

# KAROON REVIEW

February 2010



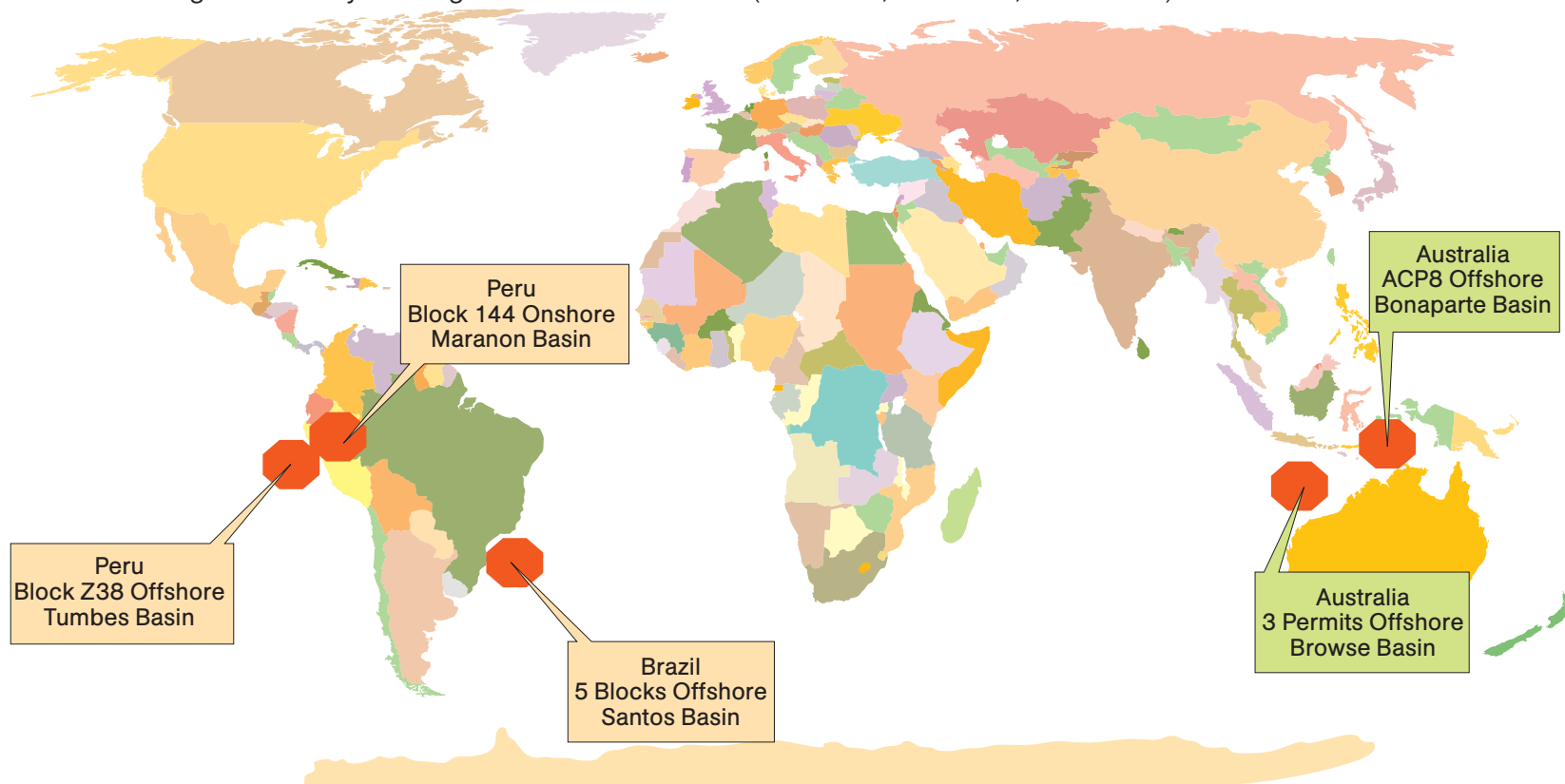
**KAROON**  
Gas Australia Ltd





## Karoon Gas snapshot

- Approximately 177 million shares and 8.4 million options
- Market capitalisation approximately A\$1.0 billion @A\$6.00
- Cash in bank A\$174 million
- Company in S&P/ASX 200 Index
- Browse Basin drilling program underway
- Poseidon-1 gas discovery Contingent Resource estimate (P90-3TCF, P50-7TCF, P10-15TCF)



- Karoon has a diverse portfolio of high value exploration and appraisal acreage in its Australian and South American focus areas.

## Karoon Gas Australia's key personnel

### Board

#### **ROBERT HOSKING** Executive Chairman

Founding Director of Karoon Gas with 30 years of commercial experience. Involved in the oil and gas industry for 15 years. Founding director of Nexus Energy.

#### **MARK SMITH** Executive Director and Exploration Manager

28 years' experience as a geologist and exploration manager in petroleum exploration and development, mainly with BHPB in Australia, Southeast Asia and North America.

#### **GEOFF ATKINS** Director

35 years' experience as a marine engineer with involvement with design and construction of LNG facilities.

#### **STEPHEN POWER** Director

25 years as a commercial lawyer providing advice to participants in the resources industry in Australia and overseas.

#### **SCOTT HOSKING** Company Secretary

International financial and commercial management background with expertise in equity capital raising.

### Technical

#### **LINO BARRO** Engineering Manager

28 years' experience in reservoir and development engineering with Delhi, BHPB & Kufpec.

#### **JORG BEIN** Geophysics Manager

41 years' experience as a geophysicist and manager with Exxon and BHPB.

#### **DAVID ORMEROD** Exploration Manager South America

20 years' experience as a geophysicist and manager with Petrofina, BHPB, Woodside, Sterling and Tap Oil.

#### **ANDREW MORRISON** Senior Geologist

25 years experience as a geologist with BHPB and Hamilton.

#### **HYWEL THOMAS** Senior Geophysicist

34 years experience as a geophysicist with BP and BHP

#### **HIEP LAM** IT Manager

10 years experience in IT most recently with Thomas Duryea.

#### **RALPH SPINKS** Drilling Consultant

40 years in the industry including 13 years with Phillips Petroleum.

### South American team

#### **JULIANO MACEDO** Brazil office Manager

28 years experience as a geologist and exploration manager, 18 years with Petrobras.

#### **JOSE COUTINHO BARBOSA** Brazilian advisor

Geologist 38 years with Petrobras rising to CEO.

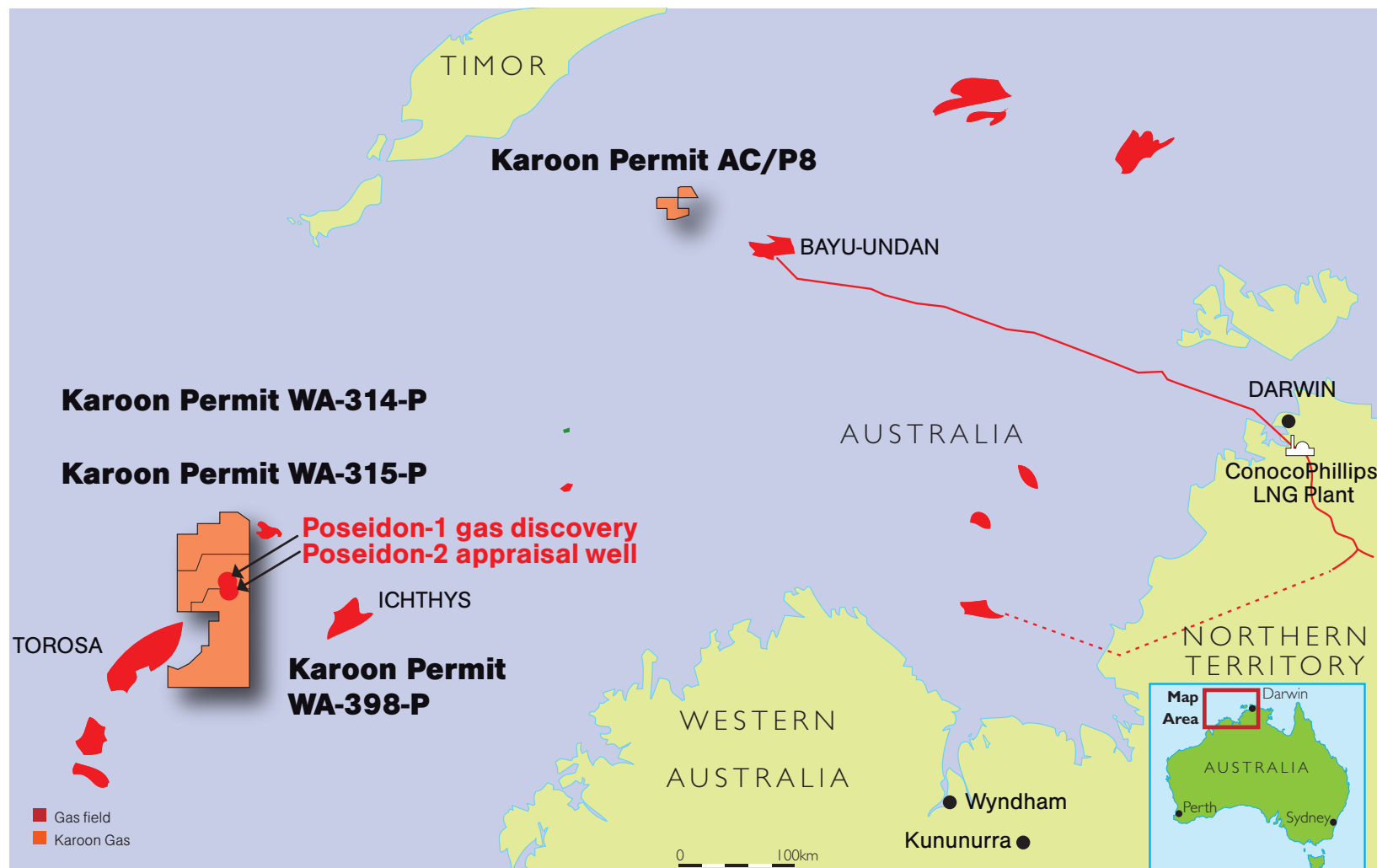
#### **CARLOS URIEN** South American Geologist

40 years with Belco Oxy & Noble.

