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UltraDeep Energy Company
Deep & Ultradeep Well Construction
Proprietary Dual Gradient Drilling Technology

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UltraDeep Energy Overview Revision 1.0

IADC

IADC UBO & MPD Committee Meeting
December 13, 2022
3657 Briarpark Drive
Houston, Texas, 77042, USA

Advanced Well Construction – Increased Well Integrity

Onshore, Shelf & Deepwater Well Construction

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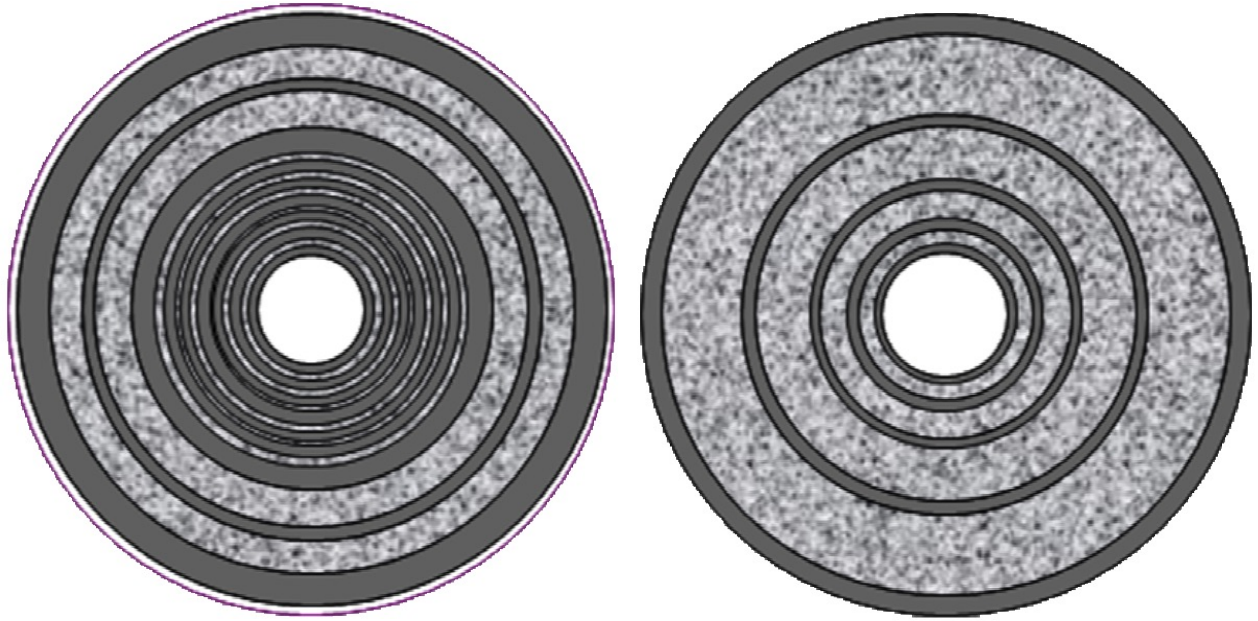
Dual Gradient Technology – Enabling Large Bore Geothermal & Deep Gas

- More than one fluid gradient used in well construction.
- Significantly reduced casing strings creating time and cost savings.
- Increased well integrity with superior wellbore cement construction.
- Enables large bore access to deep and ultradeep targets.
  - Deep - depth range 15,000 – 25,000 ft TVD
  - Ultradeep - depth range 25,000 – 35,000 ft TVD
- Reduced carbon footprint through reduced materials and time savings.

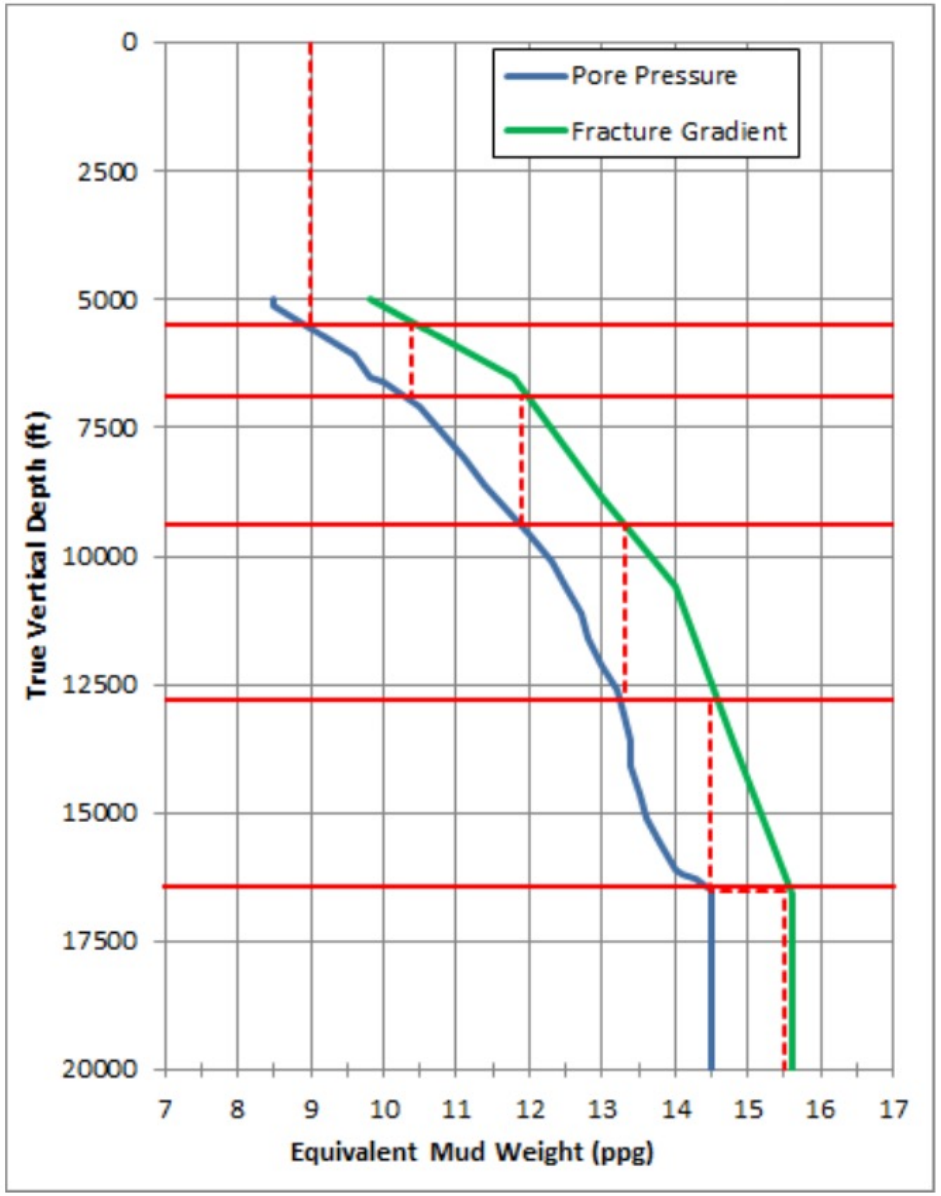
Conventional Well Construction
High count casing strings
Close tolerance cement



