



## Peru Field Trip September 2010

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*Where we stand in Exploration Today*

*Marcos Mozetic*

*Exploration Executive Director*



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## *Our current activity*



*We continue to deliver*



*Our challenge ahead*



*Our Plan*



*Latin America North*



*North America & Brazil*



*West Africa & Cuba*



*Europe & North Africa*



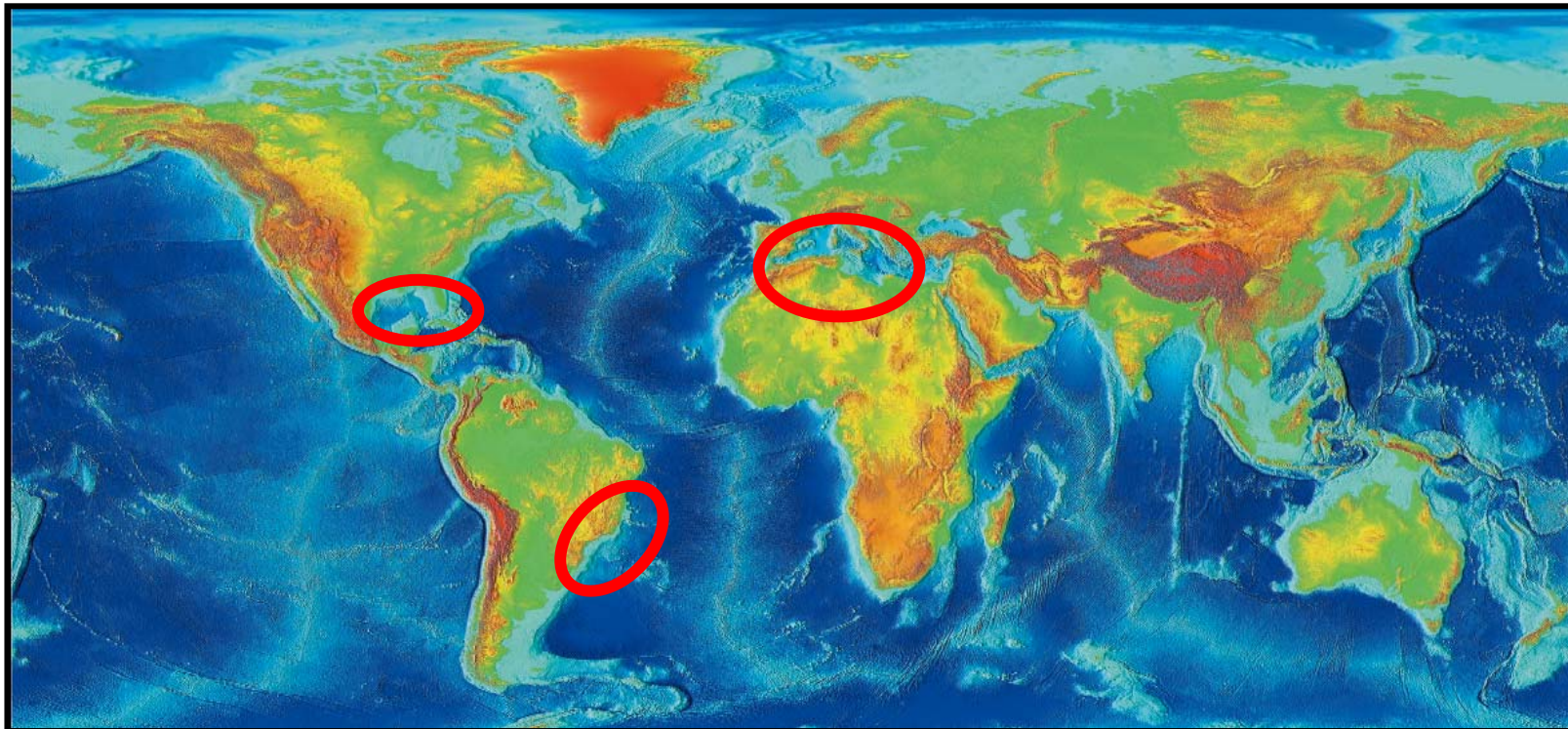
*RoW (Russia/E,Africa/Far East)*



*What to expect*

## Three focal activity areas in E&P :

- **North of Africa:** stable to increasing activity in development and production, but a strong decrease in the quality and quantity of areas offered, and some deterioration in economic terms.
- **Brazil:** high concentration in development capex and some immediate restrictions in the access to short term targeted acreage
- **Gulf of Mexico deep water:** transparent and constant acreage rotation.

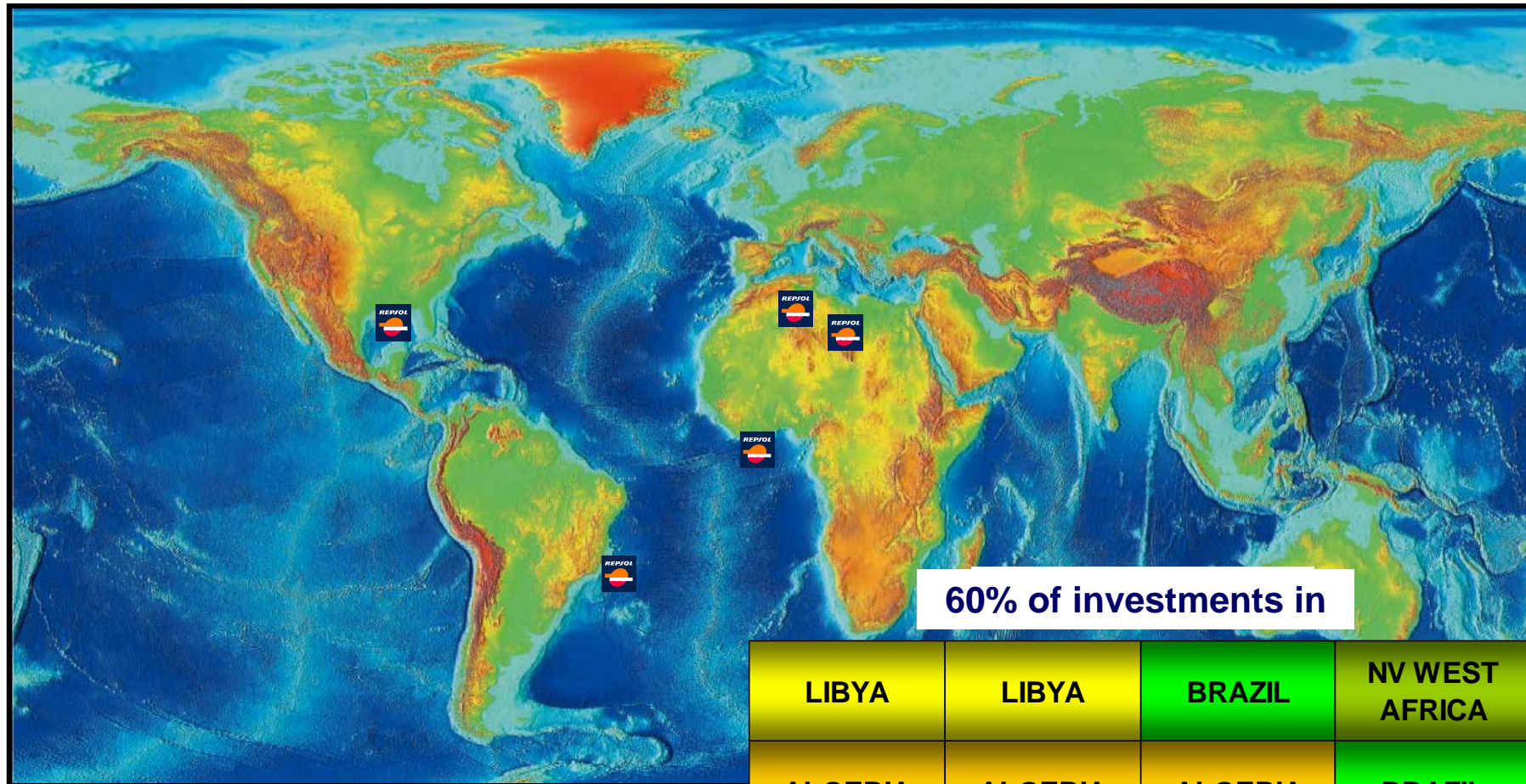






**We are currently active in Exploration in 25 countries.**





60% of investments in

LIBYA	LIBYA	BRAZIL	NV WEST AFRICA
ALGERIA	ALGERIA	ALGERIA	BRAZIL
NORTH AMERICA	NORTH AMERICA	NORTH AMERICA	NORTH AMERICA

Even though we are developing new plays and are path-finding in several countries.

