

# GeoDrilling

## INTERNATIONAL

- Offshore drilling
- Healthy and safety
- Buyers' guide



Stockholm Precision Tools AB



**SPT**<sup>TM</sup>  
Evolution in downhole  
navigation systems

Continuous North Seeking Gyro





A coastal protection project is under way at Scarborough

## Drilling study will aid UK coastal protection scheme

Engineers from Scarborough Borough Council are to drill boreholes up to 40m deep at the North Yorkshire resort as part of a coastal protection scheme.

The work will take place at the South Cliff Gardens and on the promenade in front of the spa.

The work is designed to establish the depth of the bedrock, ground conditions and water levels. The drilling at the front of the spa will be limited to 20m.

Additional monitoring equipment would be installed in the new boreholes to measure groundwater levels and movements within the cliff, a spokesman for the council said.

These would be monitored for six months to provide data for the design of the coastal protection scheme.

Samples taken from the boreholes will include soil samples and rock cores to be tested to provide information on the composition and strength of the materials in the ground.

Councillor Mike Cockerill, who is responsible for harbours, the coast and flood protection, said:

"Although there is some existing information available as a result of previous works and on-going monitoring, more information is needed, particularly about ground conditions including geology, groundwater and depths of ground movement to help determine the design of the structures that will make up the final coastal protection scheme."

## Bulroc system aids tricky rail project in Hong Kong

Bulroc is working in Hong Kong on a challenging foundation-stabilisation project for a new rail line. With the proliferation of high-rise buildings, the distance between foundation works in the Chinese region is narrowing, especially on large-scale excavations such as the Mass Transit Railway (MTR) Hung Hom station-concourse project.

The project, which is part of the new Shatin-Central MTR link, involves more than 250 610mm-diameter cased piles, varying in depth from 18m to 36m.

Most foundation pile work is done with temporary 10mm-wall casing but, more recently, many foundation designs, such as the Hung Hom project, have called for permanent 610mm-diameter casing with 16mm and 20mm wall thickness, the company says.

To accommodate this change, Bulroc now produces modified CDS560RS Stable-X systems to accept thicker-wall casing. The modular design of the Bulroc CDS560RS Stable-X system allows for variations in casing wall thickness to be easily accommodated while maintaining the use of standard components, giving the contractor flexibility in



High-rise buildings leave little room for piling work

size range, with a minimum stock of parts.

Although acceptance of the thicker-wall casing was a consideration on this MTR site, the major concern of drilling contractor Chun Hing was the proximity of existing structures to the Hung Hom station.

Chun Hing adopted the Bulroc Stable-X system, which allows only a very small amount of compressed air to travel forward to the cutting face, while the majority of the flushing air is directed

backwards into the casing, creating a vacuum effect for the removal of the cuttings. This method of cutting removal guarantees that the area surrounding the casing is relatively undisturbed, leading to minimal settlement after installation.

Based on the measurements taken and the performance achieved by the Stable-X on some difficult sites, this method of casing installation is now being widely used for foundation works around Hong Kong.

## Boart Longyear revenues up

It has been a promising start to the year for mining drilling services and products provider Boart Longyear. Total revenue for the first half of 2012 was US\$1,099 million, an increase of 15% compared with US\$959 million for the first half of 2011.

Total earnings before interest, tax, depreciation and amortisation (EBITDA) for the half-year was US\$208 million, an increase of 26%.

The Drilling Services division generated US\$177 million in EBITDA, up 37% over the same period in 2011. The Products division generated US\$68 million in EBITDA, up 2%.

Demand remained strong in Africa and Latin America. Rig sales for the Products business were up, and rig utilisation for Drilling Services

remained between 70% and 75% during the first half of 2012.

Given industry and macro-economic developments since the start of the second half, the company is revising its 2012 full-year guidance. It forecasts revenue in the region of US\$2 billion and EBITDA of approximately US\$360-390 million.

Boart Longyear's exploration market indicators are mixed and the company's visibility is being hit by conditions that vary by business, region, customer and project.

"We are seeing a mining industry in a state of flux," Boart Longyear CEO Craig Kipp said. "Uncertainties such as European debt, decreasing growth in China, restrictive financing conditions and the upcoming US elections are



Rig sales were up during the first half

driving our mining customers to be more cautious with their capital and direct it to their higher-quality assets."



PEOPLE

# New director at Boart Longyear

Integrated drilling products and services provider Boart Longyear has named Vince Trotta as its new director of global product management and sales operations.

