

Sullivan
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THE YEAR IN REVIEW

COMINCO AR 1999

Sullivan Mine

The Sullivan mine at Kimberley experienced a drop in output from 1998 levels due primarily to rock stability problems. These problems occurred as pillar recovery operations proceeded in close proximity to known fault structures. The stress concentrations resulting from the removal of portions of pillars near faults caused poor ground conditions that required time-consuming rehabilitation. Alternative ore sources were used to augment production, but these areas were lower in grade compared with the main pillars.

Sullivan's output of zinc concentrate was 93 percent of 1998 production levels but at the highest concentrate grade ever achieved in the history of the mine.

Despite the higher unit costs, Sullivan concentrates continue to be competitive in comparison to alternative sources of concentrate for the company's Trail Operations. Ore reserve rationalization studies indicate that production of concentrates, albeit from lower grade ore, can be sustained at close to current levels on a competitive basis, through to closure in mid-2002.

Lower output drove unit costs up and resulted in Sullivan reporting a \$16 million operating loss in 1999, the same as that incurred in 1998.

Trail Smelting and Refining Operations

The company's Trail metallurgical complex is among the largest in the Western world. Its existing production capacity represents 5 percent of Western world refined zinc output and 3 percent of Western world primary lead production. Trail also recovers valuable by-products including silver, gold, indium, germanium, bismuth and copper products from the sulphide concentrates it processes.

Zinc metal production at Trail in 1999 reached a record 288,700 tonnes, primarily as a result of the Kivcet and slag-fuming furnaces achieving stable,

SULLIVAN

	1999	1998
ORE MILLED (tonnes)	1,730,300	1,915,700
Zinc		
Average ore grade	6.2%	6.0%
Concentrate (tonnes)	174,100	186,900
Average concentrate grade	53.0%	52.5%
Recovery	86%	86%
Lead		
Average ore grade	3.0%	3.5%
Concentrate (tonnes)	56,800	75,300
Average concentrate grade	64.3%	64.9%
Recovery	69%	72%
Silver		
Average ore grade (g/tonne)	16	22
Average ore grade (oz/ton)	0.47	0.65
Employees at year-end	618	638

ORE RESERVES	1999	1998
	Proven	Proven & Probable
Million tonnes	4.6	6.1
Zinc %	6.4	6.6
Lead %	3.3	3.7
Silver g/tonne	18.0	20.0

high operating rates so that full advantage could be taken of the integrated nature of Trail's facilities.

Several projects are being undertaken to boost returns at Trail. In addition to yielding production efficiencies, increased volumes and better recoveries for zinc and minor metals, these programs will move the operation toward the goal of making an annual operating profit of \$100 million at a zinc price of US\$0.45.

In a \$12 million project, the previously idled No. 2 slag-fuming furnace was rebuilt in 1999 to process, over four years, 227,000 tonnes of untreated blast furnace slag that accumulated

27,685 kg
@ 25%
recovery
= 13,800 kg

Sullivan Mine

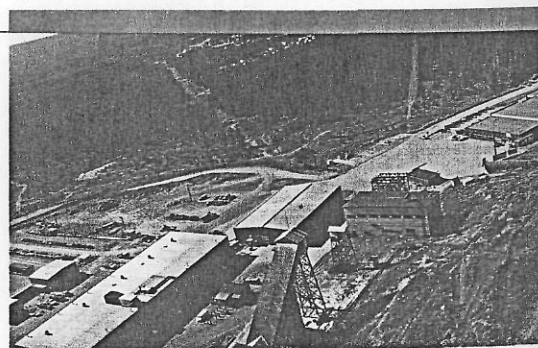
100%	1996	1997	1998	1999	2000
Tonnes milled (000's)	1,538	1,580	1,916	1,730	1,613
Tonnes per day	4,204	4,330	5,248	4,741	4,408
Grade (% zinc)	7.9	7.2	6.0	6.2	6.5
Grade (% lead)	4.0	3.7	3.5	3.0	3.1
Zinc recovery (%)	88.4	88.7	85.7	86.3	87.2
Lead recovery (%)	70.5	71.3	72.5	68.9	67.2
Zinc production (million lbs)	239	222	216	203	204
Lead production (million lbs)	94	92	108	81	73
Net operating cost (\$/tonne milled)	40.84	43.09	38.76	42.44	42.21
Cash operating loss (Teck's share, \$ millions)	-	-	-	-	15
Net operating loss (Teck's share, \$ millions)	-	-	-	-	18
Reserves (million tonnes)	8.8	7.1	6.1	4.6	1.8
Grade (% zinc)	8.0	7.2	6.6	6.4	6.6
Grade (% lead)	4.4	4.0	3.7	3.3	3.2

Sullivan Mine, Canada

The Sullivan zinc, lead mine is located at Kimberley in southeastern British Columbia. The mine has been operating since 1906, but will be closed at the end of 2001 when its economic reserves are exhausted.