#### **GUSTAVO BORJA** Peruvian advisor

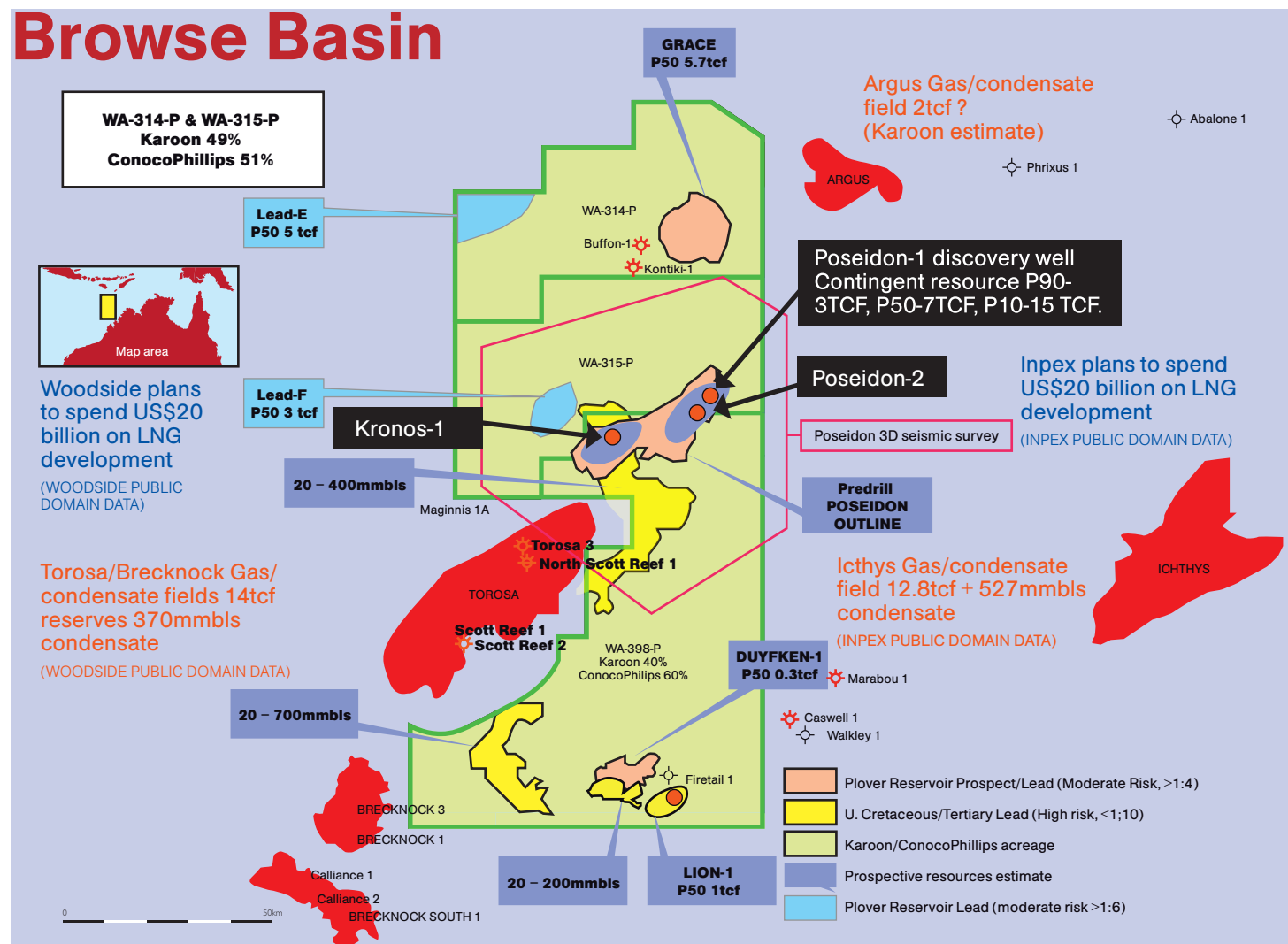
Geologist 35 years with Petroperu.

## Australian Assets



FEBRUARY 2010

# Browse Basin

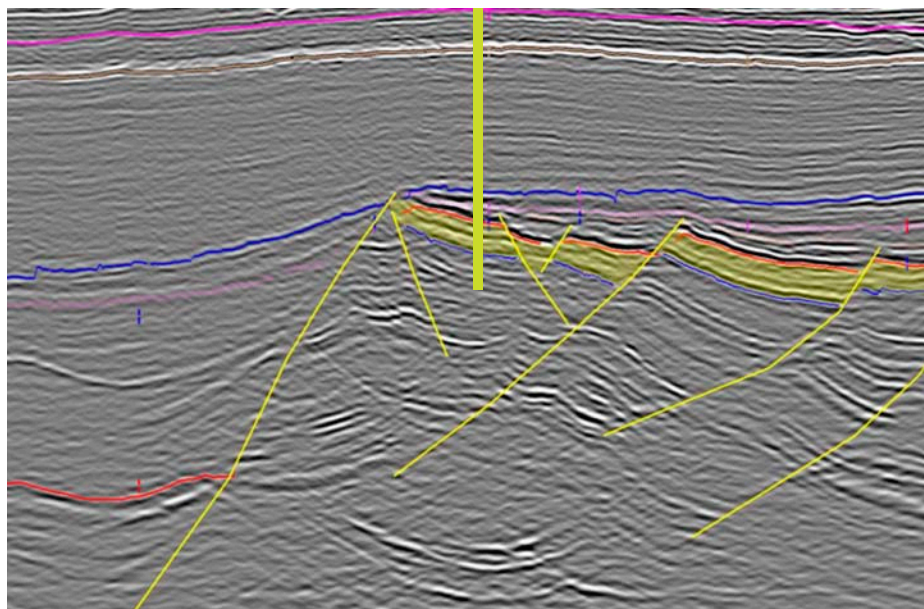


- A multi well drilling program commenced on 26 January 2009 with the spudding of the Poseidon-1 well.
- With respect to Karoon's Browse Basin Joint Venture, the disclosures presented in this review do not necessarily reflect the views of ConocoPhillips.
- Prospective resource estimates represent current interpretations by Karoon of available exploration data and are subject to material change and reinterpretation as exploration and appraisal proceeds.



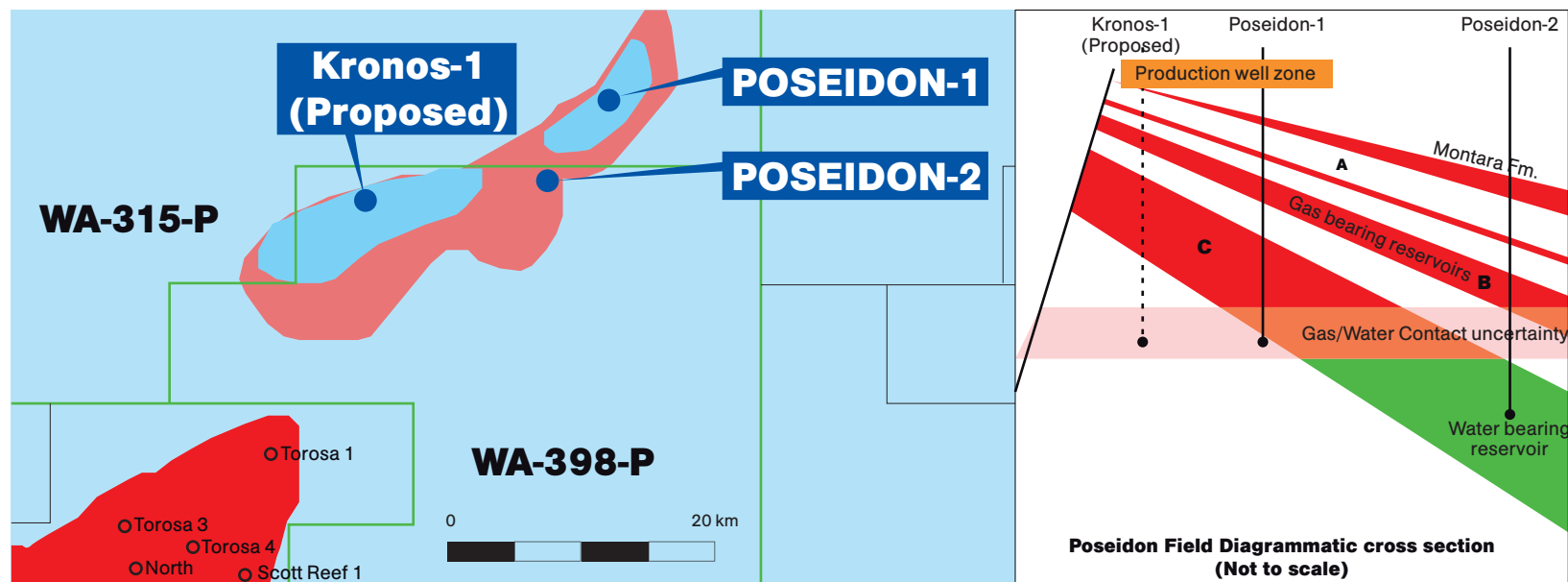
## Browse Basin - Poseidon-1 Gas Discovery

