Beyond Ultra Deep Drilling Successes, Obstacles, and a Path Forward
Mobile Offshore Drilling Units

- Conventional shallow water drilling from Jack-up
- Conventional Subsea Drilling
- Surface BOP Drilling
- Surface BOP Drilling with ESG

- High Pressure Riser
- Low Pressure Riser
- High Pressure Casing Riser
- Subsea BOP Stack
- Surface BOP Stack
- ESG - Environmental Safe Guard
Historical reference:

- The total number of oil/gas wells drilled in 5,000 meter water depth?
Historical reference:

• The total number of oil/gas wells drilled in 5,000 meter water depth?

Exactly 0
Historical reference:

- The total number of oil/gas wells drilled in 4,000 meter water depth?
Historical reference:

- The total number of oil/gas wells drilled in 4,000 meter water depth?

Exactly 0
Historical reference:

• The total number of oil/gas wells drilled in 3,000 meter water depth?
Historical reference:

• The total number of oil/gas wells drilled in 3,000 meter water depth?

At least 1
Historical reference:

- The total number of oil/gas wells drilled in 3,000 meter water depth?

At least 1

The standing water depth record well stands at 3051 meters 10,011 ft., by the Transocean “Discoverer Deep Seas”, Nov 16, 2003, Alaminos Canyon Block 951, Gulf of Mexico
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What would it take to safely reach 5,000 meters, conventionally?

- Approximately 60% longer Riser
- Approximately 50% more Riser Tensioning capacity
- Significantly larger Derrick/drawworks packages
- Significantly larger mud tanks
- Significantly larger Drillship
- Substantially higher construction cost
- New, larger vessel design effort (and cost)
- Years of delays for design, construction and commissioning of the new vessel
What would it take to safely reach 5,000 meters, UN-conventionally?

- Utilize ESG/Surface Stack/Casing Riser Drilling Technology
- Add ESG accumulators for deeper water operations
- Tweak the ESG Acoustic Control System components for deeper water operations
- Outfit an existing 3,000 m vessel (such as the Chicku) with ESG/Surface Stack equipment
- Minimal lead time
- Minimal equipment cost
How would it all fit into the Chickyu’s Moonpool?
Subsea Stack/ESG

Size Comparison

(750,000+ lbs. vs ~165,000 lbs. depending on configuration)
Typical Surface BOP and ESG Packages
Conclusions:

- Surface Stack Drilling is a relatively new form of offshore drilling
- Surface Stack Drilling operations can be conducted as safely as Conventional Drilling operations
- Surface Stack Drilling utilizes less BOP equipment than Conventional Drilling
- Surface Stack Drilling has enhanced water depth capabilities relative to Conventional drilling
- Surface Stack Drilling operations can be significantly less expensive and faster than Conventional Drilling operations
- Surface Stack Drilling can be accomplished from smaller, lighter (less expensive) rigs, anywhere in the world
QUESTIONS?
The End