

# HAKURYU-15 to be named



# HAKURYU-15

HAKURYU-15 is a 400 ft operating water depth self-elevating cantilever jack-up drilling rig, which will be constructed at Keppel FELS Limited, Singapore, based on KFELS Super B Class.

The Rig is a high standard unit featured with enhanced leg strength, large Variable Deck Load (VDL), Excellent Drilling Capability, 150 Person On Board (POB), deep water drilling operation (400 ft water

depth), deep drilling (35,000 ft drilling depth), high capacity hook load (2,000 kips), High Pressure High Temperature (HPHT) drilling and zero discharge operation.

The cantilever design allows the rotary table to be skidded out to a maximum of 75ft from the transom and 15 ft from the centre line.

**DESIGN:** KFELS Super B Class 3 legs self-elevating, cantilever type mobile offshore drilling unit.

**CLASSIFICATIONS HELD:** Classified by American Bureau of Shipping (ABS 2014), Maltese Cross A1, Self-Elevating Drilling Unit, IMO Code of Construction and Equipment of Mobile Offshore Drilling Unit (MODU Code 2009). Classification of Drilling Systems (CDS 2012)

**FLAG:** Panama.

## MAIN DIMENSIONS and PARTICULARS:

Hull Overall Length (molded) .....	247ft (75.3m)
Hull Breadth (molded) .....	230ft (70.1m)
Hull Depth (molded) .....	27ft (8.2m)
Leg Length .....	517ft (157.5m)
Spud Can Diameter.....	Approx 53.0ft (16.15m)
Max Combined Drilling Load.....	Approx 3,500 kips (1,588 tons)
Max Combined Drilling Load on Cantilever.....	2,500 kips (1,134 tons) @75ft center
	Approx 1,200 kips (544 tons) @75ft x15ft port/stbd
Max. Cantilever Outreach / Max. Drillfloor Offset:.....	75' (21.3m) / ± 15' (4.6m)
Helideck type / D-value / t-value .....	D=25.35M, T=13.0t
	MI-17, Sikorsky S92, and Sikorsky S61N
Accommodation .....	150 personnel

## DESIGN CRITERIA:

Max. Operating water depth .....	400ft (121.9m) with 36ft (10.9m) air gap & 22ft(6.7m) penetration
Max. Air gap.....	110ft (33.5m)
Max. Rated drilling depth .....	35,000ft (10,668m)

## MAXIMUM GROSS VARIABLE LOAD:

Storm.....	Approx 6,500 kips (2,948 tons)
Drilling.....	Approx 9,700 kips (4,399 tons)
Hook Load.....	2,000 kips (907 tons)
Rotary Load.....	2,000 kips (907 tons)
Setback Load.....	Approx 1,400 kips (635 tons)
Conductor Tension Load.....	500 kips (225 tons)

## STORAGE CAPACITIES:

Fuel oil .....	Approx 4,414 bbls (701 m <sup>3</sup> )
Drill water.....	Approx 6,055 bbls (962 m <sup>3</sup> )
Potable water.....	Approx 3,848 bbls (611 m <sup>3</sup> )
Liquid mud.....	Approx 5,199 bbls (826 m <sup>3</sup> )
Base Oil.....	Approx 1,881 bbls (299 m <sup>3</sup> )
Bulk mud .....	8,000 ft <sup>3</sup> (226m <sup>3</sup> )
Bulk cement .....	8,000 ft <sup>3</sup> (226m <sup>3</sup> )
Sack storage .....	5,000 sacks

## POWER EQUIPMENT:

<b>Main Engines:</b>	Five (5) Caterpillar C175-16 engines, 1930 bKW @ 1,200 rpm, IMO Tier II
<b>Main Generators:</b>	Five (5) Kato 6P6-3300 generators, 2,291 kVA @ 1,200 rpm, AC 690 V, 60 Hz
<b>Emergency Engine:</b>	Caterpillar 3508B engine, 968bKW @ 1,800 rpm
<b>Emergency Generator:</b>	Stamford HCM634K, 1138kVA, 910eKW @ 1,800 rpm, 480 V, 60 Hz.

