

**AN EXPLORATION & PRODUCTION  
PERSPECTIVE ON THE WEST COAST OFFSHORE**

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**Frontier**

# **AN EXPLORATION & PRODUCTION PERSPECTIVE ON THE WEST COAST OFFSHORE**

**B.C. NATURAL GAS SYMPOSIUM  
MAY 7, 2003**

*Dave Collyer  
Vice President, Frontier  
Shell Canada Limited*



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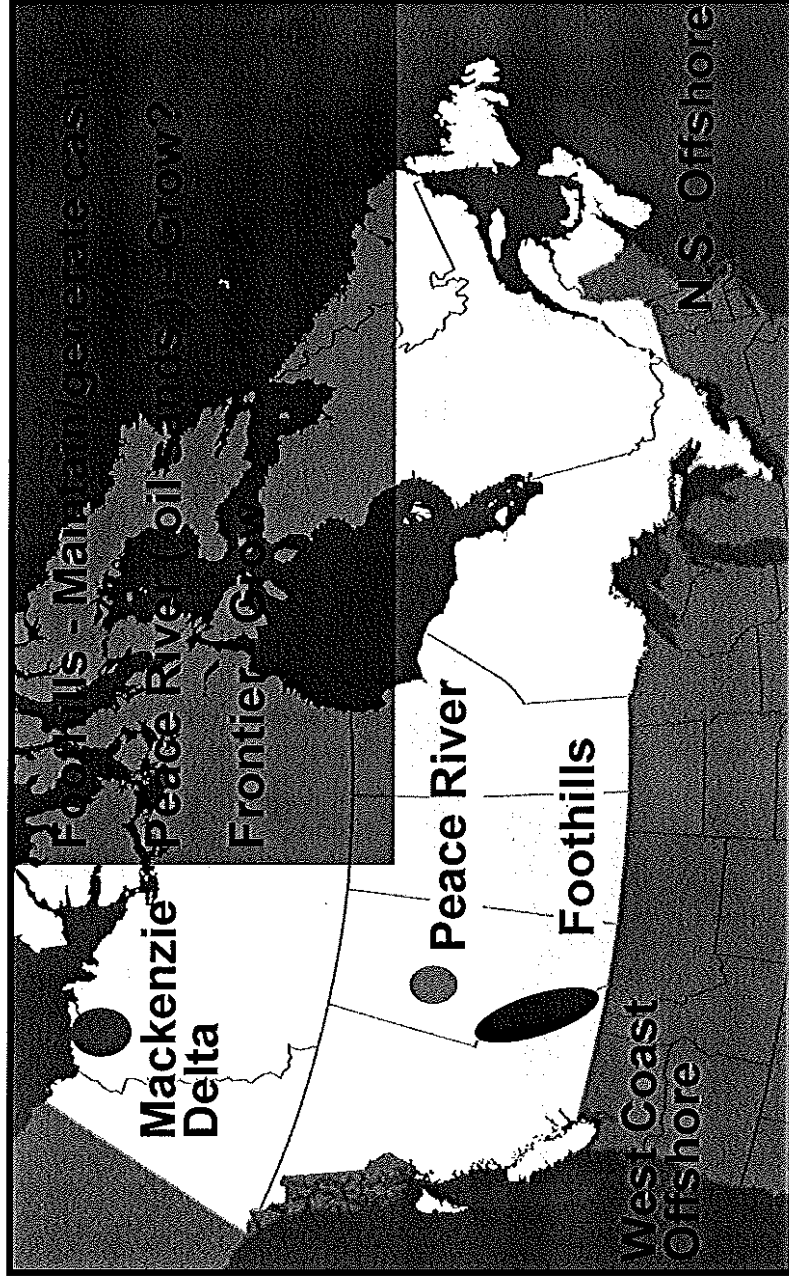
# AGENDA

- INTRODUCTION
- OPPORTUNITY EVALUATION FRAMEWORK (“TECOP”)
  - *Technical*
  - *Economic*
  - *Commercial*
  - *Organizational*
  - *Political / Societal*
- CURRENT ASSESSMENT OF WEST COAST OFFSHORE
- NEAR TERM PRIORITIES
- KEY MESSAGES



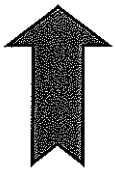
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# SHELL CANADA'S UPSTREAM BUSINESS



## West Coast Offshore

- Initial Shell land position 1961
- Exploration in 1960's
  - 14 wells drilled
  - Regional 2D seismic
- Farmout to Chevron 1971
- Moratorium 1972
- Environmental Assessment Panel 1986

 West Coast not a current exploration priority...but a strategic growth option of interest



