Successful Completion of Caspian Sea Project Using geoROV Technology

UTEC Geomarine, UK, has successfully completed the first phase of a geotechnical site investigation in the Caspian Sea for a major oil and gas operator. The project was completed using a cost-effective, time-efficient suite of remotely operated vehicle (ROV)-conveyed technology, comprising of UTEC’s patented geoROV seabed cone penetration test (CPT) and sampling system, geoREACT suction skid and a specially developed rotary core drill.

UTEC Geomarine’s geoROV technology is an ROV-compatible, CPT, T-bar and push sampling tool. Key benefits include portability, cost-effectiveness and productivity. The geoROV returns high quality soils data at any water depth (depending on ROV). The geoROV drive unit mounts to all work class ROVs and after initial mobilisation takes less than one hour to fit or remove. It can be deployed alongside or in between other subsea ROV works, and provides real-time data transmission. Additionally, geoREACT, an ROV tool skid designed to provide additional stability and reaction force for seabed investigation, enabled testing and sampling to take place over the full range of seabed types on this project.

Investigating Offshore Constructions

The geoROV has been used successfully in investigating drill cutting mounds beneath live platforms; establishing geotechnical parameters for design of subsea infrastructure in congested brownfield sites (adjacent to or beneath existing infrastructure); grid-style investigation to provide assurance of ground conditions for gravity base design; investigating geohazards; and conventional route surveys.

During 150 hours of operation in March and April 2015, the programme of testing and sampling involved 91 cone penetration test locations using geoROV 5cm² PCPT cone; 26 static and cyclic T-Bar test locations using geoROV 50 cm² T-Bar probe; 60 force probe test locations using geoROV 5cm² PCPT cone with 2cm² x 150mm hardened spike extension; 13 push sample locations using geoROV P76 Piston Sampler; 11 rotary core locations using an HD400 drill with 1.0m x 56mm core barrel, with real-time logging of drilling parameters. The Caspian Sea has recently experienced significant growth as an oil-producing region, as more countries and oil and gas operators seek development opportunities. UTEC Geomarine has completed Phase 1 of a multi-phase programme in the region and has supported major operators in the Caspian Sea for the past three years.

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