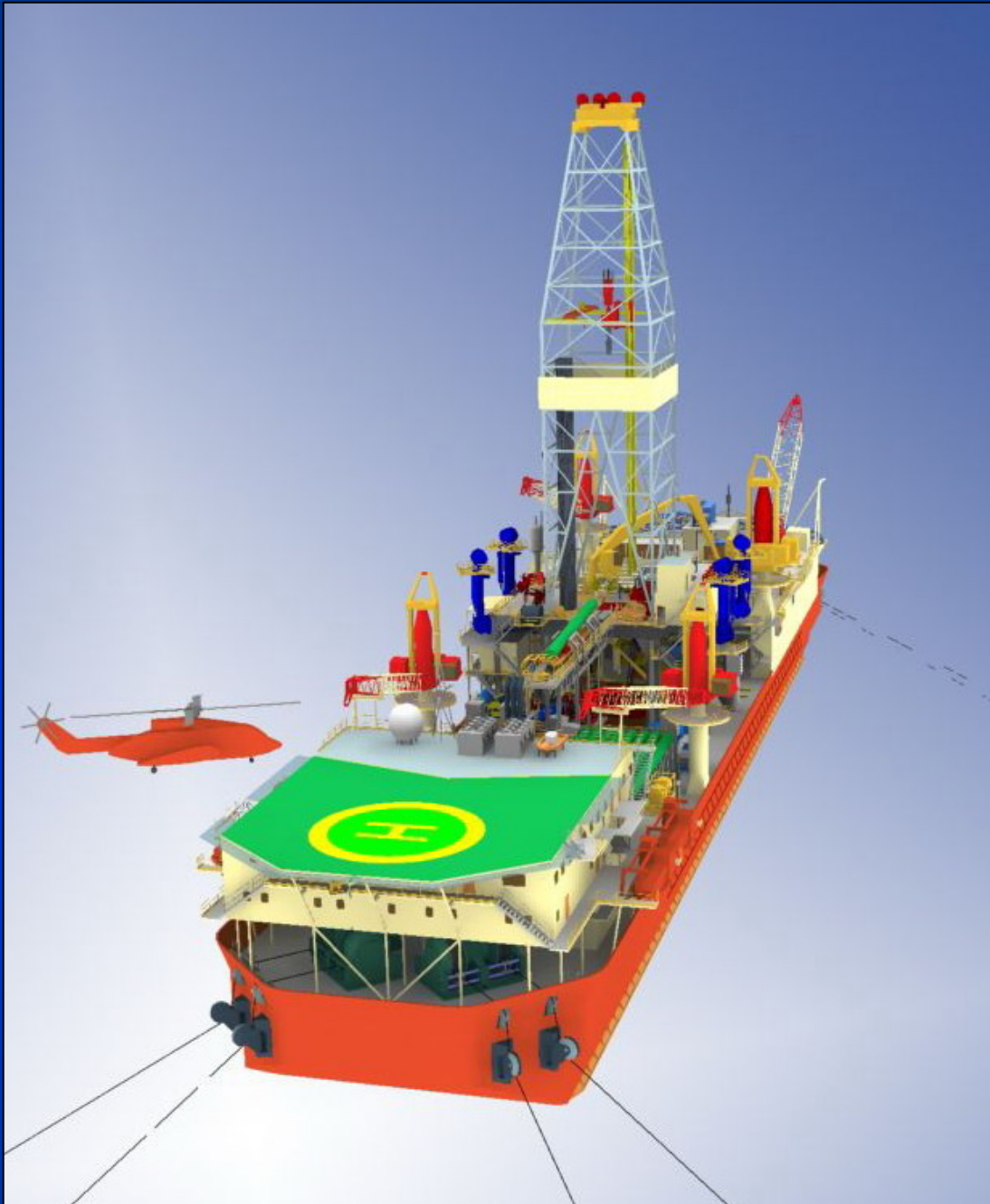


# EQUATORIAL DRILLER



***EQUATORIAL DRILLER®:***  
***The cost effective solution for***  
***efficient deep water drilling in***  
***mild environment.***