### Poseidon-1 well location and seismic section



- The well has penetrated a 317m gross gas bearing Plover Formation. over the interval 4795 to 5112 mRT with three gross gas bearing sands totaling 228m.
- Wireline pressure testing of four data points and sampling (MDT tool) in the lower sand interval shows a gas gradient, indicating that the reservoir contains gas.
- The gas water contact has not been penetrated, indicating the potential for additional gas below the total depth of Poseidon-1.
- Estimations of reservoir permeability (indicative of flow rates) based on log derived porosity and four pressure data points, suggest that reservoir section will flow gas.
- As Karoon has currently mapped, the well is located over 100m below the trap crest of the Poseidon structure with an interpreted gross gas column for the structure of over 430m. The area of the structure as currently mapped is around 280 square kilometers. Remapping is underway.
- Karoon's analysis of seismic and well results to date indicate the Contingent Resource discovered in this well is likely to be consistent with or exceed Karoon's pre drill prospective resource range (P90-3TCF, P50-7TCF and P10-15 TCF).

## Browse Basin – Poseidon-2 results



- Plover-B DST testing program (5039-5060 & 5085-5100mRT). was completed. Gas to surface at a maximum rate of 850scf/d on a 1"choke. Based on the low permeability measured in the B sand core, Karoon interprets that higher flow rates are achievable. Restricted flow resulted in part from completion brine being present in the well.
- Lowest proven movable gas now at least to 5040mrt.
- Preliminary gas composition shows high methane content, some associated heavier hydrocarbons and low CO<sub>2</sub>.
- Montara DST failed to establish connection with the reservoir.

## Browse Basin – Poseidon-2 well results

### Plover Formation

- Met the objective of establishing continuity of the gross sand intervals and intervening shales over a large part of the field in a down dip expanded Plover Fm. interval.
- DST and coring objectives were to recover gas samples and pressures and to prove that gas in the poorer quality B sand interval in this down dip location would contribute gas to planned production wells on the crest of the field.
  - DST's proved log interpretation results, identifying the presence of movable gas and adequate reservoir quality in the B interval reservoirs.
  - Karoon reservoir simulation modeling of the Plover-B core measured permeability at this downdip location indicated that the reservoir is sufficient to contribute to overall field gas recovery.
- Well results are considered unlikely to materially impact the Karoon pre-drill P90 3TCF, P50 7TCF and P10 15TCF Poseidon Contingent Resource range estimates for the Plover reservoirs.

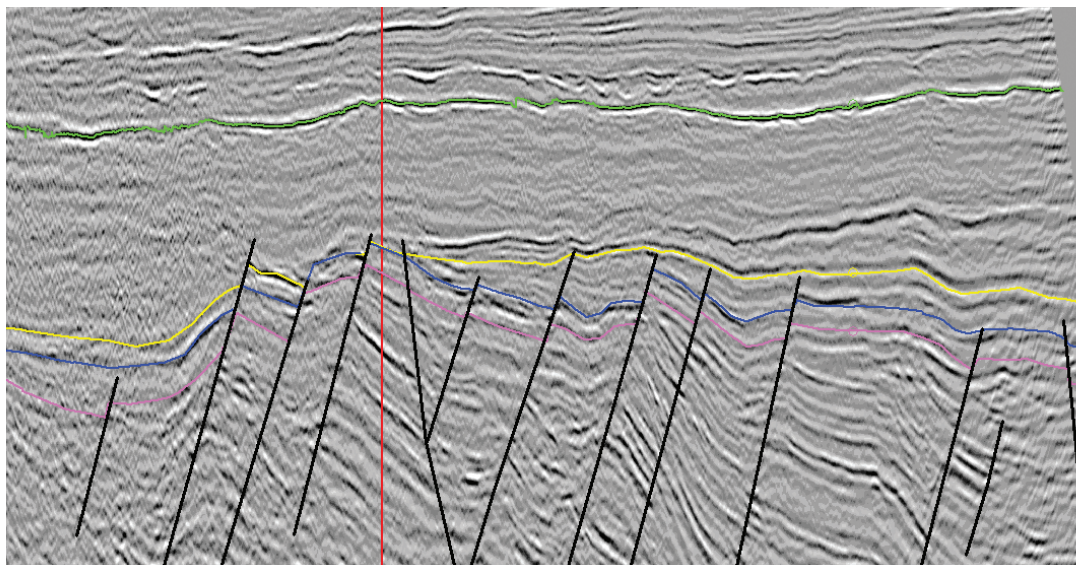
### Montara Formation

- Discovered a new Montara Formation gas reservoir.
- 20m gross sand interval showed good petrophysical response indicating a gas charged reservoir.  
Flow from the formation during subsequent drilling had to be checked with higher mud weights (permeability indicator).
- Additional Contingent Resource potential is possible from the Montara Formation.

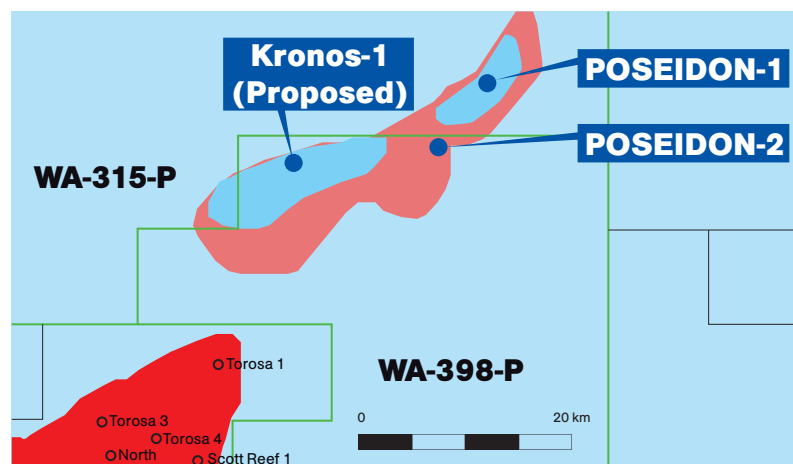


## Browse Basin - Kronos-1

Kronos-1



- The next well to be drilled is Kronos-1
- Kronos-1 is located on the south-western high of the greater Poseidon structure. This well is designed to test interpreted higher quality Plover Formation C sand interval reservoirs located high on the structure and also to test Plover Formation B sand interval reservoirs updip from the Poseidon 2 well.
- The well is designed to provide an indication of commercial production rates from possible future development production wells.