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# SHELL'S OPPORTUNITY EVALUATION FRAMEWORK - "TECOP"

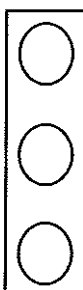
"TECOP"

**TECHNICAL**



*Prospectivity, costs, technology, HSE*

**ECONOMIC**



*Economic attractiveness*

**COMMERCIAL**



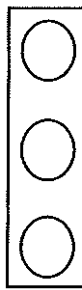
*Market, fiscal, competition*

**ORGANIZATIONAL**



*Competencies, resourcing, partners*

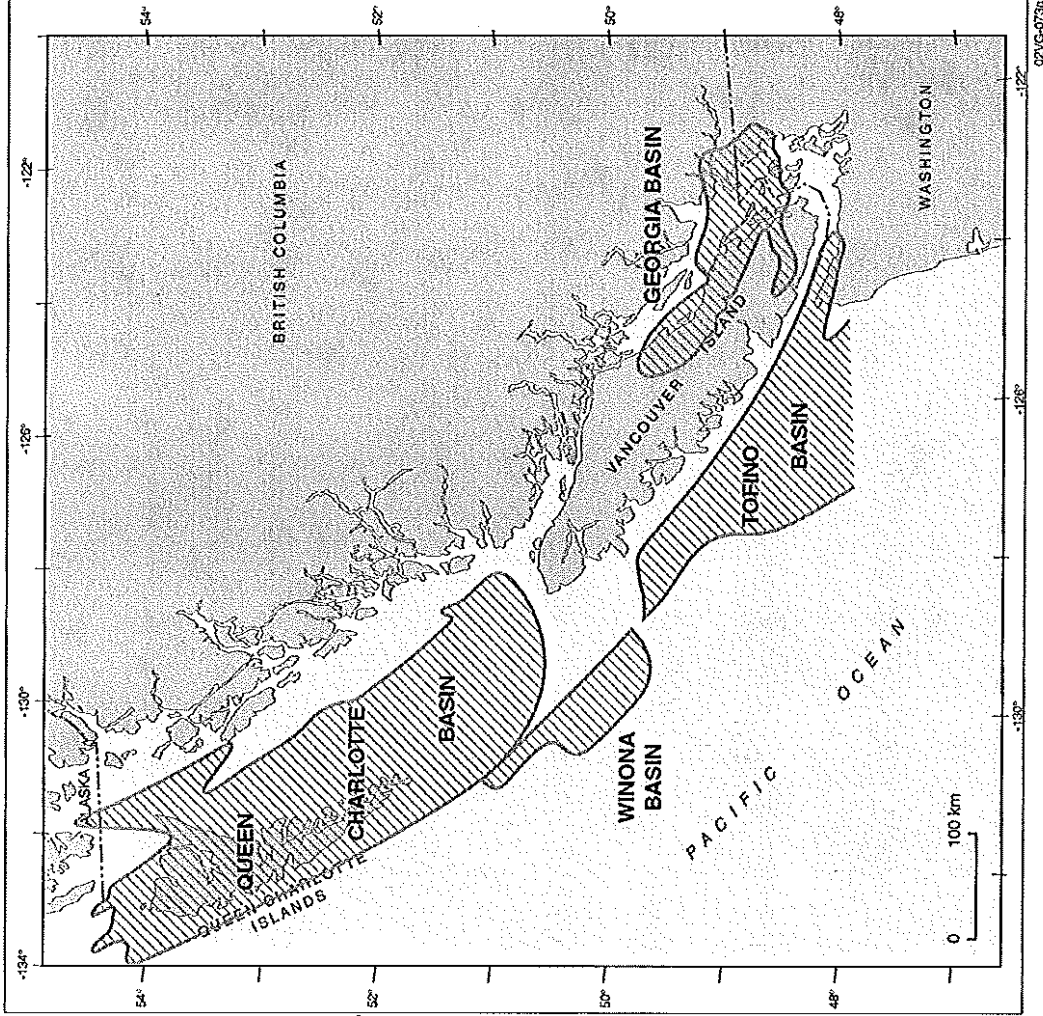
**POLITICAL /  
SOCIETAL**



*Governments, First Nations,  
stakeholders, reputation,  
regulation*



# TECHNICAL - GEOLOGICAL PROSPECTIVITY

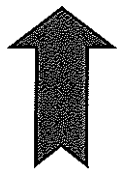


## PROS

- "Positive" indicators
  - source / reservoir / trap / seal
- GSC / other resource estimates (± 30 TCF)
- New technologies not applied
- Exploration cycle immature
- Large areal extent

## CONS

- Early drilling results disappointing
- Oil vs. gas uncertainty
- Relative attractiveness versus investment alternatives
- GSC estimates are not recoverable reserves