# EQUATORIAL DRILLER®

## Concept

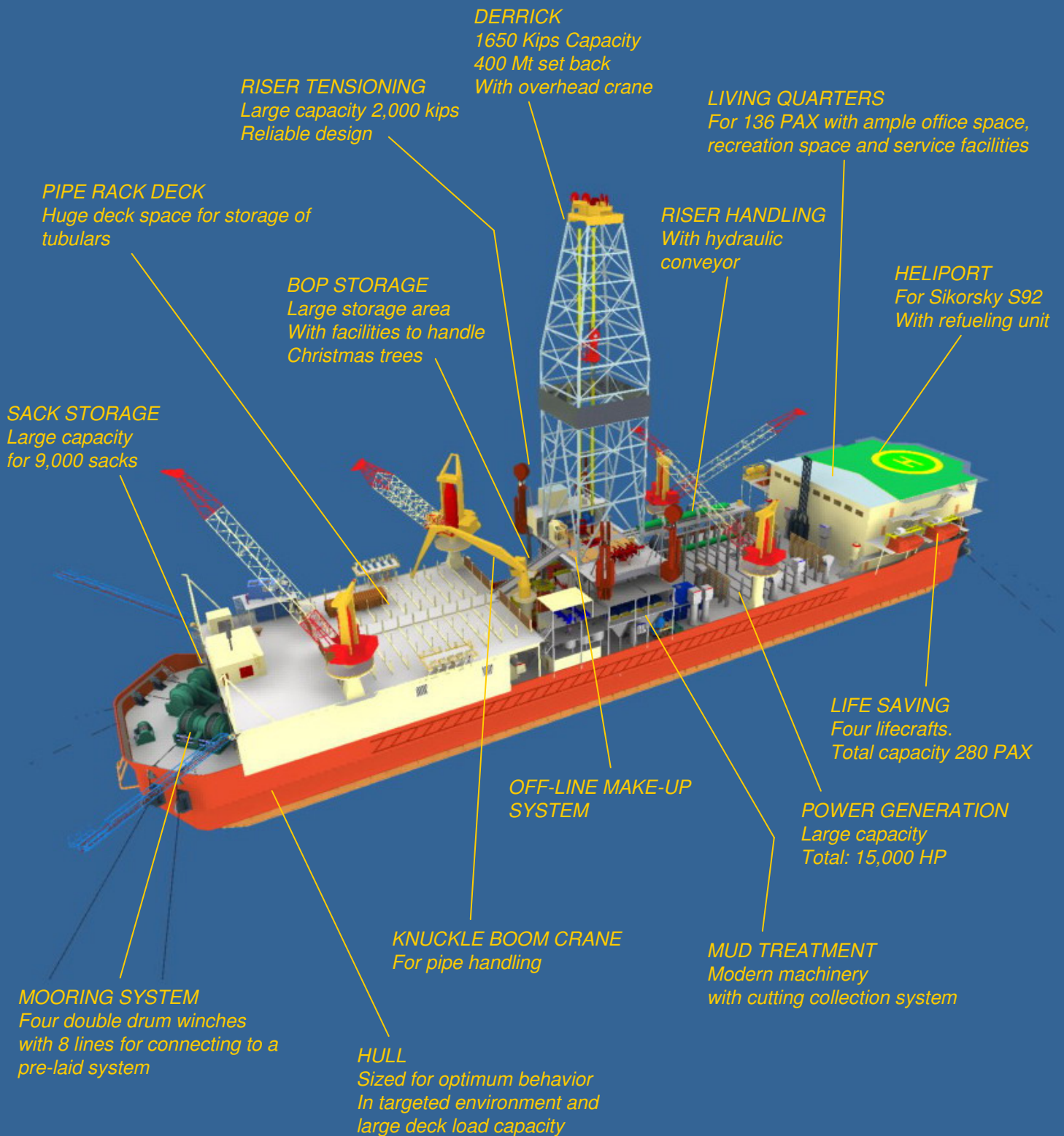
The ED concept was born from the experiences of the Unocal 76 Deepwater Asia Team from 1997-2005. The Team drilled over 150 deepwater wells and developed the only deepwater field in Indonesia at West Seno. It was clear during this time frame that the deepwater drilling rigs and deepwater production platforms designed for the industry *heartland* (North Sea, Gulf of Mexico, Brazil) represented significant capital “over kills’ in the benign ocean conditions of the tropics. For example the West Seno field was developed with a mini-TLP and a production barge to significantly lower capital costs – neither concept could be used outside the tropics.

