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Marine

An Industry in Transition: Emerging Challenges for Deepwater Oil Transportation in the Gulf of Mexico

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SPE Presentation Outline

1. **ConocoPhillips Marine – post merger**
   - A Global Marine Operation
2. **Seahorse Shuttling and Technology**
   - Shuttling Value Proposition
   - October 2000 - Shuttling View
   - Shuttling Issues and Solutions
   - October 2003 – Shuttling View
3. **ConocoPhillips Marine and Seahorse**
   - Path Forward for Shuttling

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Postmerger ConocoPhillips Marine

- >85% of all CoP crude oil supply delivered by ship
- 2 million bbls of crude delivered per day
- 16 million bbls afloat at any time.
- Crude Tankers
- Shuttle Tankers
- Gas Carriers
- Drillships
- FPSOs
- Towboats
- Barges

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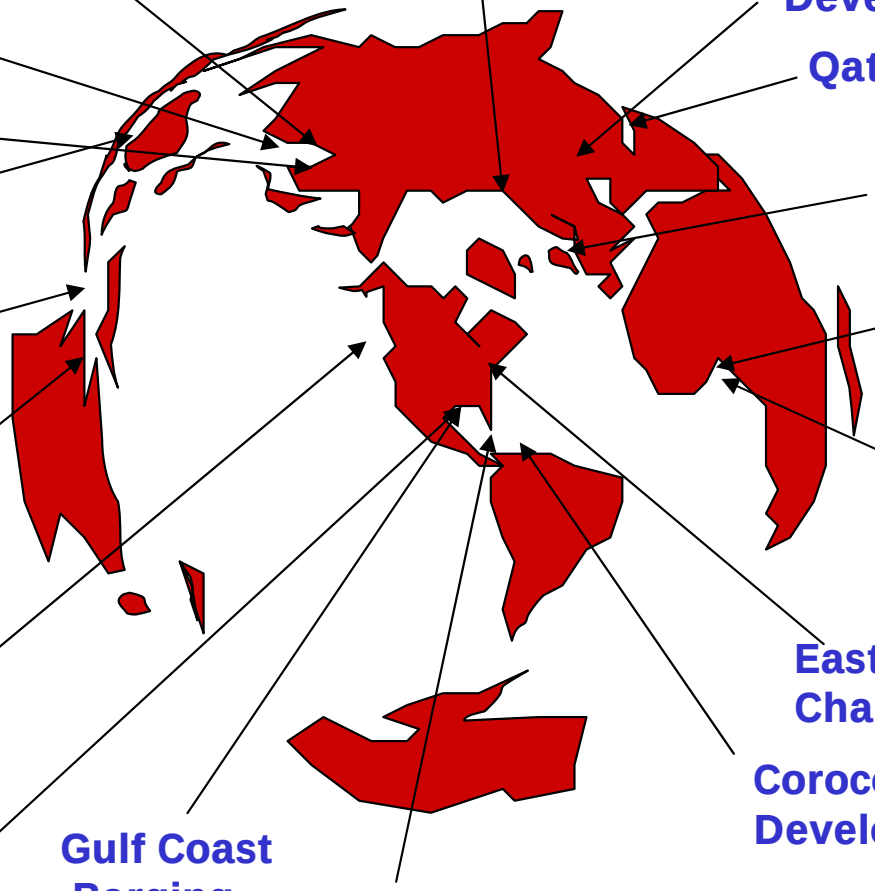
ConocoPhillips Global Marine Activities