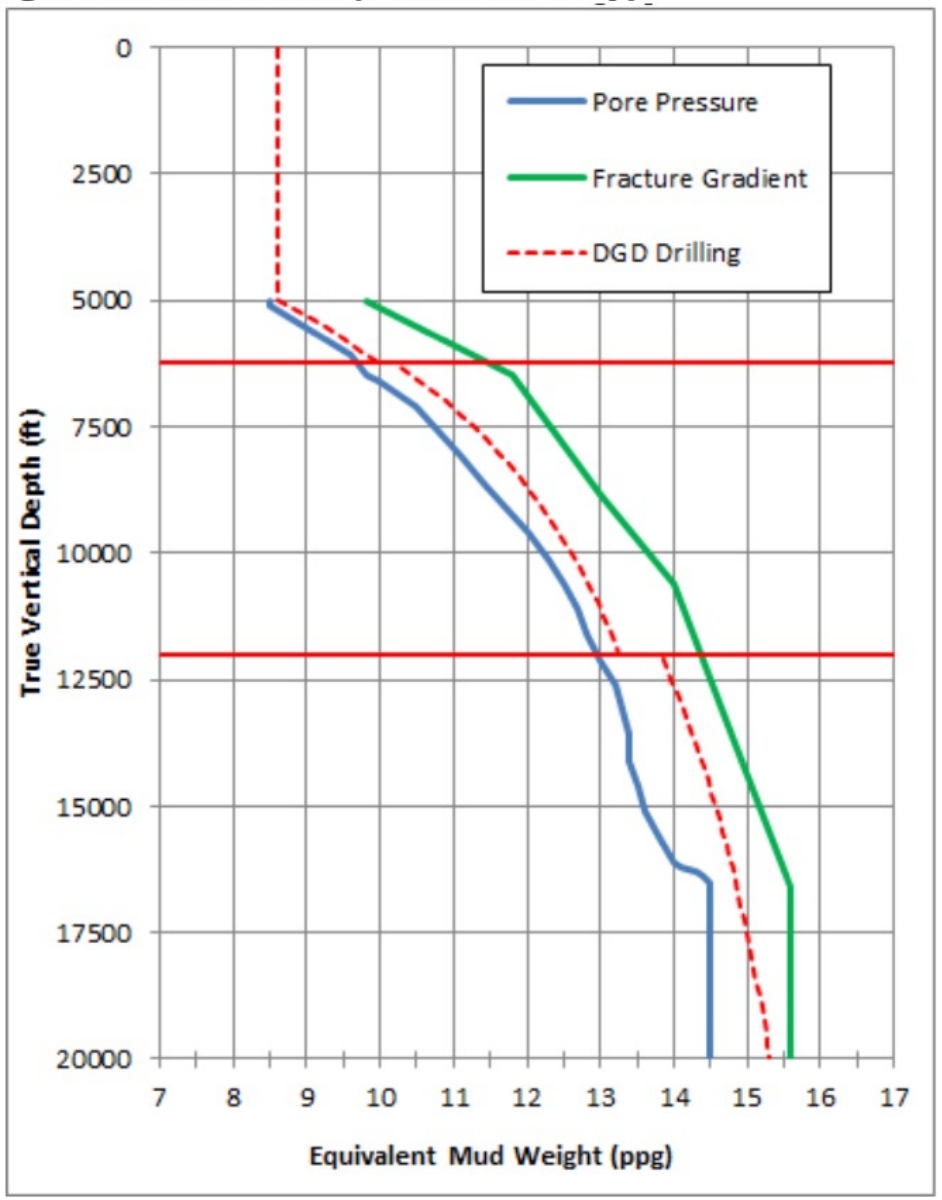
Dual Gradient Well Construction
Reduced casing strings
Superior cement construction

Technology Brief - Dual Gradient Drilling vs Single Gradient

DGD vs. Conventional Top-Down Casing Point Selection (Pressure Only)



