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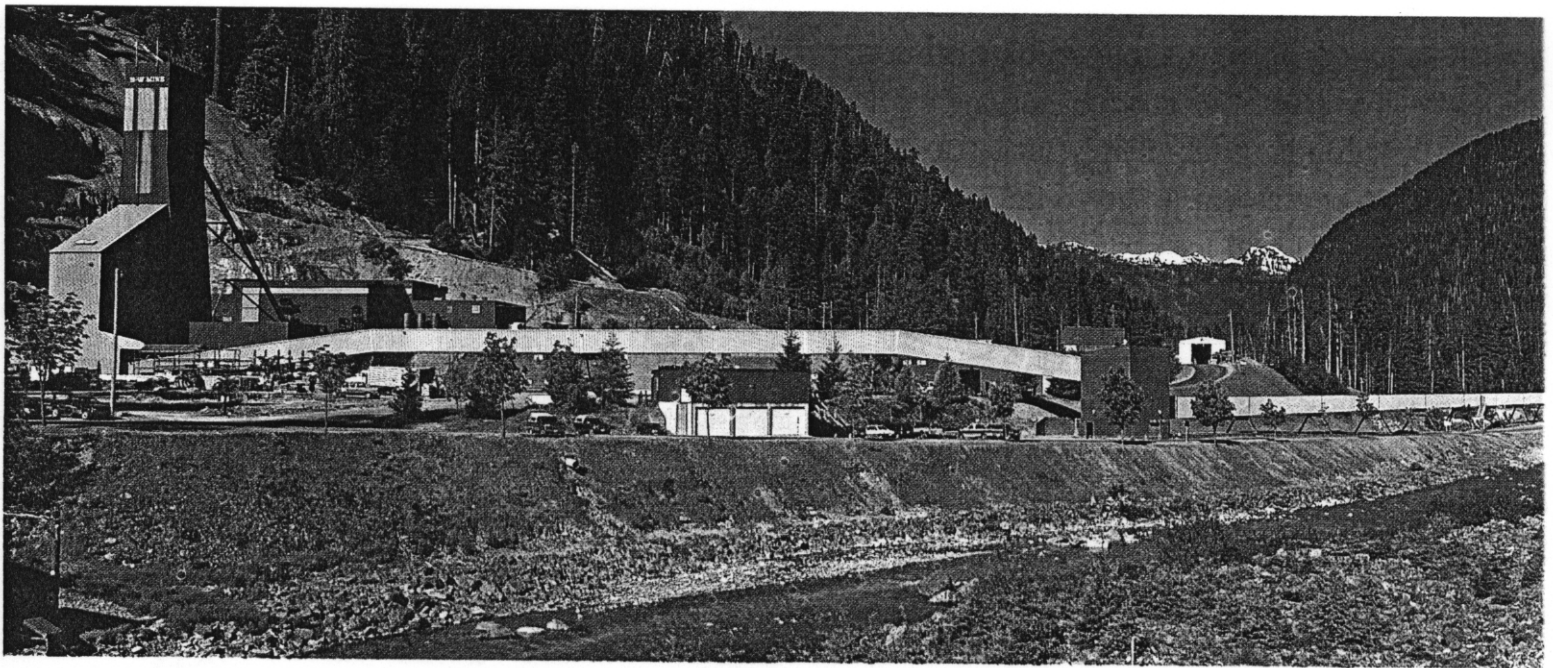