China FPSO Developments

China - Marine Construction Projects

Russia Oil & Gas Transport Developments

Caspian Shuttling Developments

Korea - Marine Construction Projects

Qatar LNG Developments

Indonesia FPSO Developments

N. Sea – Crude Shuttling

Timor FLNG Developments

Nigeria – Brass LNG Developments

Australia – Darwin LNG Shipping & Terminal Developments

Nigeria – FPSO Operations

East Coast – Crude Import Chartered Tonnage

Alaska – West Coast Crude Transport

Corocoro FSO Developments

DH Tanker Construction

Gulf Coast Barging

Venezuela – Crude Transport

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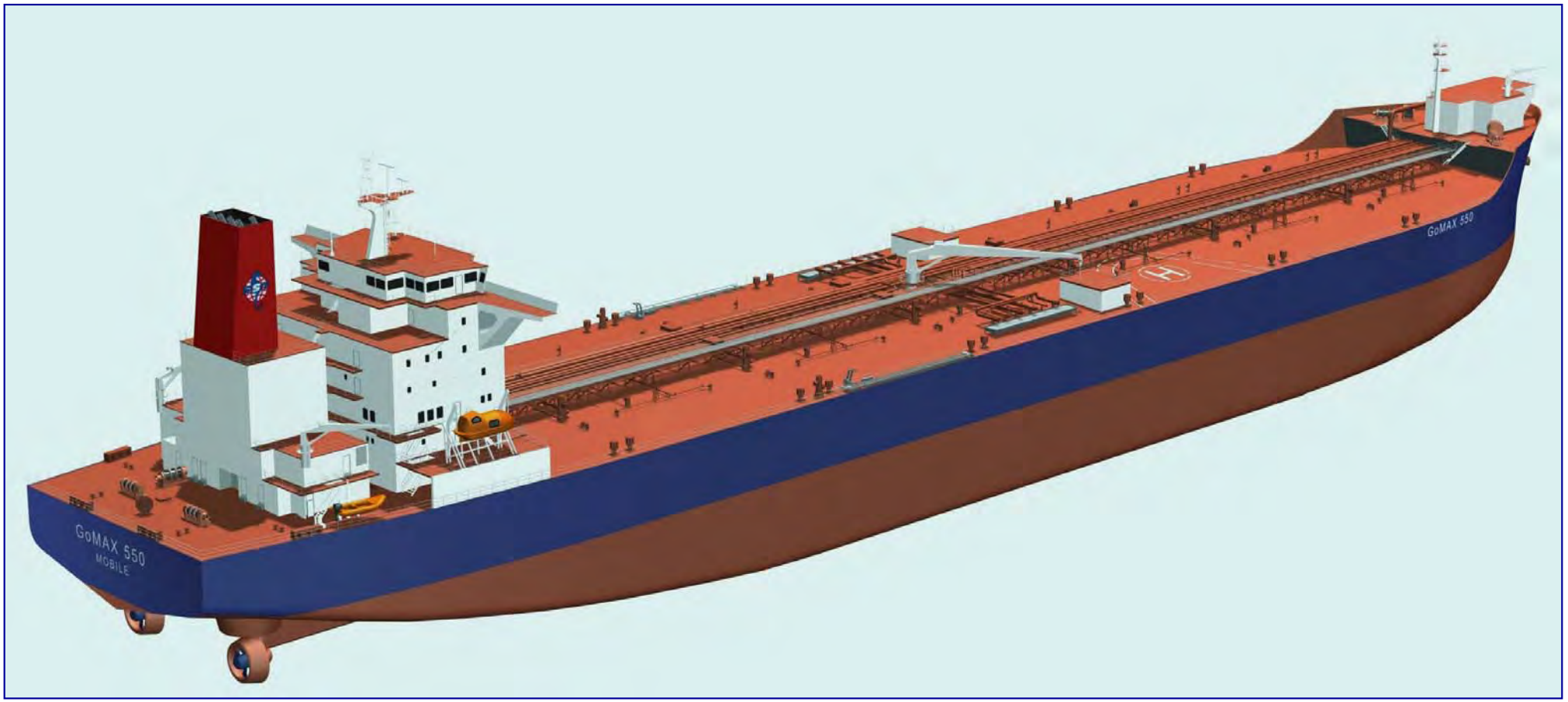
Seahorse Shuttling and Technology