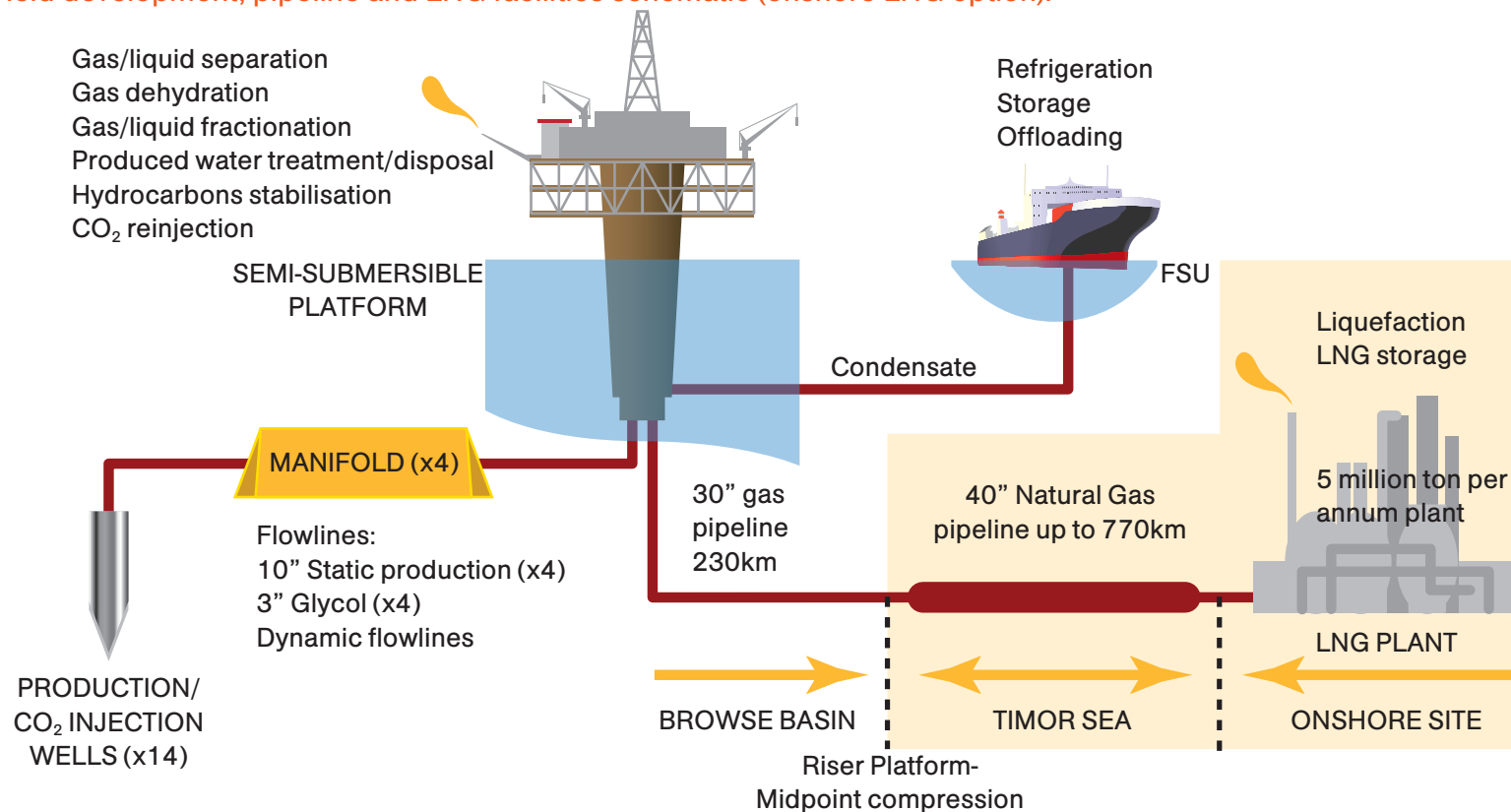
## Browse Basin – Indicative Time line

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## Indicative project concept

Karoon LNG/condensate indicative development model economics  
(assuming a discovery of 7 TCF and based on independent third party design concepts).

Field development, pipeline and LNG facilities schematic (onshore LNG option).



### LIQUID PRODUCTS ASSUMPTION

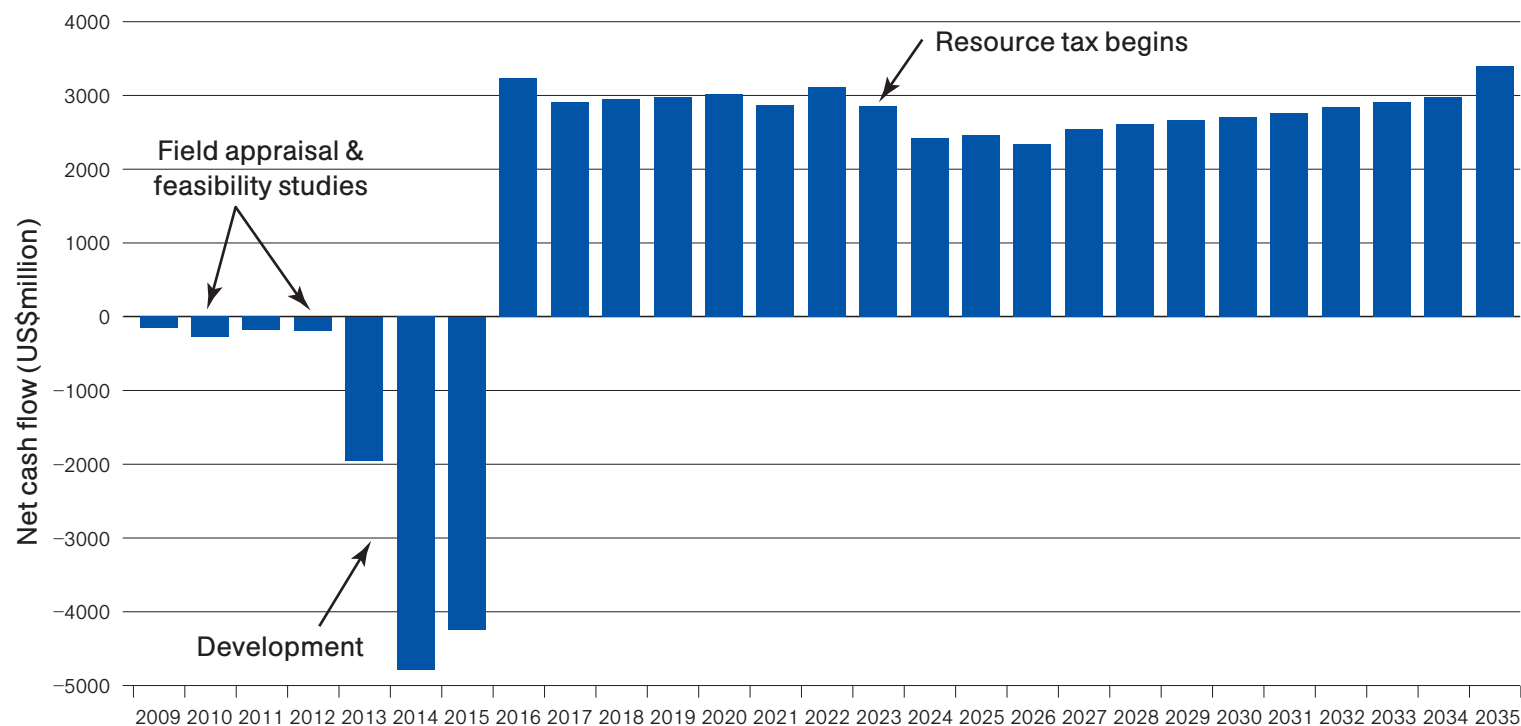
**Condensate 30bbls/million cubic feet**



## Combined net cash flow

Karoon LNG/condensate indicative development model economics.

Net cash flow for combined offshore liquids removal and onshore LNG – 100% Share.



**Project NPV US\$6.9 Billion, IRR 20%**

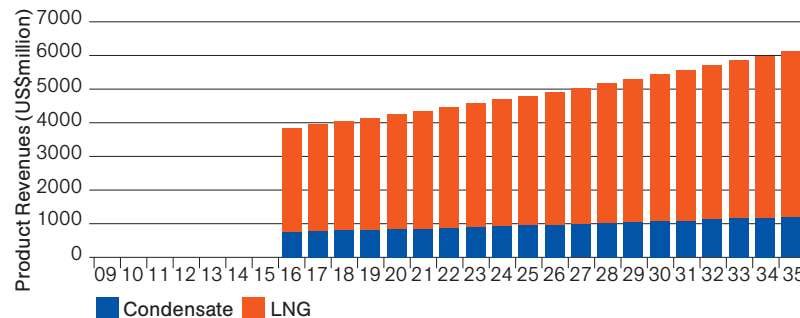
**Assumptions: Condensate US\$70/bbl, LNG US\$10/mmbtu**

Royalty: 1.5% ORR for first 5 years going to 2% thereafter (not included)

### Karooon indicative development model economics.

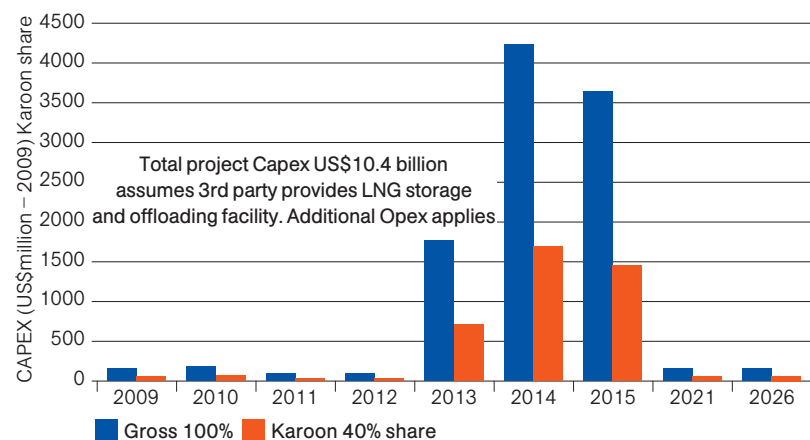
#### Product revenues

Product revenues for combined offshore liquids removal and onshore LNG – 100% Share.