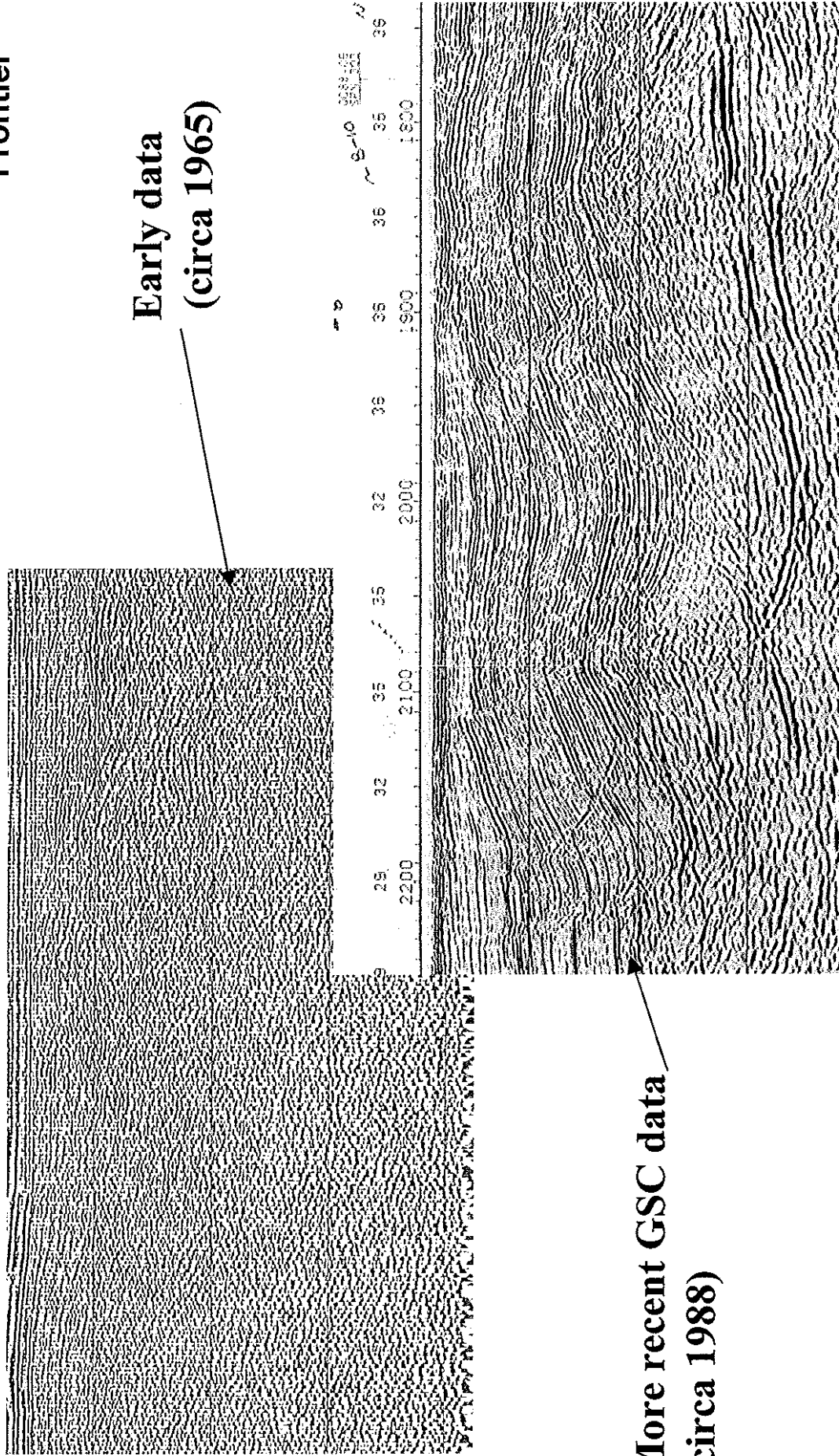


Resource potential HIGHLY uncertain...can only be confirmed through exploration



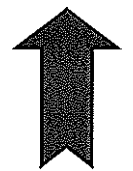
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# TECHNICAL - SEISMIC DATA QUALITY



Early data  
(circa 1965)