The mine produced 204 million pounds of zinc and 73 million pounds of lead in concentrates in 2000, or similar to that produced in 1999.

The mine incurred a net operating loss of \$18 million during the fourth quarter of 2000.

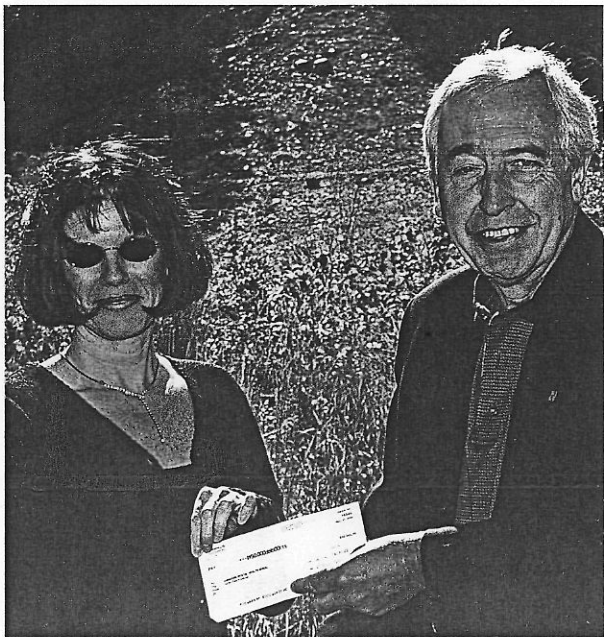


Sullivan Mine

Eight years short of a century of continuous operation, the venerable Sullivan mine enters its last year and closure is planned for December 2001. During 2000, a detailed mine life plan evaluated all remaining ore reserves and options for economic extraction and concluded that all mineable ore will be depleted by the end of 2001.

In 2001, the Sullivan mine is expected to operate at lower unit costs, as all remaining pre-production development work will be completed by May, leaving only ore recovery activity for the remainder of the year.

Zinc concentrate production equalled that of 1999, at the highest concentrate grade ever achieved by the mill, even though production was curtailed in December due to a reduction in Trail's requirements for Sullivan concentrates.



Cominco's President and CEO, David Thompson, presents Janice Bradshaw of the Canadian Mental Health Association for the East Kootenay with a \$50,000 cheque. In addition, the company donated 0.76 hectares of land, appraised at \$180,000, to support construction of a 24-unit special-needs housing facility in Kimberley.

Cominco - 2000 AR

SULLIVAN		
	2000	1999
ORE MILLED (tonnes)	1,613,000	1,730,300
Zinc		
Average ore grade	6.6%	6.2%
Concentrate (tonnes)	174,100	174,100
Average concentrate grade	53.1%	53%
Recovery	87%	86%
Lead		
Average ore grade	3.1%	3.0%
Concentrate (tonnes)	52,000	56,800
Average concentrate grade	63.7%	64.3%
Recovery	67%	69%
Silver		
Average ore grade (g/tonne)	12	16
Average ore grade (oz/ton)	0.34	0.47
No. of employees at year-end	537	618
Contribution to Cominco's operating profit (\$ in millions)	\$ (28)	\$ (16)
ORE RESERVES		
	2000 Proven	1999 Proven
Million tonnes	1.8	4.6
Zinc %	6.6	6.4
Lead %	3.2	3.3
Silver g/tonne	17.0	18.0
<small>Reserves and Resources for the year 2000 have been reclassified in accordance with the requirements of National Instrument 43-101.</small>		

Trail Metallurgical Operations

Cominco's metallurgical operations at Trail, British Columbia, constitute one of the world's largest non-ferrous smelting and refining complexes and are an important source of refined zinc, lead and silver. In addition, the fully integrated process circuits make possible the production of a wide variety of specialty metals and chemicals such as indium, germanium, bismuth, cadmium, copper sulphate, sodium antimonate, sulphuric acid, liquid sulphur dioxide, ammonium sulphate fertilizers and ferrous granules.

Sullivan

Cominco's oldest mine is the Sullivan at Kimberley, in southeastern British Columbia. Since 1909, the underground mine and mill has been supplying zinc and lead concentrates to Cominco's Trail Operations.