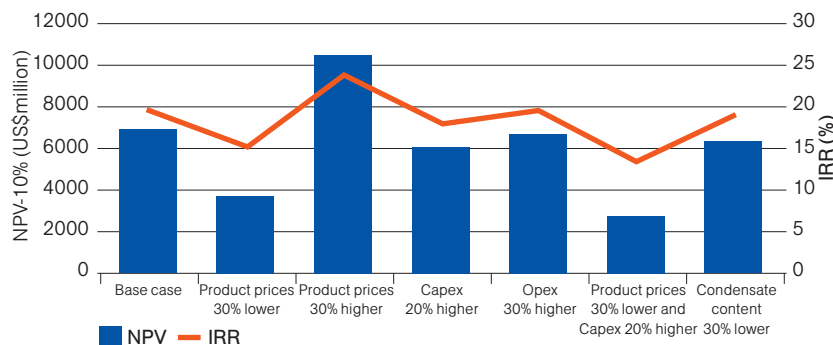


#### Capex profile

– 2009 US dollars

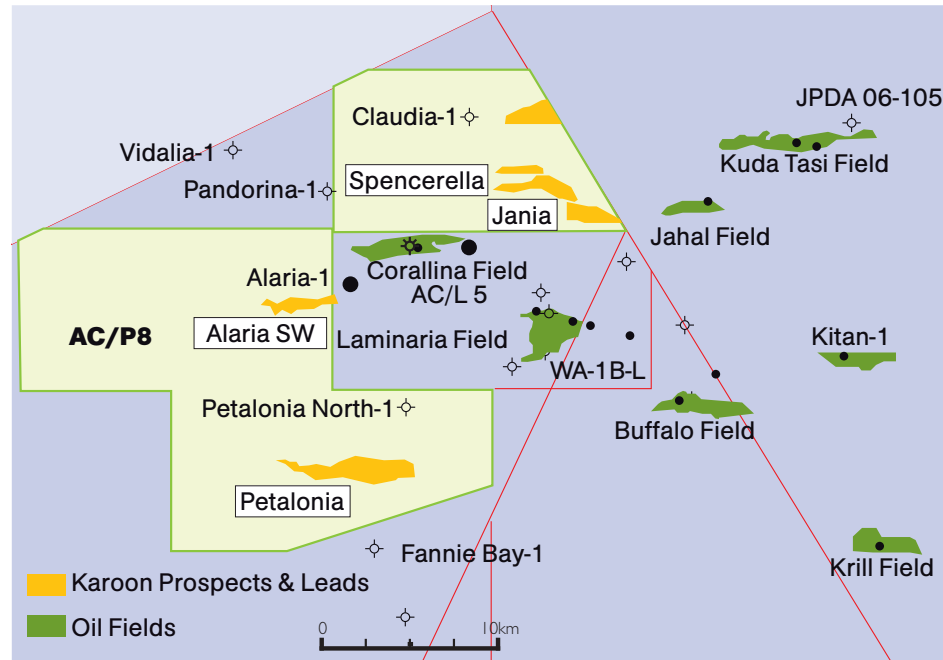


#### Economic sensitivity analysis



**Total Karoon Capex = US\$4.2 billion**  
**Total Capex = US\$10.4 billion**

## AC/P8



**Location:** Close to the Laminaria/Corallina production facility with production tie in potential.

**Potential:** Main prospect 'Jania' with up to 20mmbbl potential prospective resource.

5 additional leads with similar size potential.

**Interest:** 66% equity purchased from Woodside Petroleum.

Talisman Energy 33%.

**JV work program:**

Year-1 work program start date  
3 October 2008.

Requires more geological and geophysical studies to identify targets for drilling.

**Forward plan:**

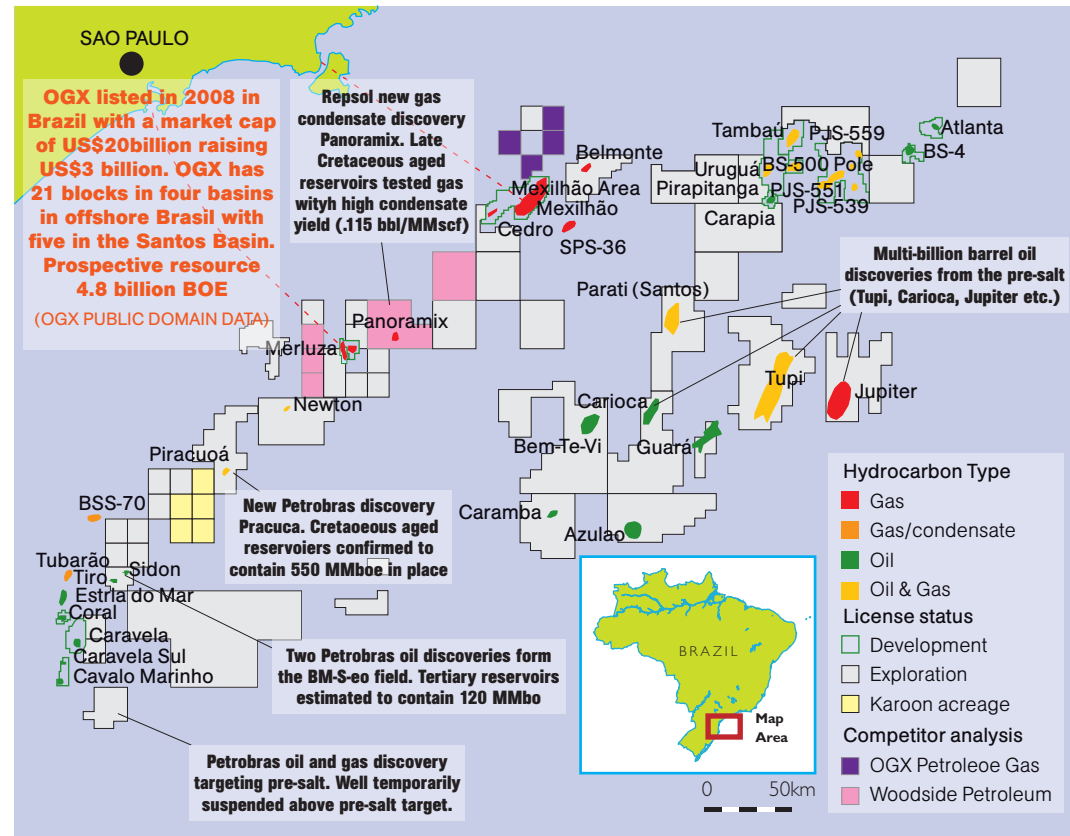
Perform CSEM survey 2010.

Drill option in 2012.

Karoon activity	2008				2009				2010				2011				2012			
Indicative time line (@Oct 09)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>BONAPARTE BASIN (Aust)</b>																				
AC/P8 Interpretation																				
CSEM survey																				
Interpretation																				
Drilling (optional w/ CSEM success)																				



# Brasil Santos Basin



**Location:** Santos Basin shallow water 300-400m, on trend with Caravela, Piracuca, Newton and Merluza fields.

**Potential:** 3 main leads each with 100 to 300mmbls oil and/or multi TCF potential Prospective Resources.

Additional leads potential recognised but yet to be defined.

**Interest:** Karoon 100% equity from bid round.

## JV work program:

3 year Work Program.

Awarded March 2008.

Purchased 3D seismic for PSDM.

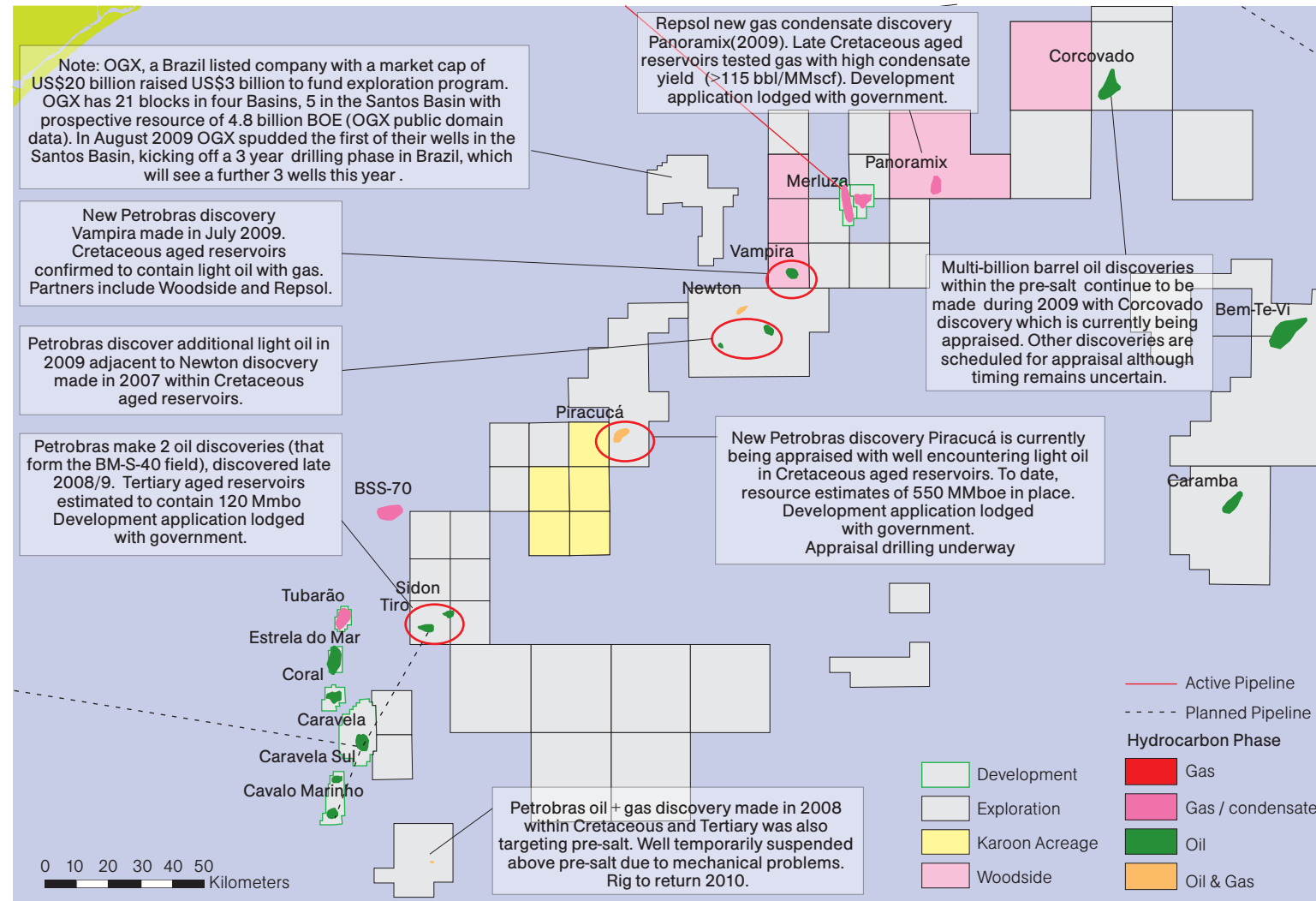
Acquire 510 sq km. 3D over three blocks.