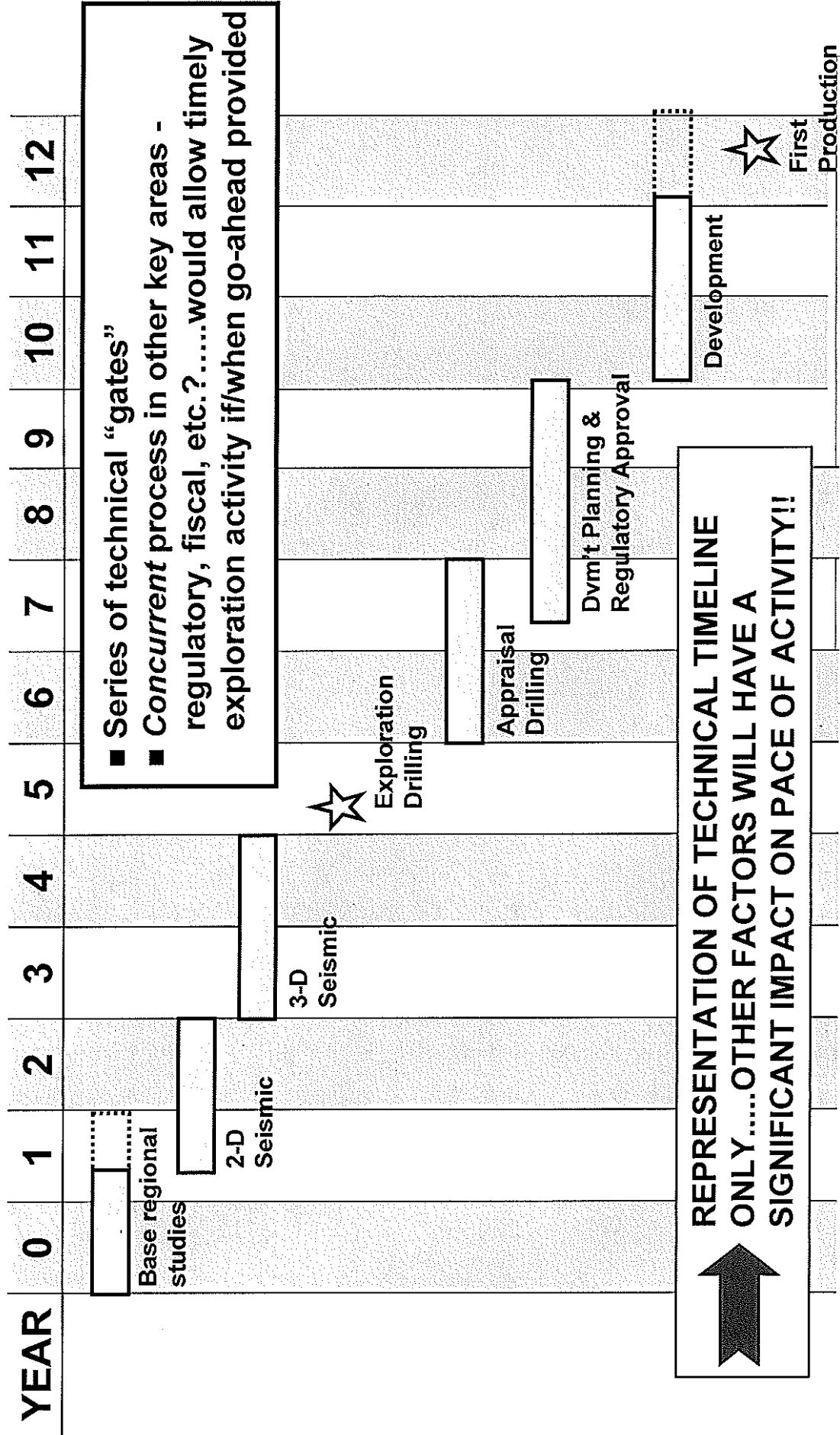
More recent GSC data  
(circa 1988)



Need to apply current seismic technology & geological concepts to more fully assess offshore potential



# A "NOTIONAL" TECHNICAL TIMELINE







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## TECHNICAL - ENVIRONMENT

- **Establish integrated planning framework @ early stage in process**
  - *Government leadership, broad stakeholder engagement*
  - *Identify data / information gaps (“real”, substantive)*
  - *Plan / timeline to address information needs*
  
- **Key requirements:**
  - *Sound science as basis for decision-making*
  - *Good baseline data*
  - *Early clarity on sensitive / protected areas (prior to significant expenditures)*
  
- **Provide legitimate “foundation” for subsequent environmental assessments & regulatory reviews for specific project proposals**



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## TECHNICAL - ENVIRONMENT

- **Important to acknowledge results of earlier reviews...**

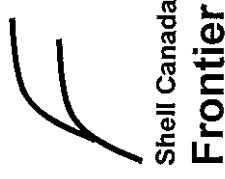
- **Oct/'01 Jacques Whitford Report**

- “...there are no specific design, geographical or environmental issues that would preclude the development of the offshore reservoirs of British Columbia”*