6 Casing Strings Conventional



3 Casing Strings DGD

BSEE Report - Risk Profile of Dual Gradient Drilling

Bureau of Ocean Energy Management, Regulation, and Enforcement

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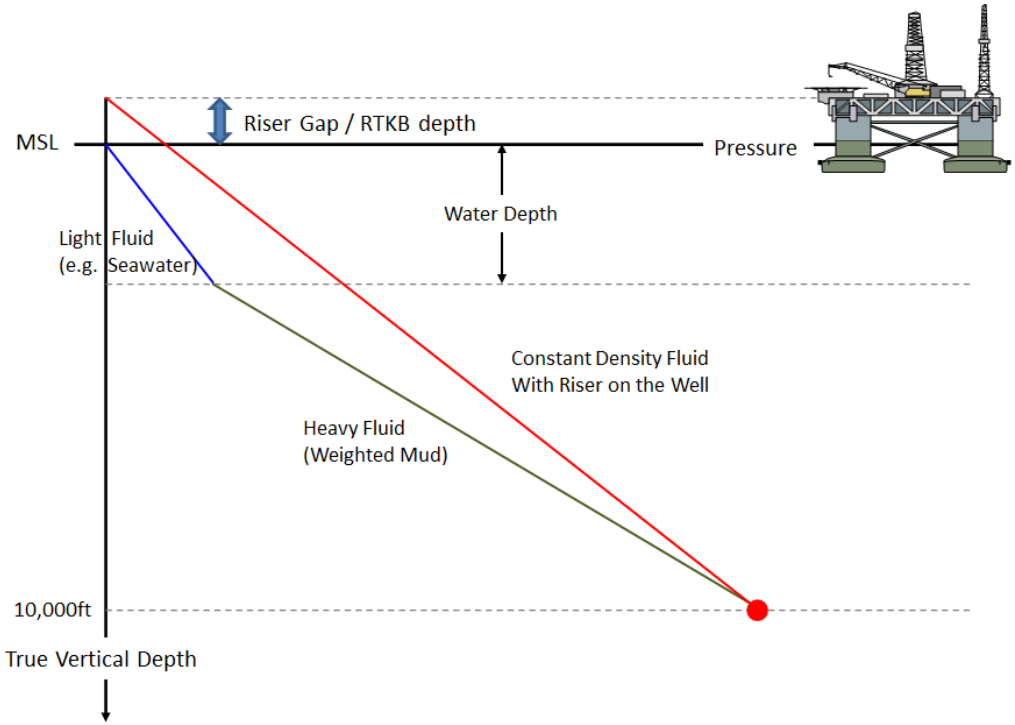
Risk Profile of Dual Gradient Drilling

Contract M09PC00016 - May 2, 2011 Final Report

https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program/631aa.pdf

Executive Summary Highlights (Chapter 3, Page 3)

- The Dual Gradient Drilling System re-establishes a margin of safety not obtainable in a single gradient system. Even the popular variant of Managed Pressure Drilling called Constant Bottomhole Pressure falls short of providing all of the well control benefits associated with DGD.
- The most impressive aspect of Dual Gradient Drilling is that it is as safe or safer than current conventional drilling techniques AND provides for full riser margin, where the well is fully controlled in the event of riser disconnect AND problem wells can be drilled and completed….



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Onshore, Shelf and Deepwater Drilling Operations

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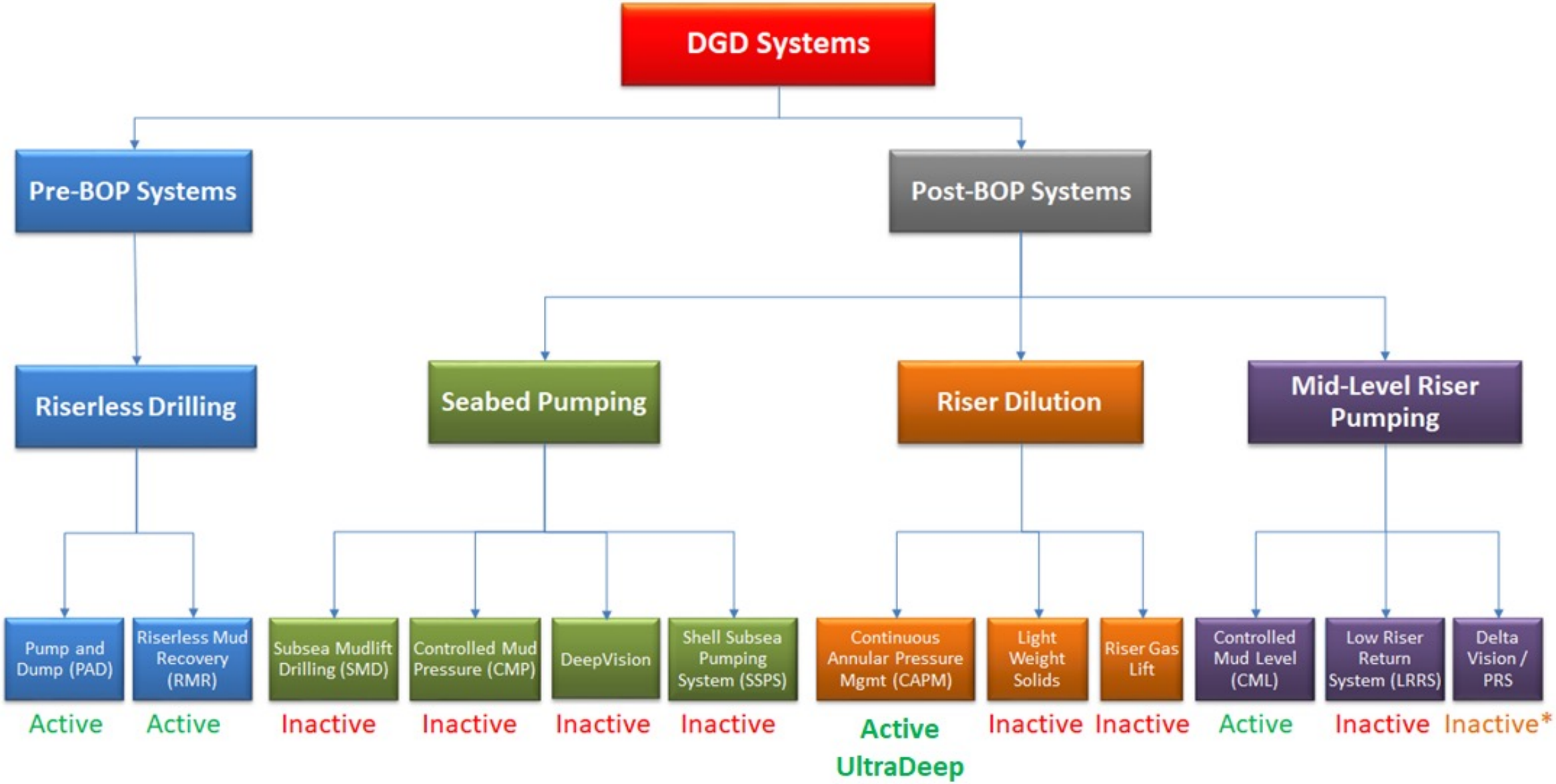