Exploration investments are focused in key projects

2007

2008

2009

2010

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*West Africa & Cuba*

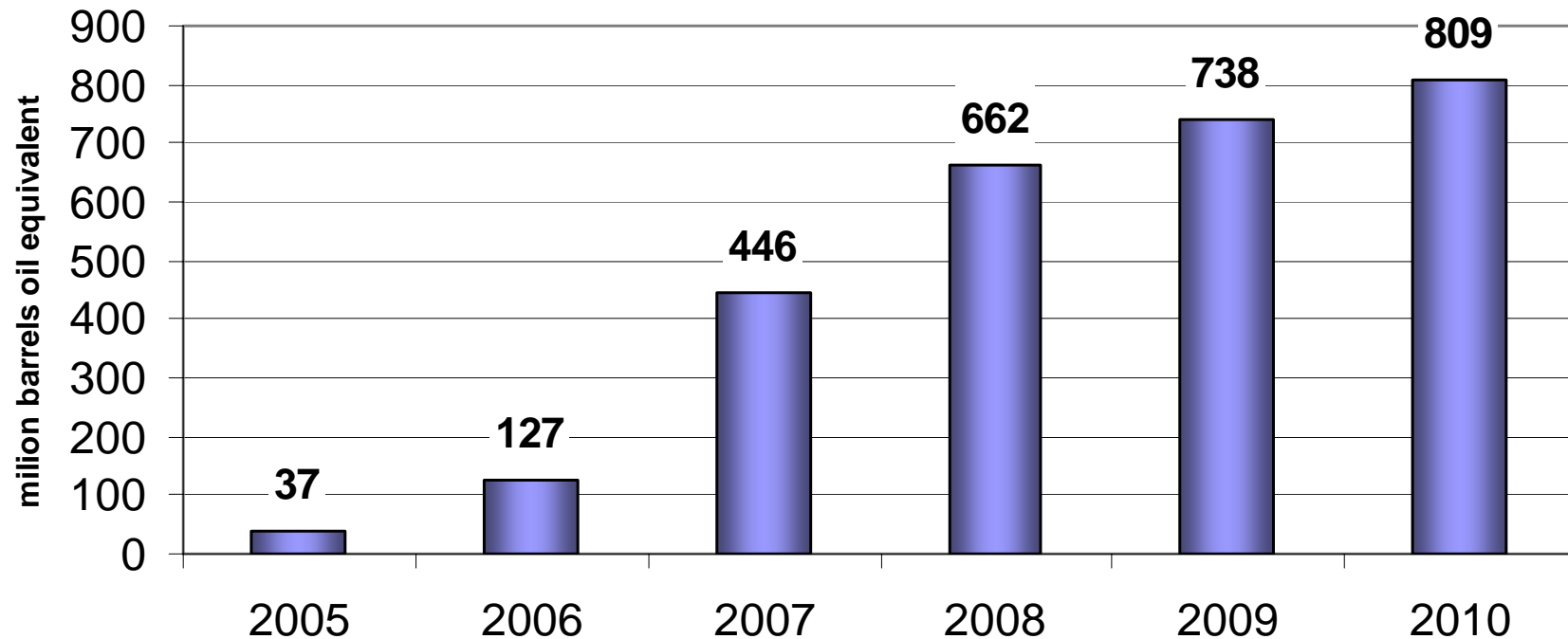
*Europe & North Africa*

*RoW (Russia/E,Africa/Far East)*

*What to expect*

# Net Contingent Resources Incorporation

## Contingent Resources Base



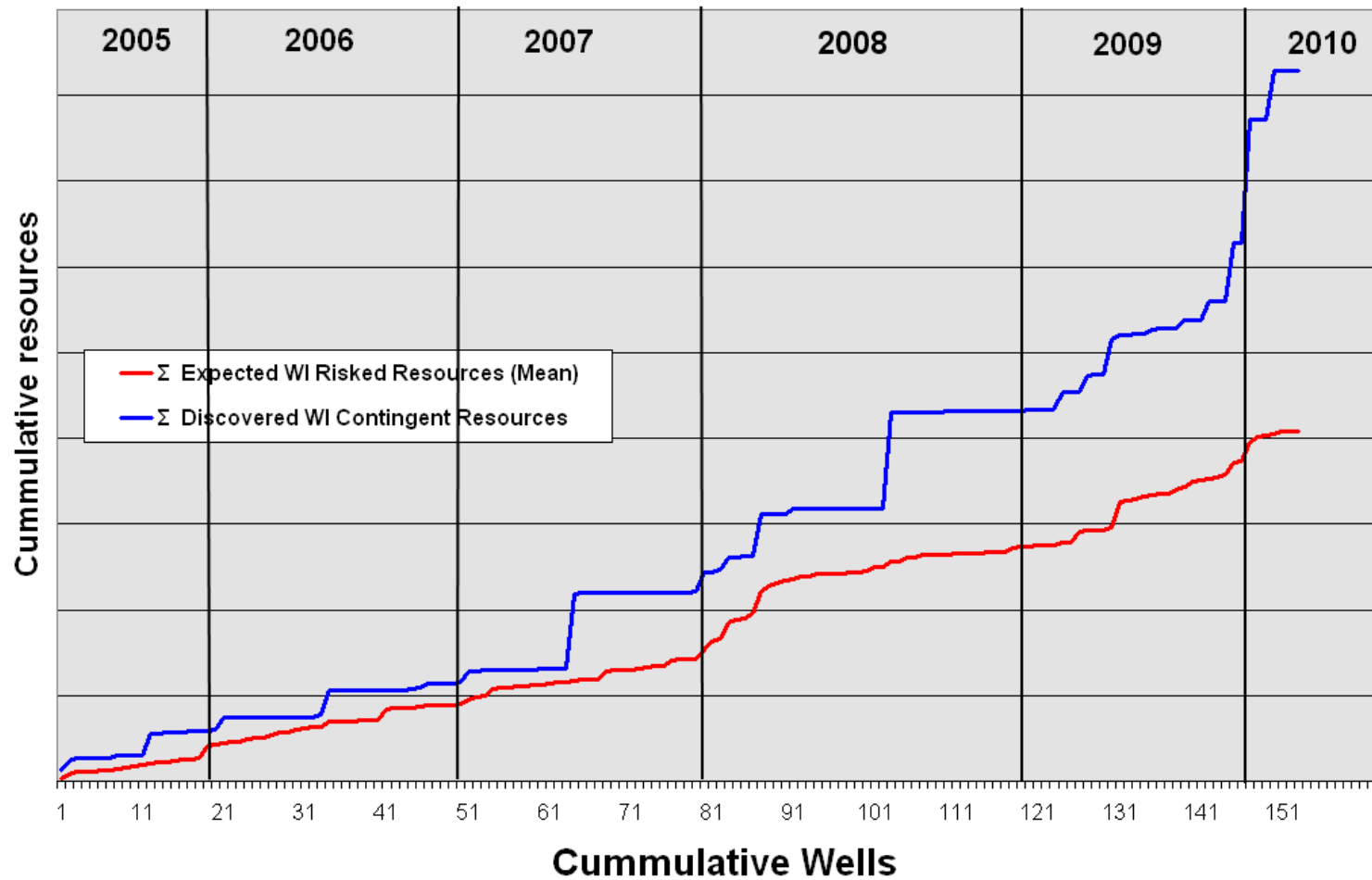
The columns reflect the resources discovered per year remaining in our resource base. The remaining resource base totals 2.8 Bboe

YPF not included, Brazil according to D&M, rest by Repsol (August 2010)



# WI Benchmarking – longer term track record

## REPSOL Exploration



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## Internal:

**The increase in activity beginning in 2004/2005 requires a continuous renovation of our Portfolio** (we drill between 25 and 35 exploratory wells, investigating an average of 4.5 Bboe per year)\*

## External:

**Rising competition in our focal areas** which no longer allows us to rely on these for medium to long term growth.

**Fragmentation of blocks into ever smaller areas** resulting in the scarcity of multi prospect blocks that justify continuous activity in a focalized geography.

**In spite of the above, there are still many prospective areas, although in less accessible terrains, less proven and sometimes in more demanding subsurface conditions.**

\* 2.5BBOE in 2007, 6.5BBOE in 2008 y 5.2BBOE in 2009

# A Challenging Environment

- **In proven mature areas, acreage on offer is getting smaller and more difficult to acquire.** Therefore a move to less recognized and frequently more widespread opportunities was convenient. To warrant the same success achieved to date, we, as most companies are doing, promote activity in more Regions. We cannot lag too far behind, and we are supported by the fact that we have fared reasonably well in frontier areas (Perla, Anchois, Venus and not least the pre-salt)
- **The Exploration organization was set up to face an increase in activity in new ventures, look for additional acreage in two ways :**

  1. The analysis of basins in longer range plans by the Geology Division and Regional Studies Department, and
  2. The evaluation and capture of opportunities in the short term by the Regional Management once sufficient in-house knowledge of a Basin is achieved.
- **This is the way in which the opening of West Africa, Alaska, Canada, Norway and Indonesia was realized.** They all involved around two years of study before the actual rights over a block were acquired.