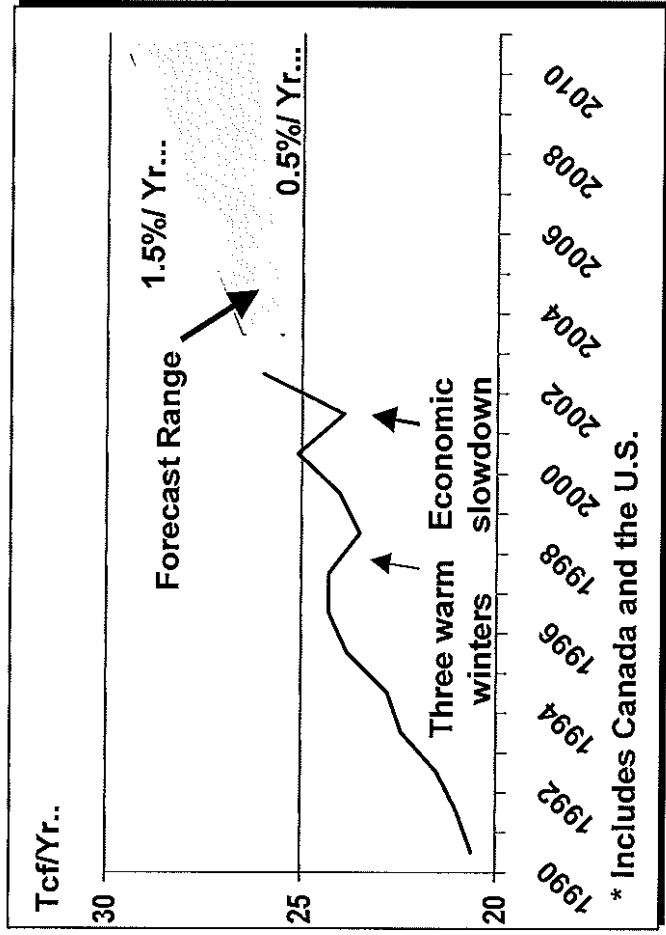
- **Jan/'02 Offshore Oil and Gas Scientific Panel Report**

- “There is no inherent or fundamental inadequacy of science or technology, properly applied in an appropriate regulatory framework, to justify a blanket moratorium on activities.”*

