboniferous Point Spring Sandstone, Early Permian Treachery Shale and Keyling Formation, and Late Permian Cape Hay, Dombey and Pearce formations of the Hyland Bay Sub-group. Salt diapirs may provide effective seals.
Traps	Various styles of structural and stratigraphic traps that contain both sandstone and carbonate reservoirs at numerous stratigraphic levels.
Infrastructure and Markets	Designated Frontier Area Tax Concession applies to Release areas W08-4 and W08-5. South and south-southeast of the Bayu-Undan petroleum production facility.