



ENERGY ENGAGER
and
ENERGY ENCOUNTER

Jack Up
Rig and Equipment Overview

RIG SPECIFICATIONS

GENERAL

Rig: Energy Engager/Energy Encounter
Flag: Liberia
Owner: Northern Offshore Enterprises Ltd/Northern Offshore Energy Ltd
Year Built: 2016/2017
Builder: COSCO (Dalian) Shipyard Company Limited, China
Design: LeTourneau Super 116E, self-elevating cantilever jackup
Classification: ABS Maltese Cross A1 Self Elevating Drilling Unit
Accommodation: 120 beds + 1 bed in sickbay

MACHINERY

Main Power: 5 x Caterpillar 3516C HD 2,150 bhp (1,600 kW) diesel engines; 5 x Kato 6P6.6-3200 generator sets, 600V, 60 Hz, 2,150 kVA (1,720 kW)
Power Distribution: NOV Drill Force variable frequency drive power management system, 600V/480V motor control centers
Emergency Power: Caterpillar 3512B marine generator, 1,120 kW/1,400 kVA, 600 VAC

DRILLING EQUIPMENT

Derrick: NOV 170 ft x 35 ft x 32 ft; 1,500,000 lbs maximum rated static hook load with 14 lines; Crown Block – NOV 750 ton with 6 x 68" diameter cluster sheaves, 2 x 68" diameter fastline sheaves and 2 x 60" diameter deadline sheaves, all sheaves grooved for 1-3/4" wireline
Drawworks: NOV automated ADS-10T, 3,200 hp driven by 3 x DM27A HN A 1,150 hp AC induction motors; NOV water/air cooled multi-plate, fail safe disc brake system
Rotary: NOV RST 49-1/2" hydraulic operated rotary support table with dynamic slip ring, 49-1/2" opening, with up to 15 rpm intermittent rotary speed
Top Drive: NOV TDS-8SA, driven by 1 x GE GEB-20 1,150 hp AC induction motor with up to 95,000 ft-lbf intermittent drilling torque, PH-100 pipe handler
Traveling Block: NOV Drecto 768TB-750-8C with 7 x 68" sheaves grooved for 1-3/4" wireline, 750 ton capacity
Pipe Handling: NOV ST-120 Iron Roughneck; PS-21 power slips; BX hydraulic elevator; NOV Bridge Racker derrick pipe racker system; off-line drill pipe/drill collar stand building system
Cementing: Schlumberger CBS393 15,000 psi WP recirculating cement mixing unit with TBC batch mixer system
Mud Pumps: 3 x NOV 14-P-220, 2,200 hp each; 7,500 psi WP each with 2 x Mattco A7520 7,500 psi WP pulsation dampeners

MUD SYSTEM

Return Mud Treatment System: 1 x dual 6 ft gumbo box; 4 x Brandt VSM 300 shale shakers with remote control feed gate system; 1 x Brandt 20/3 mud conditioning header mounted over VSM 300 shale shaker; 1 x Brandt DG- 10/12 degasser; 1 x mud/gas separator
Mud Mixing System: 2 x 105 ft³ surge tanks with surge tank feeders and dust cyclone/collector mounted over 2 x venturi mud mixers with hoppers; 1 x enclosed caustic mixing unit
Active Mud Tank System: Total volume – 3,347 bbls; consisting of 4 active mud tank compartments – 2,353 bbls; 5 mud processing tanks - 470 bbls; 2 X 116 bbl pill tanks; 1 x 186 bbl slug tank; 2 x 53 bbl trip tanks;
Reserve Mud Tank System: Total volume – 2,160 bbls; consisting of 6 tank compartments
Drill Water Volume: – 4,602 bbls dedicated volume; 10,974 bbls including combined pre-load tanks
Other Tank Volumes: Base Oil – 1,506 bbls; Potable Water – 1,625 bbls; Fuel Oil – 1,988 bbls; Completion Brine - 847 bbls; Total Pre-load - 49,759 bbls
Bulk Storage Volumes: Total Volume – 12,040 ft³; consisting of bulk barite: 3 x 1,720 ft³ P-tanks – 5,160 ft³ total; bulk cement: 3 x 1,720 ft³ P-tanks – 5,160 ft³ total; bulk barite/cement - 1 x 1,720 ft³ P-tank; sack storage – 5,000 sacks