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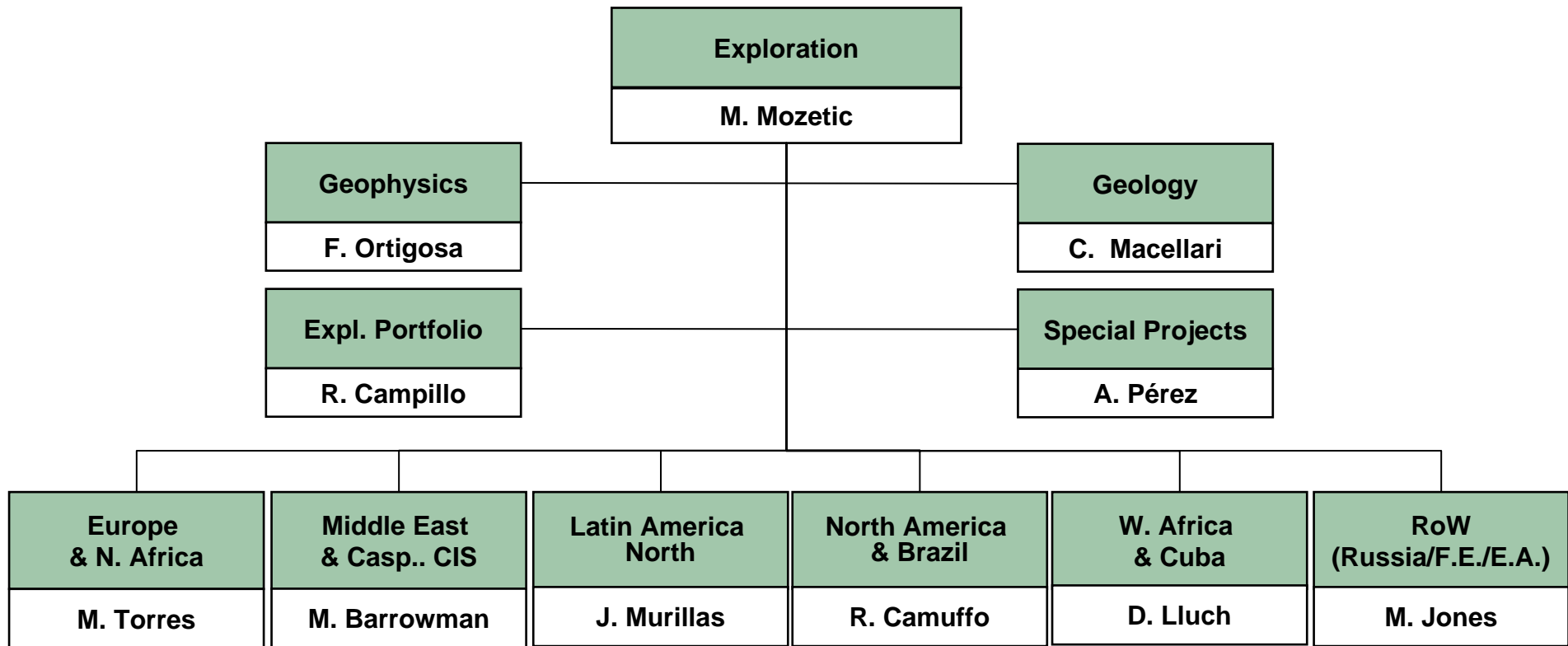
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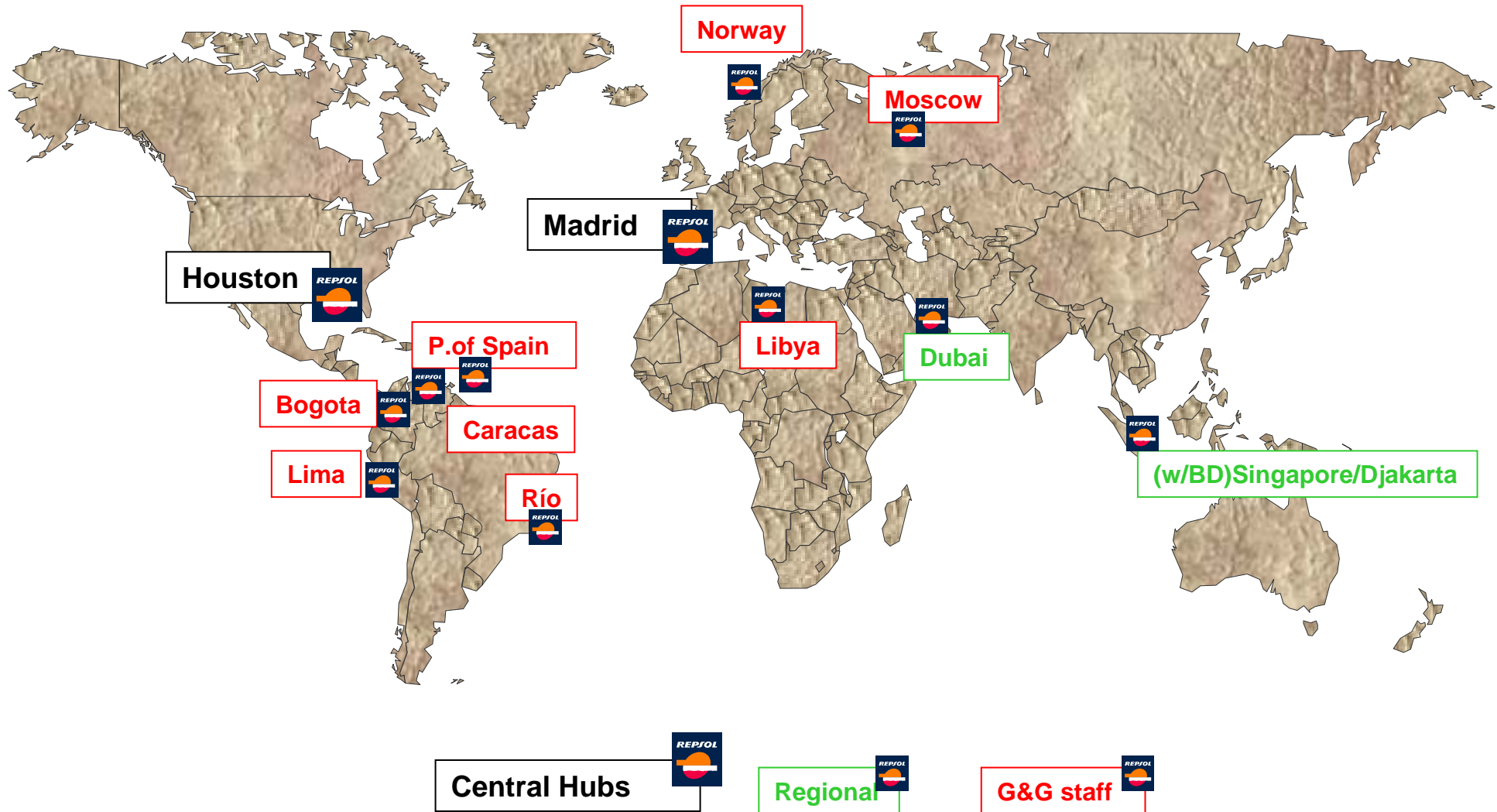
# DG Upstream Exploration

## Growth by Regions and Centralized QA & Support



**A Competent International Staff growing to 400 G&G**

# Central and Regional Technical Hubs

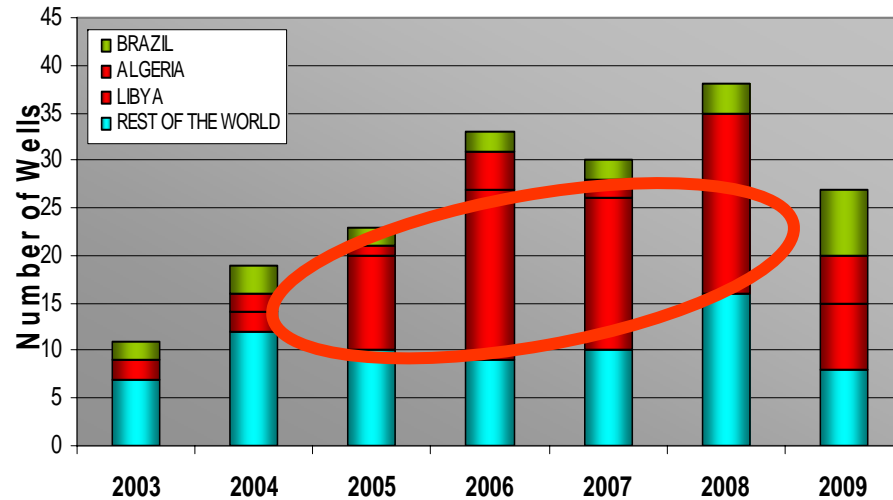


## Main goals of our team

- ❑ Intensive and Extensive New Ventures efforts to maintain and **increase** exploration acreage.
- ❑ Sustained drilling campaigns, achieving 25 to 35 wells per year.
- ❑ Quality based processes to underpin success rate.
- ❑ Balanced exposure to onshore and offshore drilling.
- ❑ Extract value from our Geophysical (Kaleidoscope/Phoenix) and Geological (Sherlock) research projects.

