

## Geoquip Investigator



### Introduction

The Geoquip Investigator is a permanently mobilised four point moored geotechnical drilling vessel with the GMR300 heave compensated marine drill rig located over a central moon pool. The GMR300 design is based on over 30 years' experience of designing, building and operating heave compensated drill rigs. The GMR300 is suitable for conducting safe and reliable geotechnical site investigations in all soil conditions and can complete boreholes to 300m below mudline. The rig has a Dando 500 top drive power swivel and is provided with 400m of 5½" drill string.

### Positioning

The vessel maintains a stable position on borehole locations through the use of a four point mooring system. The Geoquip Investigator will 'self-lay' and the four anchors on arrival at a location. Recovery of the four anchors is also completed without the requirement for assistance from other vessels. The use of a four point mooring system is typically considered a benefit in shallower water locations when other positioning techniques can be more environmentally dependant.

### Key Features:

- Four point mooring
- Fully heave compensated offshore geotechnical drilling rig
- High reaction seabed frame / drilling template
- Borehole depth 300m capability
- Downhole piston / push and percussion sampling
- Downhole WISON-APB cone penetration testing
- Wireline rock coring
- Comprehensive on board soils testing laboratory

### Drilling Monitoring and Downhole Tools

All downhole tools are fully interchangeable within the single drill string and bottom hole assembly such that any sampling and testing regime can be accommodated. 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, PS logging) are fully compatible within the 5½" API drill string. A range of drag and specialised coring bits are provided.

Drilling Rig GMR300	
<b>Power Swivel</b>	Dando 500 swivel 9500N.m <sup>-1</sup> max 200rpm, 20t load capacity
<b>Drill String</b>	5½" or 6¾" API drill string
<b>Seabed Frame</b>	12t, with hydraulic clamps
<b>Heave Compensation</b>	Drill string and seabed frame heave compensation with an effective stroke length of 0m to 4m
<b>Mud</b>	4,000l mix tank, 8,000l storage tank guar gum seawater miscible
<b>Downhole Sampling</b>	Wireline piston / push sampler, percussion / hammer sampler
<b>Downhole <i>in situ</i> Testing Tools</b>	WISON-APB PCPT cone penetration testing with pore water pressure and seismic velocity measurements
<b>Downhole Coring</b>	Traditional and leading shoe core barrel
<b>HPU</b>	Electro-hydraulic, 3 x 125hp
<b>HP Air</b>	2,000l HP Air with associated compressors, filters and driers
<b>Drill Control Cabin</b>	Lever controlled operations, fully HVAC
<b>Drill Rig Workshop</b>	ISO 20ft container sized fully equipped workshop c/w suitable tools and equipment. 220v supply
<b>Equipment Winches</b>	Braden draw works winch 8t seabed frame umbilical winch, piston sample winch (electro mechanical), headline tugger winch, tail line tugger winch

Geoquip Investigator	
<b>Flag, IMO, Call Sign</b>	Vanuatu, IMO 8020795, Call Sign: YJQG2
<b>Class</b>	RINA C <del>X</del> supply vessel; unrestricted navigation; ICE CLASS ID
<b>Built</b>	1981, converted 2007
<b>Tonnage</b>	GRT 1,306 NRT 392
<b>Principal Dimensions</b>	LOA 59.4m Breadth 14.0m Draft (max) 4.3m
<b>Tank Capacity</b>	Fuel Oil 448m <sup>3</sup> Fresh Water 168m <sup>3</sup>
<b>Speed / Consumption</b>	Standby 2 m <sup>3</sup> /24h On position 3 m <sup>3</sup> /24h Economic (transit) 7 m <sup>3</sup> /24h
<b>Endurance</b>	>28days
<b>Machinery</b>	Main engine 2 x KHD SBV6M 628, each 956kW 2 x 520kW shaft Generators 2 Shaft Gen. 2 x 520kW (380v/220v 50Hz) 1 x 170kW (380v/220v 50Hz) 1 x 96kW (380v/220v 50Hz) Bow thrusters 404kW varispeed
<b>Four Point Mooring</b>	4 x 3t Flipper Delta HHP anchors
<b>Moon Pool</b>	3.0m x 2.7m
<b>Cargo Deck</b>	410m <sup>2</sup>
<b>Accommodation</b>	34 Persons 1 x Project / drilling office 2 x Client office 1 x Hospital