MAIN DIMENSIONS/ DRAFT/DISPLACEMENT

Length: 243.1 ft
Breadth: 206 ft
Depth: 26 ft
Legs: 3 x 477 ft with 46 ft diameter spud cans; leg below hull - 414 ft
Cantilever: 70 ft lateral; 15 ft transverse each side
Transit Draft: 17 ft load line
Transit Displacement: 27,566 kips

OPERATING PARAMETERS

Max Water Depth: 350 ft
Max Drilling Depth: 30,000 ft
Survival Conditions: Wind - 100 knots; waves - 40 ft; period - 10.2 sec @ 350 ft WD and 15 ft of leg penetration with max elevated weight of 20,020 kips

CAPACITIES

Variable Deck Load: 8,357 kips (incl combined cantilever load); 4,136 kips afloat; 4,361 kips jacking; 5,707 kips drilling (excl combined cantilever load)
Total Cantilever Variable Load Capacity: 2,650 kips
Drilling Load Capacities: static hook load with top drive: 1,500,000 lbs; rotary: 1,500,000 lbs; rig floor setback: 750,000 lbs; cantilever deck: 800,000 lbs

BOP & CHOKE MANIFOLD SYSTEMS

13-5/8" BOP system: 1 x 13-5/8" 10,000 psi NOV Shaffer Spherical BOP; 2 x 13-5/8" 15,000 psi NOV Shaffer SLX double hydraulic operated ram preventers
21-1/4" BOP system: 1 x 21-1/4" 2,000 psi NOV Shaffer spherical BOP; 1 x 21-1/4" 2,000 psi NOV Shaffer LWS double hydraulic operated ram preventer
Choke and Kill Manifold: NOV Shaffer 3-1/16" 15,000 psi H2S trim with 2 x hydraulic actuated automatic chokes and 2 x manual chokes
Diverter: Velco Gray KFDJ, 500 psi with 16" OD port/stbd overboard lines
Control System: NOV Koomey BOP and diverter hydraulic control system consisting of 750 gal accumulator reservoir capacity, 10 station BOP manifold with 16 x 15-gallon 3,000 psi bottles for BOP functions and independent diverter control manifold with 5 x 15-gallon 3,000 psi bottles for all diverter functions
BOP Handling: 150 mt handling system consisting of 2 x 75 mt air operated chain hoists

TUBULARS

Drill Pipe: 25,000 ft x 5-1/2", 21.9 lb/ft, Grade S-135, 5-1/2 FH conn; 10,000 ft x 3-1/2", 15.5 lb/ft, Grade S-135, NC38 conn
Hevi-wate Drill Pipe: 30 joints x 5-1/2"; 30 joints x 3-1/2"
Drill Collars: 15 joints x 9-1/2"; 30 joints x 8-1/4"; 30 joints x 6-1/2"; 30 joints x 4-3/4"

ADDITIONAL EQUIPMENT

Craneage: 1 x LeTourneau PCM-220SS pedestal crane (port side) with 140 ft boom, 68 mt capacity @ 37 ft (10.7 mtr); 2 x LeTourneau PCM-120SS pedestal cranes (port aft and starboard) with 120 ft boom, 38 mt capacity @ 25 ft (7.6 mtr)
Jacking System: LeTourneau rack & pinion system with 4 x 375 kips elevating units per leg, each leg with 20 output pinions; jacking speed: 1.5 ft/min
Helideck: S-61NS-92N rated; aluminum octagonal shape, 72.8 ft diameter (D-value) CAP 437 compliant
Lifeboats/Life Rafts: 2 x 120 man lifeboats, SOLAS approved; 5 x 25 man life rafts, SOLAS approved
Conductor Pipe Tensioning System: NOV CTU-150-350; 150 mt (tension capacity); 4 lift points; 14" (350mm) (stroke)