Current state of the art deepwater rigs cost \$600MM plus to build, but are “highly over qualified” for drilling in the tropics. The ED76 will cover 95% plus of the market in the tropics for less than half the capital of the *heartland* rigs.

The ED 168 is designed to drill in 7,000ft of water in the subsea BOP mode and 8,500ft of water in the surface stack BOP mode. The rig is capable of drilling 30,000ft below the mudline.



# EQUATORIAL DRILLER®





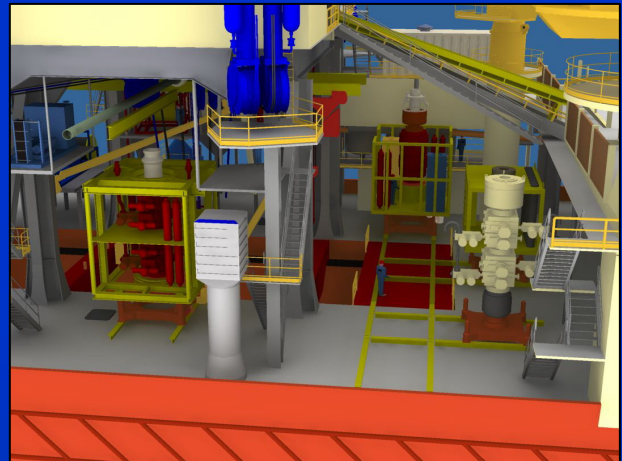
# EQUATORIAL DRILLER®

## KEY FEATURES

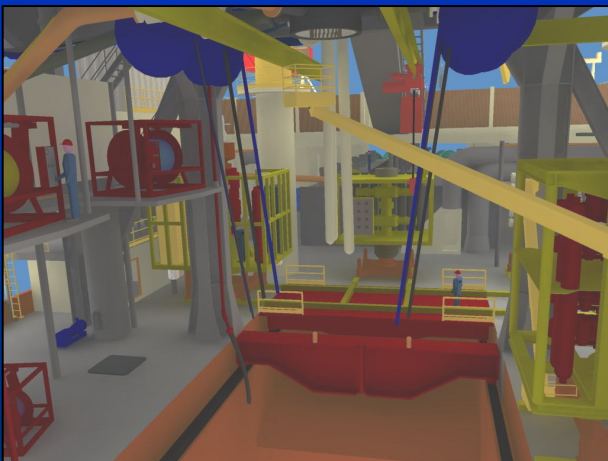
- Deep water drilling capabilities using well proven and easy-to-handle drilling equipment.
- Capable of operations with surface BOP or subsea BOP in equatorial environment.
- Large Variable Load capacity, large deck space.
- Low maintenance and operating cost.
- Zero-discharge capability integrated from the early design stage of the vessel.
- Large BOP storage platform allowing safe maintenance and improved handling operations. Include facilities for handling wellheads and Shut In Device (SID).
- Fully integrated and ergonomic system for driller's control and instrumentation.
- High standard accommodations.