Onshore & Shelf New Technology Well Construction

Deepwater Origin & Future Enabler

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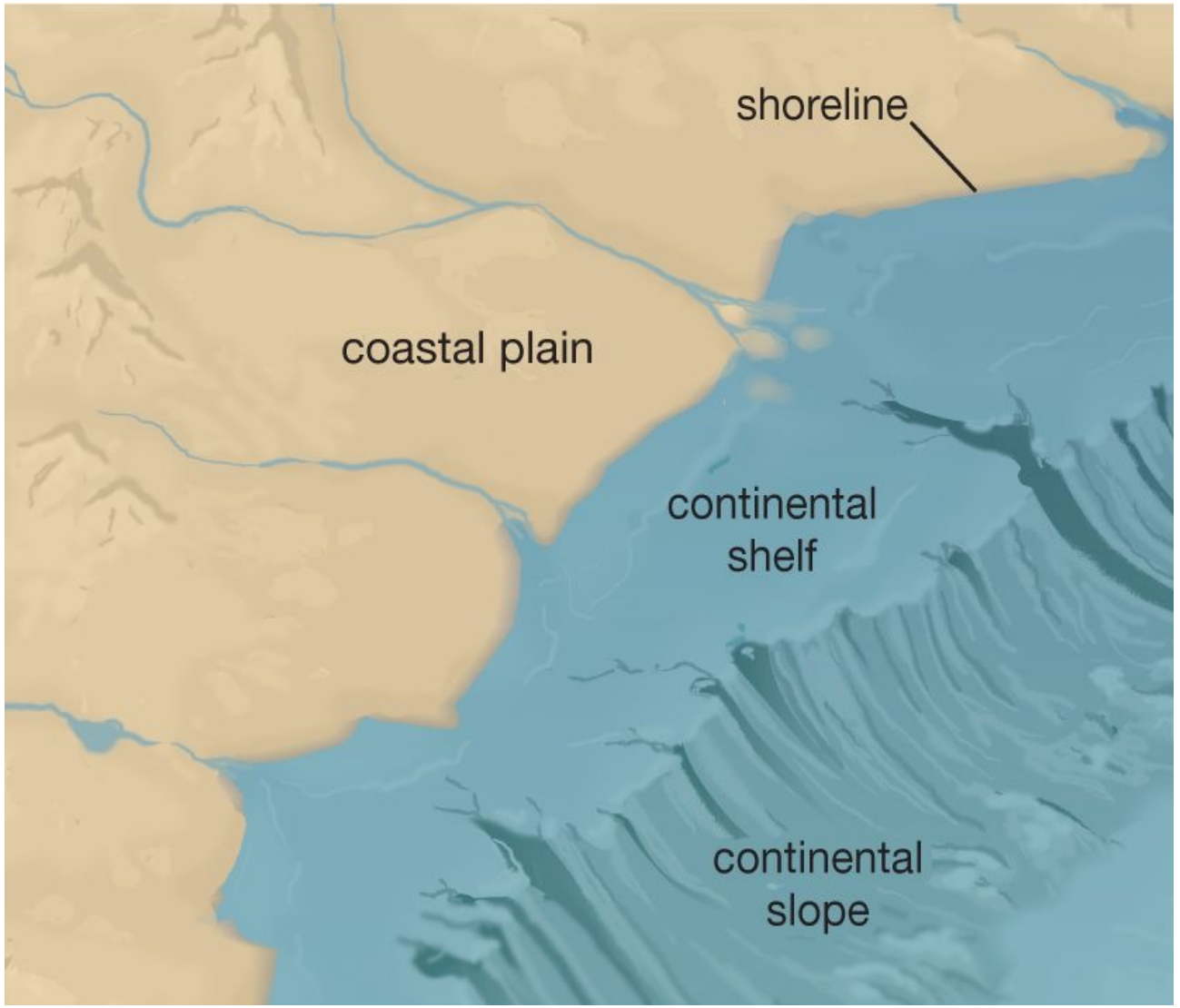
Original Technology Development

- Deepwater

New Technology Adaptations

- Onshore Adaptation
- Shelf Adaptation
- Adaptation Applications
  - Geothermal well construction.
  - Deep and ultradeep gas.
  - Well construction time & cost savings.
  - Over pressurized reservoir solution.