Seahorse GoMAX 550 Shuttle Tanker

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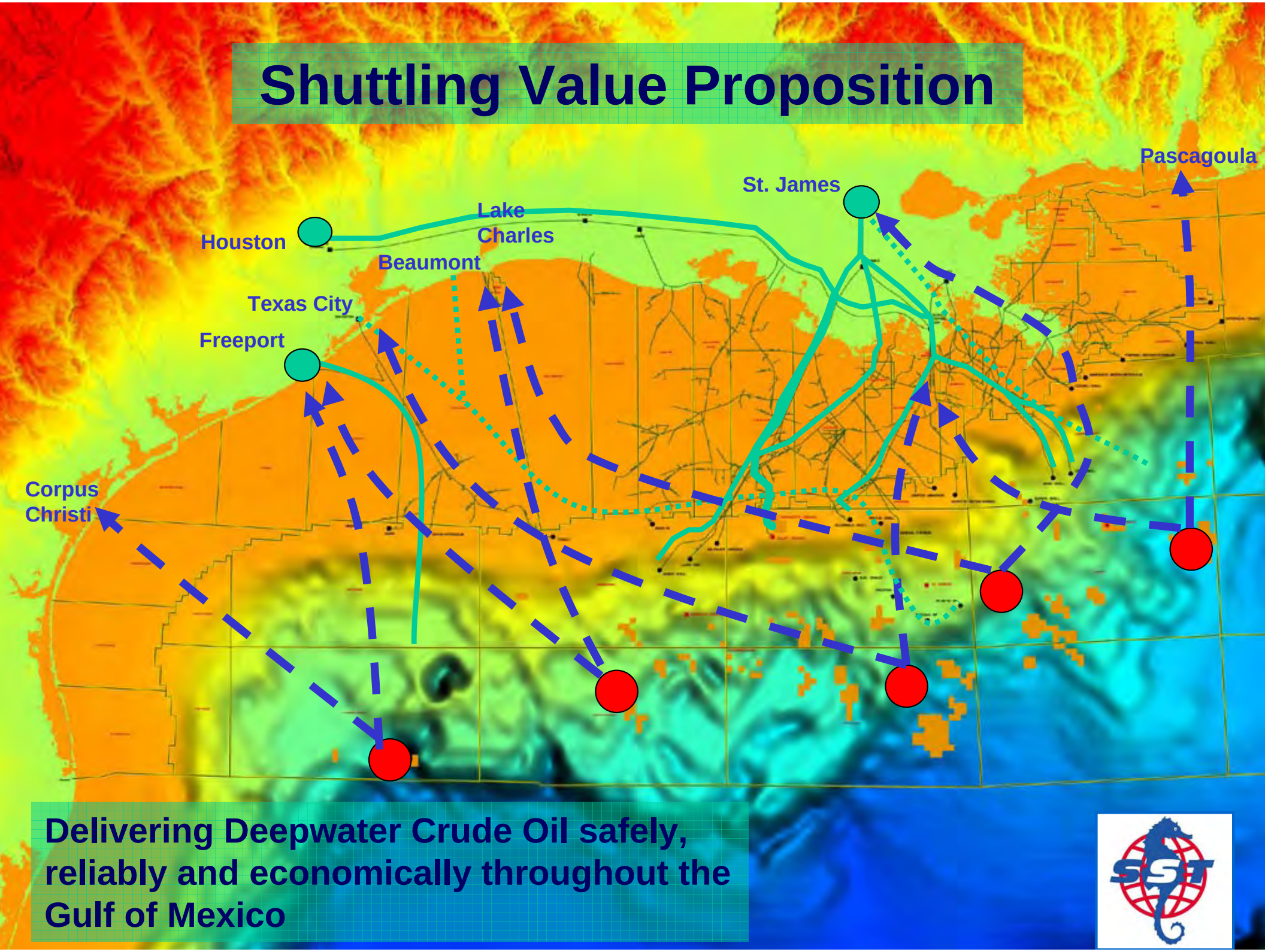
Shuttling Value Proposition



Delivering Deepwater Crude Oil safely, reliably and economically throughout the Gulf of Mexico

Shuttling Value Proposition

Producer Benefits

- As an Enabler
  - Technically Stranded Reserves
    - Location: Water Depth, Seafloor Gradient, Distance from Pipelines
- As a Cost Competitor - Higher Field NPV, IRR & PI
  - Value Preservation
    - Lower tariff than deepwater pipeline alternative?
  - Value Creation
    - Higher revenue from marketing flexibility
      - Location differential pricing (discharge port flexibility)
      - Crude quality premium (cargo segregation)
    - Earlier cash flow
      - Pipeline capacity availability?
      - Shorter lead time for FPSO / Shuttle than TLP / Pipeline?