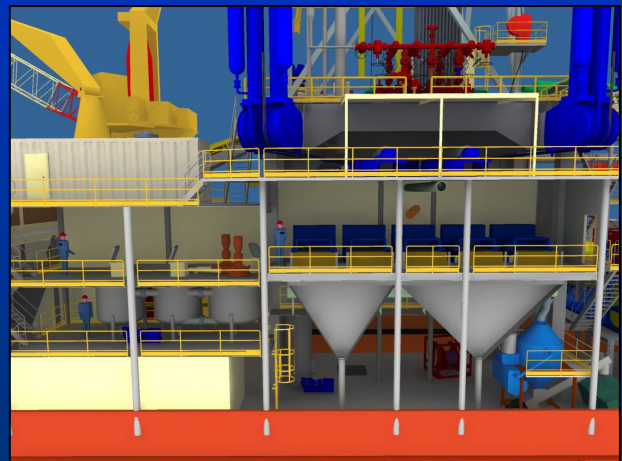
DRILLING CONTROL WITH  
THE LATEST TECHNOLOGY



LARGE BOP & CHRISTMAS TREE  
STORAGE AREA



LARGE MOONPOOL 20mx9m

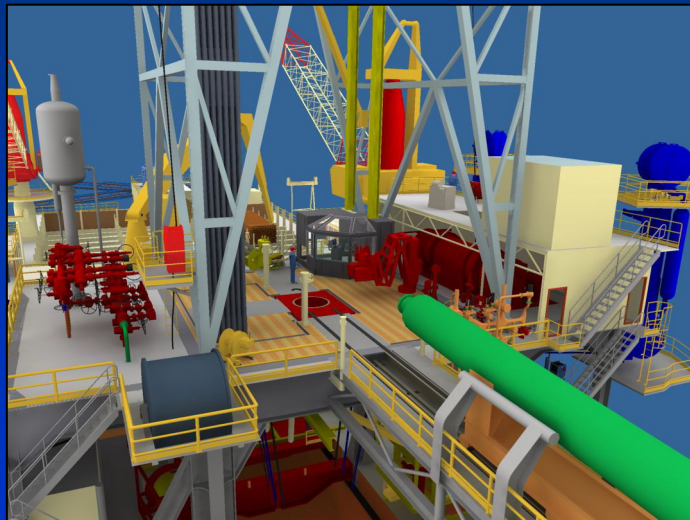


MODERN & POWERFUL  
MUD SYSTEM

## OUTLINE SPECIFICATIONS

### MAIN CHARACTERISTICS

Design	ED 168 Class
Designer	Moonpool Consultants Pte Ltd – Singapore
Builder	TBD (shipyard in Asia)
Type	Equatorial Drilling barge
Drilling Depth	9,144m (30,000 ft)
Water Depth	From 50 m (165 ft)
	Up to 2,135m (7,000 ft) w/ subsea BOP stack
	Up to 2,600m (8,500 ft) w/ surface BOP stack
Classification	Bureau Veritas
Flag	TBD
Accommodation	136 Pax in single or double berth cabins



### DERRICK & DRILL FLOOR

Max Hook Load (or rotary load)	680 Mt	1,500 kips
Max Set Back Load	400 Mt	880 kips
Max Set Back load "Field Move"	400 Mt	880 kips
Riser Tensioning Capacity	907 Mt	2,000 kips

### VARIABLE LOADS <sup>(1)</sup>

Field Move	10,000 Mt
Tow "moderate environment"	7,300 Mt
Long Ocean Tow	3,000 Mt

VL at normal operating draft	7,300 Mt
VL at load line draft (Max)	14,600 Mt

(1) These values are preliminary and depend on the actual equipment installed on board.