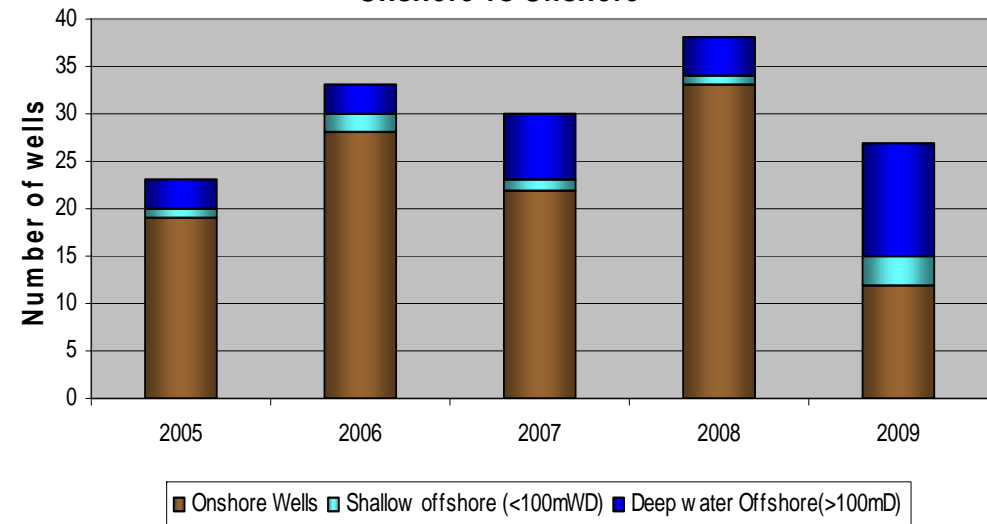


DGU EXPLORATION WELLS 2005-2009



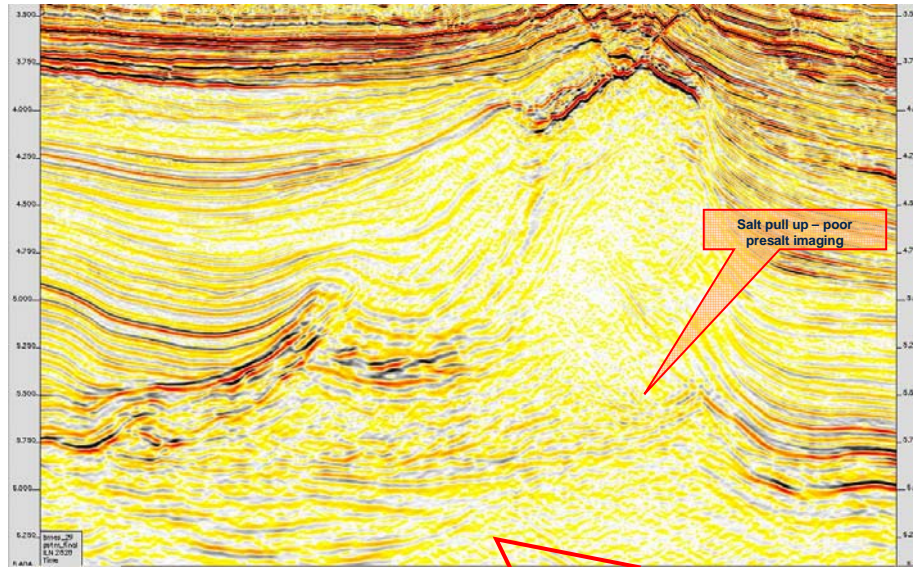
Our resource recovery was initiated with an intensive drilling effort onshore. We have since 2006 gained expertise in offshore operations, accessing the then perceived higher potential in deep waters, but we also need to maintain a portfolio of onshore drilling to leverage F&D costs

REPSOL Exploration 2005 - 2009  
Onshore vs Offshore

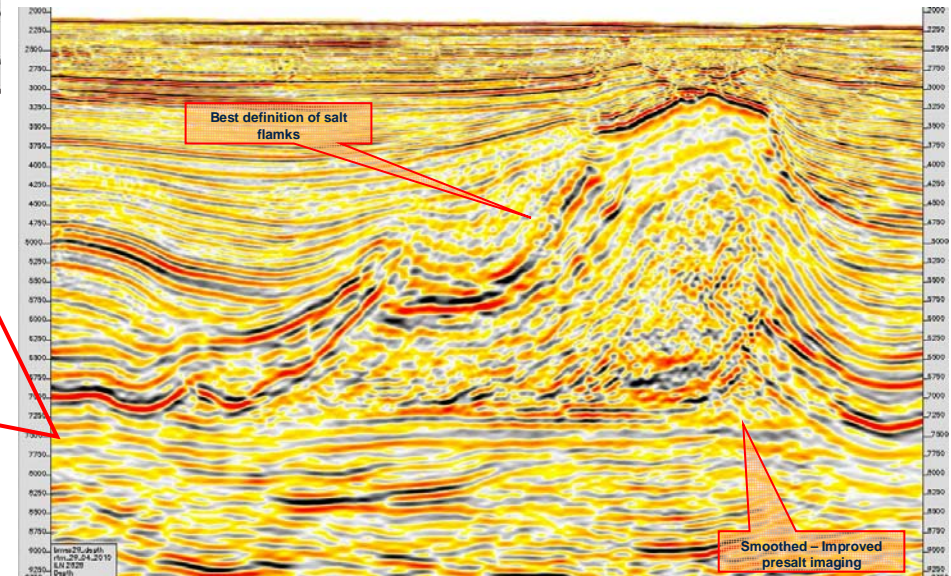


# Progressive improvement in subsurface picture

Inline 2828 – XXX Contractor PSTM



Inline 2828 – Repsol RTM PSDM



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# Latin America North Region (LAN)