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Shuttling View in October 2000

- Conoco's GB783 Magnolia discovery, ~4700 ft WD
  - Development scenarios include FPSO & shuttle tankers
- BP, BHP & Unocal's GC 826 Mad Dog, ~6,500 ft WD
- Significant Conoco/Industry exploration in >5,000 ft WD
  - S Green Canyon, Walker Ridge, Keathley & Alaminos Canyons
- Forecast 18 BBOE deepwater GoM discoveries from 2000-2010
- Forecast 10 FPSOs in Deepwater GoM by 2010
- Estimated 2012 GoM production peak of 2.5 MMBOPD:
  - 1.5 MMBbl via pipelines, filling existing trunklines
  - 1.0 MMBbl via ten shuttle fleet to Gulf Coast ports
- Only HOOPS oil pipeline extends to ~5,000 ft WD

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Shuttling Issues - October 2000

- MMS Evaluating FPSOs and Shuttling in GoM
  - FPSO Environmental Impact Statement Pending
- FPSOs
  - USCG / MMS Jurisdiction (Hulls and Topsides)
  - General Rules and Guidelines for operations
  - Manning requirements (Foreign or US Nationals)
- Jones Act Compliance for GoM Shuttle Tankers
  - US Shipyards, capability and vessel cost
    - Ship shape vs. ATB
  - US Crew availability and training

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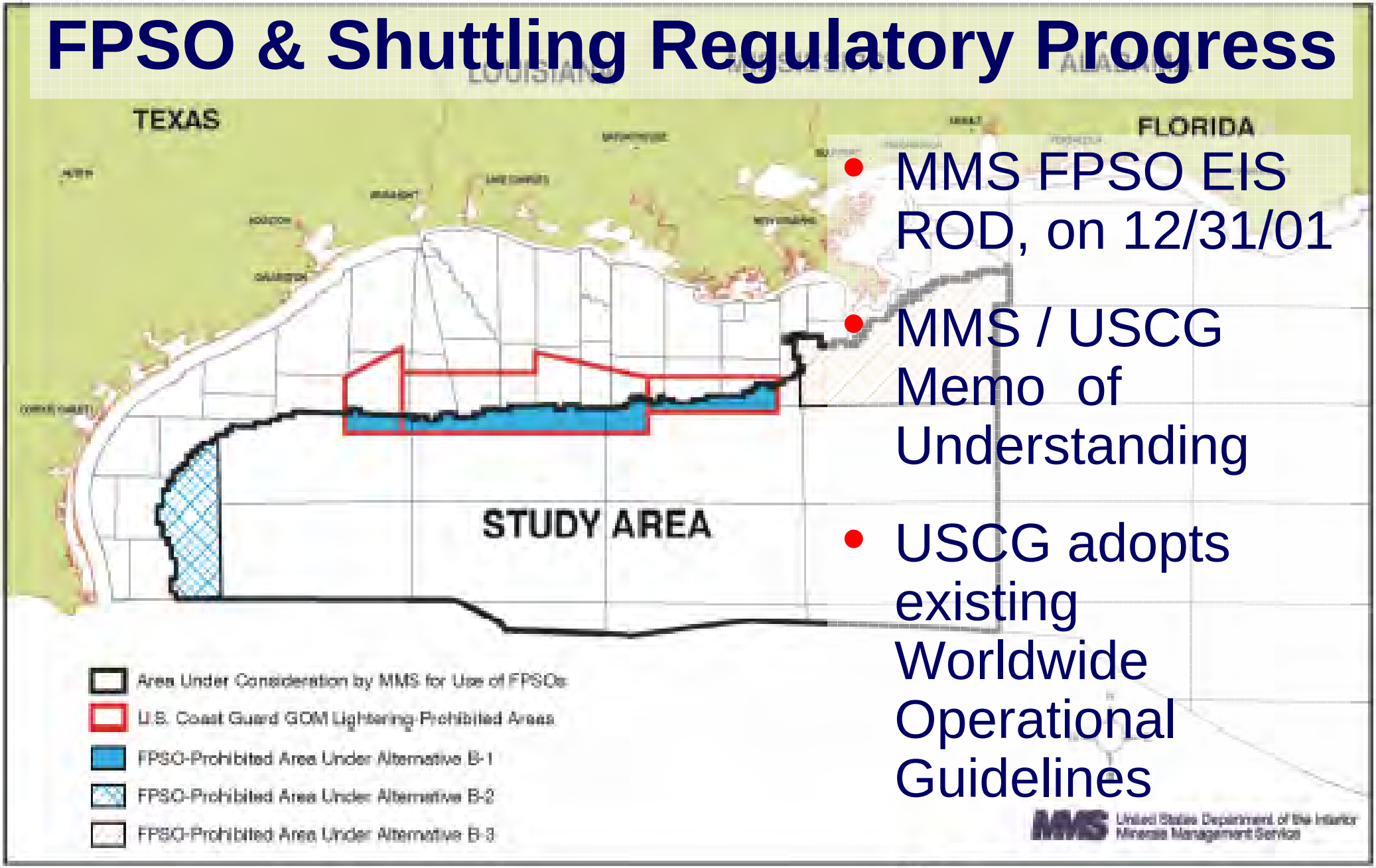
FPSO & Shuttling Regulatory Progress