"This is an exciting opportunity to more closely align our product management team with our global sales force," Alan Sides, vice-president of products for the company, said.

"Mr Trotta brings over 25 years of experience in driving industry-leading product sales in a variety of markets. He has a strong skill set in product management, sales process and productivity improvement that will result in the growth of our global customer base."

Mr Trotta was most recently a global sales executive for Boart Longyear and has over seven years



Vince Trotta, director of global product management and sales operations

of experience in the heavy mining equipment market.

Before joining Boart Longyear last year, he worked for Keystone Automotive Operations as director of western US sales. He has also worked in a variety of general management, sales leadership and acquisition integration roles in Brazil, China, Indonesia and the US. He has a Bachelor of Science degree in electrical engineering from West Virginia University.

# Woldmo becomes Normet MD

Ola Woldmo took over as the managing director of Normet Scandinavia, based in Ludvika, Sweden, from October 1.

Mr Woldmo, a Norwegian citizen and civil engineer, has over 30 years of experience in project management and as advisor for major civil engineering and infrastructure projects in Africa, Europe, South America and southeast Asia.

He is an expert in rock mass grouting, rock support and sprayed concrete and has built his career over 18 years in management positions within the Norwegian contractor Veidekke and as general manager for BASF

Construction Chemicals Norway.

For several years Mr Woldmo was the sales and technical manager for MBT-Degussa UGC in Hong Kong and later the UGC director responsible for the Asia-Pacific region, based in Singapore.

He joins Normet from Woldmo Consulting, where he was the CEO and acted as advisor to, among others, Leighton Contractors in Hong Kong, SKAVA at Codelco's Andina Mine in Chile, and Bombela/Bouygues' Gautrain project in Johannesburg, South Africa.



Ola Woldmo is the new managing director of Normet Scandinavia



VIBRO-ROTARY HEADS



HYDRAULIC DRIFTERS



HYDRAULIC ROTARY HEADS



COMPACT DOUBLE HEAD SYSTEMS (ROTARY + ROTARY) (ROTARY + DRIFTER)

## HYDRAULIC DRIFTER HB35



- Especially designed for overburden drilling, drive drilling, self-drilling anchors and micropiles.
- Compact design – the ideal drifter for mid-size drill rigs and excavator attachments.
- Up to casing dia 133mm (5-inch) or 73mm (3-inch) self-drilling anchors.
- Adjustable impact rate to match each drilling task.



# A mine of experience

Kent Adamson, global director of environmental, health and safety at Boart Longyear, talks training and new technology

Boart Longyear's operation at Sepon, Laos, achieved six years without losing any time due to injury in 2010

**W**hen it comes to drilling practices, Boart Longyear focuses on giving its employees – especially new hires – the right training. There has been a marked change in the availability of skilled workers coming into the drilling industry, the company says: it is now hard to find workers who have had a combination of mechanical and hydraulic experience and have had to work outside.

The company makes it a priority to train all new hires thoroughly and to make sure they understand the risks of the job. With proper training, they will understand how the equipment operates, what tools to use and the best safety practices.

By using a five-by-five risk-assessment matrix, employees identify their highest risks and implement measures to lessen the chance of injury. The assessment calculates a rating by comparing the likelihood of an injury with the severity of the consequence. The higher the risk rating, the more controls and protections must be put in place to lower the chance of danger.

Training of drillers begins when they are hired and each driller will also go through a yearly refresher course. Drillers can have a very systematic job progression. With this progression, new training is required to develop the competencies needed in each new role throughout a driller's career. The basis of this programme is developed from the Australian Drilling Industry Competency Standards.

In the US, drillers who are working underground will have 40 hours of Mine Safety and Health Administration (MSHA) training, and if they are working on the surface, they will have 24 hours of MSHA training. The drillers will also receive all the necessary training required when working



on an Occupational Safety and Health Administration (OSHA) regulated site. During operations in other countries such as Canada and Australia, drillers receive the regional regulatory training required.

## The method at the mine

The biggest change has been the shift in culture towards health and safety in the mining industry. Boart Longyear has focused on changing the culture throughout the company. The mining industry has realised that leadership is

## Key safety device

The key safety device on all Boart Longyear drills is the automated rod-handler. This is because it takes the manual handling of drill rods out of the equation. This lowers the incidence of injuries associated with heavy lifting, including back injuries. It also helps reduce hand injuries because hands can be crushed by falling rods or lacerated by sharp rod edges. The automated rod-handler removes the driller's hands from the danger zone.