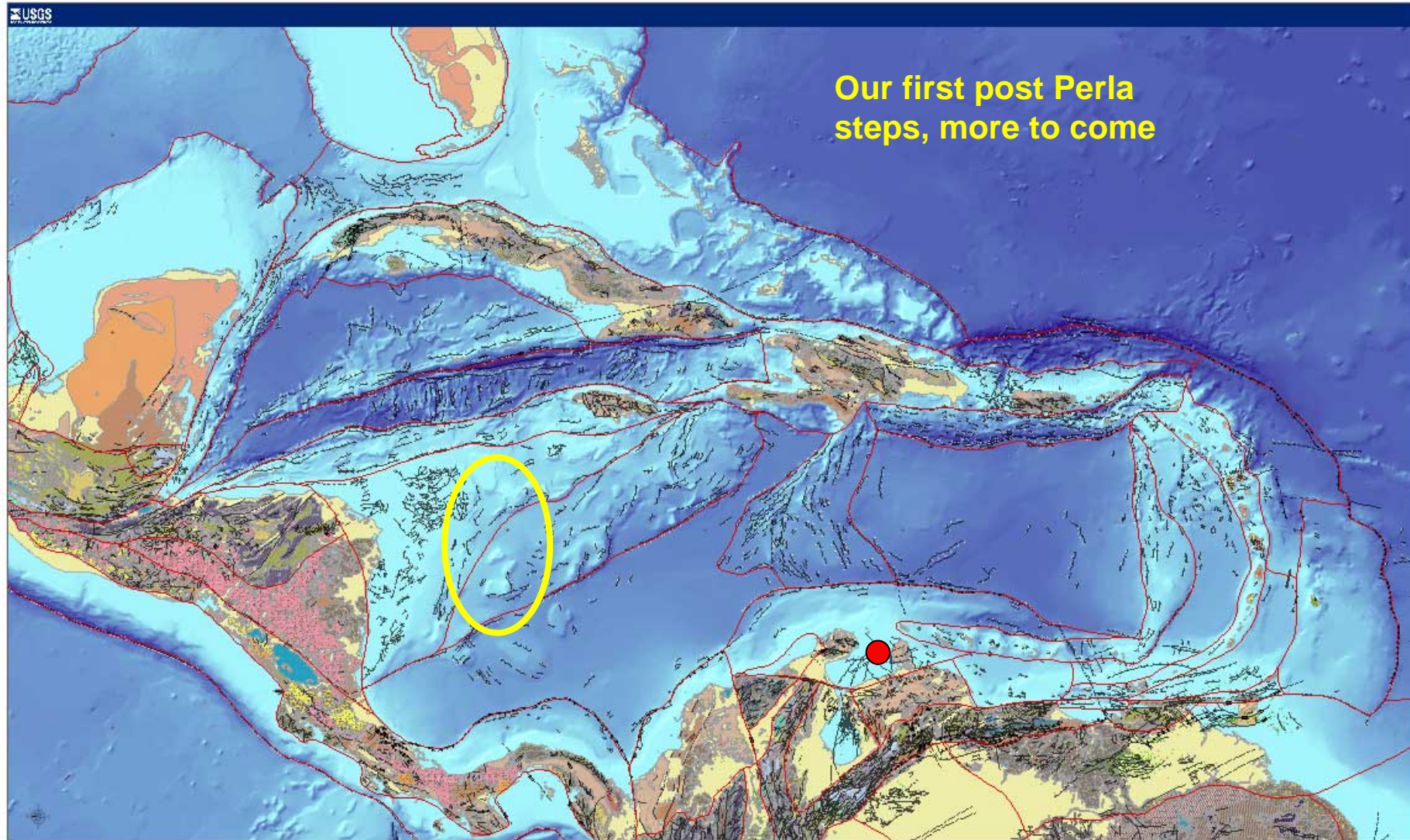


## Distribution of Hydrocarbon Reserves by latitude (pre Kinteroni)



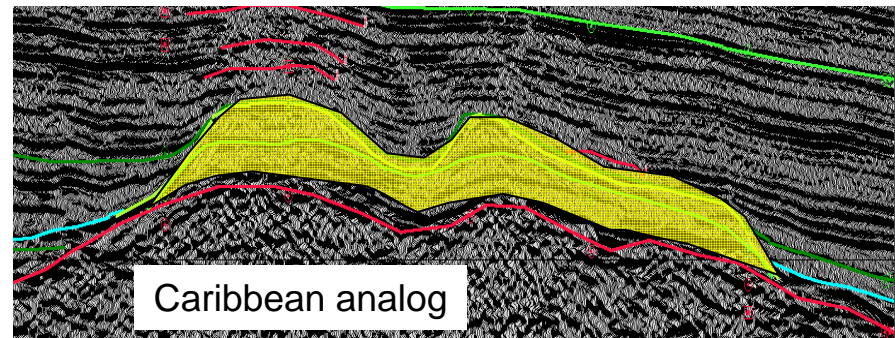
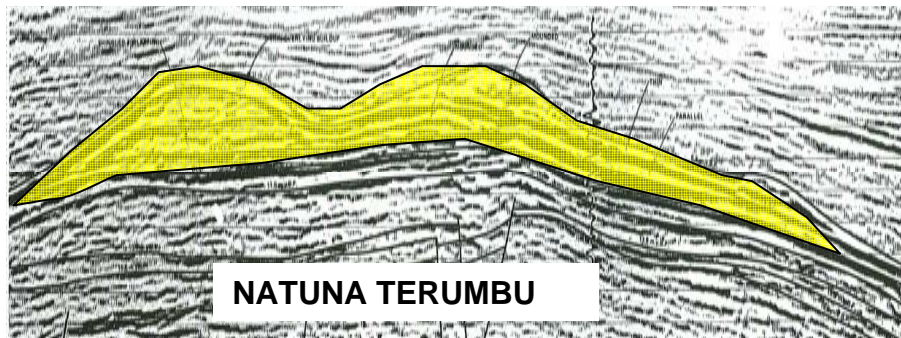
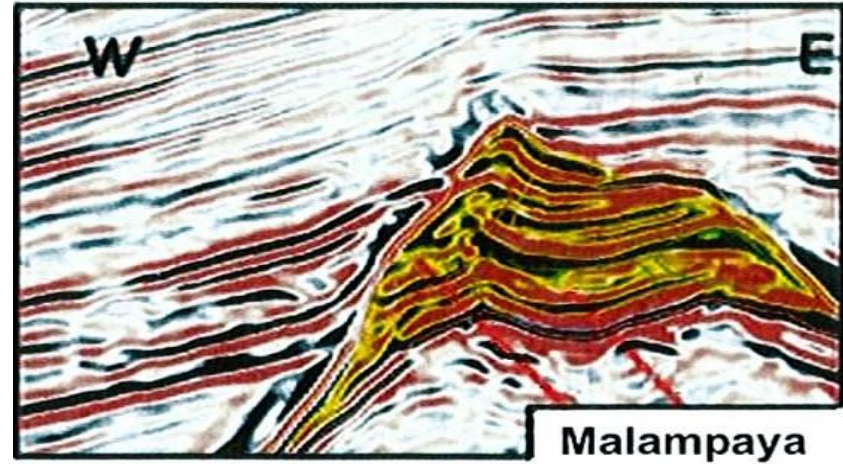
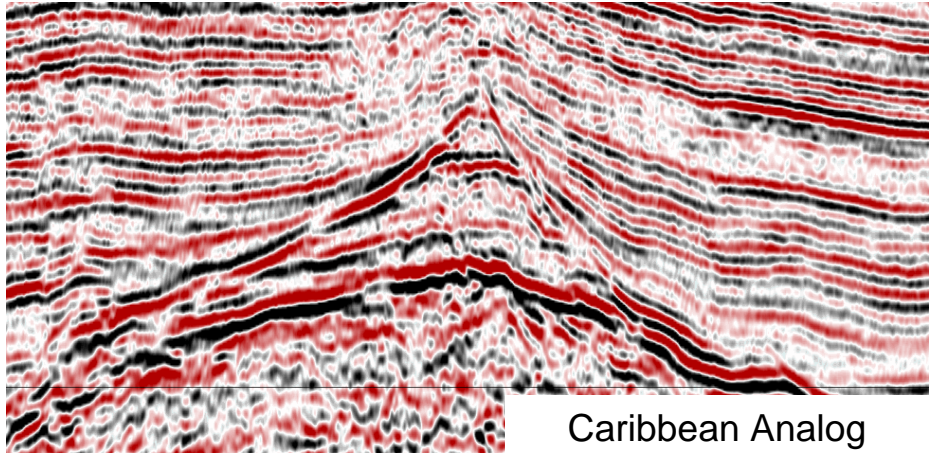
Data from IHS







# Frontier, but with sense



During the next 12/24 months we expect to perform:

- ❑ 3D exploration seismic in Venezuela (Cardon IV)
- ❑ Drill 1 exploratory well contingent to above 3D
- ❑ Drilling Jaguar in Guyana
- ❑ 2 exploratory wells in Block 57 (Peru)
- ❑ 2D seismic in Block 39 (Peru) and 1 additional contingent exploratory well
- ❑ Exploratory well in new block (Peru, block entry pending Government approval)
- ❑ Complete seismic in block 76 to define drilling locations
- ❑ Initiate operations in Offshore Colombia (Cayos)
- ❑ Drill 1 onshore well in Colombia + 2 Oxycol wells
- ❑ 3D Seismic in T&T
- ❑ Drill 2 significant Sub-Andean exploratory wells in Bolivia and appraise recently announced Rio Grande deep discovery

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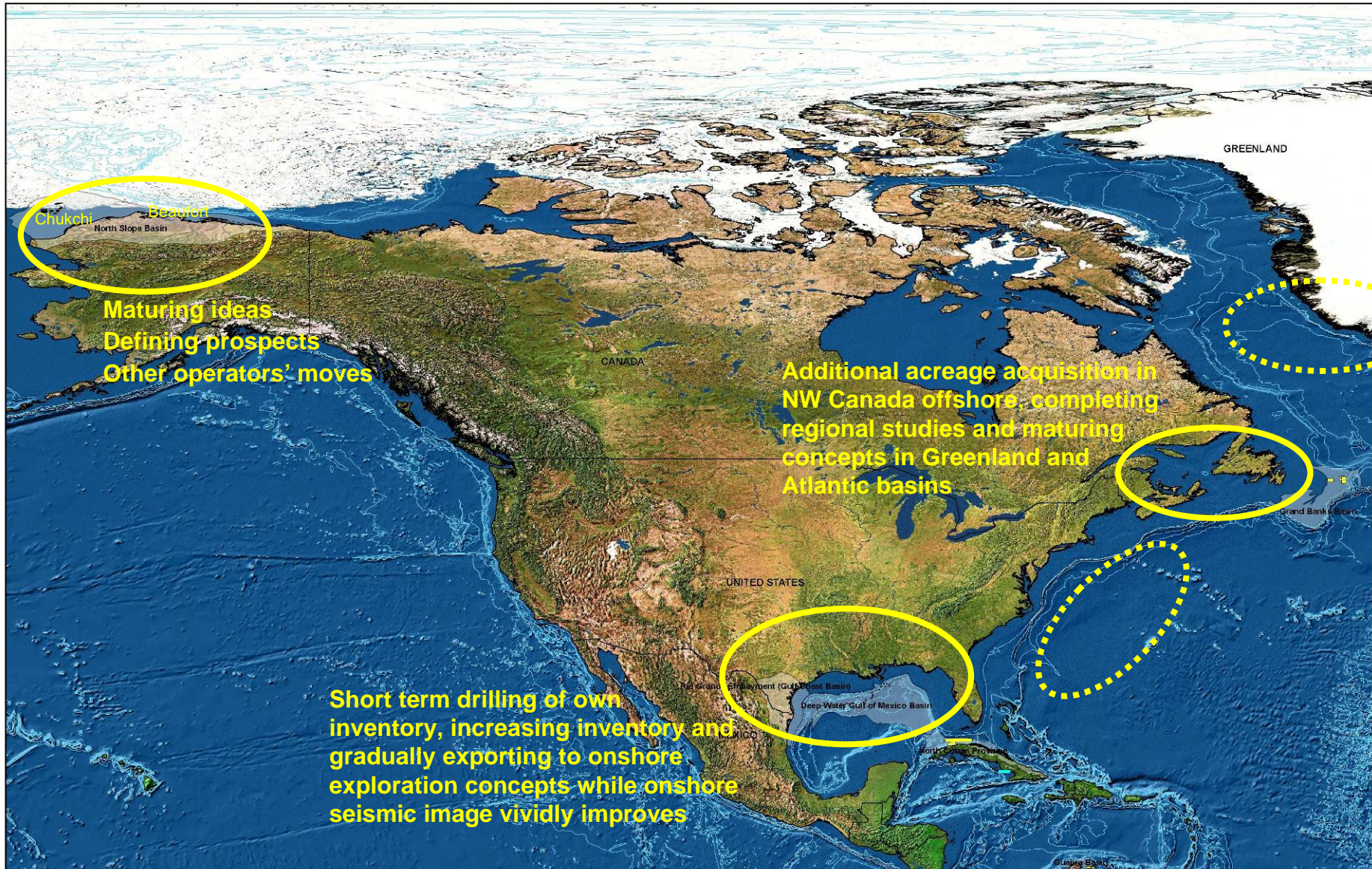
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# North America & Brazil Region (NAB) North America Exploration