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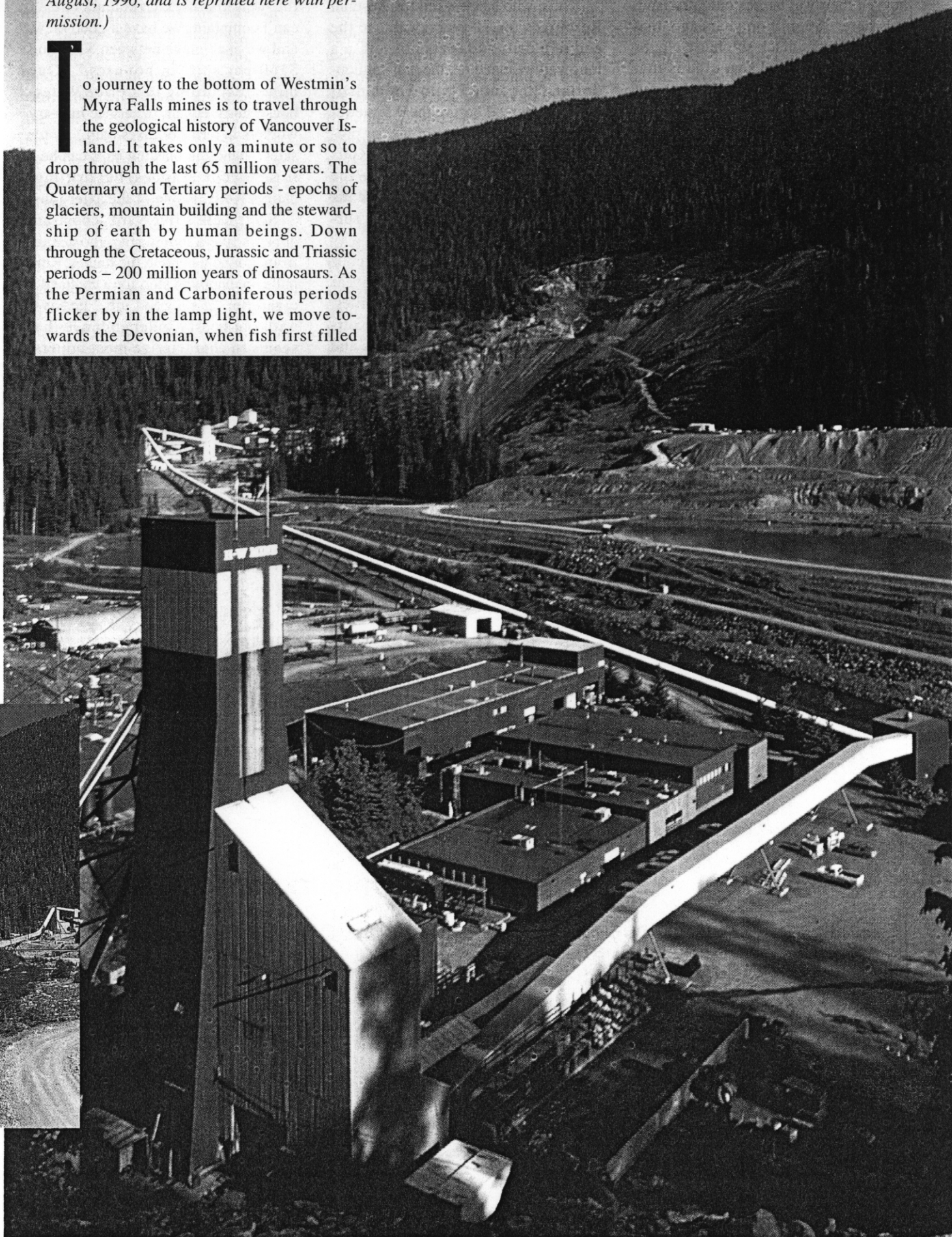
Thirty Years at Myra Falls