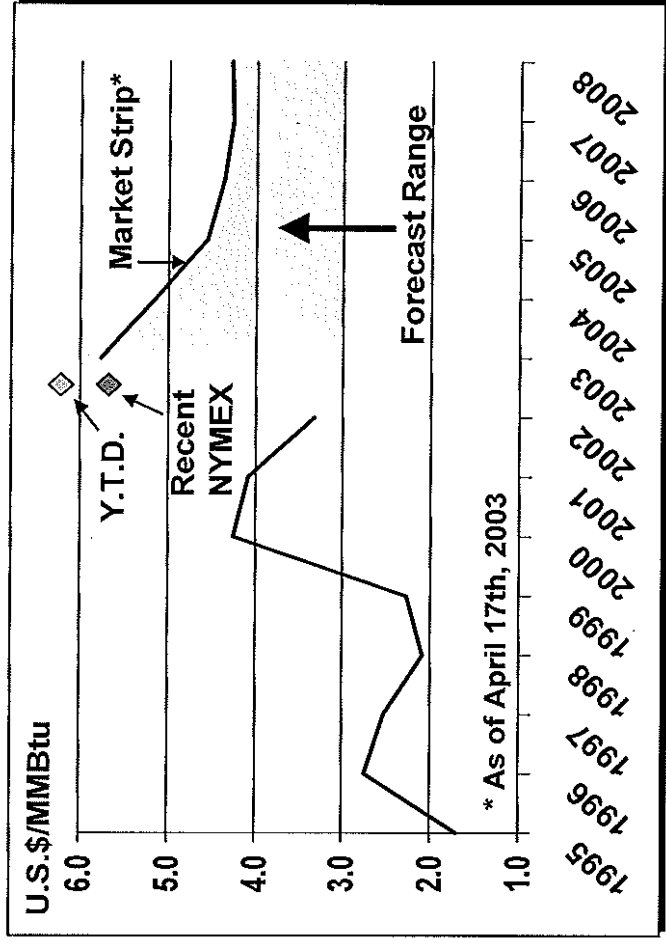
# COMMERCIAL - MARKETS & INFRASTRUCTURE



**N.A. Demand\***



**Price Outlook**

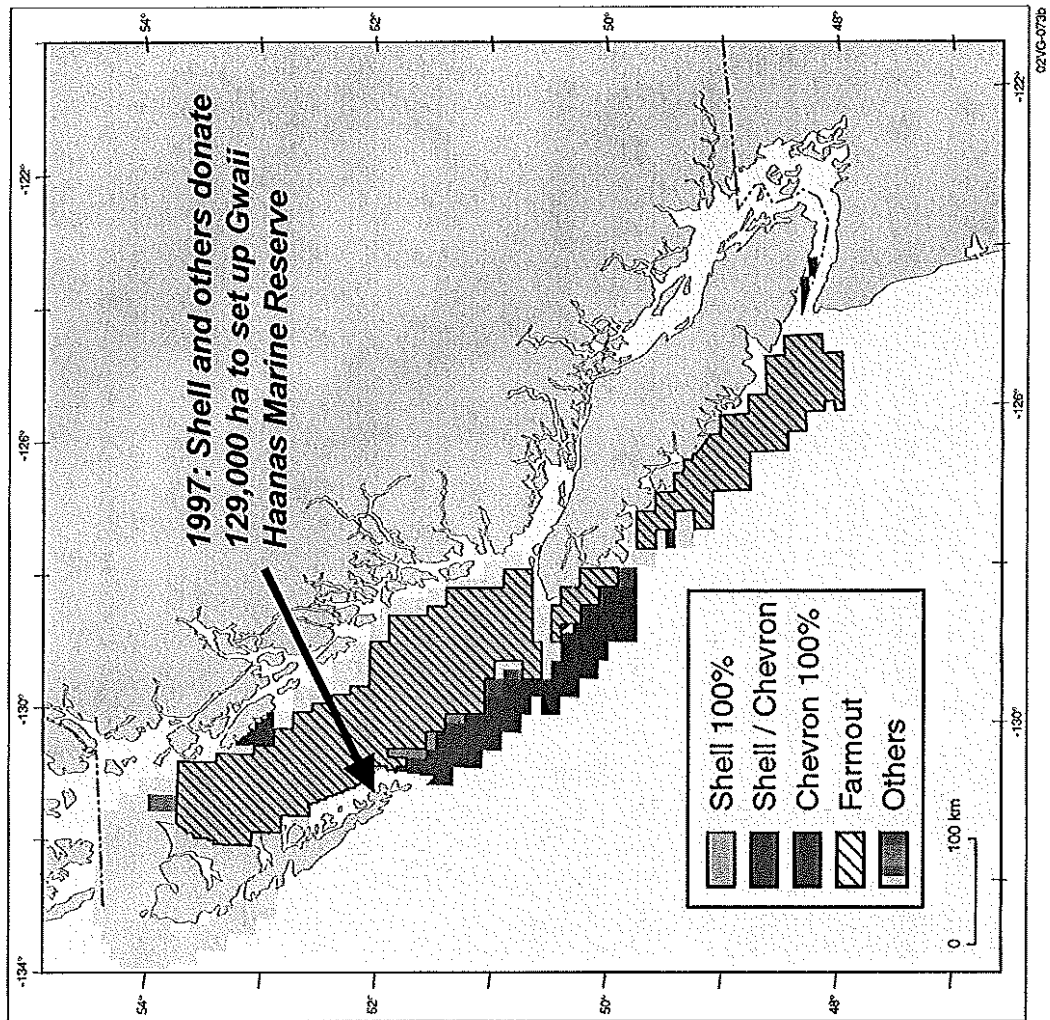


- Positive medium term outlook for N.A. gas market
- Other commercial issues to be addressed by industry:
  - ◆ pipeline infrastructure
  - ◆ local market development
  - ◆ access to export markets



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# COMMERCIAL - LANDHOLDINGS & PARTNERSHIPS



- Highly concentrated landholdings
- Responsible operators with global experience...Shell, ChevronTexaco, PetroCanada
- Strong partnerships (Shell / ChevronTexaco)
- Rights & interests of existing landholders must be respected!

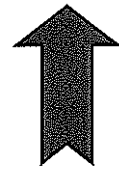


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## POLITICAL / SOCIETAL

- **Governments must jointly take lead in resolution of...**
  - *Jurisdictional issues*
  - *Regulatory framework*
  - *Fiscal regime & revenue sharing*
  - *Rights & tenure*
  - *Environmental assessment process*
- **Need a pragmatic tripartite process involving First Nations peoples**
  - *Meaningful consultation*
  - *Focussed process*
- **Industry (& other stakeholders) will engage once multi-stakeholder process(es) established**



**Is there sufficient alignment of interests & political will?**

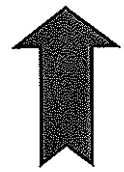


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# W.C. OFFSHORE - CURRENT ASSESSMENT

“TECOP”

