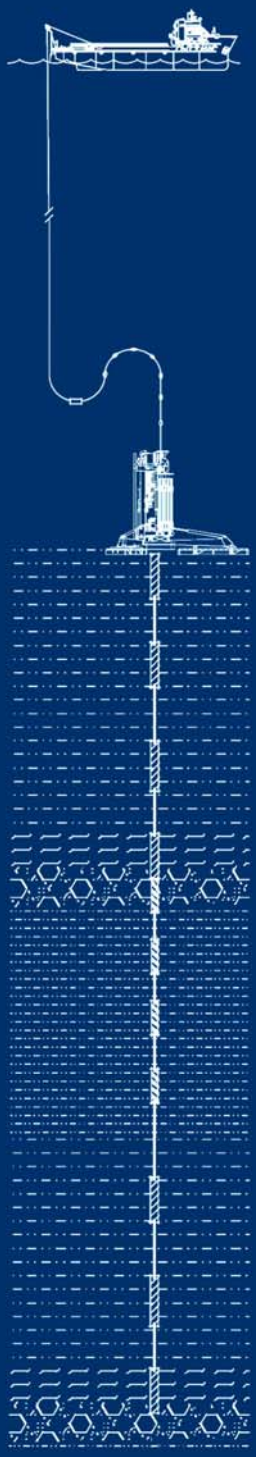
Benthic Geotech Newsletter August 2006



’05/’06 – a year of safety, operational and financial success

Welcome to the inaugural Benthic Geotech Newsletter. The financial year 05/06 has been a year of significant achievement. The company has been busy operationally and has achieved a record financial performance. PROD has operated to its design depth of 2000m. The development of new tools has allowed the company to offer innovative in situ testing such as hydrocarbon analysis whilst drilling. Mobilisation and deployment times have been reduced whilst safety and control has been enhanced by the introduction of the dedicated launch and recovery system (LARS).

Recent projects overview

North West Shelf – Australia

30 Jumbo Piston Cores in up to 950m water

In cooperation with EGS (Asia) Ltd and Somehsa Geosciences, Benthic Geotech conducted a 30 site Jumbo Piston Coring programme over the proposed FPSO Location, pipeline route and infield areas of Stybarrow, Pyrenees and Enfield oil fields in water depths from 150m to 950m for BHPP.

Mobilising in March 2005 from Dampier on the MV Southern Supporter, Benthic Geotech conducted this coring program in calcereous sands, achieving very good sample recovery in a mission time of 10 days.

Core Samples from Pyrenees ready for shipment to onshore laboratory

East Sea - Korea

100% core recovery in up to 1550m

PROD tested in 2000m water depth

In November 2005 Benthic Geotech's PROD carried out a safe and successful drilling, sampling and in situ testing program in a range of water depths between 1000m to 1600m offshore East Asia.

In challenging conditions, including mobilising from Singapore and navigating around two large typhoons en route, Benthic Geotech conducted a number of deep water trials of PROD and we are very happy to report that PROD successfully completed full functionality trials in 2000m water depth.

A number of innovative features in the PROD system were used for the first time, including:

- Dedicated Launch and Recovery System (LARS) which improved the safety and handling of the PROD on and off the vessel in a broad range of weather conditions.
- Soft sediment PROD feet that ensured the baseplate stayed at the mud line providing a very stable drilling platform and accurate assessment of the mudline and near surface soil layers.
- All borings included real-time methane sensing while drilling incorporating Benthic Geotech's patented Hydrocarbon Analysis System. This provided a composite trace of hydrocarbon presence and relative abundance or absence concurrent with sampling and boring activities.

PROD Recovery

Excellent productivity was achieved with the duration from PROD launch to recovery being around 6 hours for a 20m borehole in 1000m water depth and around 12 hours for a 40m borehole in 1500m water depth. There was zero mechanical downtime during this mission.

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OMV Maari – Cook Strait - New Zealand

CPTs and boreholes at 24 sites completed from 8 PROD launches over 5 operational days

With the client requiring confirmation of near mudline data for the detailed design of a shallow gravity based platform, accurate measurement of the mudline and near surface properties were essential. Benthic Geotech deployed PROD with the soft sediment feet which minimised impact on the seabed allowing testing and sampling to commence at the mudline. Operations successfully identified, tested and sampled soft near surface layers with excellent thin walled piston core recovery in all silt and sand layers.

In a short weather window prior to end December 2005 PROD had achieved rapid production through "swimming" between boreholes and streamlining of sampling routines. Returning to site after a period of weather downtime at end December, the Benthic Geotech team completed the remaining CPT testing and sampling by mid-January 2006.

Sample recovery throughout the project was exceptional, with OMV's site representative commenting "*PROD is the ideal tool for this type of shallow foundation structure at this site. The productivity, reliability and sample quality of the PROD system well exceeded our expectations.*"

What's new in Benthic Geotech's tool-box?