After three decades, Westmin Resources' top-producing mine shows no signs of slowing down



(This article first appeared in B.C. Business, August, 1996, and is reprinted here with permission.)

To journey to the bottom of Westmin's Myra Falls mines is to travel through the geological history of Vancouver Island. It takes only a minute or so to drop through the last 65 million years. The Quaternary and Tertiary periods - epochs of glaciers, mountain building and the stewardship of earth by human beings. Down through the Cretaceous, Jurassic and Triassic periods - 200 million years of dinosaurs. As the Permian and Carboniferous periods flicker by in the lamp light, we move towards the Devonian, when fish first filled



the sea, forests took root in the primeval soil and the first amphibians heaved their wet bellies onto dry land. It is here, 380 million years ago, that volcanoes spat black sulphuric clouds into the primordial sea, clouds that rained sulphide-laden metals onto the ocean floor, where they pooled into lens-shaped deposits rich in iron, copper, lead, zinc and even gold. Today, these orebodies are known as Volcanogenic Massive Sulphide deposits, the geological mainstay of Westmin Resources.

Level 18 - The H-W Mine at Myra Falls

The cage tender opens the cage door and a dozen men march off into the large, dark, warm, well-ventilated tunnels where they work. Mike Kotis walks through the mud toward the work face where he will spend the day. He is dressed, like all the miners, in rubber boots, coveralls and a yellow utility belt fitted with an emergency air purification canteen and a battery,

cabled by thick rubber hose to the lamp on his hard hat.

Kotis, who has worked for Westmin Resources for 11 years, walks to the end of a drift and seats himself in a long yellow machine, the half-million-dollar, 20-tonne "twin boom drill jumbo" situated before the 4.5-metre-high rock face. Lowering his ear protection and starting the engine, Kotis uses the controls to manoeuvre the drill toward the first drill point on the large grid painted on the rock's surface. When the bit has cut its way through 3.8 metres of rock, Kotis pulls the drill out and repeats the process until the wall is riddled with cavities. When all the holes are drilled, Kotis will carefully place explosives and detonating caps down each one. Between shifts, when everyone is topside and accounted for, the caps will be detonated electrically and tonnes of ore-rich "muck" will fill the passage-way. Then come the scalers and muckers, who knock down loose rock and clear away the rubble, exposing the

next rock face, ready to be mined.

"I make good money," says Kotis through his thick Czech accent. "I can't complain. We have a good crew, and we each make between \$130 and \$160 per shift in bonuses." (One miner, according to a Price Waterhouse study, equals 16 service industry workers in terms of taxes paid.) As for safety, handling blasting caps can be a little touchy at times, but drilling, claims Kotis, is one of the safer jobs.

Scott Kelk's five-yard scooptram appears like a thundering ghost train from around a bend in the tunnel. Kelk pulls up, happy to stop for a chat and a cigarette. "It's a good job," he says, with the hearty independence that seems to characterize most miners. "The boss isn't looming over me all day." Asked if the rock is friend or foe, Kelk shrugs. "That depends on how you treat it."

Kelk has worked in the Myra Falls mines as a bolter for the last 12 years, dealing with "loose and bad ground." The "ground" is all around a miner,



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not just under his feet. After a blast, large chunks of loose rock cling to the drift, posing a serious threat to workers. Bolters like Kelk stand on truck-mounted scissor-lifts, sinking bolts into the rock. In areas of special concern, thick wire screens are attached to the bolts, creating a safer, more stable environment.

That's not to say that accidents don't happen. Vic Misko has mined at Myra Falls on and off for 20 years. Several years ago a rock fall partially severed Misko's left arm at the bicep. Misko, who now works topside on light duties, is neatly trimming the letters for a safety sign. He pulls up the sleeve of his left arm and displays an enormous scar on his reattached arm. "You can't spend your life crying," he says pragmatically. "I'm even starting to move my fingers again."

Jody Mullin has worked for Westmin for 16 years, six of those during the early days at the Lynx Mine. "The H-W's a lot safer than at the beginning," says Mullin, who works as a

bolter, "but ground conditions are difficult, that's why we use screen."

Asked to explain his affinity for being underground, Mullin points to the mild climate. "Topside, for all anyone down here knows, could be blazing hot or soaking wet. Who in their right mind would choose to go logging when there's a nice, warm mine to work in?"

View From the Surface

The cage door opens to disgorge workers back into the sunlit realm. The site, apart from the old open-pit, shows little evidence of mining. The land, after all, is part of Strathcona Park. Besides the headframe, which straddles the 14- by 22-foot, six-compartment H-W Mine shaft, there is a main administration building, a power station, an assay office, several multi-purpose buildings (maintenance and warehousing) and, stretching across the property from mine shaft to the mill, a covered conveyor belt.

North, south and west rise moun-

tains, still capped with snow in late May. To the east lies Buttle Lake. Around the mine a system of terraces, now greening up with vegetation, is a picturesque manner of dealing with tailings – the refuse from the milling process. Water treatment ponds dot the property. Although they look like landscaping, the ponds comprise a multi-stage process for removing leachate from tailings drainage and ground water before returning it to the environment. If the site were abandoned and the buildings removed, it would not be long before Myra Falls mines became all but indistinguishable from the surrounding park.