TECHNICAL		<p><i>Prospectivity highly uncertain, technology exists, environmental must be addressed (appears doable)</i></p>
ECONOMIC		<p><i>Costs &amp; economics uncertain</i></p>
COMMERCIAL		<p><i>Market outlook very favourable</i></p>
ORGANIZATIONAL		<p><i>Industry capability exists, limited current capacity for West Coast Offshore</i></p>
POLITICAL / SOCIETAL		<p><i>Jurisdiction, fiscal, regulatory framework are undefined, meaningful First Nations engagement required... mixed stakeholder messages</i></p>



**Some positive indicators, many unknowns, significant issues to be resolved!**



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## NEAR TERM PRIORITIES

- Establish a coordinated & transparent multi-stakeholder process  
(joint Federal / Provincial)
- Establish integrated planning framework...focus on substantive gaps in environmental information & plans to address
- Federal & Provincial governments align to address:
  - *fiscal regime*
  - *regulatory framework*
  - *jurisdiction*
  - *rights & tenure*
- Meaningful consultation with First Nations peoples..... tripartite process?

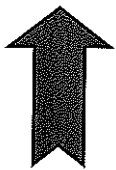
 **Concurrent, flexible process building momentum  
toward lifting of moratorium**



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## KEY MESSAGES

- Shell largest West Coast landholder...offshore “on the radar screen”, driven by market pull & potential geological prospectivity
  - Issues / challenges are reasonably well-understood...but difficult, complex, diverse
  - Industry needs clarity, certainty, transparency on “rules of game” before undertaking significant investments
  - Industry will engage in multi-stakeholder processes... once established by responsible gov'ts & regulators
  - Some momentum established, but much work to be done before “moratorium” lifted
  - Take longer term view & be realistic about timelines / expectations
-  **Potential window of opportunity...is there sufficient alignment to proceed?**

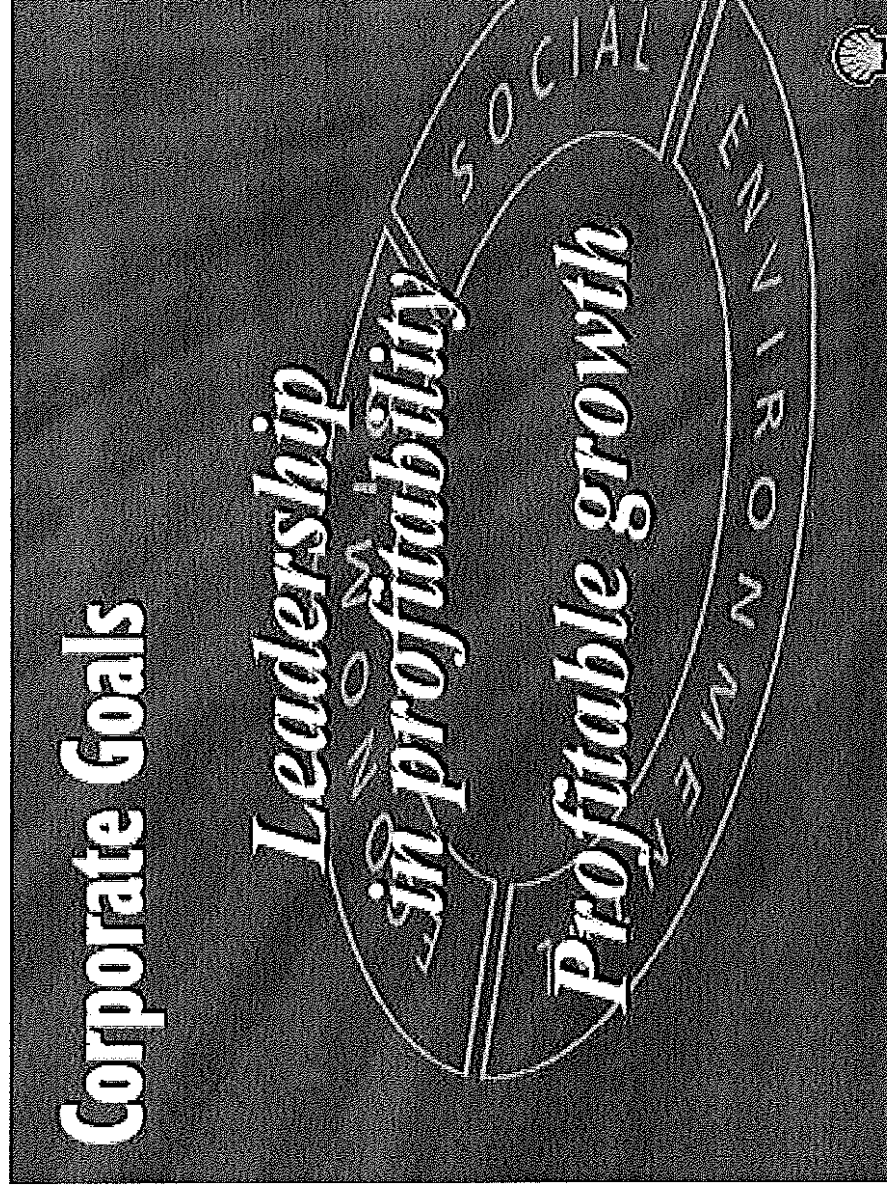




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# SHELL & SUSTAINABLE DEVELOPMENT

