Global Perspectives for Deepwater Presalt Exploration and Development

Windsor Atlântica Hotel
Copacabana, Rio de Janeiro
11-12 September 2012
ORGANIZING COMMITTEE

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Co-Chairman

Gene Walton (BP America)
Co-Chairman

Paulo Johann (Petrobras)
Co-Chairman

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The global focus on exploration and development of subsalt resources, including presalt areas, has challenged the oil industry to find advanced technical solutions to the unique complexities of this emerging play concept. Brazil, including the presalt play, has attracted international attention as one of the newest and biggest frontiers in exploration. Subsalt discoveries have also been made in deepwater West Africa, including recent presalt success. The Gulf of Mexico has an extensive track record of technical innovation in managing subsalt challenges from exploration to production. The subsalt and presalt play is typically characterized by poor to limited seismic imaging and resolution, challenging drilling and high development costs. The complexities of this environment lead to high levels of uncertainty and increased risks for exploration, appraisal and development, posing significant technical and commercial challenges for the oil industry.

The objective of this workshop is to address challenges and share best practices and technological breakthroughs in presalt and subsalt exploration, appraisal, and development through a multidisciplinary approach. Oral presentations and discussions will feature advances in seismic imaging, well design and execution as well as reservoir characterization and rock physics. Global case studies will highlight experiences from industry leaders in this complex and exciting new play.

The Society of Exploration Geophysicists (SEG), the Brazilian Geophysical Society (SBGf) and the Society of Petroleum Engineers (SPE) are proud to promote this opportunity for knowledge exchange along the famous Copacabana beach in Rio de Janeiro. On behalf of the SEG, SBGf, SPE and the Organizing Committee, we are honored to welcome everyone attending the Presalt Workshop and we wish you a pleasant stay in Rio de Janeiro.
The Organizing Committee will provide lunch for all participants on Tuesday, 11 and Wednesday, 12 September. You will receive two tickets to be used for admittance to the lunch room, located on the 5th floor of the hotel.

**CLOSING DINNER**

This dinner, for all participants, will take place on Tuesday, 11 September at 7 pm, at Windsor Atlantica Hotel on the 5th floor. You will receive a ticket, which will be required for entry into the Closing Dinner.

If you would like to bring a guest to the Tuesday Closing Dinner, you can purchase Closing Dinner Tickets at R$ 200,00 (two hundred reais) per ticket to attend this event at the Registration Desk.

**BADGES**

Our strict security rules require that nobody (participants and contractors) is allowed into the convention room without an appropriate badge. This applies to participants and contractors and the badge allows you to enter the convention room.

**ORAL PRESENTATIONS**

Each presenter has a 25-minute time slot (20 minutes for presentation - 5 minutes for discussion).

We strongly recommend that all presenters test and upload their slides onto the network before its scheduled presentation. On Tuesday, 11 September, at 7 am, you will find technical support at the back of the meeting room to help you with your presentation.

**LANGUAGE**

The Workshop official language is English. No simultaneous interpretation will be provided during the presentations and all presentations must be in English.

**WORKSHOP POLICIES**

Reminder: All notes, reproduction, distribution or storage of any part of the presentations and discussions is prohibited. No proceedings will be reproduced or printed of the presentations.
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11-12 September 2012
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>8:15am - 8:30am</td>
<td>Welcome/Safety Briefing</td>
</tr>
<tr>
<td>8:30am - 9:00am</td>
<td>Keynote Speaker: Mário Carminatti, Petrobras Exploration Executive Manager &quot;Presalt Exploration Challenges in Brazil: Technology and Knowledge Integration.&quot;</td>
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**Session 1: Advances in Presalt Imaging Technology and Interpretation**

Chairmen: Eric Ekstrand, BP America; Carlos Cunha, Petrobras; John Bastnagel, CGGVeritas and Marcos Bueno, Petrobras