- MMS FPSO EIS ROD, on 12/31/01
- MMS / USCG Memo of Understanding
- USCG adopts existing Worldwide Operational Guidelines

Figure 2-1 LIGHTERING-PROHIBITED AREAS IN THE GULF OF MEXICO

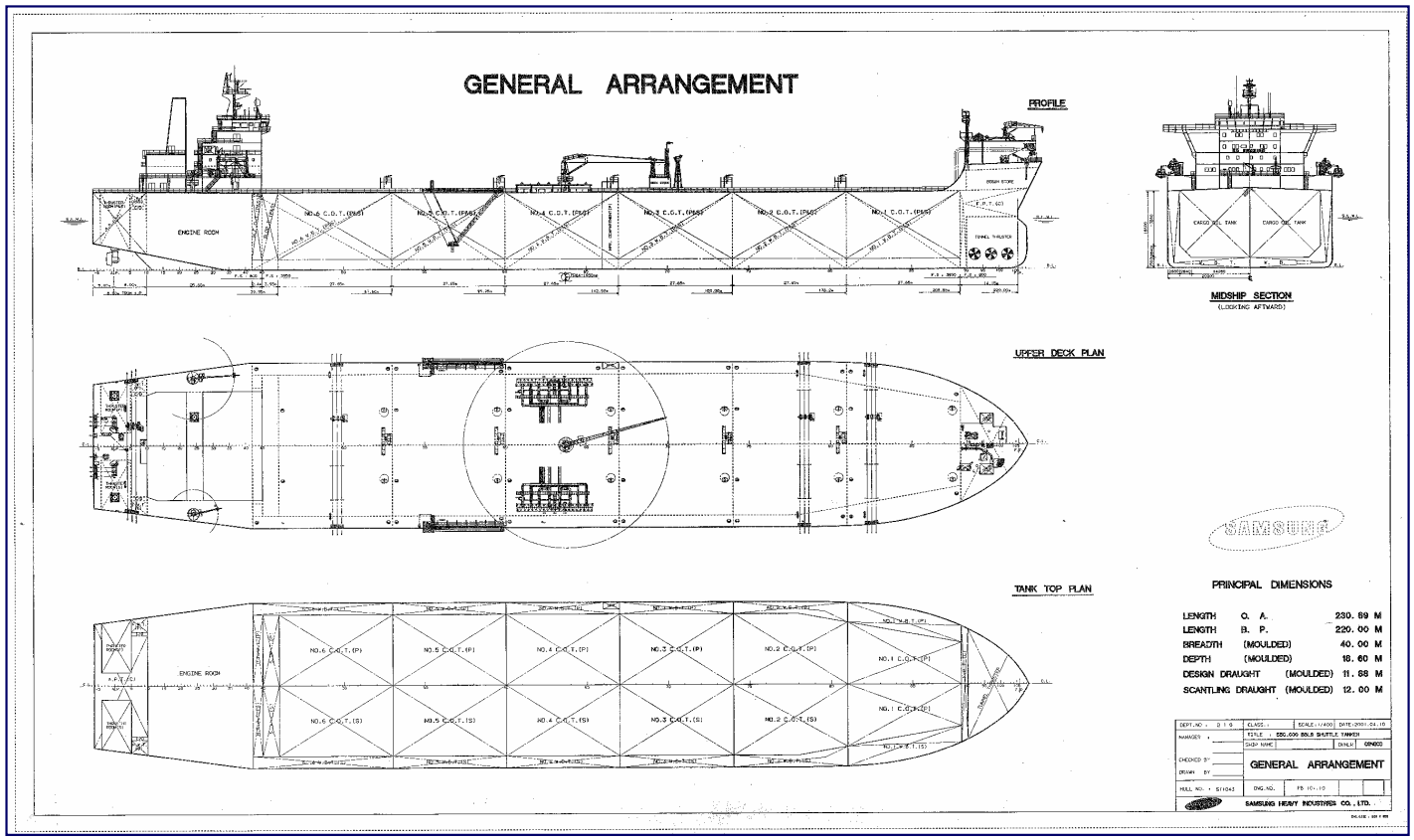
JAC Shuttle Build Solution
Conoco / Samsung / Alabama Alliance