"Myra Falls is a tremendous ore-body," says mine manager Bill Diment. "It's one of the most prolific geological environments for finding economic massive sulphide deposits I have ever been involved with. The good Lord, however, in creating it, did not see fit to tip it up like so many others – he left it flat. As a result, we have a very high ratio of development

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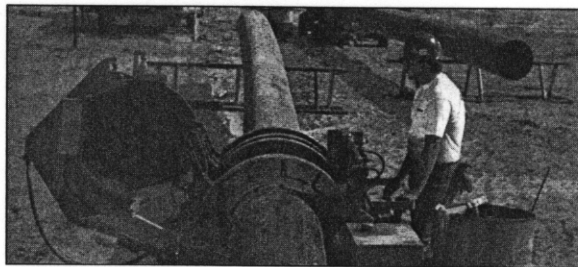
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work to tonnes produced."

Diment spends much of his time dealing with people-related tasks, organizing, planning and building an efficient team. Since August 1994, when Myra Falls re-opened after an 18-month labour dispute, Diment and his management crew have devoted considerable energy to building bridges between labour and management. "If you want my opinion," says Diment, "the lock-out wasn't all bad, despite the hardship it brought to everyone. Those 18 months allowed the management team to become very close, and to develop a back-to-work plan that allows us to run the operation in a more co-operative, participative and efficient manner. To this day, our efforts have been very successful."

Mining at Myra Falls is now in its 30th year. Chief geologist Cliff Pearson has been at Myra since September 1969, when all the production still came from the Lynx open-pit, and the underground portion of Lynx was just coming on line. In the earliest days

everything needed for the mine, including the miners themselves, had to be barged up Buttle Lake to Myra Falls. Pearson, to avoid long weeks living at the camp, claims to have been the first to commute to Campbell River via the road Westmin built through Strathcona Park during the late '60s. With 27 years at Myra, Pearson now serves in the unofficial capacity of site historian. "It's a great property," says Pearson, "infinitely varied."

As far back as 1918 the Myra Falls area was identified as a potentially rich source of copper, zinc and lead. In 1930, a report to the Geological Survey of the Department of Mines noted "extensive mineralization of probable milling grade." In 1959, claims in the Myra Falls area were acquired and consolidated by the Reynolds Syndicate. At this time, however, base metal prices were low, and it was difficult to raise investment money. Ultimately, the Reynolds Syndicate teamed up with Harold Wright

of Western Mines, and in 1961 an agreement was reached to develop the property. By 1964 the development of the Lynx Mine was underway, and production started in the Lynx open-pit in 1966, but delays and bad winters postponed underground production until the spring of 1967. Now closed, the Lynx Mine consisted, according to Pearson, "of hundreds of ore lenses, placed like sausages on strings."

In December 1969, geologists found the Myra mine, a near-surface orebody that produced a million tonnes of high-grade ore over the next 13 years. By the mid-'70s, however, with both the Lynx and Myra mines fully defined, it became evident that the company was rapidly losing its reserve.

Around then, remembers Pearson, Westmin's management made a decision to accelerate exploration in the area, and Pearson became involved. Part of the exploration included deep drilling, a strategy enforced by corporate headquarters despite the objec-