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
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<tbody>
<tr>
<td>9:00am - 9:25am</td>
<td>Craig J. Beasley, WesternGeco - &quot;Advances in Marine Acquisition Technology: A Key to Better Imaging in Complex Salt Environments&quot;</td>
</tr>
<tr>
<td>9:25am - 9:50am</td>
<td>Didier Lecerf, CGGVeritas - &quot;Multi-azimuth Imaging for Deepwater Presalt Reservoirs in Santos Basin&quot;</td>
</tr>
<tr>
<td>9:50am - 10:15am</td>
<td>Jeremy Langlois, CGGVeritas - &quot;Variable Depth Streamer Acquisition: Broadband Data for Presalt Imaging in Santos Basin&quot;</td>
</tr>
<tr>
<td>10:15am - 10:45am</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:45am - 11:10am</td>
<td>Cyrille Reiser, PGS - &quot;A Clearer Image of the Presalt in Angola&quot;</td>
</tr>
<tr>
<td>11:10am - 11:35am</td>
<td>Chris Willacy, Shell International Exploration &amp; Production - &quot;Pre-stack Depth Imaging and Velocity Model Uncertainty in the Deepwater, Presalt, Offshore Brasil&quot;</td>
</tr>
<tr>
<td>11:35am - noon</td>
<td>Jerry Bowling, BP America - &quot;Subsalt Imaging at Mad Dog Field, Gulf of Mexico - Past, Present and Future&quot;</td>
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Noon - 12:30pm Discussion

12:30pm - 1:30pm LUNCH

**Session 2: Challenges in Deepwater Presalt Drilling Design and Operations**

Chairmen: Gene Walton, BP America; Antonio Lage, Petrobras; David Reid, Shell and John de Lange, BG Brasil

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>1:30pm - 1:55pm</td>
<td>John de Lange, BG Brasil - &quot;Challenges for the Drilling Industry in Ultra-deepwater&quot;</td>
</tr>
<tr>
<td>1:55pm - 2:20pm</td>
<td>Danilo Signorini Gozzi, Petrobras - &quot;Presalt - Santos Basin - Drilling and Completion&quot;</td>
</tr>
<tr>
<td>2:20pm - 2:45pm</td>
<td>John Gradishar, Shell International Exploration &amp; Production - &quot;Deepwater Well Construction in a Post Macondo World&quot;</td>
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<tr>
<td>2:45pm - 3:15pm</td>
<td>Coffee Break</td>
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<tr>
<td>3:15pm - 3:40pm</td>
<td>Nathan Biddle, BP Energy do Brasil - &quot;Challenges of Well Construction in Brazil Presalt Play: Risk Reduction, Long-Term Integrity and Performance&quot;</td>
</tr>
<tr>
<td>3:40pm - 4:05pm</td>
<td>Augusto Borella Hougaz, Petrobras - &quot;Optimization of Well Construction in the Presalt - Santos Basin&quot;</td>
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<tr>
<td>4:05pm - 4:30pm</td>
<td>Sameer Yadavalli, BP America - &quot;Long Term Pressure Monitoring in the Campos Presalt: Itaipu Surveillance Strategy&quot;</td>
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<tr>
<td>4:30pm - 5:30pm</td>
<td>Discussion</td>
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7pm Closing Dinner
### Session 3: Reservoir Characterization and Petrophysics: Applications & Analogues

Chairmen: Paulo Johann, Petrobras; Carlos Eduardo Abreu, Petrobras and Wenceslau Gouveia, Shell

| 9:00am - 9:25am | Presenter: Paulo Johann, Petrobras - "Reservoir Geophysics in Brazilian Presalt Oilfields"
| 9:25am - 9:50am | Presenter: Jacob Proctor, InGrain - "Application of Digital Rock Physics to Characterize Complex Carbonate Formations"
| 9:50am - 10:15am | Presenter: Gareth D. Jones, ExxonMobil Exploration Company - "Diagenesis Driven by Geothermal Convection: Implications for Reservoir Quality Prediction in Presalt Lacustrine Carbonates"
| 10:15am - 10:45am | Coffee Break
| 10:45am - 11:10am | Presenter: Marcelo Frydman, Schlumberger (BRGC): "Reducing Geomechanics Risks in Deepwater Presalt Brazil"
| 11:10am - 11:35am | Presenter: Mark G. Kittridge, Ikon Science - "Rock Physics for Improved Interpretation of Reservoir Properties: Bringing Reservoir Petrophysics to Seismic Inversion"
| 11:35am - noon | Presenter: Gerardo González, Paradigm - "Reducing Uncertainties for Faults and Fractures Extraction from Presalt Seismic Attributes"