## Forward plan:

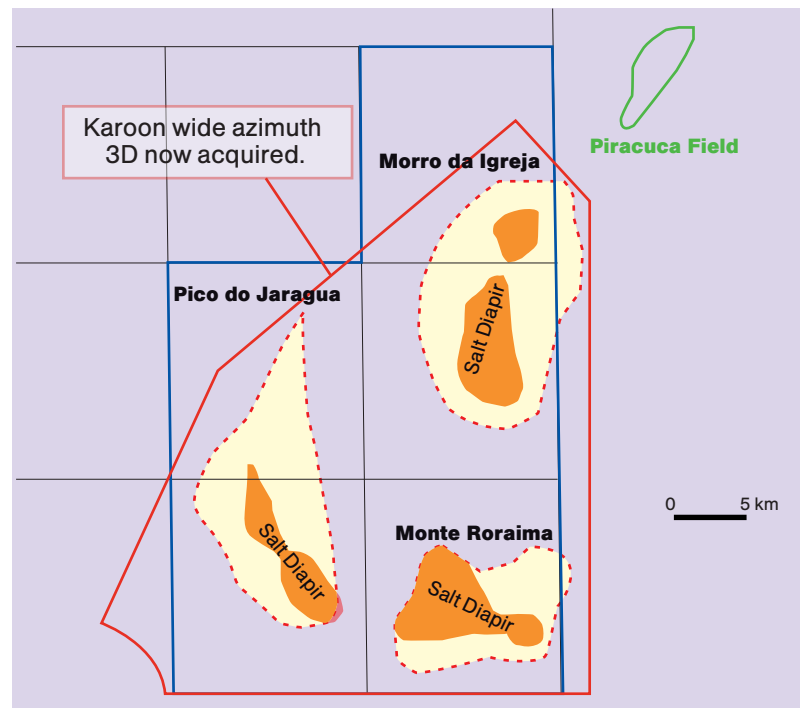
Acquire 3D seismic in 2010 (750 square km), (survey started Feb 9 2010)

Drill in 2011

# Brasil Santos Basin - Recent activity



## Brasil Santos Basin - Prospects

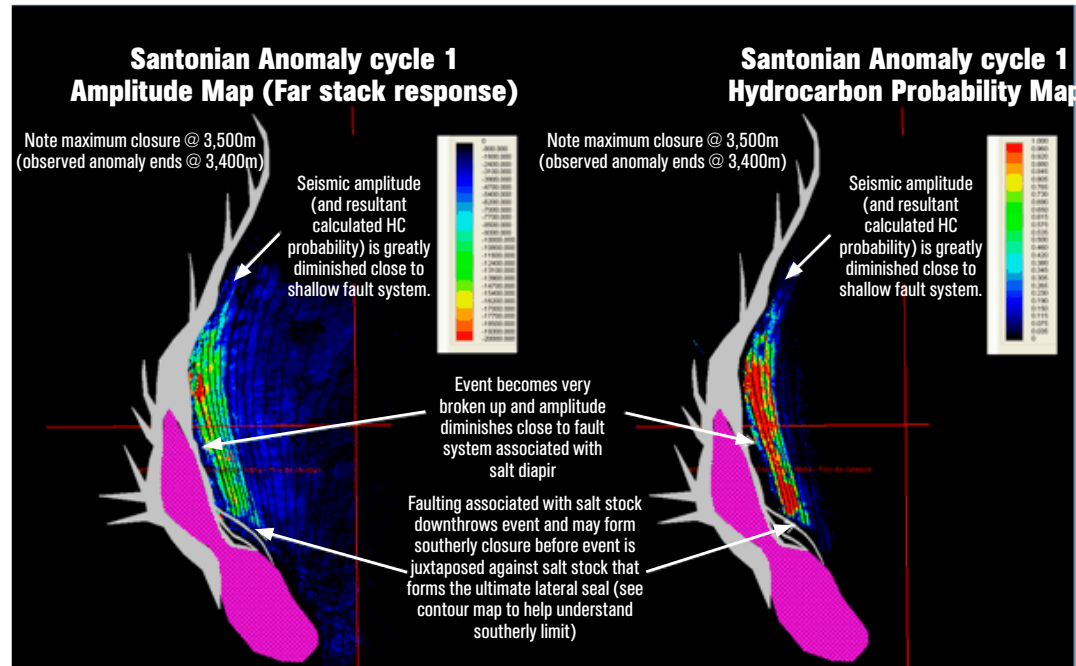


Prospect	Reservoir	Mean Rec Oil (mmbbls)
Pico do Jaragua East	Santonian	260
	Maastrichtian	138
Pico do Jaragua West	Maastrichtian	228
Morro da Igreja East	Santonian	~250
Monte Roraima North	Maastrichtian	~200
Monte Roraima South	Maastrichtian	~200

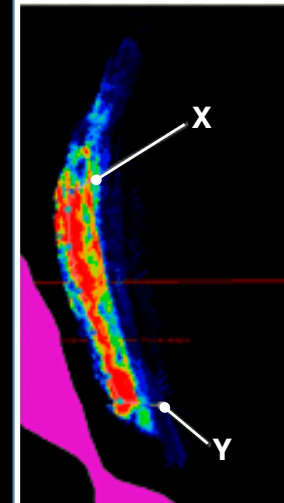
- 3D interpretation complete for post salt prospects.
- Total Prospective Resource over 1 billion barrels unrisked.
- Farmout underway



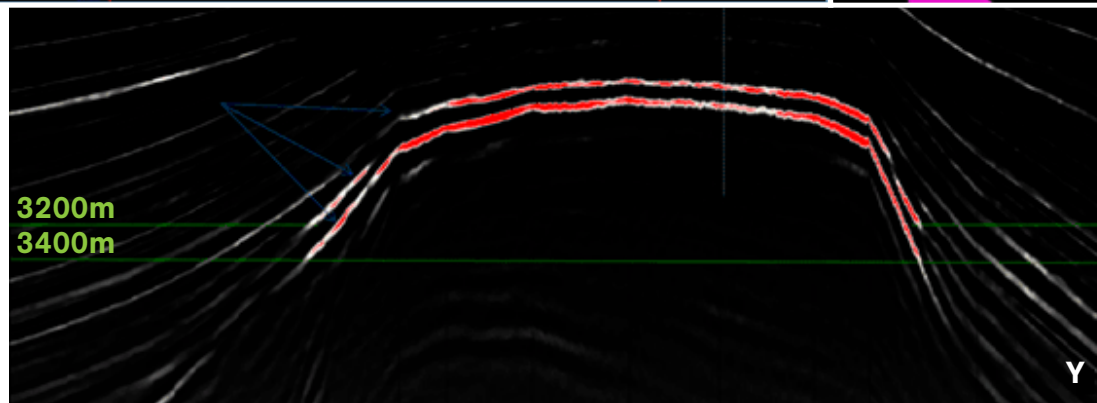
# Brasil Santos Basin - Prospect example



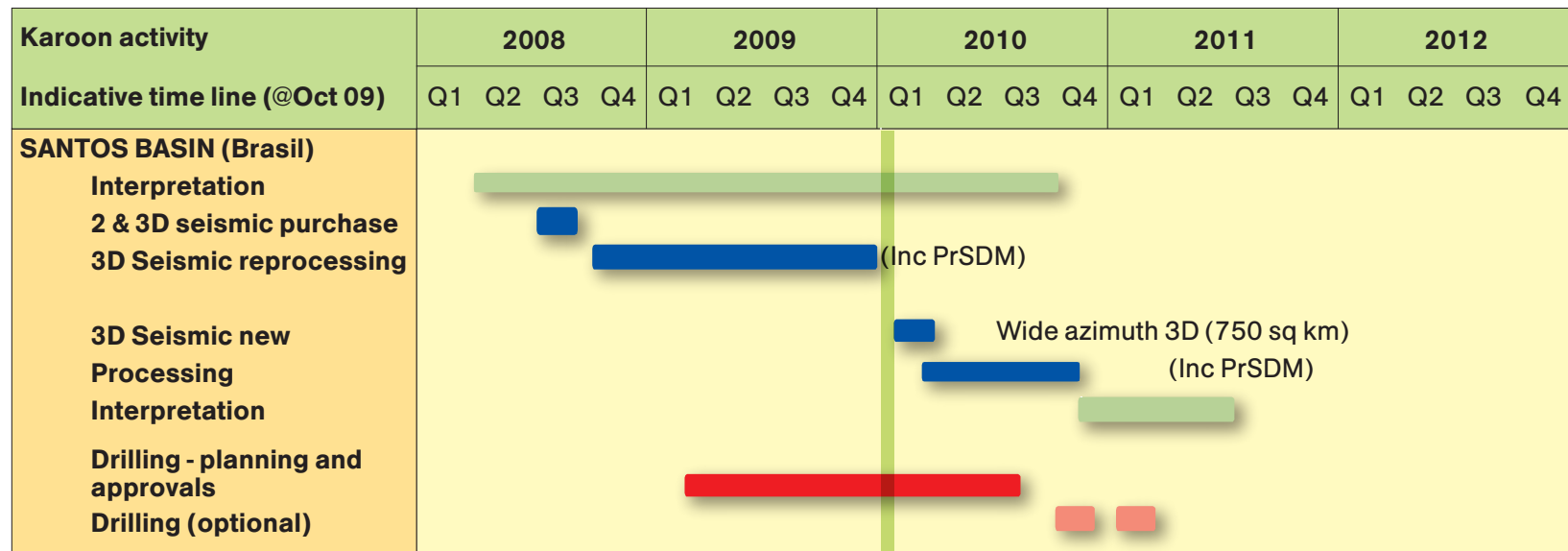
## Pico do Jaragua East Santonian Prospect example- amplitude anomalies