- US Owner and Operator
- Fit for Purpose Design
- Simplified Hull Form
- Modular Design for Vessel Assembly
- Proven Primary Vendor Alliance

- High Efficiency Shipbuilding
- ABS/USCG/ACP Approved Design
- Total Material Procurement Package
- Pre-commissioned Engineering modules
- Personnel Exchange with Alabama

- US Shipyard
- Hull Construction
- Vessel Assembly

Principle Particulars - GoMax 550 Shuttle



Draft operating	~38.5 ft
Cargo Capacity	547,000 bbls
Service Speed	13.5 knots
Propulsion Power	2x6500 kw
Bow Thrusters	3x2000 kw

Length O.A.	758 ft
Beam	131 ft
Depth	61 ft

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Production Schedule and Fleet Capacity

- Alabama Shipyard capacity - 2 tankers per year
- SST tanker delivery schedule and fleet capacity:

Vessel #	~Fleet Capacity (bopd)
1st vessel, Q1 2006	125,000
2nd vessel, Q3 2006	250,000
3rd vessel, Q1 2007	375,000
4th vessel, Q3 2007	500,000

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US Ship Building & Operations

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Shuttling Issues - October 2003

- **CoP selected TLP & pipeline offtake for Magnolia Field**
- **Pipeline selected for SE Green Canyon discoveries**
- **No FPSOs proposed yet for deepwater GoM fields**
  - Impact of oil storage requirement and cost to make shuttling work:
    - FSO vessel or Direct Shuttle Loading and dedicated tankers
- **Lower volumes than anticipated available for shuttling**
  - Few fields identified as shuttle candidates
    - Field numbers, size, peak rates and decline rates suboptimal
    - Need for guaranteed shuttle offtake
      - Low vessel utilization rates

⇒No benefit from “fleet economies”

⇒Difficult to “Start-up” GoM Shuttling as a transportation business

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Magnolia DVA Drivers

- Reserves distributed over multiple horizons
- Reservoir continuity thought to be an issue
- Fluid properties not conducive to a long subsea tieback

- Future rig intervention required. Therefore…

FPSO Eliminated as Primary Development Option

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Shuttling Issues – October 2003

- Reservoir conditions favor “Dry Tree” solutions
- Pipeliners much more competitive than expected
  - No additional storage component for SPARS and TLPs
  - Willing to lay to deepwater fields at tariff rates competitive with fleet shuttling rates
  - Willing to take significant risks on future tieback volumes
- Oil pipelines under construction to >6,000 ft WD
  - Oil Trunkline capacity increases by >1.25MBOPD
- Cameron Highway - Cross GoM pipeline
  - Connection to Cameron Highway permits capture of differential location benefits

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Dry Trees with an FSO

- Full production TLP or Spar
- Export of Oil through midwater flowlines to FSO
- Gas export by pipeline

- FSO moored remote from TLP
- Offtake by shuttle tankers

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Dry Trees with Direct Shuttle Loading

- Full production TLP or Spar
- Volumes >150Mbopd
- Export of Oil via HiLoad direct to Shuttle Tankers
- Gas export by pipeline

- Offtake by direct load shuttle tankers

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Dry Trees with some Production Facilities on FpSO

- Mini TLP wellhead platform
- First Stage separation
- Gas Export by Pipeline
- Non stabilized crude export to FpSO by midwater flowlines
- FpSO moored close by or coupled
- Second stage separation
- Oil Storage 5-10 days
- Shuttle Tanker Offtake