During 2005/2006 a number of new tools were successfully commercialised.

Spherical Ball Penetrometer – an excellent tool for soft fine-grained soils

The Ball Penetrometer Tool , "BPT", is a specialist in situ tool that can be deployed as an alternative to Benthic Geotech's standard piezocone system. The BPT comprises a large, smooth spherical ball that is attached to a small diameter high tensile steel shaft.

The BPT provides an accurate definition of the shear strength profile of very soft to firm, fine-grained soil. The BPT can measure a range shear strengths comparable to an in situ vane however, unlike the vane tool, it can undertake continuous strength profiling.

The large bearing area of the BPT enhances the resolution of the metering system. The closed form solution for the undrained shear strength greatly reduces uncertainty in selection of appropriate coefficients for the calculation of true in situ shear strength.

The tool's capability to measure excess pore water pressure enables dissipation measurement to be taken at any point during the course of testing. The ability to investigate the in situ response of the soil to cyclic loading greatly enhances the understanding of the soil's ability to withstand cyclic degradation and liquefaction.

The BPT was successfully used to measure soil stength degredation from cyclical loading at the Trefoil field location in the Bass Strait, Australia with the results being published in a paper at the ISFOG 05 conference held in Perth.

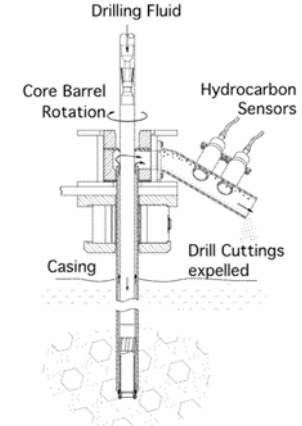
The BPT is a key addition to Benthic Geotech's suite of integrated down-hole geotechnical tools aimed at meeting the needs of clients at the frontiers of offshore goetechnics.

Hydrocarbon Analysis System – real-time sensing whilst drilling.

Shallow gas and methane hydrate deposits are potential hazards for any deep water field development. Benthic Geotech has developed a Hydrocarbon Analysis System (HAS) to provide an immediate assessment of these hazards by real-time hydrocarbon sensing while drilling sub seabed sediments. When used on PROD, the HAS can produce a composite trace of hydrocarbon presence and the relative abundance or absence can be produced concurrently with normal sampling and boring activities.

The relative concentrations of hyrocarbons can also assist in understanding the geological layering of the soils.

At present two sensors are used on PROD which detect high range and low range concentrations. The HAS system has been used on all the recent boring programmes with great success.



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Soft Sediment Feet – accurate measurement of mudline and near surface parameters in soft soils.

Many of today's methods of sampling and testing the seabed are with equipment that place a bearing pressure on the soil greater than the soils bearing capacity at the seabed. This will cause the equipment to settle into the soils and hence the sampling equipment will miss the top layers of the soil profile.

Soft sediment feet dockside trial launch

The strength profile of the top few metres of seabed can substantially affect the design of weight bearing structures, anchors and their deflection characteristics.

With this in mind Benthic Geotech has designed large area lightweight feet. These feet allow PROD to land on soft seabeds with a bearing pressure of approx 1kPa and to position the PROD drilling base plate at the mudline with minimal disturbance of the seabed to be tested.

Benthic Geotech's soft sediment feet have been designed using lightweight marine alloys and are progressively hinged along their length to minimise any soil suction effect when retreiving the PROD from the seabed.

On a recently completed mission, where the first several metres of the seabed were very soft, the project's foundation design consultant stated "*PROD's ability to clearly identify the soft surface layer and the softer lenses within the dense sand has been very helpful to the detailing of our foundation design.*"

Coming soon - Vane Shear and Seismic CPT tools

Tools presently under development include the Vane Shear and Seismic CPT tools. Sea trials for both these tools are scheduled for December 2006.

The Vane Shear test is a rapid and accurate means of assessing the in situ undrained strength of soft clays. The test is carried out in two parts – first a steel cruciform is pushed into the soil at the bottom of the boring, then a torque is applied to the cruciform until the soil fails. The test has the advantage of being a direct measure of the peak undrained shear strength at discrete levels in the borehole.

Vane shear assembly

The Seismic CPT uses shear & compression wave generators situated on PROD and two triaxial geophones spaced at 1m in the downhole tool. It provides low strain soil stiffness information which is of particular interest for structures in earthquake zones and foundations subject to dynamic loading. This data can be compared with shear-wave velocity measurements in laboratory tests and may also be correlated to seismic survey data.

The tools described above and other PROD related drilling, sampling, and subsea technologies and methods are protected by international patents, patents pending, and patent applications.