### Session 4: Case-Studies: Access to First Oil

Chairmen: Antonio Pinto, Petrobras; Heitor D’Arrigo, BG Brasil; Jacek Jaminski, BP America and Kristan Reimann, Maersk Oil

| 1:30pm - 1:55pm | Presenter: Gene Walton, BP America - "Subsalt Challenges on the Angolan Passive Margin - Block 31 Exploration through Development"
| 1:55pm - 2:20pm | Presenter: Matthew E. Richards, Chevron North America Upstream - "St. Malo Appraisal and Development: A Multidiscipline Approach to a Subsalt, Phased Development in the Gulf of Mexico"
| 2:20pm - 2:45pm | Presenters: Mark Pearce and David Shepherd, BP America: "Unlocking Value from a Giant Gulf of Mexico Deepwater Subsalt Development: The Atlantis Story"
| 2:45pm - 3:15pm | Coffee Break
| 3:15pm - 3:40pm | Presenter: Donatella Astratti, Schlumberger Stavanger Research: "A Dual Representation of Multiscale Fracture Network Modelling: Application to a Giant Carbonate Field (UAE)"
| 3:40pm - 4:05pm | Presenter: Iubatan Antonino Pinto, Petrobras: "Presalt Production at Jubarte Field - Campos Basin"
| 4:05pm - 4:30pm | Presenter: Jorge Oscar de Sant’ Anna Pizarro, Petrobras - "Lula Pilot and Phased Development of Santos Basin Fields"
| 4:30pm - 5:30pm | Discussion / Workshop Summary
The Brazilian currency is the Real (R$). The official exchange rate is published daily in newspapers. Cash and travelers checks are easily exchanged at hotel cashiers, banks, and travel agencies. Many hotels and shops accept foreign currency and international credit cards.

Shops and most businesses are open from 9am to 6pm on Monday-Friday and on Saturday from 9am to 1pm. Banks are open Monday through Friday from 10am to 4pm. Most shopping centers and malls remain open from 10am to 10pm Monday through Saturday and from 3pm to 10pm on Sunday. Many pharmacies and small grocery stores are open on Saturday.

In restaurants, beauty salons and bars, tips varying from 10% to 15% are usually given when not included in the bill.

Rio de Janeiro offers a tropical climate year round. Dress lightly and be sure to bring appropriate protection from the tropical sun (hat and sunscreen). Light cotton clothing is the rule for outdoor activities during the day. A light sweater is advisable for the evening. Light sport coats and slacks are appropriate for men and casual attire is fashionable for women. From August to October, the temperature stays close to 25°C.
TAXI SERVICE

Regular yellow cab cars are found outside the airport and may be flagged from the street. But we recommend you to take a special taxi at the airport to the hotel. These are found at the airport and outside hotels or can be requested by the front desk. When you arrive in Rio, look at the following special taxi companies which have a desk located in the hall of the arrival gate at the airport: Cootramo (blue cab cars) and Transcopass (red cab cars).

CONSULATES

All nations that maintain diplomatic commercial relations with Brazil have consulates in Rio. Telephone numbers and addresses are available at your hotel front desk or in the phone book.

ELECTRICITY SERVICE

The voltage is 110 or 220volts, 60 cycles.

For more information about Rio de Janeiro city, please visit: http://www.rioguiaoficial.com.br/
People in Rio de Janeiro are very hospitable and very graciously welcome tourists. However, in a big city you should be careful and avoid exposing yourself to certain risks.

Please find some tips below that will help you be safe and have an enjoyable stay.

• Do not carry your passport. It is unnecessary. A photocopy will be enough.
• Always exchange currency for the local money (Real) and avoid using cash machines outside banks or shopping centers.
• Avoid going around with a lot of money. Major credit cards are easily accepted.
• Do not wear expensive watches or jewels. Keep your jewels and valuables in your room safety deposit box.
• For your safety, immediately report any loss of your key to the hotel front desk.
• Always carry cameras or video devices in a small bag.
• Do not take valuables to the beach and never leave your belongings unattended.
• During the evening, the preference is to use the sidewalk for walking; do not walk at the seaside.
• For taxis, always ask the hotel front desk.
• The personnel at the front desk are trained to inform you about the best options, such as important museums, shopping centers, botanical garden, sightseeing, or typical restaurants.

Enjoy your stay in Rio de Janeiro!