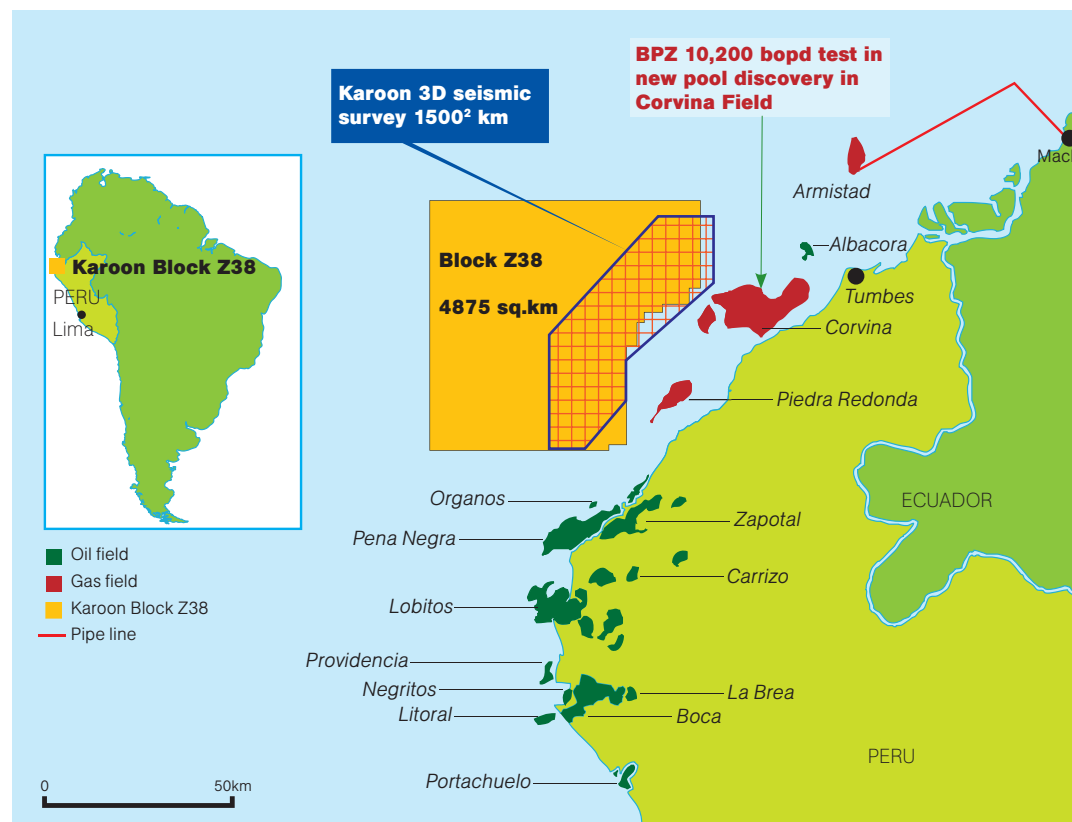
- Seismic Inversion for Santonian Anomalies (cycles 1, 2 & 3) probability of hydrocarbons. Note conformance to depth.
- Excellent amplitude and depth concordance translates to low risk



## Brasil Santos Basin - Indicative Timeline



## Peru Tumbes Basin Block Z38



**Location:** Offshore Peru close to producing fields and discoveries.

**Potential:** 2 main leads each with 50 to 250mmbls potential oil or multi Tcf gas prospective resources potential.

Additional leads potential recognised but yet to be defined.

**Interest:** Karoon earning up to 75% from funding 2D & 3D seismic and 2 wells.

Vamex farm down to 25%.

### JV work program:

First phase (1.5 year) Work Program.

Fund 2000km 2D seismic.

Second phase acquire 600 sq. km. 3D seismic.

Third phase drill two wells.

**Forward plan:** Acquire 3D data in 2010 (survey started in Jan 2010)



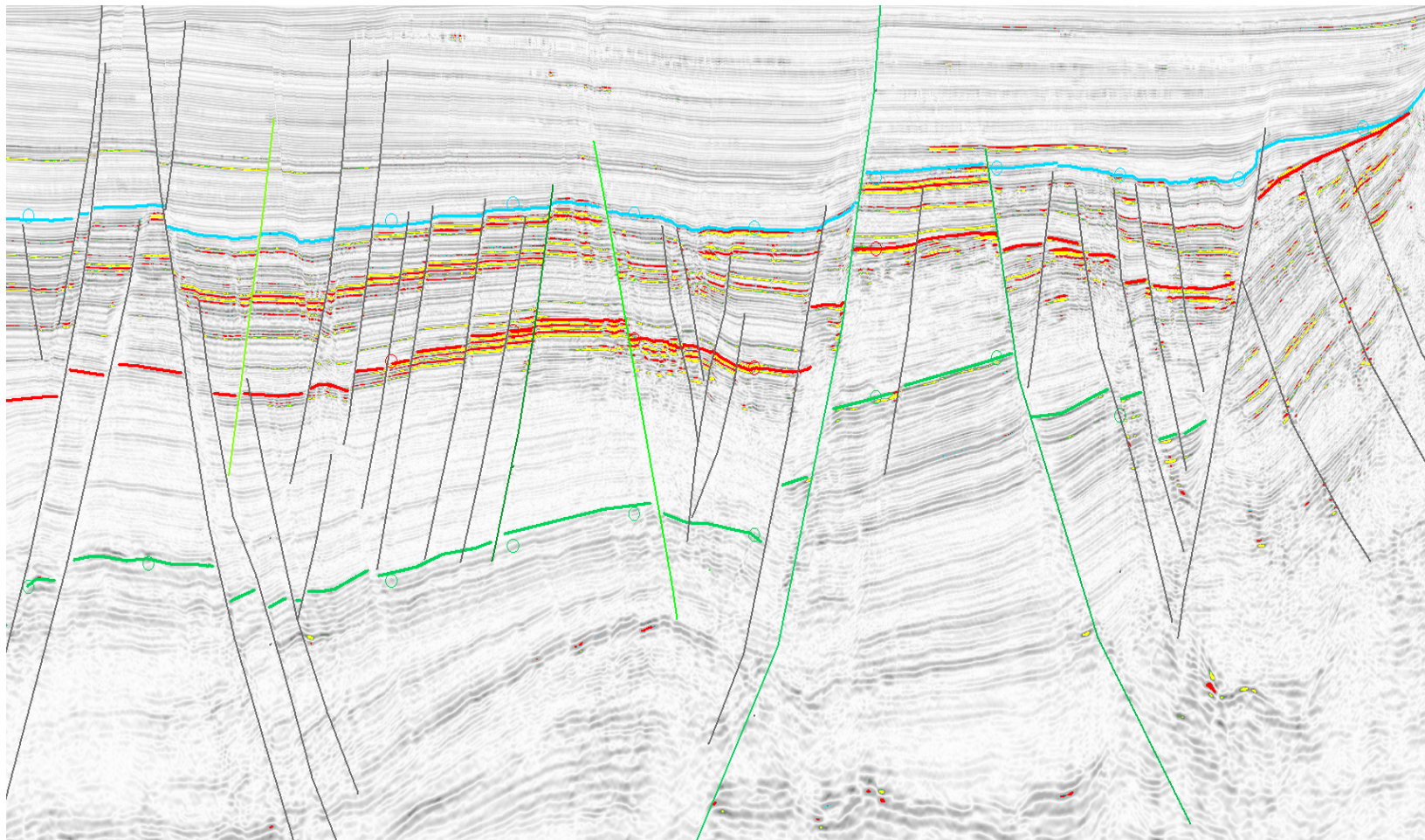
## Tumbes Basin BlockZ38



The Geowave Endeavour 3D seismic vessel currently operating for Karoon in Peru.

## Peru Tumbes Basin Block Z38

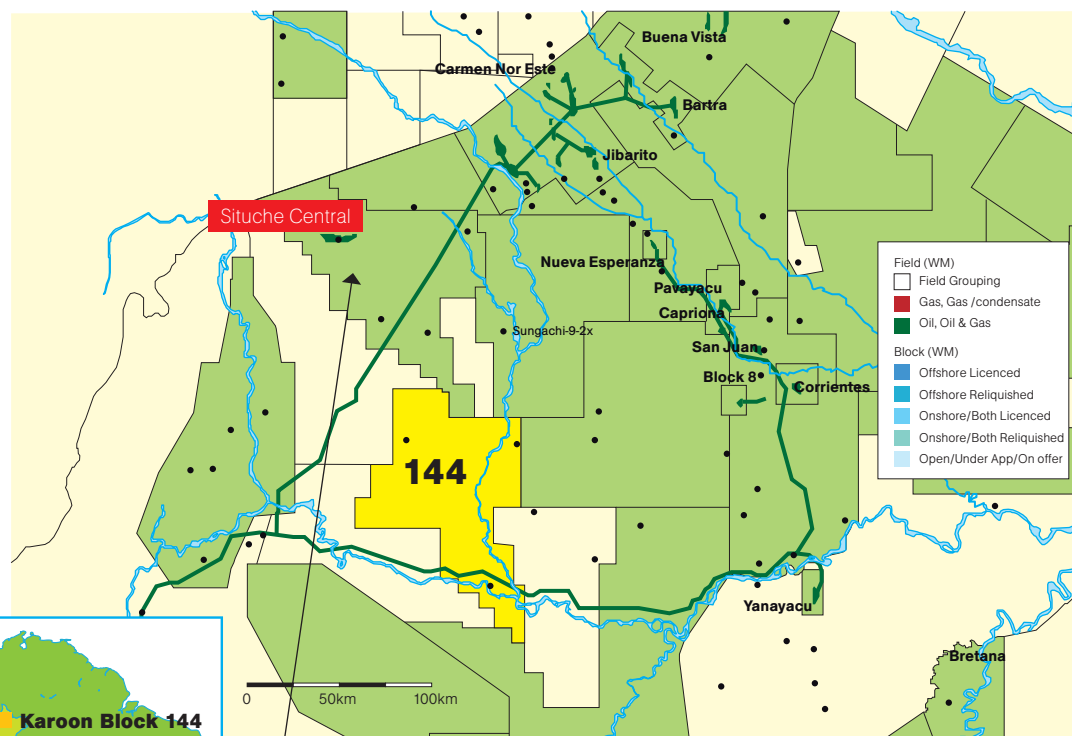
Seismic line example.