Dilution DG – Technology Adaptation

Surface & Subsurface Proprietary Technology

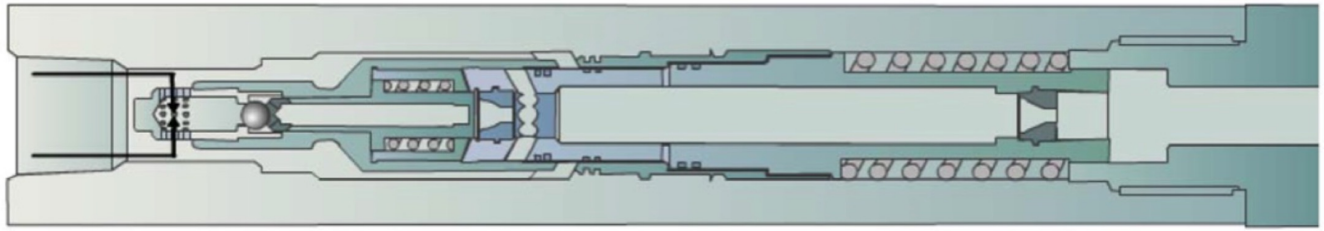
Surface Equipment

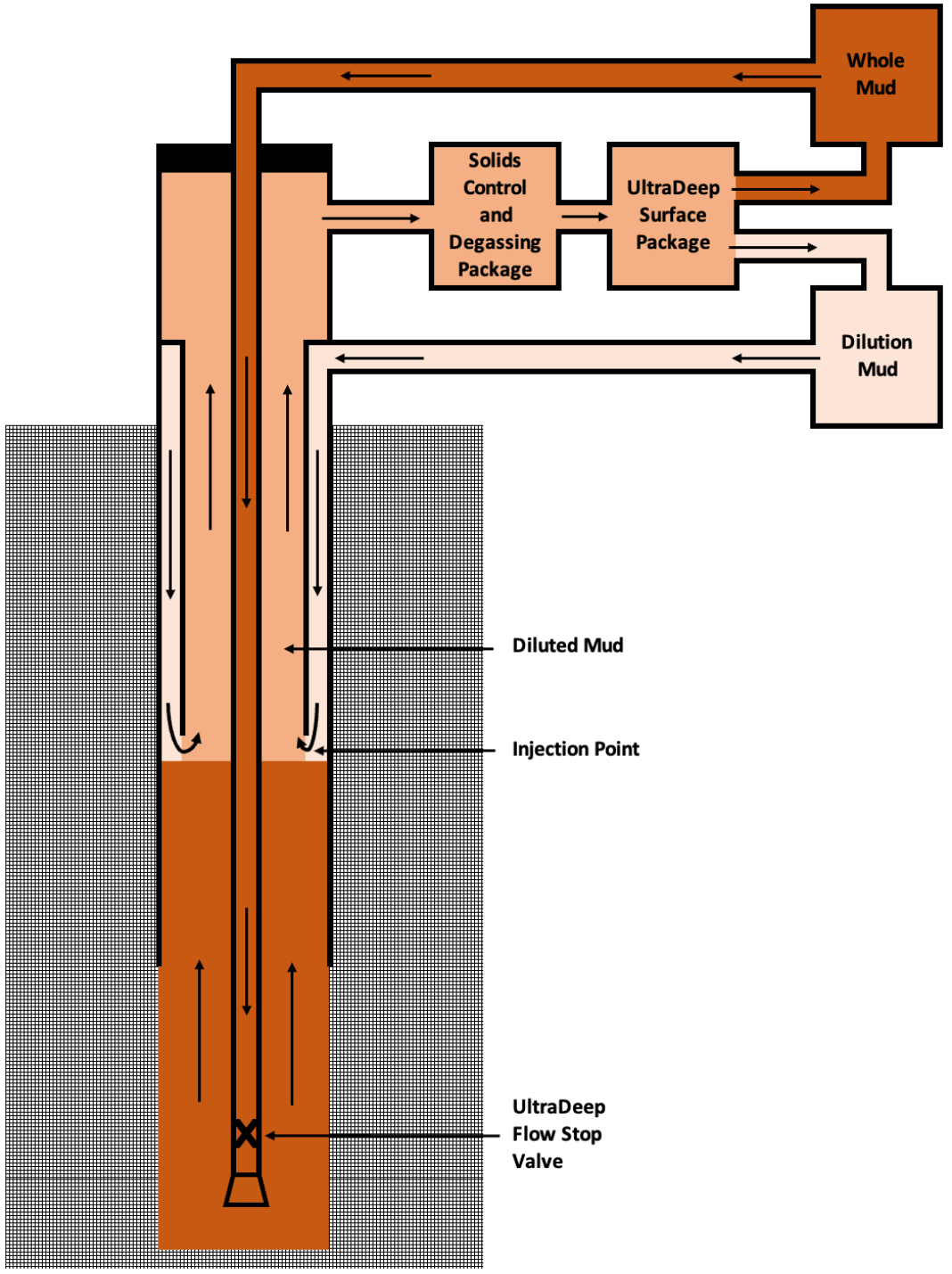
- Drilling fluid separation package 500gpm
  - Whole Mud
  - Dilution Mud