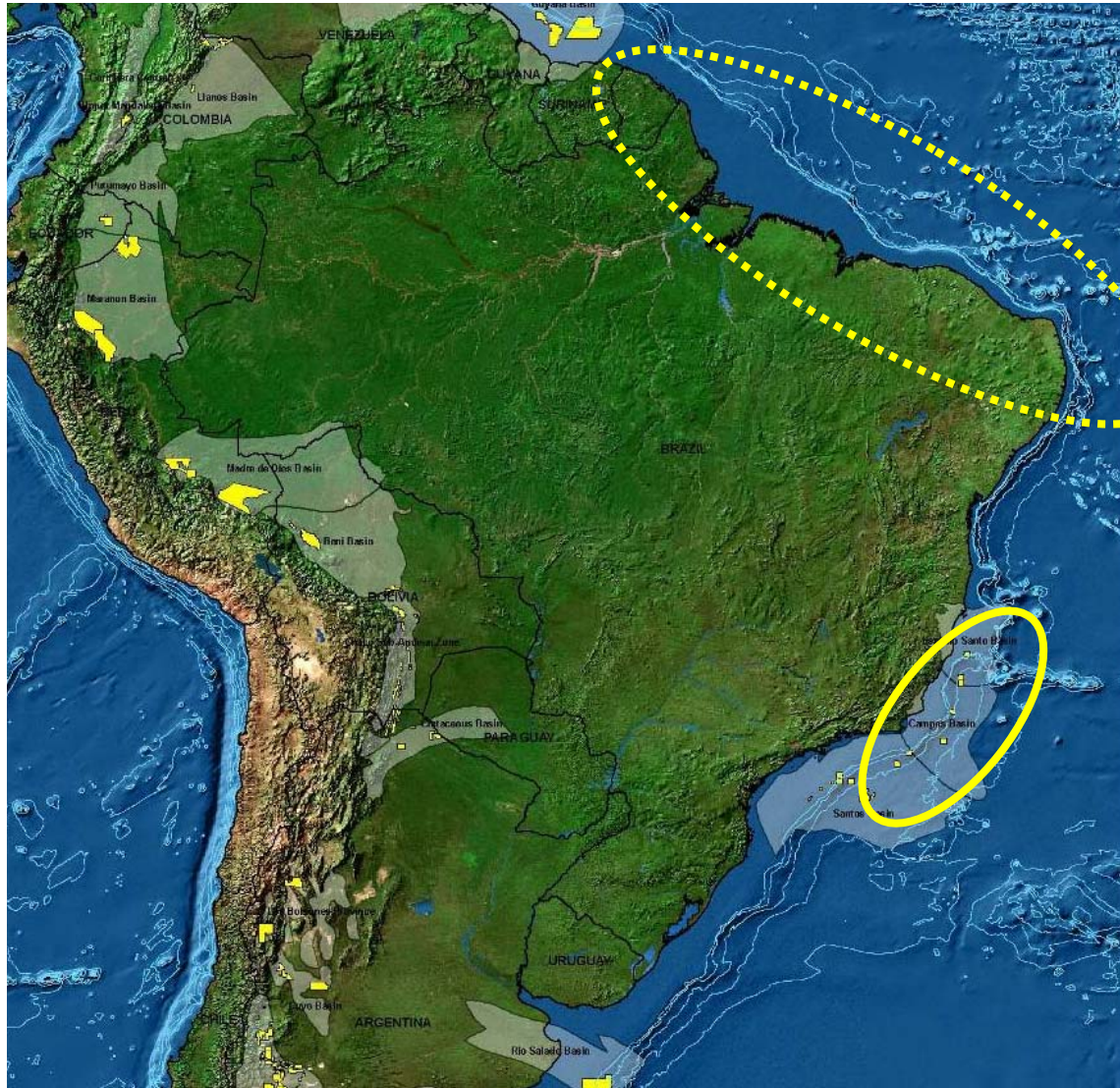


Maturing ideas  
Defining prospects  
Other operators' moves

Additional acreage acquisition in  
NW Canada offshore, completing  
regional studies and maturing  
concepts in Greenland and  
Atlantic basins

Short term drilling of own  
inventory, increasing inventory and  
gradually exporting to onshore  
exploration concepts while onshore  
seismic image vividly improves





**Our long term growth in Brazil is based on maintaining a position in the Campos/Santos presalt with Petrobrás, acquiring in the future rounds acreage positions around our prospects and discoveries and pursuing Atlantic passive margin plays when analogous to the ones we generated in West Africa.**

During the next 12/24 months we expect to perform:

- Recommence drilling of Buckskin appraisal as soon as allowed
- Drill 2/3 wells in 2010/2011 in GoM with Drillmax and 2 non-operated subsalts
- Drill minimum 2 subsalt wells onshore US
- Complete prospect definition for NE Canada
- Continue drilling Brazilian inventory
- Beaufort 3D for pre-drill definition

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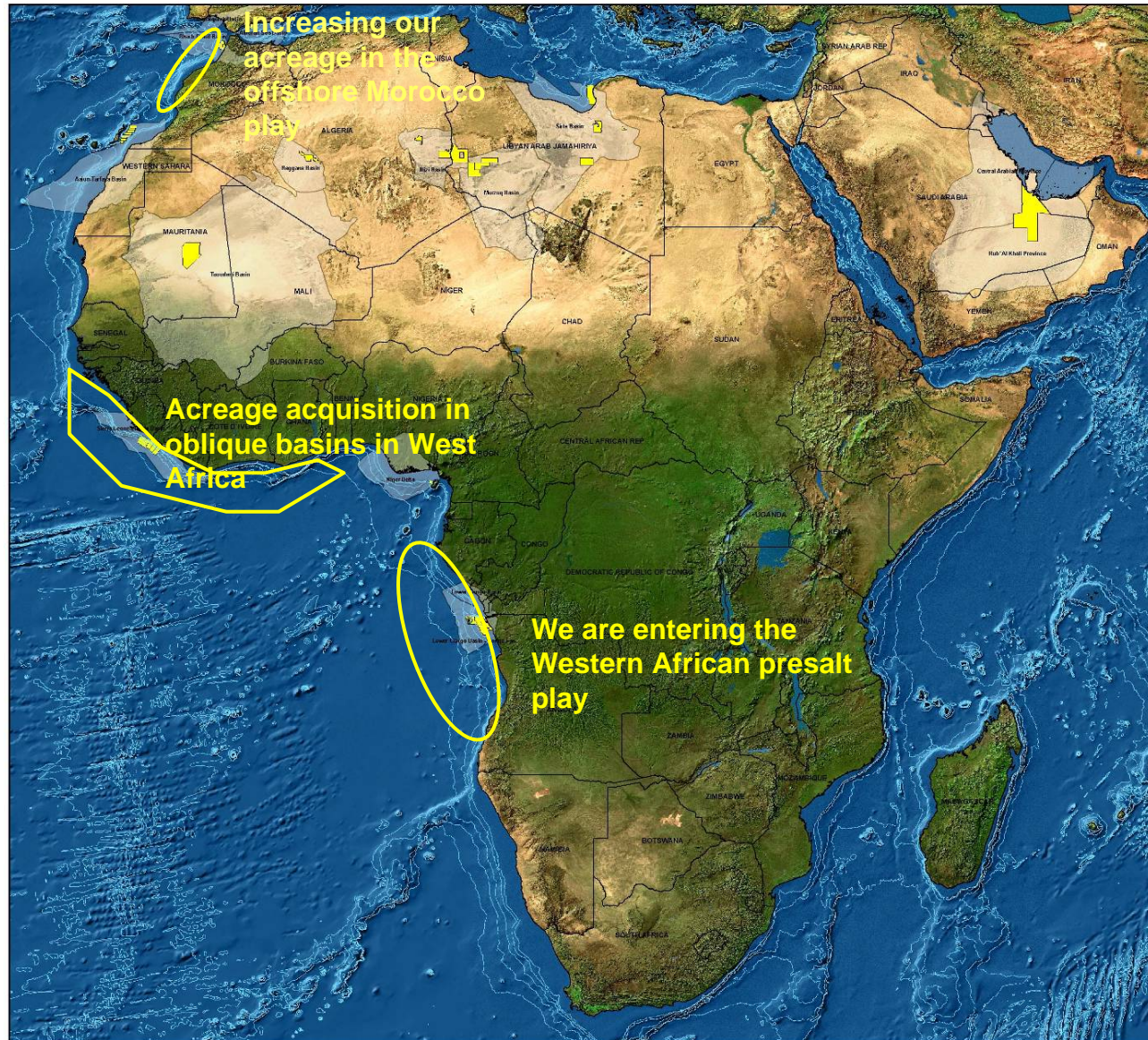
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# West Africa & Cuba Region (WAC) West Africa Exploration



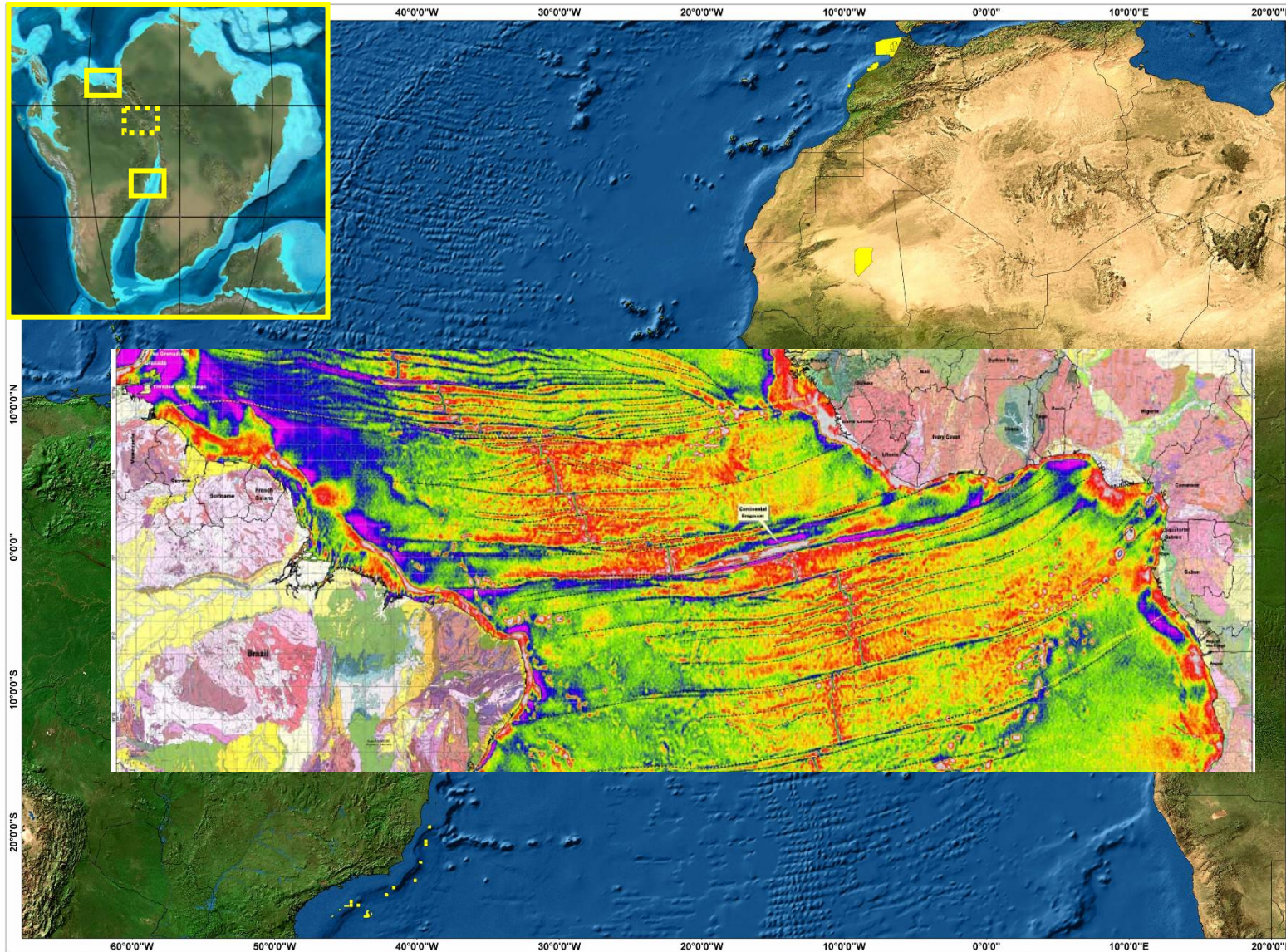
## West Africa & Cuba Region (WAC) Near term activity

