



ENEOS Drilling Limited

HAKURYU-16



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HAKURYU-16 is a fifth-generation semi-submersible drilling unit based on the RBS-8M design. It was developed through a joint collaboration between Reading & Bates Falcon Exploration Company (RBS) and Ishikawajima-Harima Heavy Industries Co. (IHI), Ltd., and was constructed in 2000 by Hyundai Heavy Industries in Korea.

The hull configuration consists of twin pontoons, four columns, canted in the transverse plane and a watertight rectangular box-type upper hull with machinery spaces and two-level quarters for 166

personnel. Each column is subdivided above and below the design waterline to give adequate damage stability. Each column is fitted with a COB (Column Outer Belt) which enhances stability at the drilling draft and minimizes heave response in sea states normally encountered during drilling operations. HAKURYU-16 is designed to perform drilling operations in a maximum of 8,000 ft of water with 8,801 m.tons of deck load. HAKURYU-16 is currently configured to operate in a max of 2330 ft of water.

DESIGN:

RBS/IHI RBS-8M, semi-submersible drilling rig.

CLASS:

American Bureau of Shipping; ❖AI M Column Stabilized Drilling Unit

MODU CODE:

IMO 1989, Resolution A.649 (16)

MAIN DIMENSIONS:

Length overall.....	374'
Breadth overall (without anchor rack).....	256'
Main deck elevation.....	136'
Operational draft.....	76'
Column (Four each).....	46' x 49' (Nominal)
	46' x 54' (Bottom)
Weight (Light ship condition).....	25,338 tons
Displacement (Drilling condition).....	46,933 tons
Helicopter deck.....	Sikorsky S-92 (certified by CAP437 Edition 8.1)

DESIGN CRITERIA:

Transit Speed.....	Up to 4.5 knots (calm sea)
Max. operating water depth.....	8,000' (2,438m)
Max. drilling depth.....	30,000' (9,144m)

STORAGE CAPACITIES:

Fuel oil.....	27,021 bbls
Drill water.....	19,775 bbls
Potable water.....	4,252 bbls
Active mud.....	4,139 bbls
Reserve mud.....	5,711 bbls
Base oil storage.....	2,969 bbls
Bulk mud.....	13,625 cu.ft.
Bulk cement.....	8,175 cu.ft.
Sack storage.....	10,000 sacks
Brine storage.....	2,969 bbls

MAX. GROSS VARIABLE LOAD (ON DECK LOAD):

Drilling condition.....	9,400 tons
Towing condition.....	5,214 tons

ACCOMMODATION:

Air conditioned second-storied cabins for 166 persons.

POWER EQUIPMENT:

Main Generator	4sets	5,875 KVA, AC 11,000 V, 60 Hz each driven by 6,300 PS 720 rpm engine.
Emergency generator	1 set	500 KVA, AC 480 V, 60 Hz driven by 600 PS, 1200 rpm engine.

PROPULSION/ Thruster EQUIPMENT: NA

MOORING SYSTEM:

Anchors	8 sets	18 tones Stevpris MK-5
Anchor Chains	8 sets	ABS RQ3S, 1,305 ft usable length of 3-9/16" chain
Anchor Wire Ropes	8 sets	6X52(WS) IWRC, 15,000ft. 3-3/4" Wire ropes
Anchor Windlasses	4 sets	Combination traction winch/windlass Bodewes Model 2/1209 drum winch.

DRILLING EQUIPMENT:

Drawworks	1 set	NOV AHD1000 GE 6,900 hp. 907 tons
Derrick	1set	Dreco, 180 ft high, with 48 ft x 48 ft base. 1,133 tons capacity
Travelling Block	1 set	NOV Dreco / 778TB-1000, 907 tons capacity
Top Drive	1 set	Varco TDS-1000 (AC), electric 907 tons capacity, Max. torque 68,500 ft-lbs, Max. speed 270rpm, GE 5G high torque AC motor with model PH-100 pipe handler.
Rotary Table	1 set	Varco hydraulic with a 60-1/2" opening, rated at 907 tons
Heave Compensation		Drawworks active heave compensation system
Tubular Handling	2 set	NOV PRS-4i
Iron Roughneck	2 set	Varco AR3200.

BOP & RISER EQUIPMENT:

BOP Stack	1 set	Cameron type TL double 18-3/4" 15,000 psi 5-ram preventer. (2 x double rams and 1 x single ram)
	2 set	Cameron DL 18-3/4" 10,000 psi annular preventer
	1 set	Vetco 18-3/4" SHD-H4 or ExF-H4 x 15,000 psi.
BOP Control System	1set	Cameron Multiplex control accumulator unit 5,000 psi WP, one master and three mini control panel.
Riser pipe		Vetco HMF Class G 21" OD x 90 ft. (27.4 m) with 6 bolts flange, choke and kill lines (6-1/2"OD x 4-1/2"ID x 15,000 psi), Booster line (4-1/2"OD, 3-7/8"ID x 5,000psi), Hydraulic supply line (3-1/2" OD, 2-5/8"ID x 5,000psi)
Riser Pipe tensioner	6sets	Hydralift / N-line tensioner rated at 368 tons each (Cylinder type tensioners)
Diverter	1set	Hydril FS 2160 diverter, 500 psi, with a 14" flow line.

MUD TREATMENT SYSTEM:

Mud pump	4 sets	National 14-P-220 triplex pumps, each driven by 2 x traction motors.
Shale Shakers	5 sets	Derrick 600 series shale shakers
Degasser	2 set	Burgess / Model 1500

AUXILIARY EQUIPMENT:

Deck crane	2 sets	Leibherr 3600-92D with 150 ft. (45.7 m) booms rated at 90.7 tons at a radius of 22 ft. (6.7 m)
Knuckle boom crane	1 set	Outreach PLC with 68 ft. (20.7 m) boom and rated at 18 tons at a radius of 70 ft. (21.3 m)
B.O.P. crane	1 set	Hydralift Bridge crane rated at 440 tons
Riser Handling crane	1 set	Aker Maritime Hydraulics / Gantry Type crane 36 tons aft deck
Distilling unit	2 sets	SWRO8D 20K GPD Modular 75 m3/day each



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