Industry involvement

ISFOG – Perth Sept. 2005

The specilialist offshore geotechnics ISFOG conference for 2005 was held in Perth and represented an excellent opportunity to catch up with clients and collaborators. Benthic Geotech's Dr. Pat Kelleher co-authored, with Professor Mark Randolph from the Centre of Offshore Foundation Systems (COFS) at the University of Western Australia, a technical paper on "Seabed characterisation with a ball penetrometer deployed from the Portable Remote Operated Drill". Due to Pat being on a vessel battling typhoons at the time (see the project – East Sea, Korea above) his paper was presented at the conference by Benthic Geotech Director, Dr Andy LeMessurier.

ISFOG presentation

Also presented at the conference were papers on Benthic Geotech's sampling programme at Origin's Yolla platform "Geotechnical Interpretation at the Yolla A Platform" by Phil Watson of Arup, and on the value of Benthic Geotech's cyclic Ball Penetrometer data from the Trefoil site for evaluating the effect on the jack-up pre-loading procedures. "Australian frontiers – spudcans on the edge" by Carl Erbrich.

As an emerging innovative designer of geotechnical testing and sampling equipment for offshore site investigation, Benthic Geotech exhibited its new technologies at the conference and hosted an evening reception for clients.

In Situ Testing in Deep Water JIP

During the year Benthic Geotech was invited to join the Joint Industry Program (JIP) to participate in a

study on "Shear Strength Parameters Determined by In situ Tests for Deep Water Soft Soils". The aim of the JIP is to provide an improved quantitative framework for the characterisation of soft offshore sediments, with the emphasis on improved in situ testing methods.

Corporate development

As part of the continuing evolution and growth of Benthic Geotech's business, the company welcomed four new members to the Board of Directors: Russell Staley, Andy LeMessurier, Ron Finkel, and Gary Zamel, bringing with them a wealth of industry and business experience.

Russell Staley

Russell became chairman of Benthic Geotech in August 2004 bringing his 25 year experience in the global oil and gas business and expertise in growing the world-renowned oil and gas services company, WorleyParsons. His role in Benthic Geotech is to work closely with the CEO, Peter Williamson, to ensure the company's strategic growth.

Andy LeMessurier

Andy joined the board of Benthic Geotech in July 2004 bringing a wealth of knowledge to the company from almost 30 years oil industry experience with Shell and WorleyParsons in offshore structures and foundation systems. His role within Benthic Geotech is to assist the CEO in the areas of strategic planning, business development and client relationships.

Gary Zamel

Gary has been a private equity investor in technology, mining and industrial ventures for over 18 years. He established a number of successful technology start-up companies including Mine Site Technologies Pty Ltd, Pacific Tunnelling Pty Ltd, and Ringwood Superabrasives Pty Ltd. In 1989, Gary founded coal mining company Jellinbah Resources Pty Ltd creating ground breaking international export markets in the steel industry. Gary is a Member of the UNSW Mining Advisory Council.

Ron Finkel

Ron has been actively involved in the venture capital industry since 1986 including roles at Pratt Venture Management and as Director of Investments at the Advent Management Group where he was actively involved with portfolio companies across a wide range of innovative technologies. In 1997, together with colleague Ergad Gold, established the Momentum Investment Group and were successful tenderers for one of the Australian Government's inaugural licences under the Innovation Investment Fund program. Ron is also currently a Director of Momentum Investment Group , Momentum Ventures Ltd, Petrecycle Ltd, and Ingena Pty Ltd.

New PRODs now being designed.

With the first PROD now proven to work in 2000m water depths, BENTHIC GEOTECH has commenced the design and construction process for two new PRODs with a focus on reliability, robustness and flexibility for client needs. During the year the company has canvassed major clients on the functionality that they would like to see in future PRODs. BENTHIC GEOTECH's CEO, Peter Williamson, stated that "*the company has always been destined to become a multiple PROD organisation to service the ever-growing market for offshore site investigations. As clients have differing requirements, several PRODs with distinct capabilities will meet the needs of clients in a variety of geographies*"

BRW Fast 100 award – 7th place

In November 2005 BENTHIC GEOTECH was awarded 7th place in the fastest growing 100 private businesses by Business Review Weekly, 'BRW' - Australia's pre-eminent weekly business magazine. The prize, awarded annually, assesses entrants on their business growth and successes, entreprenuerial talents, ability to export and potential for the future.

Other BENTHIC GEOTECH growth initiatives

BENTHIC GEOTECH has excelled at commercialising the results of years of research and development of new tools and systems for the PROD. Commercialisation of research and development is a core competency of the company. The company is leveraging on this competency in a collaboration with the Australian National University in an initiative to develop an extremely sensitive all-optical array for use in marine applications such as seismic surveys, oil well monitoring and remote passive detection of seaborne vessels.

In November 2005 the collaboration was awarded a $1m Linkage Grant from the Australian Research Council with BENTHIC GEOTECH facilitating the Universities research as an industry partner.