During the next 12/24 months we expect to perform:

- Just acquired and acquiring additional seismic in the Moroccan offshore play
- Drill 1 to 2 wells in 2011 in Morocco
- Define prospect in frontier Mauritania (Total is drilling in adjacent block)
- Complete negotiations on new acreage in Sierra Leone and Liberia
- Drill in Sierra Leone and Liberia 2010/2011
- Drill in Cuba in 2011 (1 to 2 wells)

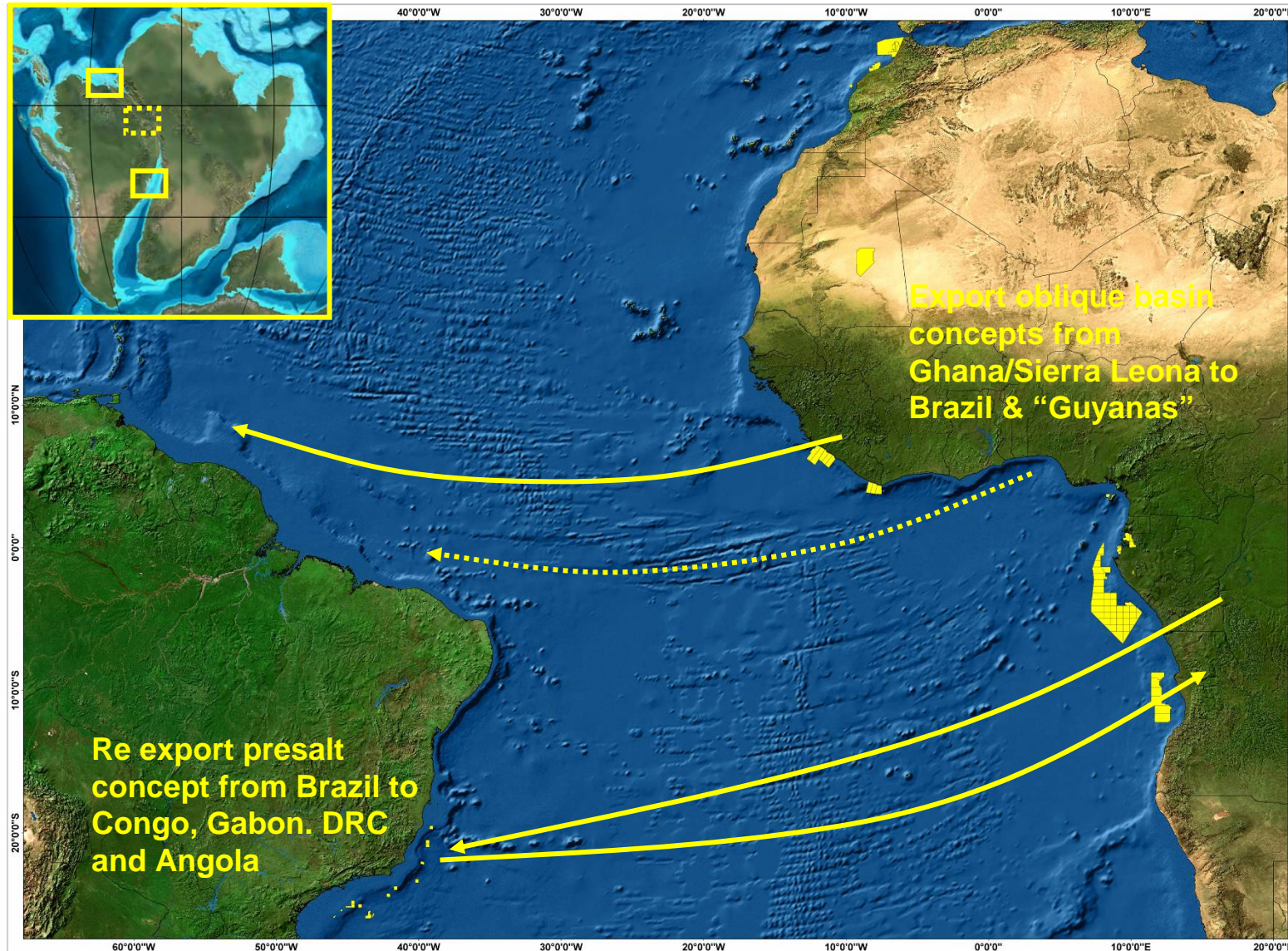


# Common technical issues for LAN, NAB & WAC Regions





# Common technical issues for LAN, NAB & WAC Regions





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# Europe & North Africa Region (ENA)

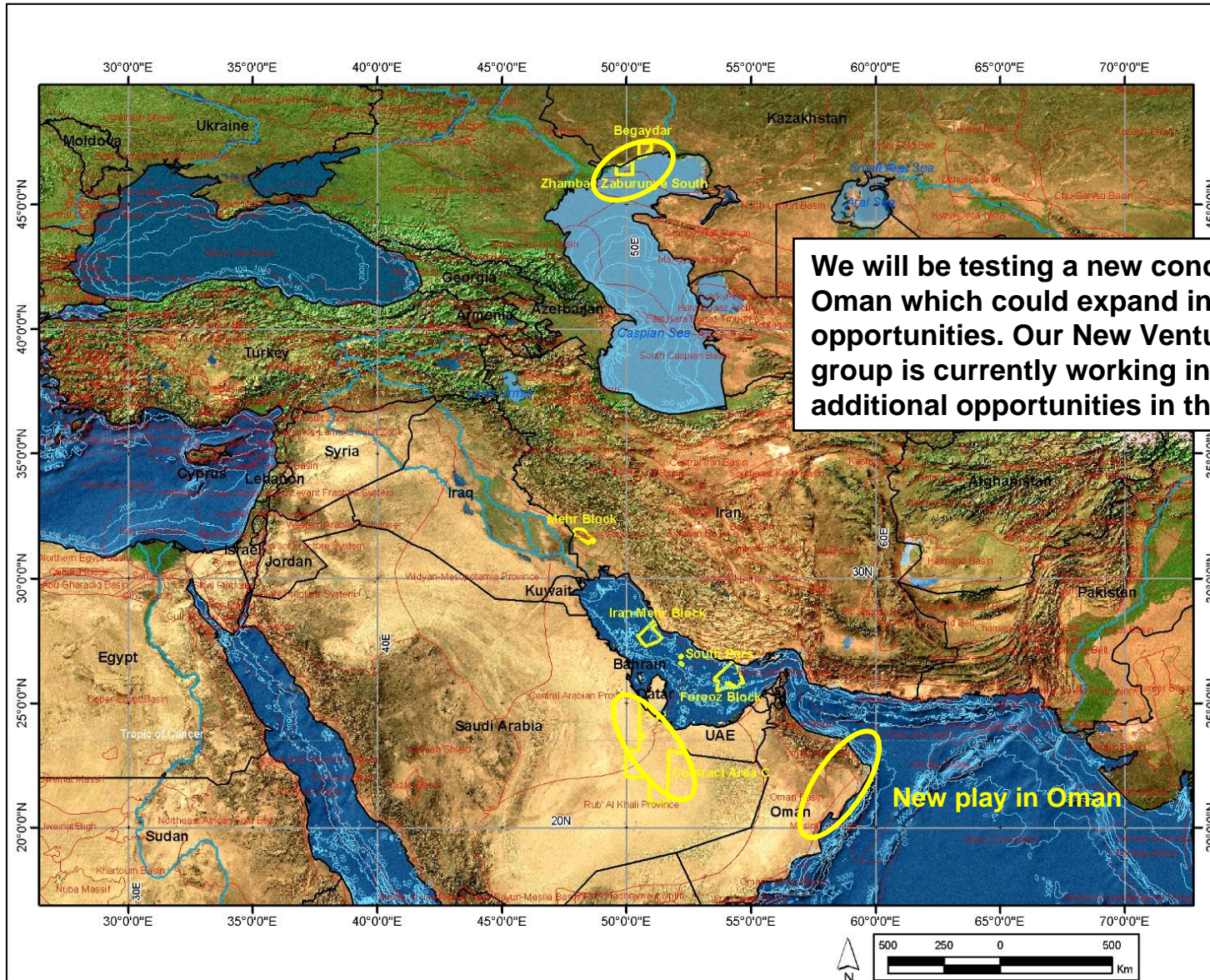




During the next 12/24 months we expect to perform:

- ❑ Finish massive 3D acquisition in NC115 & NC186
- ❑ Recommence onshore drilling in NC115 & NC186 (we estimate up to 10 exploration wells to be drilled in the period)
- ❑ 1 well in NC 137
- ❑ Continue exploration in package 1 when renegotiation is complete
- ❑ Participate in up to 3 non operated wells in Norway
- ❑ Drill 1 to 2 wells in offshore Spain
- ❑ With the reprocessing of the existing 3D, commence operated drilling in Algeria NE Illizi Block

# Middle East and Caspian CIS Region (MECC)



We will be testing a new concept in Oman which could expand into more opportunities. Our New Ventures group is currently working in additional opportunities in the area.

