

SUDBURY

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Redpath unveils newest raisedrill

■ Redbore 100 will improve productivity between 35 and 40 per cent

BY NORM TOLLINSKY

The most powerful raisedrill in the world, the Redpath Group's Redbore 100, is scheduled to begin drilling two ventilation raises at Vale Inco's Copper Cliff South Mine in January.

Designed and manufactured in North Bay by the Redpath Group's raiseboring division, the Redbore 100 "has 3.5 million pounds of pull – that's primarily what you use to break the rock - and 750,000 foot pounds of rotational torque for turning an eight metre diameter reaming head," said Dan Kelly, manager of operations for raiseboring.

"It's also a low profile machine. It has a 24-foot, nine-inch back height, which is the ground you need to excavate to take it underground. A lot of other machines that are not as powerful are 35 feet high, so they're really difficult to take underground and you have to do huge excavations for them. We kept this machine very compact."

The Redbore 100 is expected to increase productivity by 35 to 40 per cent and may change the way mines are designed, said Redpath marketing manager Marcel Gravelle.

"Instead of doing a raise in two passes, they can now pull it in one run. The cost of mobilization, installation and excavation all start to play a role, so it becomes far more economical, far more viable."

The Redbore 100 will excavate two 650-metre, 5.5-metre diameter ventilation raises required by Vale Inco for its planned billion

dollar Copper Cliff Deep project. The raisedrill will operate from surface and sit on top of collars on massive steel beams. The reamer will be disassembled and transported underground to join up with the drill steel once a pilot hole is completed. The work is expected to take 10 months.

The Redpath raiseboring team began thinking about building a more powerful raisedrill 15 years ago when it became apparent that mines were moving towards bigger and deeper holes.

"We started pencilling out what would be the biggest, most powerful drill in the world, but that's not something that happens overnight," said Kelly. "There was a lot of drive technology that was still coming out that was new and unproven and there was a lot of work that was needed on the drill string because the drill strings that were available were not sufficient."

"We also had to wait a long time for the market to change and that's just happened in the last two years. There's now a market for all these large holes and we see it going on for the next eight to 10 years."

Redpath worked with Sudbury-based Mining Technologies International to design the 14.5-inch diameter drill steel, which comes in seven-foot lengths and features a new thread design to accommodate the powerful torque and thrust. A new reamer for the Redbore 100 was designed and manufactured by Atlas Copco.

The Redpath Group began offering contract raiseboring services in 1970 and began manufacturing raisedrills in 1987.

"We saw the need for different



The Redpath Group's Redbore 100 delivers 3.5 million pounds of pull and 750,000 foot pounds of rotational torque.

equipment that wasn't available, so we decided to start manufacturing drills for ourselves," recalled Kelly. "It took off. People liked the product we were building, so we've been doing that for 21 years."

Since then, the Redpath Group has sold 19 drills around the world and built 31 in total.

"We have 19 drills in our fleet now," said Kelly. "All the large diameter drills are booked up for the next couple of years. The small, production-type machines that just do one or two-metre holes for production blasting and (other jobs) aren't that busy, but that's because we've been selling

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them to our customers, so they don't have to call on us to contract. They can just purchase a drill from us."

The Redbore 100 comes with a control station with a visioning system that allows the operator to view all of the moving components of the machine on monitors.

Typically, the raisedrill is operated by a crew of two per shift.

Raiseboring has its share of challenges, one of which is ground control, said Kelly.

"If you don't do the research and don't understand the ground, you can run into a lot of problems such as the ground unravelling or movement of ground, which makes it very difficult for us to break rock.

"When you excavate an eight-metre hole, you want to make sure it's going to stay eight metres, that it's not going to go to 10 metres or 12 metres on you. If that happens, you have to go in and do very expensive support inside the raise."

Redpath had some practice with another challenge – transporting the Redbore 100 – when it decided to exhibit it in Las Vegas at MINExpo September 22 to 24.

"It was supposed to take seven days to transport it from North Bay to Las Vegas, but it ended up taking nine and a half days, so we were late and almost lost our position to get into the show," said Kelly.



Dan Kelly, manager of operations, Redpath Group raiseboring division

The 120,000-pound drill was lifted by two cranes and laid on its side on a 10-axle, 125-foot long truck to disperse the load. Redpath had to comply with different rules and regulations for each state along the route and apply for overweight permits from each jurisdiction.

"Some require a police escort, some daytime driving only and some only require a flagged escort truck in front of you," said Kelly.

The trip down to Las Vegas was delayed when an escort failed to meet the truck at the Pennsylvania border and when the truck driver got food poisoning halfway through the trip.

Transporting the drill 125 kilometres from North Bay to Sudbury won't be as nerve-wracking, but the weight of the fully completed drill will be 160,000 pounds, so an even bigger truck will have to be found.

It will take two cranes to lift it up – an 85-tonne crane and a 130 tonne crane – "because not everyone has a 200-tonne crane in their backyard," joked Kelly.

The Redbore 100 is dubbed the Queen Louise in honour of administrative assistant Louise Young, who has been with Redpath for 20 years and whose husband and son also work in the raiseboring division.

The market value of the drill is estimated at between \$12 to \$15 million. ■



BRIEFS

Mine Radio Systems appoints new general manager

Cindy Chesney has been appointed to the position of general manager for Mine Radio Systems' (MRS) Canadian operations. Formerly sales and marketing project co-ordinator, Chesney will oversee day-to-day operations and be responsible for sales, production co-ordination and client satisfaction.

Describing the appointment as "an integral part" of the company's overall business development plan, MRS president Ken Morrell said Chesney "brings more than nine years of internal sales, marketing,



Cindy Chesney, general manager, Mine Radio Systems

project management and customer care experience ...that will strengthen and add efficiencies to our Canadian operations."

Mine Radio Systems, is an ISO 9001:2000-registered company specializing in underground communication systems. Based in Goodwood, Ontario, the company has offices in Sudbury, Australia, South Africa, Mexico, and the U.K.

Mining association launches video contest for high school students

The Ontario Mining Association (OMA) is inviting Ontario high school students to submit videos for its "So You Think You Know Mining" video contest.

The contest offers high school students an opportunity to produce a two to three minute video showcasing the benefits of mining. The OMA website encourages students to explore a range of benefits the mining industry offers, including economic growth, employment and entrepreneur-

ial opportunities. It also highlights the end-uses of mining products along with technological and environmental innovations.

The website offers prospective teen movie makers resources and links to numerous helpful websites as well as a "Guide to Making a Video." This guide has details on everything from planning a production to setting scenes and camera angles as well as tips on music and budgeting.

The competition aims to motivate young people to learn about mining while picking up valuable skills in script writing, musical adaptation, film editing and video production. Five winning entries will be selected by a panel of judges based on originality, audio-visual quality and effectiveness. The prize categories are for Best Overall entry (\$5,000), Best Directing (\$2,500), Best Writing (\$2,500) (original screen play), Best Music (\$2,500) and Best Comedy (\$2,500).

The winning productions will be featured at the Canadian Institute of Mining, Metallurgy and Petro-

leum's conference in Toronto in May 2009 and on the OMA website. Entries close March 31, 2009. Students can learn about contest details and how to enter and upload their movie productions on the OMA website at www.oma.on.ca

Sudbury to host Ontario geoscience symposium

The 2008 Ontario Exploration and Geoscience Symposium will take place in Sudbury December 9 and 10.

The two-day event, organized by the Ontario Prospectors Association, is expected to attract approximately 400 prospectors, junior miners and exploration industry suppliers. A full slate of speakers will provide an overview of exploration activity in the province.

www.ontarioprospectors.com



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