TRUSTED OFFSHORE GEOTECHNICAL SOLUTIONS

Drilling Vessel Geoquip Speer

Introduction

The Geoquip Speer is a 2010 build, dynamically positioned geotechnical site investigation vessel designed for safe operations in harsh and remote regions. The vessel is 84m in length with the GMR302 heave compensated geotechnical drill rig installed over a centrally located moonpool. The GMR302 can also deploy and recover a 20T deep push seabed CPT unit.

Positioning

The vessel uses a Rolls-Royce Icon dynamic positioning (DP) system for station keeping. The system consists of a dual DP controller unit and operator stations. The controller unit and the operator station communicate via a dual high-speed data network. The DP system provides a direct interface to the propellers, thrusters and rudders, and includes the necessary interfaces to power plants, position-reference systems and sensors. This provides accurate and precise station-keeping during all borehole and seabed testing operations.

Key Features:

- Class 2 Dynamic Positioning
- Heave compensated offshore geotechnical drilling rig
- Combined water and borehole depth of 360m
- Large deck space
- Comprehensive on board soil and rock testing laboratory

Drilling Monitoring and Downhole Tools

The GMR302 drill rig includes instrumentation for the electronic display of drilling parameters: torque, bit weight, mud pressure, mud flow rate and rotation speed. A comprehensive range of wireline downhole sampling and testing tools is available including PCPT (Piezocone Penetration Test), piston sampling, push sampling, wireline core barrel and percussion (hammer) sampling. All downhole tools (coring, sampling, P-S logging, etc.) are fully compatible with the 5.5” API drill string. A range of drag and specialised coring bits are provided. Large diameter drill pipe can also be used to allow large diameter cores to be taken.

Drilling Rig GMR302	
Power Swivel	Dando 500 with dual speed setting for high torque/high rotation dependent on soil/rock type
Drill String	5½" or 6⅝" API drill string
Seabed Frame	20t, with hydraulic clamps
Heave Compensation	Drill string and seabed frame heave compensation with an effective stroke from 0.0m to 4.0m
Mud	4,000l mix tank, 8,000l storage tank guar gum seawater miscible
Downhole Sampling	Tools piston/push sampler, percussion/hammer sampler, marine wire
Downhole *in situ* Testing Tools	WISON-APB PCPT (cone penetration test with pore water pressure measurement) WISON-APB S-PCPT (cone penetration test with pore water pressure and seismic velocity measurements) PS wireline logging
Downhole Coring	Traditional/Leading Shoe Core Barrel
HPU	Electro-hydraulic, 3 x 125hp
HP Air	2,000l HP Air with associated compressors, filters and driers
Drill Control Cabin	Lever controlled operations, fully HVAC
Drill Rig Workshop	ISO 20ft container sized fully equipped workshop c/w suitable tools and equipment. 220v supply
Equipment Winches	Braden draw works winch 8t seabed frame umbilical winch, piston sample winch (electro mechanical), headline tugger winch, tail line tugger winch
Seabed CPT Unit	20t deep push seabed CPT system. Straight rod push thrust mechanism allows recording of *in situ* data to 40m below mudline, or greater, depending on soil conditions

Geoquip Speer	
Flag, IMO, Call Sign	Marshall Islands, IMO 9546021, Call Sign: V7VK4
Class	Rina
Built	2010, converted 2020
Tonnage	GRT 3,504 NRT 1,052
Principal Dimensions LOA Breadth (moulded) Draft (max)	 84.0m 17.6m 6.5m
Tank Capacity Fuel Oil Potable Water Ballast Water	 1,720m^3 1,650m^3 2,120m^3
Speed / Consumption Standby On DP Economic (transit)	 3m^3/24h 9m^3/24h 14m^3/24h at 12 knots
Endurance	28 + days
Machinery Main Engine Propellers Thrusters / Rudders Fuel Type	 4 x Caterpilar 3512C, 1,700kw each 2 x Rolls-Royce CPP azipull 1,600kw each 2 x Rolls-Royce CPP tunnel thrusters 880kw MGO
DP System	Rolls-Royce Icon
Moon Pools Main Deck	 4.0m x 3.5m
Cargo Deck	830m^2
Accommodation	7 x 1 man cabins, 23 x 2 man cabins, 1 x office, 1 x conference room 1 x recreation room, 1 x smoking/recreation room