## Boart Longyear's THINK standard

- Take time
- Hazard identification
- Identify the risk
- Necessary control is applied
- Keep safety first

extremely important when it comes to health-and-safety practices. Drill crews respond to the programmes, tools, training and policies put in place to provide safe environments. It is therefore important for the leadership to get it right and to lead by example. If the leaders can do this, then employees will have the items needed to safely perform their job.

By law, the MSHA and OSHA are required to visit drilling and mine sites. They have a set number of required inspections and, in certain circumstances, are increasing their presence. Responsible companies see this as a positive trend, because the inspectors are trying to help them operate safely.

Boart Longyear crews operate in remote locations. When working in these areas, getting to and from the drill sites can be the most hazardous part of the job. Very little infrastructure means having to drive long hours to reach the sites. This is a real risk when drive time and long shifts are coupled, because fatigue can set in while trying to navigate poor road conditions.

## Hands-free

From an equipment standpoint, the mining industry has been pushing for hands-free drilling and removing the worker from harm's way. Automation and remote controls are the main avenues in equipment innovation. Equipment providers have developed components to distance the drillers from the rigs, such as rod handlers, remote-control stations and mechanical threading of rods.

Hand injuries are the most common injury in the drilling industry, so limiting the handling of equipment is key to lowering the injury rates. The recently released split-tube loader and the rod lifter are small solutions to big problems. Both of these products help keep the driller's hands away from pinch points and sharp edges.

The split-tube loader prevents hand lacerations due to sharp edging and metal

"The mining industry has realised that leadership is extremely important when it comes to health-and-safety practices"

Two safety tools championed by Boart Longyear to reduce hand injuries are the split-tube loader (left) and rod lifter (right)







burs on split tubes and outer casing. The split-tube loader is designed to keep fingers away from dangerous areas and eliminate hand contact.

The rod lifter is engineered to protect a driller's hands during rod handling. Designed to be lightweight and ergonomic to keep the wrist and hand in a neutral position while eliminating strain, it removes fingers from pinch points and sharp surfaces while promoting proper lifting techniques. The rod lifter also prevents pipe slippage through the use of carbide teeth grips.

### Monitoring

The company is currently in the process of implementing a vehicle-monitoring system in its global fleet of vehicles after experiencing an increase of rollover



incidents. These monitors now allow Boart Longyear to have real-time information on drivers' behaviour. The monitors can track speed, aggressive driving, seat-belt use and idle time.

These results can be pulled out at any given time. Boart Longyear posts a report that shows which region has the best overall score, who the top five drivers are, and who the worst five drivers are.

The employees know that they are being monitored, especially when they receive instant feedback in the cab of their vehicle. If drivers are going faster than the posted speed limit, they will hear a voice that tells them to check their speed.

As long as drivers make the necessary correction in a certain amount of time, then the monitoring device does not log the incident. If the drivers do not make

that correction, the system logs the event and Boart Longyear receives a report.

Knowledge of being monitored and counselling sessions following violations have changed driver behaviour, resulting in zero rollover incidents since being implemented. ♥

### Workers' wisdom

During a recent open-mine project, a client asked the Boart Longyear drilling team to set up operations closer to a high wall than the crew felt safe. The drillers felt the need to stop work. Within two weeks of that stoppage, the wall failed. If the team had moved ahead with drilling there, the company would have lost equipment and employees could have been injured.

*Paying attention to health and safety ensures happy workers around the globe*



## Drill Smarter

Drill faster, cheaper, smarter with Sonic Drill Corporation's award-winning, patented drilling technology. Put it to work on your next project to heat up profits and cool down costs. It's the perfect choice for geothermal installations, environmental investigations and mineral explorations.

- Drill 3-5X faster (depending on conditions).
- Drill, case, loop and grout in one step for geothermal projects.
- Collect continuous, undisturbed core samples to 300 ft.
- Drill using water or air (depending on conditions).
- Produce up to 70% less mess, lower your site clean-up costs.
- Various rig sizes (some fit in a 20' shipping container to drastically reduce shipping costs).



SONIC DRILL CORPORATION

Suite 190, 119 N. Commercial Street, Bellingham, WA 98225

1.604.792.2000 (ext 104) or 1.604.306.3135

[www.sonic-drill.com](http://www.sonic-drill.com)