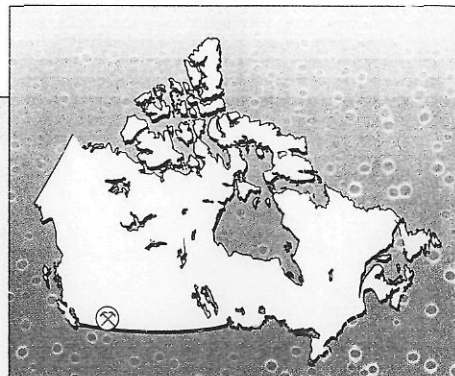
The Sullivan uses a combination of conventional and mechanized mining methods. Pillar recovery currently constitutes the bulk of mine activity, although some primary mining is still being carried out. 1.7 million tonnes of ore are mined annually producing 210,000 tonnes of zinc concentrate and 80,000 tonnes of lead concentrate. Because the composition of the remaining part of the orebody is more complex, modifications have been made to the mill utilizing state-of-the-art technology enabling slightly higher grade zinc concentrate and improved lead and zinc recovery.

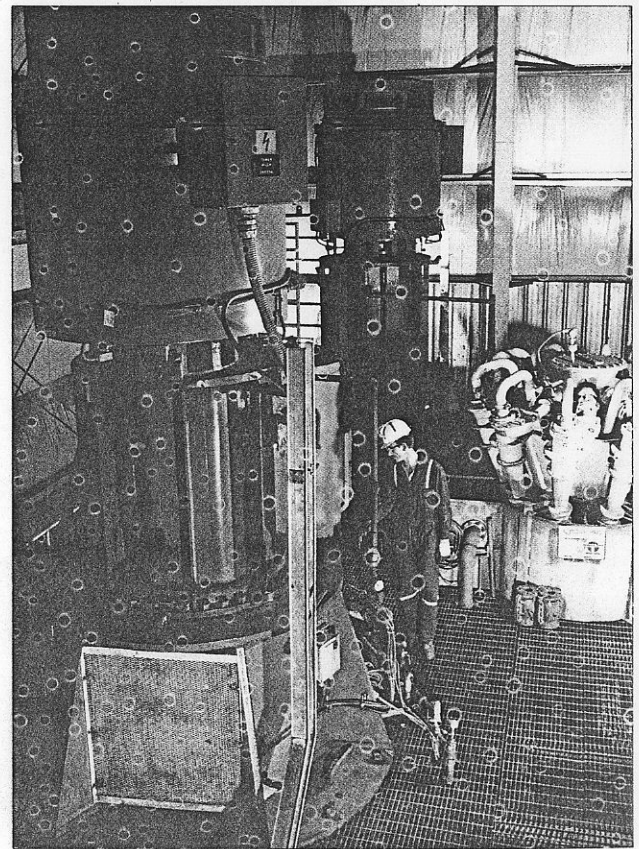
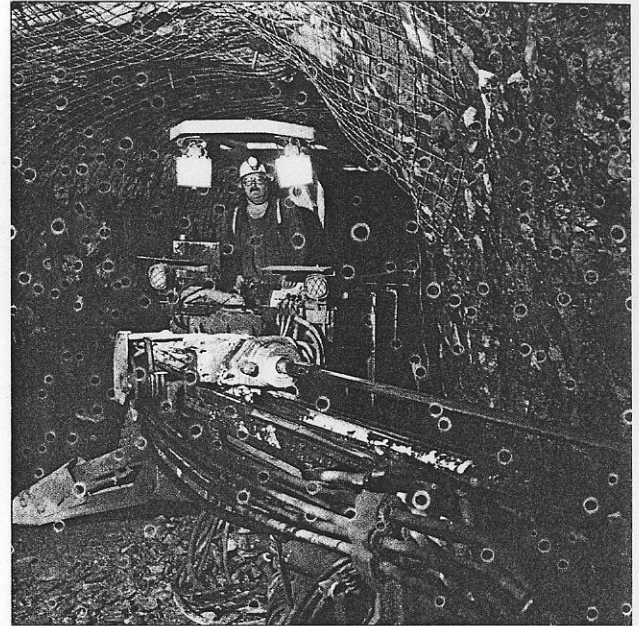
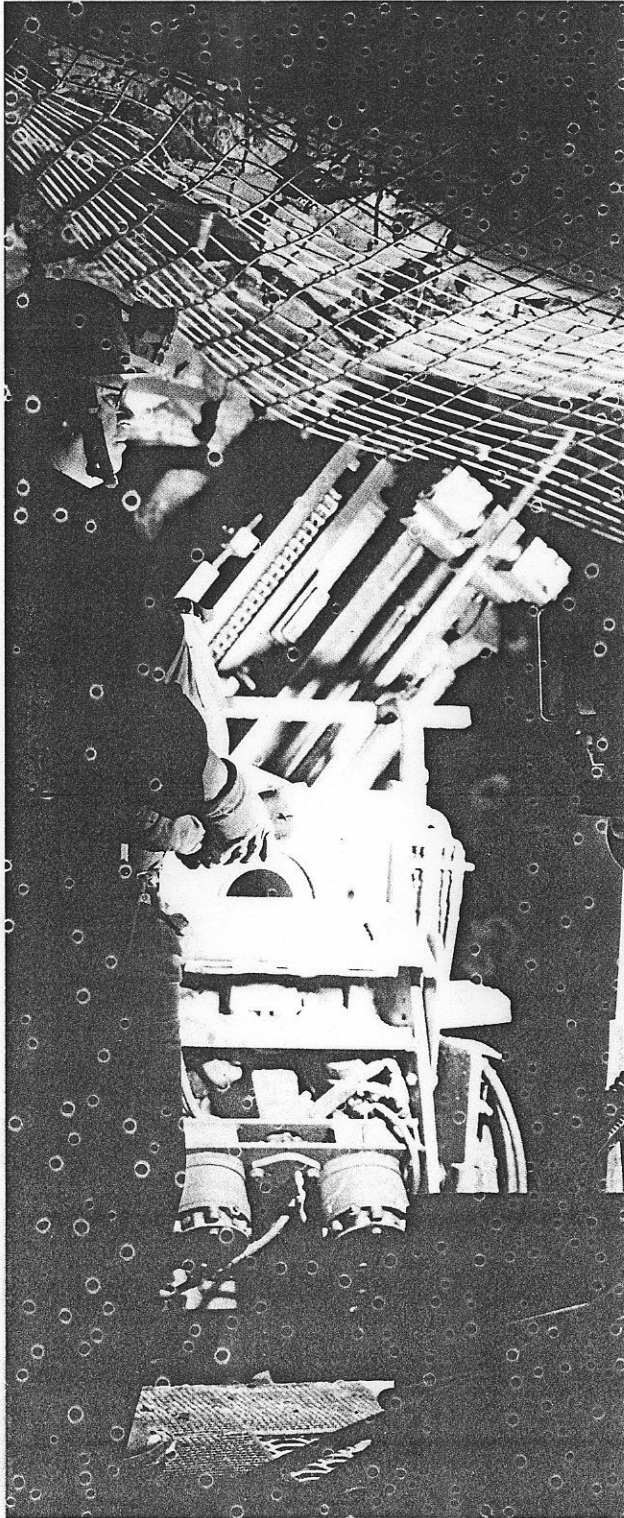
Due to ore reserve depletion, the Sullivan is scheduled to shut down permanently in 2001. In 1993, Cominco developed a comprehensive decommissioning and closure plan, soliciting input from private citizens and individuals representing the local community, area residents, special interest groups and four levels of government.