Subsurface

- Flow Stop Valve
  - Controls U-Tube effect

Flow Stop Valve





Ultradeep Well Construction & Days vs. Depth

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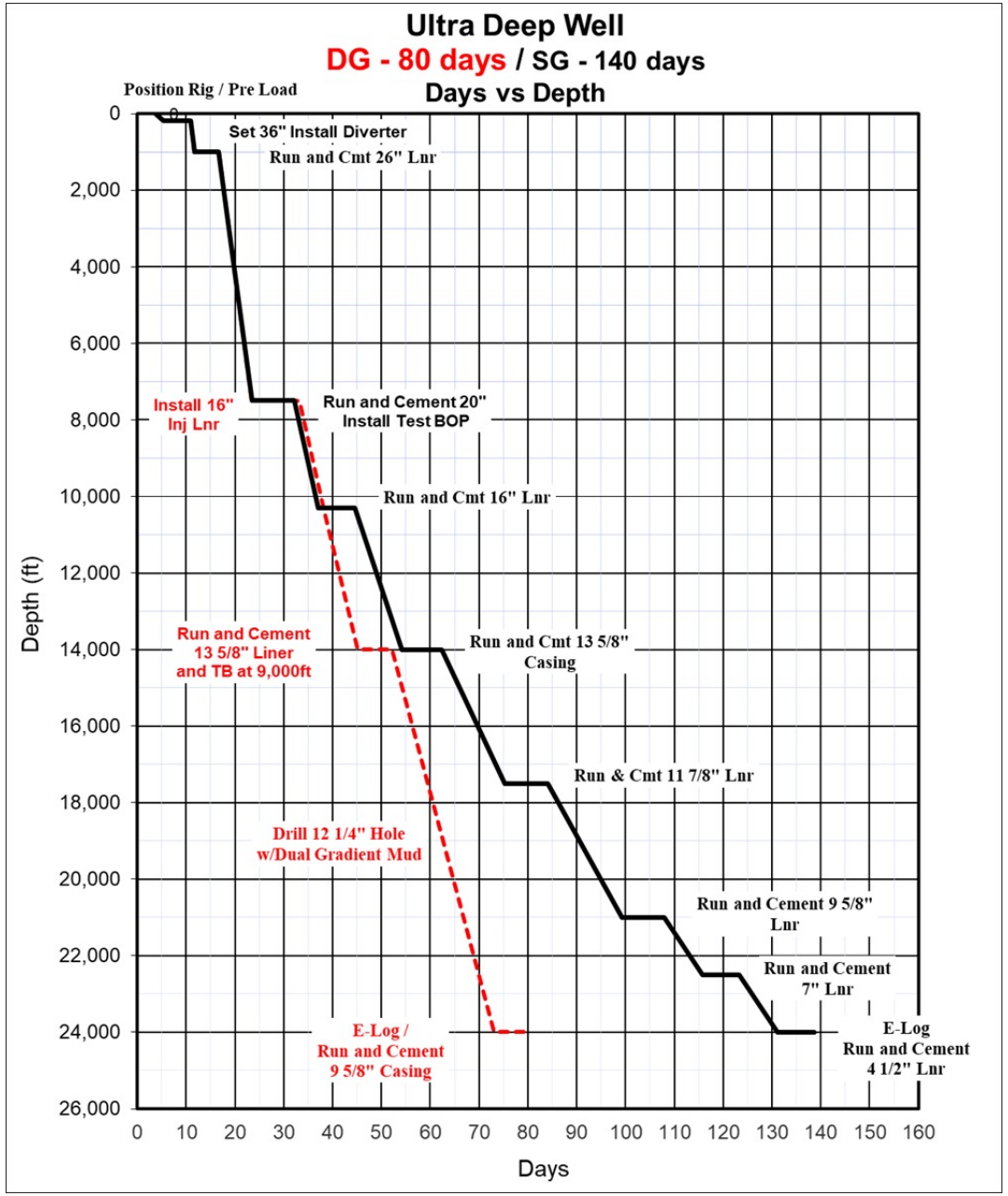