*An overarching commitment to SD - Economic, Social, Environmental - part of our Business Principles*

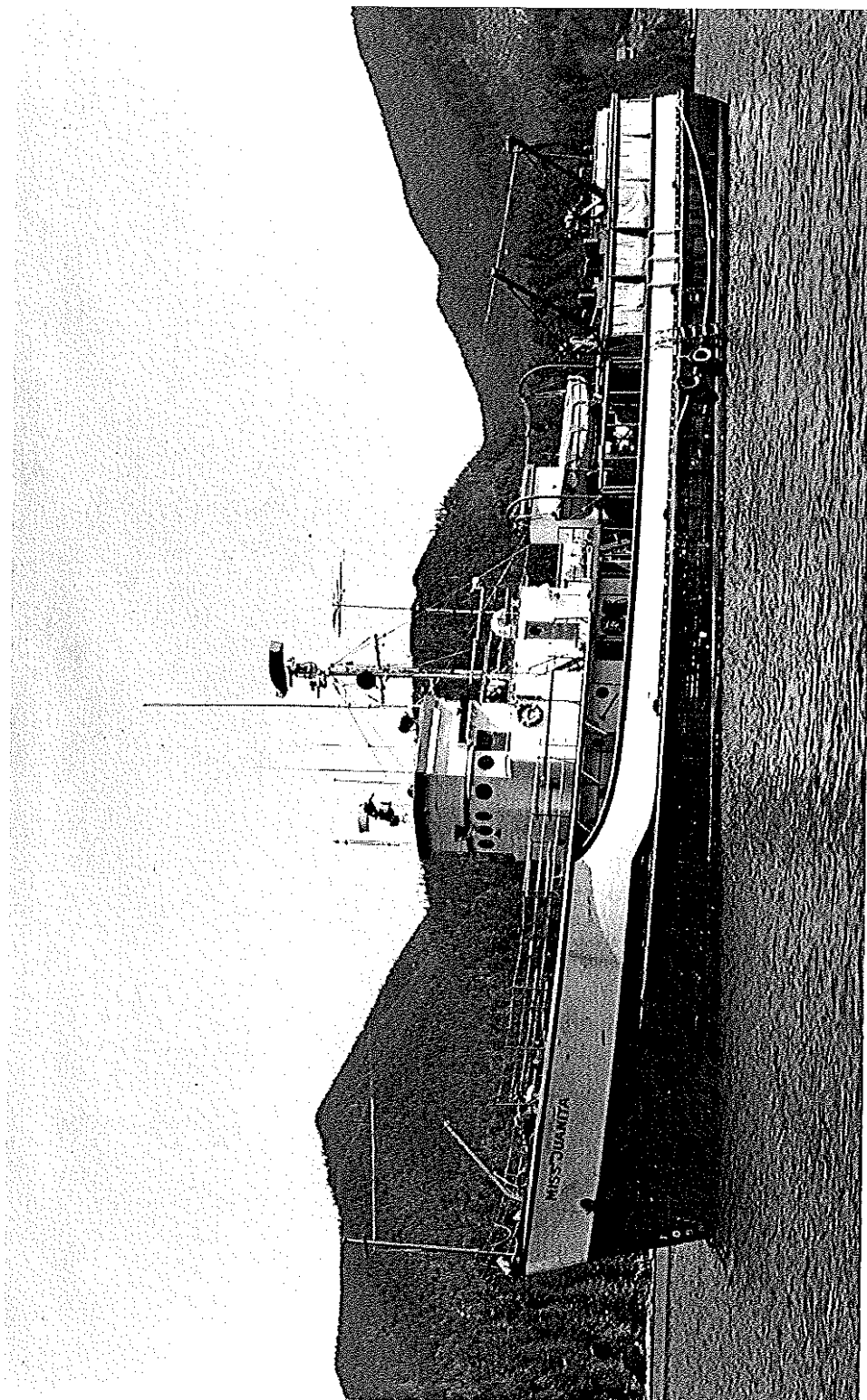


**Context in which offshore oil & gas activity MUST be evaluated!**



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**We're all in this boat together, so let's do it right.....**



**THANK YOU**