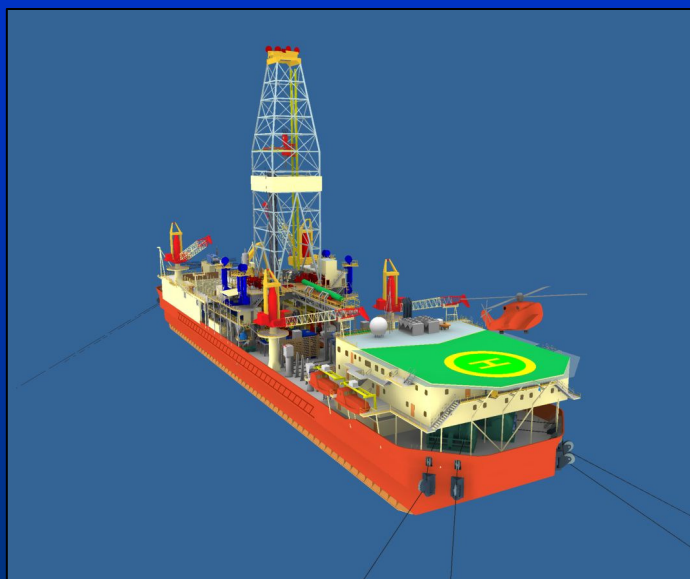
### CAPACITIES

Ballast Sea Water	12,440 m³	
Fuel Oil	960 m³	6,040 bbls
Potable Water	670 m³	4,200 bbls
Drill Water	2,530 m³	15,900 bbls
Active & Reserve Mud	900 m³	5,660 bbls
Base Oil	880 m³	5,530 bbls
Brine	220 m³	1,380 bbls
Bulk Mud	350 m³	12,360 ft³
Bulk Cement	350 m³	12,360 ft³
Sack material		9,000 sacks

Helideck	Designed for Sikorsky 92
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### MAIN DIMENSIONS

Hull Length	161 m	528 ft
Hull Breadth	31 m	102 ft
Hull Breadth at water line	27 m	89 ft
Hull Depth	10 m	33 ft
Normal Operating Draft	4.75 m	
Max Transit Draft (M.E.)	5.50 m	
Maximum Load Line Draft	6.50 m	
Moonpool		
Width	9.0 m	
Length	20.0 m	(excluding beach)



## MAIN EQUIPMENT

### POWER EQUIPMENT

<b>Diesel Engines</b>	Six CUMMINS QSK 60 - 2,500 HP each Total power 15,000 HP
<b>Generators</b>	Six 2500 KVA, 4160 V
<b>Emergency Generator</b>	One CUMMINS KTA 50, 1500 HP With 1250 KVA generator 480 V
<b>VFDs</b>	As required for mud pumps, drawworks & TDS

### DRILLING EQUIPMENT

<b>Derrick</b>	185 ft clear height, base 39 ft x 42 ft 1650 kips static capacity on 14 lines Racking area for 25,000 ft of 5-7/8" drill pipe & 12,500 ft of 3.5" drill pipe.
<b>Tubular &amp; riser handling</b>	<ul style="list-style-type: none"> <li>• One power slip Varco PS 30</li> <li>• One bridge crane above racking board</li> <li>• One auxiliary DP robot-connector and two auxiliary mouse holes</li> <li>• One knuckle boom crane for pipe handling</li> <li>• One tubular conveyor (pipe rack to V-door)</li> <li>• One riser handling system, hydraulic.</li> </ul>
<b>Drawworks</b>	NOV ADS-30Q - 6,000 HP, AC powered, regenerative braking, multiple discs brake, water cooled.
<b>Top drive</b>	NOV TDS 8SA with raised backup system, Rated 750 short ton, AC motor 1450 HP
<b>Heave Compensator</b>	NOV Hydro pneumatic passive, in-line mounted. 600 kips capacity compensating (1,500 kips locked)
<b>Rotary Table</b>	NOV RST 60. Hydraulic, rated 1000 ton, 60.5" opening.
<b>High torque make-up / brake-out</b>	<ul style="list-style-type: none"> <li>• One hydraulic Iron Roughneck, NOV ST 120, pedestal mounted.</li> <li>• One NOV hydraulic cathead 30,000 lbs pull.</li> </ul>
<b>Drill Floor Winches</b>	<ul style="list-style-type: none"> <li>• Three air winches (2x7 Ton, 1x5 ton)</li> <li>• One man-rider air winch</li> </ul>
<b>Access Basket</b>	One NOV Hydralift telescopic stabbing basket installed in the derrick.
<b>Slick Line Unit</b>	One Mathey wireline unit