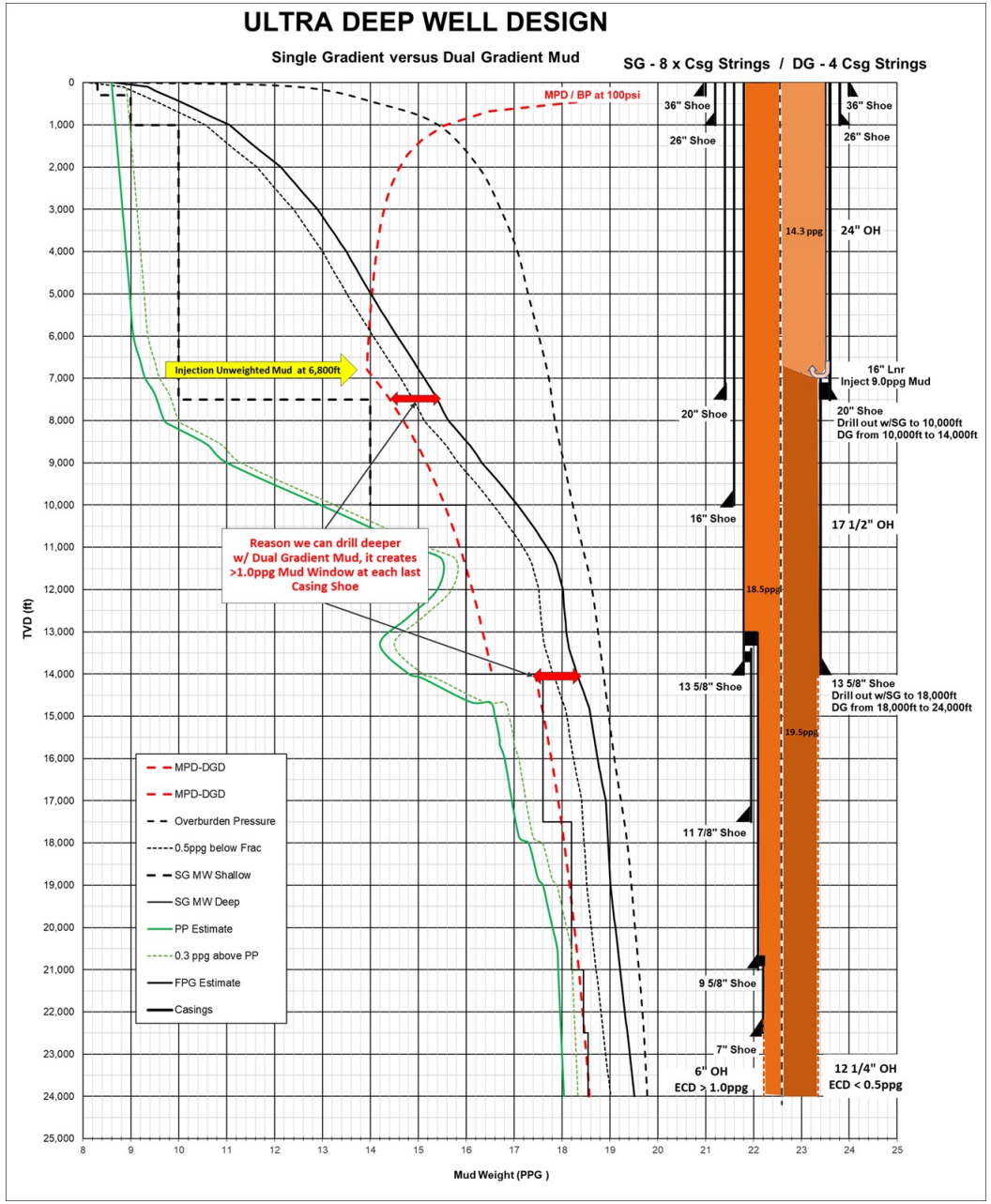

Ultradeep GoM Onshore & Shelf Gas Reserves

Overview

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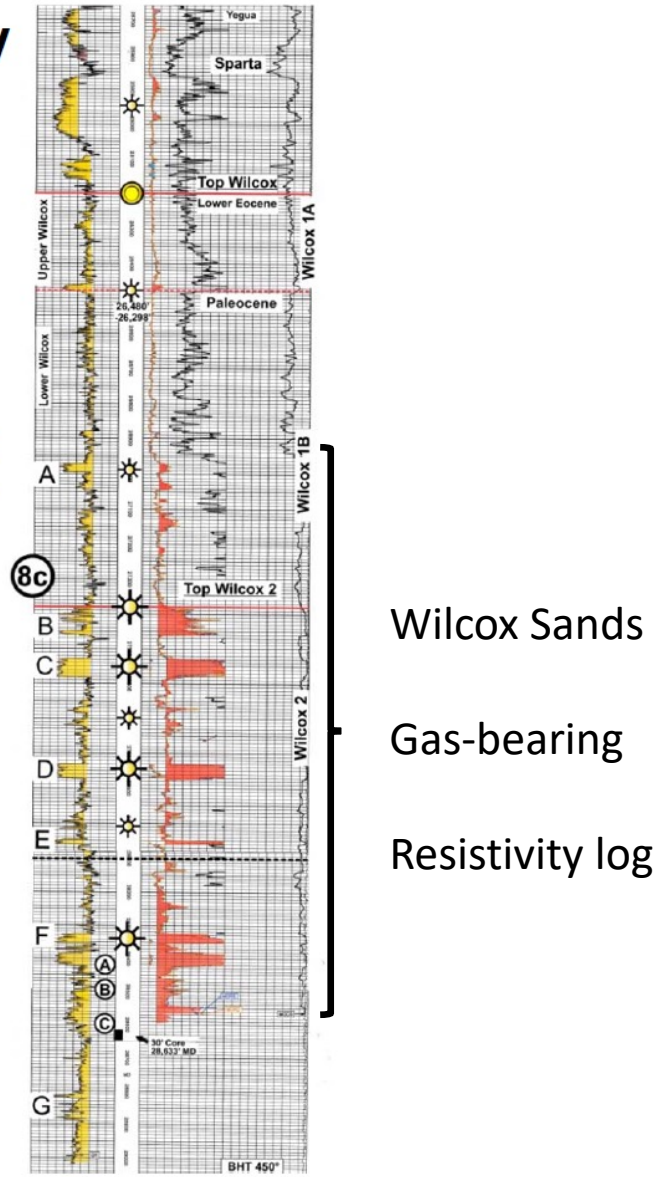
Conventional attempts & demonstrated presence of deep and ultradeep reservoirs

- McMoRan attempt: Davy Jones – spend $800M+
- ExxonMobil attempt: Blackbeard – spend $300M
- Shell attempt: Joseph – spend $120M
  - (Note: Dr. Eric van Oort participated in this effort)
- Freeport McMoRan: Onshore Highlander Discovery (29,400 ft TVD)
  - 75MMcf/Day successful production test (2/20/2015)
  - Sold Q1 2019 to Magnolia Oil & Gas Corporation.
- Chevron – Lineham Creek – abandoned at 24,000 ft.
- Grand Gulf Energy – Yellowfin – not pursued.