## DRILLING EQUIPMENT:

<b>Draw Works:</b>	NOV ADS-30Q, 6,000hp (Four 1500 HP, 690 V AC motors). 2" dia. wire.
<b>Derrick:</b>	NOV, 40 x 40 base, Max. load: 2,200 kips (998 tons). Racking capacity: 368 stands of 5-7/8" drill pipe + 10 stands of 9-1/2" Drill collar + 4 stands of bottom hole assembly (BHA).
<b>Offline Standbuilding System:</b>	5-7/8" drill pipe
<b>Vertical Pipe Handling System:</b>	NOV Bridge Racker BR-10
<b>Crown Block:</b>	2,200 kips (998 tons) capacity, with 6 x 72" sheaves.
<b>Traveling Block:</b>	NOV HTB-1100, 2,200 kips (998 tons), with 7 x 72" sheaves.
<b>Top Drive:</b>	NOV TDX-1000, 2,000 kips (907 tons), 2 x 1,150 hp, 690 V AC motor. Installed with a retractable dolly.
<b>Rotary Table:</b>	One(1) NOV 49-1/2" RST, hydraulic motor driven.
<b>Iron Roughneck:</b>	Two (2) NOV ST-120, serving rotary center and mouse holes Size range 3-1/2" to 10"
<b>Catwalk Shuttle:</b>	NOV / CWS-P10-45, 10MT SWL / Range 2-7/8" to 36"
<b>Pipe Handling Crane:</b>	NOV Knuckle Boom Crane 1891, 12MT @ 8m to 15m, 3.5MT @ 3m to 25m, Pipe Gripper Yoke 3" to 20"
<b>Control System:</b>	NOV Cyberbase™.

## WELL CONTROL EQUIPMENT:

<b>Diverter:</b>	GE oil and Gas (Vetco), KFDJ 500 psi WP
<b>BOPs:</b>	18-3/4" BOP Stack NOV-Shaffer 18-3/4" 10,000 psi WP Annular. Four (4) Cameron TL 18-3/4" 15,000 psi WP Ram. Two (2) 3" x 15,000 psi WP Choke Line Two (2) 3" x 15,000 psi WP Kill Line.
<b>BOP Control:</b>	Cameron
<b>Choke and Kill Manifold:</b>	15,000 psi WP, sour gas service. Two (2) Manual Choke Valves. Two (2) Hydraulic operated Choke Valves.

## MUD CIRCULATION EQUIPMENT:

<b>Mud Pumps:</b>	Three (3) NOV 14-P-220, 7,500 psi WP.
<b>Mud Treatment System:</b>	<b>Gumbo Separator:</b> NOV-Brandt, One (1) Dual Chain Gumbo Box. <b>Primary Shakers:</b> Five (5) Brandt VSM300 shale shakers. <b>Mud Conditioner:</b> One(1) NOV-Brandt Desander 1,000GPM, Desileter 960 GPM desilter cone assembly (4" x 16 cones). <b>Degasser:</b> One (1) Brandt DG-10/12 degasser. <b>Mud Gas Separator:</b> One (1) Technics Offshore Engineering, 207 psi WP, Nominal Capacity 10.8m <sup>3</sup> , 12MMscfd

## JACKING EQUIPMENT:

<b>Jacking Units:</b>	KFELS OTD 1000FV Jacking Unit 54 Motors & Pinions on 3 Legs Normal Jacking .....	54,000 kips (24,494 tons)
	Preload Jacking .....	70,200 kips (31,842 tons)
	Max Holding Capacity.....	100,926 kips (45,780 tons)

## SHIP SERVICE EQUIPMENT:

<b>Deck Cranes:</b>	Three (3) Seatrax S7228, Diesel-Hydraulic Kingpost cranes. 65.1tons @ 16.7m, 16.7tons @ 38.1m (Onboard)
<b>Water Makers:</b>	Two (2) Sasakura VVC-60L-EL water makers, Nominal 60 Kl/day each. Vapor Compression Type.
<b>Anchors:</b>	Four (4) sets 5 tons Flipper Delta type anchors.
<b>Anchor Winches:</b>	Four (4) sets Four (4) x Brothl anchor winches. Maximum pull 89.9 kips (40.78 tons). Maximum holding 224.8 kips (101.97tons) at 1 <sup>st</sup> layer.

The above specifications are provisional only.

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