■ Clear gas DHI's with amplitude ratio updip to down dip around 5 to 10 times.



## Peru Marañon Basin Block 144



18th August. 2009 Scout Meeting, TALISMAN has reported that the well Situche 3 is drilling to the depth of 15,900 feet and found the Vivian Fm. sand with a 90 ft oil column, ave. porosity 16 % and permeability 300/350md. Oil 35° API. Estimated to confirm prediction of 120MM to 150MM of barrels of oil reserves.

**Location:** Onshore Peru close to existing infrastructure and producing fields.

**Potential:** Leads with 50 to 250mmbls prospective resource potential. Additional leads potential recognised but yet to be defined.

Along trend from from Situche oil field (100+mmbs).

**Interest:** Karoon holds the permit 100%.

### Work program:

Phase-1 April 16 2009 - October 2011  
Reprocess 1000km 2D seismic, geological and geophysical studies.

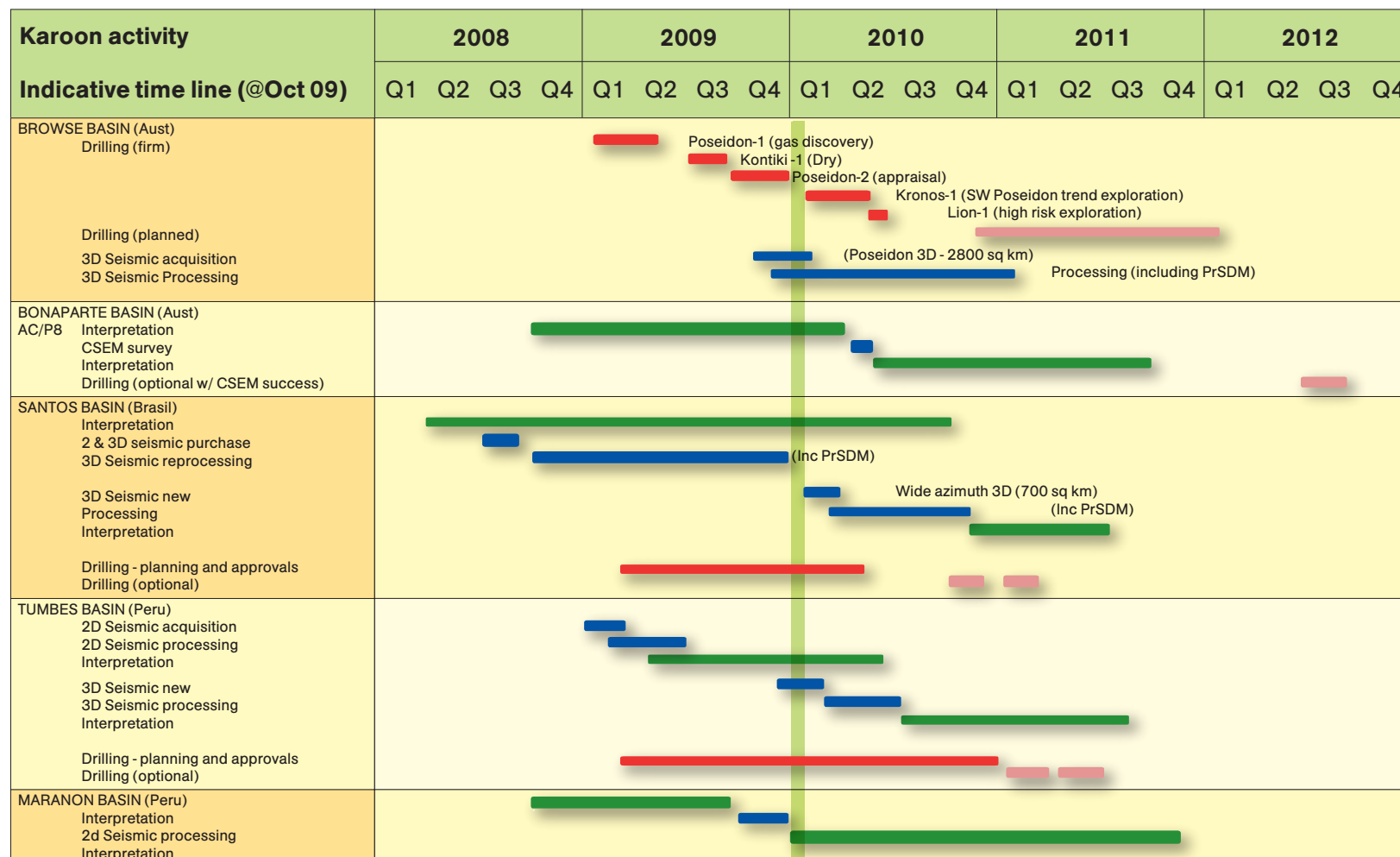
Phase-2 October 2011 - April 2013  
Interpretation of 300km 2D seismic.

Phase-3 April 2013 - October 2015  
Drill one well to a minimum depth of 4200m.

**Forward plan:** Interpret completed 1000km seismic reprocessing in presentation for drilling in 2013



# Activity Summary



## DeGolyer & MacNaughton Assessment

Thursday, 10 December 2009

**(ASX Code: KAR)**

### ASX ANNOUNCEMENT

**Karoon Releases New Estimates of Volume Certified by D&M – Net Contingent Resources of 1.27 Billion Barrels of Oil Equivalent (“boe”) and Risked Net Mean Prospective resources of 900 Million boe.**

Karoon is pleased to advise the results of an independent report on both its Contingent and Prospective Resources for the company's world wide portfolio of appraisal and exploration assets as completed by DeGolyer and MacNaughton (D&M).

The first report, (Contingent Resources Report) certifies the high case net contingent resource of 7.6 Tcf (Gas) or 1.27 billion boe and the second (Prospective Resource Report) certifies the risked net mean prospective resources of 900 million boe, as detailed in the table on the right.

DeGolyer & MacNaughton Karoon Gas Resource Estimate 30 September 2009	Low Estimate	Best Estimate	High Estimate	Mean Estimate	Risked Mean Estimate
Net Contingent Resource					
Poseidon Wet Gas (Tcf)			7.6		
Net Prospective Resources					
Australia Browse Basin Wet Gas (Tcf)	1.8	4.5	11.2	5.8	1.6
Oil Total Australia and South America (billion barrels)	1.13	2.30	4.70	2.69	0.63

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Petroleum exploration relies on the interpretation of complex and uncertain data and information which cannot be relied upon to lead to a successful outcome in any particular case. Petroleum exploration is inherently uncertain and involves significant risk of failure. All information regarding Prospective resource estimates and other information in relation to Karoon's assets is given in the light of this caution.



## Index of terms

**TCF:** trillion standard cubic feet ( 1,000,000,000,000 cubic feet)

**Mmbbls:** Millions of barrels ( 1,000,000 barrels)

**Bbls:** Barrels

**BOE:** A means of expressing gas volumes in barrels of oil equivalent.  
(1BOE equals approx. 5500 standard cubic feet of gas)

**PSDM:** Pre-stack depth migration

**CSEM:** Controlled source electromagnetic (survey)

**Monte Carlo simulation:** Where there is uncertainty in the variables used in the calculation of reserves, the ranges of possible values of each variable can be incorporated in a Monte Carlo simulation calculation to produce a range of probabilistic outcomes that reflect that uncertainty.

The "Mean" is the expected outcome. The **P10** (probability greater than 10%) is often used as the maximum case, the **P50** (probability of 50%) the mid case and the **P90** (probability greater than 90%) the minimum case.

**Risk:** Prospect Risk or Geologic Risk is the assessed chance that the drilling of the prospect will be successful in finding significant volumes of hydrocarbons. The risk is calculated by multiplying the chance of success of each of the Petroleum System Elements involved in the prospect.

**Prospective Resource:** A 'Prospective Resource' is the term used to describe undiscovered volumes in an exploration prospect yet to be drilled.

**Contingent Resources:** Those quantities of petroleum which are estimated, on a given date, to be potentially recoverable from known accumulations, but which are not yet currently considered to be commercially recoverable.

**ORR:** Over-riding royalty

**Prospect:** Target ready for drilling

**Lead:** Potential target under evaluation