New play in Oman



## Middle East & Caspian CIS (MECC) Near term activity

During the next 12/24 months we expect to perform:

- Drill first non-operated well in Block 47 (Oman)
- Define fourth location in Saudi Arabia
- Drill 1 well in Kazakhstan

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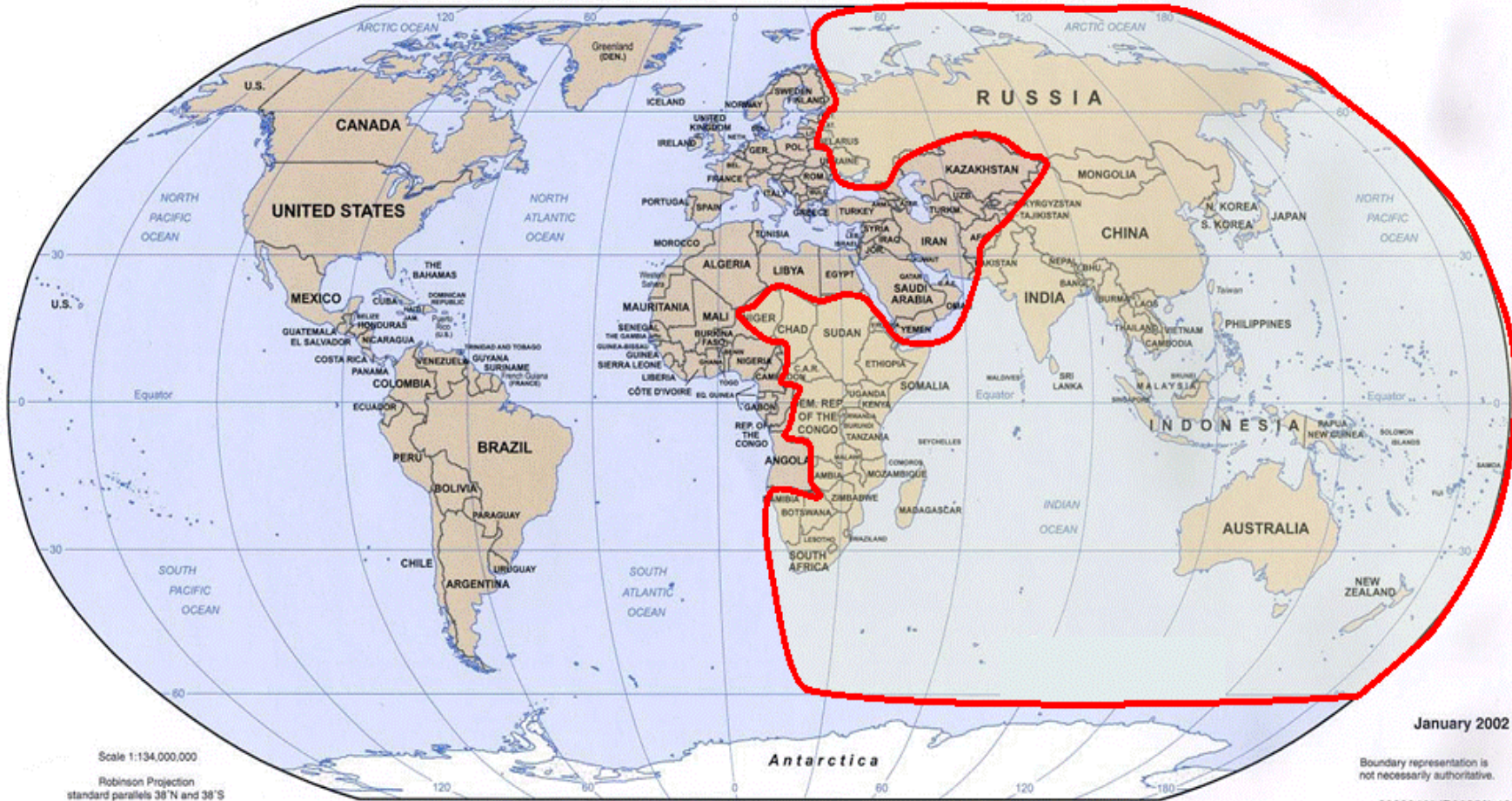
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# Exploration Rest of World

One hemisphere, two focus countries: Indonesia & Russia





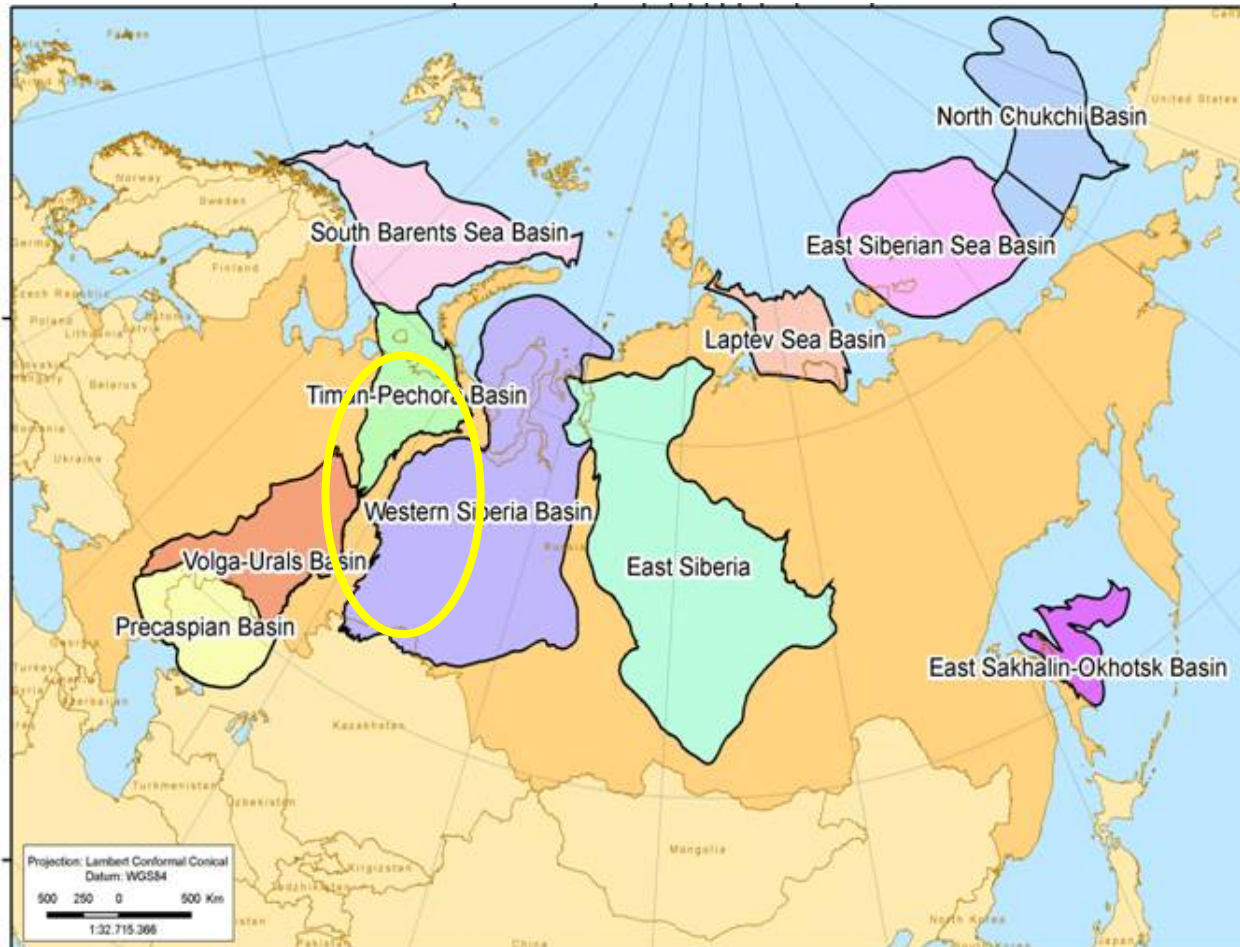
# Entry into Indonesia

Our motivation to enter Indonesia is the existence of unproven offshore basins with abundant indications of active petroleum systems in the complex plate interfaces in Western Indonesia. Some concepts if proven could be extrapolated to Papua New Guinea





Our presence in Russia is long term. We are advancing prudently, and ready to “break the code” of acreage acquisition. We cannot do this alone and we are relying on current operators to lead the process. We are targeting pure exploration in limited basins and medium potential blocks to stand inside the non-strategic size.



During the next 12/24 months we expect to perform:

- ❑ Drill first well in Seram (Indonesia)
- ❑ Complete seismic acquisition in current 5 blocks (2 blocks pending Indonesian Government approval)
- ❑ 2 additional blocks have been negotiated directly with Migas but may be included in next Indonesian Round
- ❑ Will shoot first ever seismic in Russia and plan to drill prior to IV-2012.

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## Our future delivery

- ❑ Our future delivery is based on an efficient replacement of exploration acreage. For this we have a qualified team and a flexible and agile management committed to organic growth
- ❑ We have an adequate geographical deployment to capture opportunities globally
- ❑ We maintain our target of generating an average of 30 drillable prospects per year
- ❑ We plan to continue with our goal to find around 300 million barrels of WI contingent resources per year, and gradually increase the target as we improve our reserves replacement





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