SST

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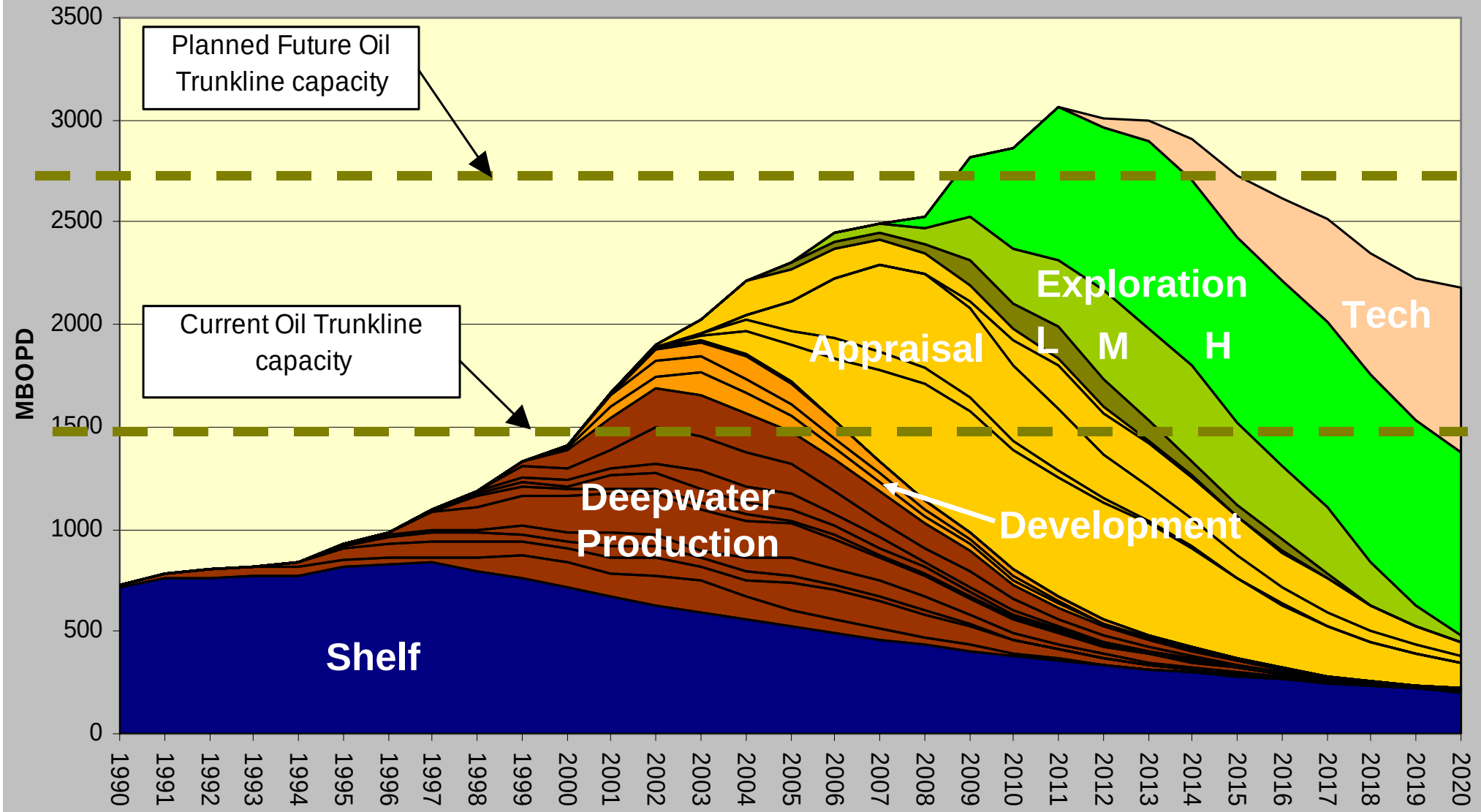
Deepwater GoM Production Forecast (Q2 2002)



