



## AGR drills the deepest well below the mudline in the Gulf of Mexico: The Blackbeard Well.

### CHALLENGE

The HPHT personnel at AGR were contracted by a longstanding client to act as exclusive drilling consultants on the deepening of an ultra-deep exploratory well on the Gulf of Mexico shelf with severe temperature and pressure environments to a planned total depth in excess of 31,000 feet.

#### Complicating Factors

The demanding HPHT environment created special challenges for operations, equipment and logistics. Conventional thinking and industry standards were often insufficient to deal with the unique issues posed by the extreme pressures and temperatures, such as tripping, hole conditioning and well control. The unique drilling environment also meant that conventional drilling mechanics be rethought, customised and properly executed so that the risks associated with a lost well or a catastrophic well-control event could be minimised.

### SOLUTION

Many of the solutions to the problems posed on this well were pioneering and had never before been implemented in the field. A key reason for the success of the innovative solutions was the coordination between the AGR team and the client; forward planning the logistics around the long lead-time services and equipment, understanding how to implement unconventional methods in innovative ways, and having the experience and cool-headed resolve to modify or re-invent the norm under stressful conditions - all the while maintaining the highest regard for health, safety and the environment.

As a result, the AGR team was able to reach a total depth of 32,997 feet, or six and one quarter miles, below the mudline.

### BENEFIT

The construction of a stable wellbore beyond the target depth enabled logs to be run in the highest hydrostatic pressures ever recorded with mud weight. Blackbeard served as invaluable data points for the client; providing the missing geological links between the onshore and deepwater discoveries in the Gulf of Mexico. Finally, the techniques, systems and equipment that the AGR team helped to develop will serve as a foundation for furthering the exploration of the ultra-deep, multi-Tcfe Miocene gas plays below 25,000 feet.

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