### MUD SYSTEM

<b>Mud Tanks</b>	<ul style="list-style-type: none"> <li>• 11 Mud pits, 3 slugging pits</li> <li>• Two mud pits fitted with HP shear system</li> <li>• One trip tank, one stripping tank</li> </ul>
<b>Slush Pumps</b>	<ul style="list-style-type: none"> <li>• Three Triplex pumps NOV 14-P-220 2,200 HP each, AC powered, 9" bore x 14 "stroke. Rating 7,500 psi</li> <li>• All HP mud piping rated 7,500 psi</li> <li>• Riser booster line 5,000 psi.</li> </ul>
<b>Mud mixing</b>	<ul style="list-style-type: none"> <li>• Two VORTEX mud shear mixer with hoppers</li> <li>• One VORTEX high rate auto-mixer</li> <li>• 4 transfer / mixing pumps</li> </ul>
<b>Brine Mixing</b>	<ul style="list-style-type: none"> <li>• One brine shear mixer with hopper</li> <li>• Independent transfer/mixing pump &amp; piping.</li> </ul>
<b>Mud process</b>	<ul style="list-style-type: none"> <li>• 5 dual deck shale shakers. Total: 2,000 gpm.</li> <li>• 3 mud process tanks</li> <li>• 2 degasser, Burgess type, 1000 gpm each</li> <li>• 1 cutting dryer</li> <li>• 2 mud centrifuges (3<sup>rd</sup> party)</li> <li>• Cutting collection system (screw conveyors)</li> </ul>

### CEMENT SYSTEM

<b>Cement Tank</b>	Partially remote controlled bulk transfer system
<b>Cementing Equipment</b>	TBD – Space allocated for diesel powered system.
<b>Piping</b>	Stand pipe manifold and associated piping rated 15,000 psi

### WELL CONTROL & RISER SYSTEMS

<b>Diverter system</b>	NOV Shaffer diverter 60-1/2" Two outboard lines
<b>Subsea BOP system</b>	<ul style="list-style-type: none"> <li>• One CAMERON 18-3/4" 15,000 psi stack with two double rams &amp; two annulars</li> <li>• CAMERON Load King 2.0 marine riser 21" diameter with buoyancy modules.</li> </ul>
<b>Surface BOP system (option)</b>	One BOP stack 18-3/4" 10,000 psi with: Two double rams 10,000 psi One annular 5,000 psi hydraulic connector
<b>BOP Control</b>	CAMERON BOP control system type MUX electro-hydraulic last generation with hydraulic control of surface stack.
<b>Kill &amp; Choke manifold</b>	<ul style="list-style-type: none"> <li>• One manifold 15,000 psi</li> <li>• One glycol injection unit</li> </ul>
<b>BOP Handling</b>	<ul style="list-style-type: none"> <li>• 3 BOP carts hydraulically operated</li> <li>• 1 BOP transporter hydraulically operated</li> <li>• 2 hydraulic riser hang-off beams SWL 700t</li> <li>• 2 air hoists 60 Mt each under drill floor</li> <li>• 4 air winches 5 ton each in moonpool area</li> <li>• 2 man rider air winches in moonpool area</li> <li>• 2 telescopic maintenance baskets</li> </ul>
<b>BOP testing</b>	CAMERON BOP stumps & test pump.
<b>Riser tensioners</b>	DTI double wire tensioners with total capacity of 2,000 kips (8x250 kips) Stroke 50 ft Two HAMWORTHY HP air compressors