Discovery Well

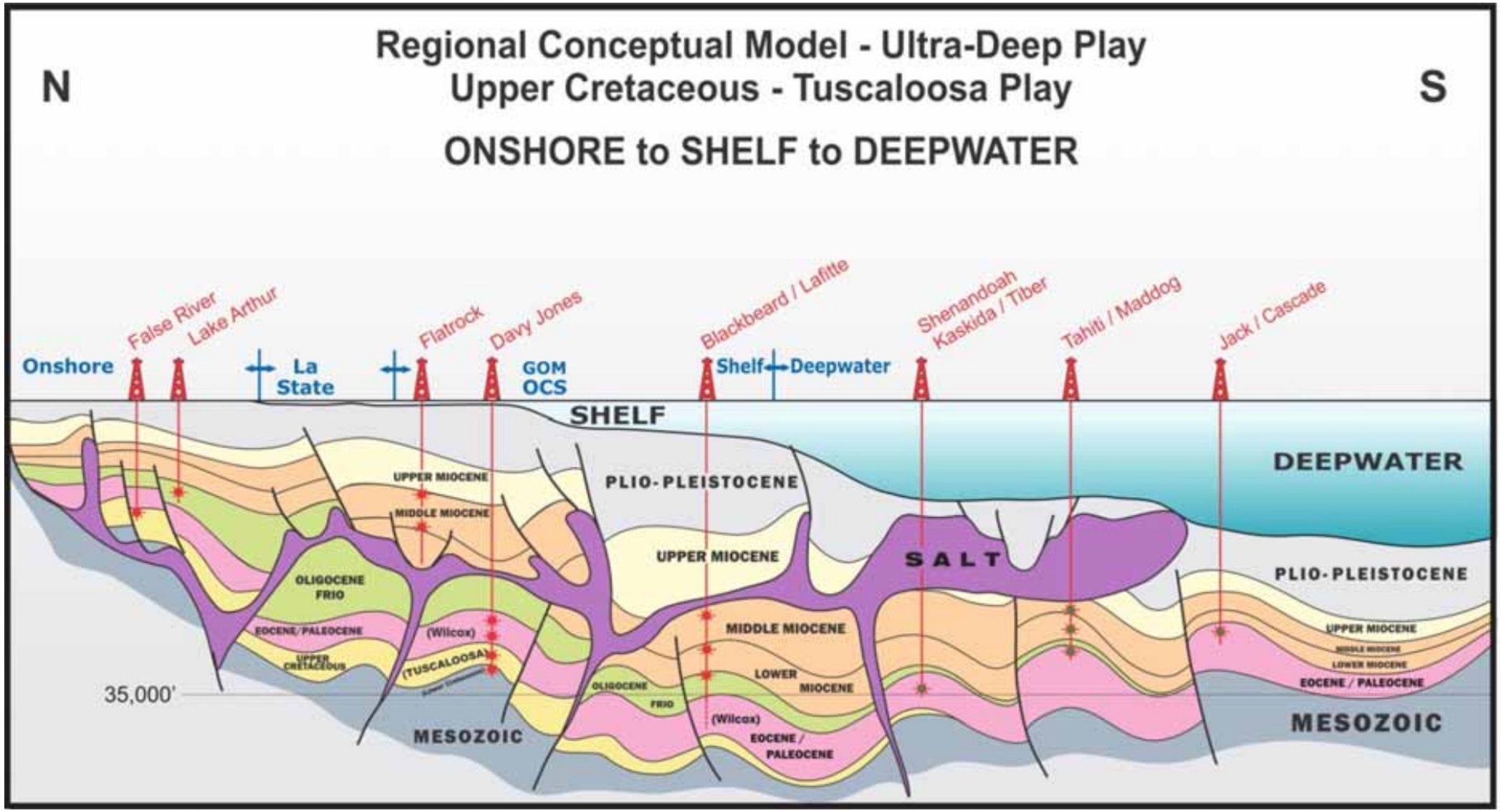


Wilcox Sands with 13-15% Porosity

Wilcox Sands

Gas-bearing

Resistivity log



Drilling activities to date have successfully confirmed geologic model and have indicated the potential for a major new geologic trend spanning 200 miles in the shallow waters of the GOM and onshore in the Gulf Coast area.

Source: Freeport-McMoRan, Management Presentations; New York City; June 24, 2013

Gross Unrisked Potential* Exceeds 100 Tcfe

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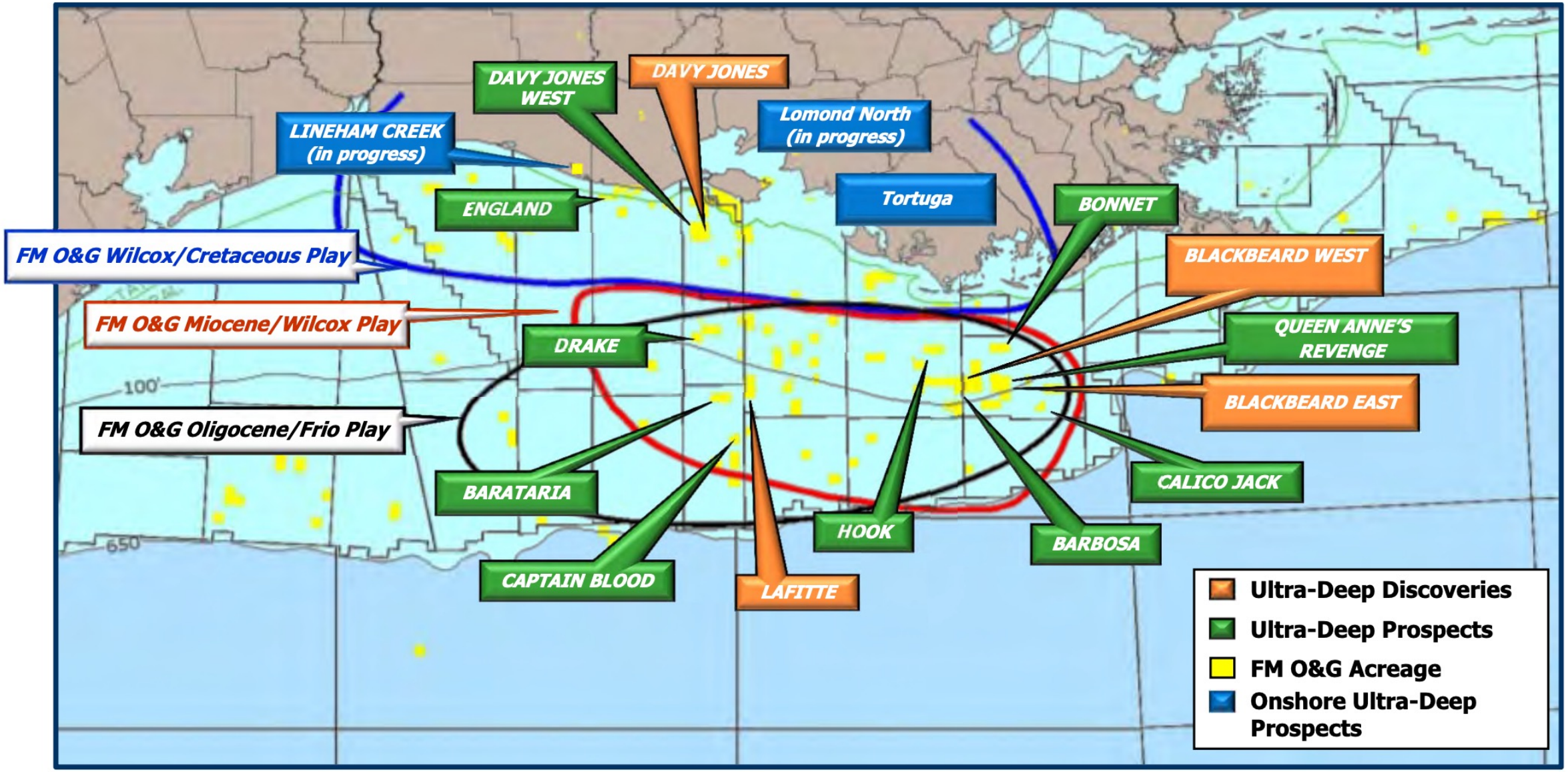

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