Deepwater Geotechnical Vessel

Bluestone Offshore’s Greatship Maya is a dynamically positioned (IMO Class 2) geotechnical vessel, capable of operating worldwide in water depths of up to 1800m. The vessel holds a valid Special Purpose Ship Safety Certificate according to the IMO SPS Code 2008.

This newly built vessel classed with DNV, is fitted with modern technology in in-situ testing and sampling tools.

The drilling rig system is designed and built to industry standards, with unique customised features to meet the practical balance of safety and efficiency.

The main capabilities of the vessel are:

- Performing geotechnical or geological surveys
- Drilling deep boreholes at deep water depths
- Collecting high-quality, undisturbed soil samples
- Performing real time in-situ tests, in downhole or seabed mode
- Performing various geotechnical laboratory tests onboard
- Drilling deep pilot hole for shallow gas detection
- Providing ideal platform for ROV Construction Support works
Bluestone Offshore

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GREATSHIP MAYA
Deepwater Geotechnical Vessel

Vessel Name: Greatship Maya
Builder / Year: Keppel Singmarine, Singapore / 2009
Flag / Port of Registry: Singapore
IMO Number: 9463499

Classification Society:
Det Norske Veritas (DNV)

Design:
Marin Teknikk AS, Norway

Speed / Endurance:
13 knots / 45 days

Operational Water Depth:
1,800 m

Ships Particulars
Length Overall: 50.60 m
Breadth Moulded: 19.70 m
Depth Moulded: 8.95 m
Max. Loaded Draught: 6.3 m

Class Notation:
DNV +1A1, ED, SF, DYNPOS

GRT: 4765 tons
NRT: 1430 tons
Deadweight: 4600 tons
Official Number: 394878
Call sign: 9V7820

Propulsion & Machinery
Main Engines:
4 each 2131 kW each
Total: 8522 kW

Auxiliary Engines
Emergency Generators: 1 x 188 kW
Supply System: 660 V, 60Hz

Accommodation
1 Man Cabin: 11 (each w/private WC)
1 Man Cabin (Client): 5 (each w/private WC)
2 Man Cabin: 25 (each w/private WC)
Hospital: Standard medical facility with full-time medic on standby 24hrs.
Recreation Rooms: Gymnasium, Reception Area, Lounge, Dayroom, Smoking Room & Mess room
Additional Work Rooms: Workshop for Instrument & Electrical
Total Accommodation: 66 Berths, fully air-conditioned

Deck Machinery
Deck Cranes:
2 x 5 tons @ 15m radius, Knuckle Jib
1 x 10 tons @ 5m radius, Telescopic Palfinger crane

Tugger Winches: 2 x 15 tons
Capstans: 2 x 10 tons
Moon pool: 7m x 7m

Dynamic Positioning System
Gyro Compass: 3 units
DGPS: 2 units
Motion reference: 2 units
Underwater reference: 1 x Sonardyne / Haps 500

Cargo Capacities
Deck Strength: 5 – 107 m²
Potable / Fresh Water: 1140 m³
Fuel Oil: 1140 m³
Ballast: 1530 m³
Drill Water: 1010 m³

Discharge
Fresh Water: 1 x 0 – 200 m³/hr at 9 bar
Fuel Oil: 2 x 0 – 200 m³/hr at 9 bar

Anchoring
Anchors: 2 x Min 10MT
Winches: 2 x electric driven anchoring

Drilling System
Derrick: Bluestone 2000
Height: 32 m
Pumping Capacity: 100 MT

Top Drive
Rotary drill F150
• Torque: 23,000 ft lb
• Speed: 80 – 100 rpm

Drawworks Winch: Line Pull 35 MT

Heave Compensation: In-line Drill String Compensator 3.5 m stroke. Capacity: 80 MT

Heavy Load Winch: Single Drum Hydraulic Winch 60 MT

Drill String:
Drill String Length: 1800m (approx.)

Drill Pipes:
API 5-1/2” with 5-1/2” FH Tool Joint
API 7” with 5-1/2” FH Tool Joint

Seabed Frame
Dimension:
3 m (L) x 3 m (W) x 1.95 m (H)
Skirt: 0.15 m
Features:
Tilt Meter
Current Meter
Shear Ram

Mud System
Mud Pump: 2 x GD 5-1/2 x 5-1/2 Triplex
300 gpm

Mixing Pump: Mission Magnum Horizontal centrifugal pump

Mud Tank: 2 x 30 m³

Engineering Data Processing
Borehole Log Generation
Design Parameters Generation
Shallow Foundation Analysis
Deep Foundation Analysis

Down-hole Sampling and Testing
Rock Coring:
• PQ or HQ size selection
• Variety of bits onboard
• 1 x Longyear H32
• 2 x API Core Barrel

WSON-APB
• Maximum of 3 m stroke
• Piston Sampler
• WIP Sampler
• Piezocone Penetration Test
• In-situ Vane Penetration Test

Seabed Sampling and Testing
Electrical Wheel Drive Method
RDSON Rated to 40m push @2000 WD
• Piezocone Penetration Test
• In-situ Vane Penetration Test
• Deepwater Sampler (DWS) 4” diameter piston corer

Free Fall Control Method
Box Corer: 600cm² or 1000 cm²
Grab Sampler: 250cm² or 1000 cm²
Gravity Piston Corer: 6 – 9 m, ø101.6mm
Vibro Corer: 3 – 6 m, ø101.6mm

Geotechnical Laboratory
1 x Wet Laboratory (20FT Container)
1 x Dry Laboratory (12FT Container)

Classification / Physical Property Tests
Water Content
Soil Unit Weight
Grain Size Distribution
Organic Content
Carbonate Content
Photography of Samples

Index Strength Test
Fall Cone: Max 200 kPa
Motovane: Set of 4 springs
Pocket Penetrometer: Max 430 kPa
Tonvane: Max 250 kPa
UU Triaxial: 2 x 3500 kPa cell

Options
1 x MISCL Laboratory (20FT Container)

Liquid and plastic limits (clay samples)
Maximum and minimum density (sand samples)
Unit Weight of solid particles
Point Load Test
CRSC Oedometer

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