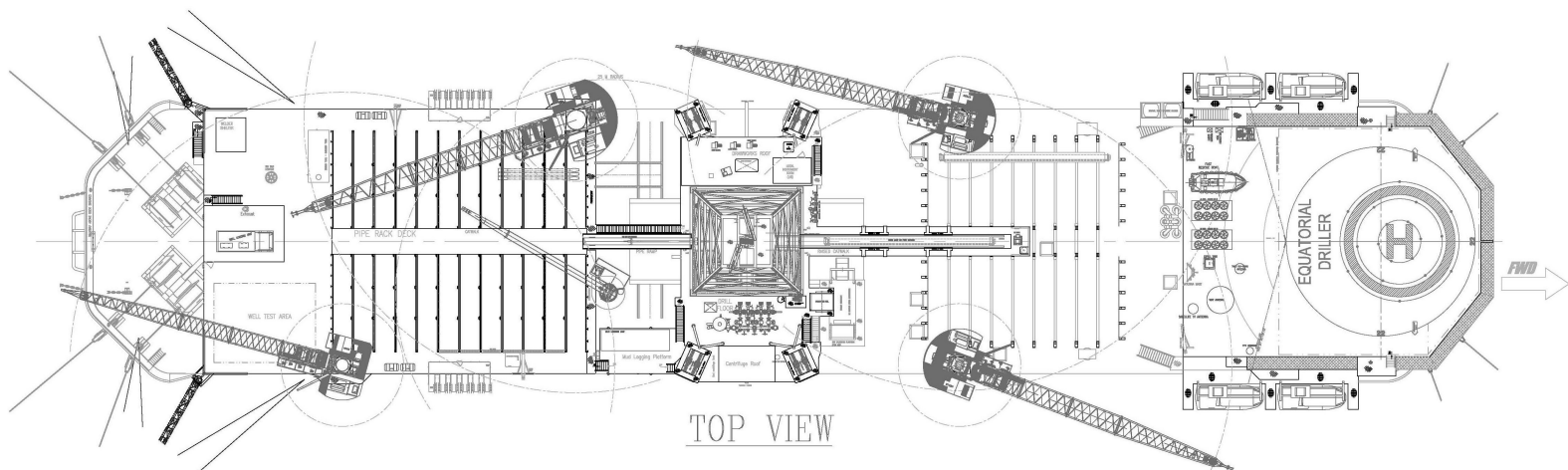
### AUXILLIARY EQUIPMENT

<b>King Post Cranes</b>	Four SEATRAX offshore hydraulic cranes: <ul style="list-style-type: none"> <li>• One unit w/ 100 ft boom, 85 Mt @ 8m radius</li> <li>• Two units w/ 100 ft boom, 70 Mt @ 8m radius</li> <li>• One unit w/ 100 ft boom, 40 Mt @ 8m radius</li> </ul>
<b>Heliport</b>	Compliant with UK CAP 437 regulation One refueling unit
<b>Mooring system</b>	Four NOV BLM double Drum anchor winches, with 1,000m of 3.5" wire, 8 fairleaders.
<b>Water Makers</b>	Two ALFA LAVAL water makers, vapor compression type. Capacity: 50 m³/day each.
<b>Service Air Compressors</b>	<ul style="list-style-type: none"> <li>• Four compressors each 860m³/h @ 10.5 bar</li> <li>• Two air dryers 2,500 m³/h each</li> </ul>
<b>Safety Equipment</b>	<ul style="list-style-type: none"> <li>• One rescue boat</li> <li>• Four survival crafts, 70 men each</li> <li>• H2S and combustible detection system</li> <li>• Water Mist unit for fire fighting</li> </ul>
<b>Controlled Discharge System</b>	• Allow the collection, storage and treatment of drain fluids: oily water, muddy water, rain water, grey and black water.



# EQUATORIAL DRILLER®

## General Arrangement



### HULL CHARACTERISTICS

OVERALL LENGTH	161 M
OVERALL WIDTH	31 M
HULL DEPTH	10.0M