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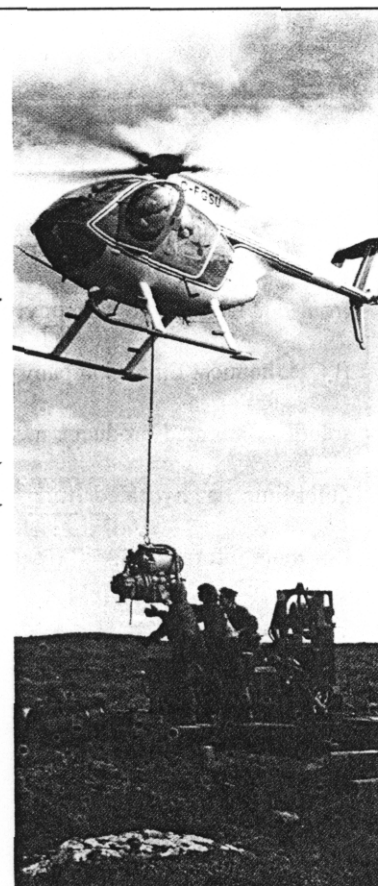
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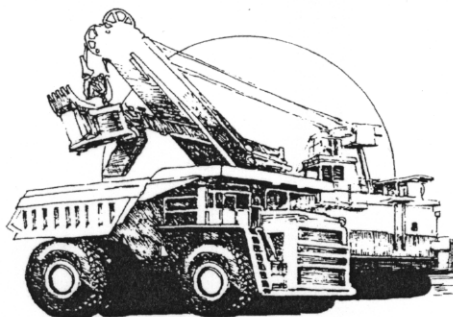
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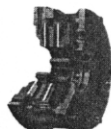
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tions of the mine manager, who at the inception of the drilling program bravely announced to Westmin's VP, exploration, that "if that hole hits ore I'll kiss your ass." In December 1979 the deep drilling paid off with the discovery of the first H-W ore-grade intersection. "Well, Art," said the mine manager, "your hole hit ore: drop your pants."

From 1982 into the '90s, Westmin made a big push to define the H-W Mine's tonnes and grade, during most of which time exploration at Myra Falls came to a halt. In 1988 the exploration program started up again, beginning with a second look at one of the last holes drilled in the early '80s. This hole had hit what are called the Ridge Zone deposits, well below the Lynx Mine, but only slightly above the H-W.

Over the next three years, a series of discoveries defined the Battle and Gap Mine, which promises to rival the Myra Mine for copper, zinc and lead, although it doesn't have much in the way of precious metals. To facilitate the mining of Battle and Gap, the ore will be dropped down an ore pass and trammed horizontally 1.8 kilometres to the H-W Mine, where it will undergo primary crushing and be hoisted to the surface.

"The orebodies we're finding are not as big as H-W," says Pearson, "but they're even more viable than Lynx. At H-W the deposits are complexly distributed, and contain large amounts of worthless iron pyrite. The new orebodies we're finding have very little pyrite, and are of an overall better grade than the Lynx."

Not everything at Myra Falls has been there since the Devonian period (or even for 30 years). Rob Farmer, for example, at age 26, has worked at Myra Falls as a mining engineer for one-and-a-half years. After spending time with miners, who as a group tend to be lantern-jawed, solid and hard as...well, rock, Farmer's boyish enthusiasm comes as quite a contrast. "Minesight," explains Farmer, pointing to his computer screen, "is the mining industry's most state-of-the-art visual

and analytical software." Not only can Minesight create 3-D maps of orebodies, but it can indicate complex arrays of diamond drill holes, each line drawn in a variety of colours to indicate assay results.

These maps, which can be cross-sectioned in any direction, allow Farmer to determine how much ore there is, where it lies and the most efficient manner in which to extract it. Myra Falls is one of the few mining operations in Canada using such advanced software, and it is obvious that Farmer could expatiate for hours on its many attributes. His, however, is not the only computer at Myra Falls.

Chris Braun sits in his chair in the mill control room. Behind him stands the Modicon system. The Modicon is a hulking great box, replete with dials, switches, toggles, green, red and yellow lights and big red buttons. Nowadays the Modicon is almost a relic. Granted, it is still used to start and stop the many machines that rumble several floors below, but for the past seven years Braun's attention has been fixed on the computer screens and security monitors mounted compactly on the desk before him. Braun shakes his head ruefully. "In some ways the old system was simpler - I have to think more now." His thoughts turn to the old Lynx Mill, which processed 1,000 tonnes of ore a day.

The new mill, opened in 1985, is now processing 3,700 tonnes per day. Down on the floor, huge rolling drums use a "rod and ball" milling process to grind the ore, brought to the mill from the mine shaft via 1.4 kilometres of conveyer belt. The ore, pulverized into fine particles and mixed into a slurry, is moved to the flotation cells, where it is agitated in water and chemicals and floated in a bubbly chemical froth to the surface of the tank. The froth is then scooped off, pressed dry, and the resulting concentrate poured into trucks from overhead loaders. From the mill, the concentrate is taken to Westmin's own shipping facility in Campbell River, from where it travels to smelters around the Pacific Rim.