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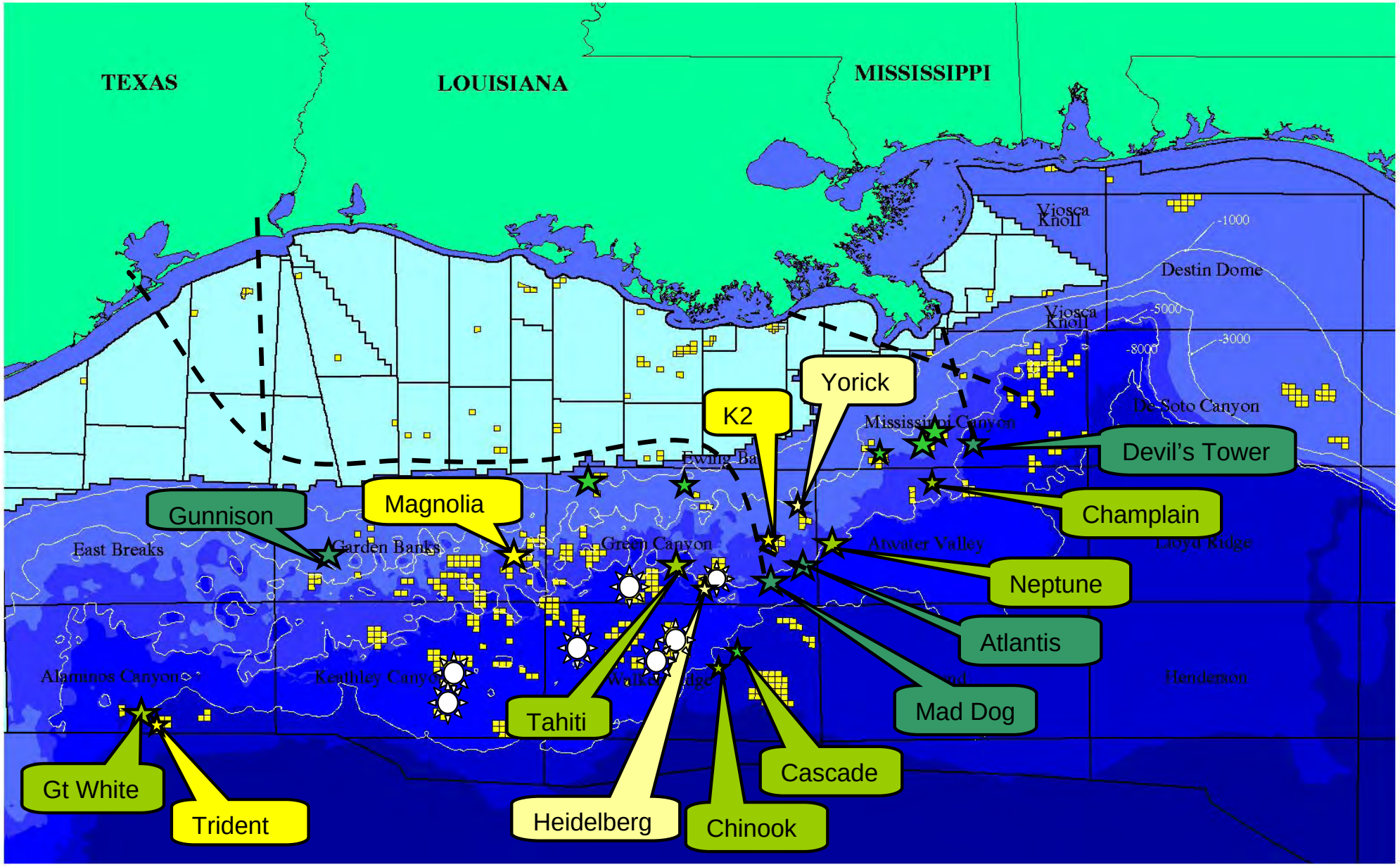

Key Industry & ConocoPhillips Deepwater Activity

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ConocoPhillips & Seahorse
Path Forward for Shuttling

- **CoP still believes shuttling can be a cost effective mode of deepwater oil transportation for GoM**
  - Have developed JAC shipbuilding solution & DSL capability
  - Have experience in US ship operations and access to trained US Mariners
- **Consider shuttling to be an enabling tool for our own deepwater developments**
  - CoP has not yet discovered commercially viable reserves in GoM deepwater that lend themselves to shuttling
- **CoP not now considering shuttling as 3rd Party Business**
  - However, will work with potential partners with applications for shuttling sooner than our own developments.

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