"Just about everything's on the

computer," says Braun, who has been at Myra Falls for 20 years. He flips the screen to a bewildering array of input messages. "From here we control the conveyers, the ore grinding and flotation, and we're also responsible for regulating our power."

Power is an important issue for any mine, and one of Myra Falls' most important features is its energy independence. Diesel mechanic Udo Arnold has been at Myra Falls since 1972. "Back in those days," says Arnold somewhat wistfully, "it was us against the rock." But helping in the struggle is another natural substance: water. Nineteen-sixty-six saw the construction of Myra Falls' 3,000 kilowatt Tennent Lake hydro-electric plant. With the opening of the H-W Mine and mill, more power was needed, and in 1985 the company built the 8,000 kilowatt Thelwood Valley plant. "In '72 our peak load was 2,700 KW," says Arnold. "Now it's twelve-and-a-half thousand kilowatts. The two hydro plants manage most of that, and the diesel generators start up as required for load increases."

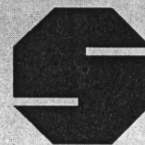
Westmin Resources - The Future

Although Myra Falls is Westmin's most important asset, it is only one of many properties the company controls. Last year, explains Harlan Meade, Westmin's VP, exploration and environment, the company made an important discovery at its recently acquired Wolverine Lake project in the south Yukon. Westmin acquired the property in January, began surveying in June, and drilled the first hole in August. By December the team had defined nearly three million tonnes of high grade ore, much the same as is found at Myra Falls. The speed with which drilling progressed at Wolverine is indicative of the aggressive exploration and development principles that guide Westmin's management. "We have a mandate to put together a portfolio of massive sulphide properties second to none," says Meade, who feels intuitively that Wolverine has only just begun to reveal its potential. "With our

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discoveries at Wolverine and adjacent properties, as well as our projects at Dragon (Vancouver Island), Black Moon (California) and in Argentina, I believe we have achieved just that."

Meade becomes excited when he considers the potential of the Fin del Mundo property in Argentina which Westmin has recently optioned from Yamana Resources Inc. "We've tied up the whole belt," says Meade. "It's a massive sulphide environment like geologists dream of. There are ore-grade outcrops that have never been diamond drilled - that is what Canada was like 30 years ago."

Massive sulphide prospects, however, are not the only properties that Westmin finds attractive. The company will invest, says Meade, where it sees potential, developing targets on its own, or even farming them out in joint ventures. This allows Westmin the luxury of broadening its base without taking money from its primary concerns.

Meade is also responsible for West-

min's environmental compliance record, which, he maintains, would be the envy of any mining company. "We have operated," he claims, "under the microscope of a provincial park for 30 years, and have learned to achieve the highest performance at the lowest cost." Westmin's green record is so good that Westmin is currently being considered as a target for investment by two large ethical investment funds.

Walter Segsworth has been president of Westmin Resources for the past six years. "Myra Falls is a 3-D jigsaw puzzle," says Segsworth. "It offers many challenges and much satisfaction." One of Segsworth's fondest memories is of replacing the noisy aboveground ventilation fans that park users often complained of hearing. The fans were moved underground - not only muffling the noise, but lowering energy consumption. "We've learned a lot of things from working in Strathcona Park."

Through growth and exploration, Segsworth plans to see Westmin own-

ing and running three to five profitable mines within the next five years. Fueling the company's optimism is \$170 million of capital raised over the past six months through the sell-off of a 76 per cent control block (Brascan), and two treasury issues. Besides exploration, development and acquisition, the extra money has allowed Westmin to become effectively debt-free. "For a company the size of Westmin," says Segsworth, "\$170 million is a considerable amount of cash." In addition, the company is currently selling off substantial coal interests in Alberta, which will realize a guaranteed minimum of \$80 million.

Over the last 30 years Westmin Resources has evolved from a penny junior stock on the VSE without capital or reserves, to a controlled subsidiary, to a well-financed, widely held, acquisitive and profitable public mining company, with active prospects throughout North and South America. ■



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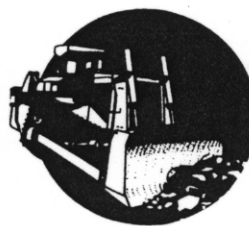
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