Cominco is also working with the City of Kimberley to ensure the long-term viability of the city, including involvement in the increasing development of the area as both a destination resort and retirement area, plus the pursuit of commercial and industrial ventures.

Sullivan employs approximately 600 people.

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Tel. (604)427-8211 Fax (604) 427-8201





Facing page: The Sullivan mine has been producing zinc and lead concentrates since 1909. This page: Ken Willey, mechanized miner, operates at rock bolter; Danny Perih, mechanized miner, operates a single boom jumbo; Stu Foisey, column cell operator at the Sullivan, checks the valves of one of the largest column cells in North America.

COMINCO → Sullivan
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"Performance at the Sullivan concentrator was outstanding in 1996. The average zinc concentrate grade was the highest in the mine's history and zinc recovery was the highest achieved since 1973."

Sullivan Mine

Cominco's wholly owned Sullivan mine at Kimberley, B.C., is in the last five years of its life. Mining will be focused on pillar recovery and ore remnants left after 87 years of operation. The Sullivan is still an important producer of zinc and lead concentrates, which are delivered to the company's refining operations at Trail, B.C.

Profitability at the Sullivan was down in 1996 due to a combination of lower lead concentrate production, increased treatment charges, higher labour costs and provisions related to closure.

Performance at the Sullivan concentrator was outstanding in 1996. The average zinc concentrate grade was the highest in the mine's history and zinc recovery was the highest achieved since 1973. More than 209,000 tonnes of concentrate were produced, the highest in 32 years. At



63.8 percent, the lead concentrate grade was the highest achieved in the last 22 years. However, lead production was below expectations because of lower lead ore grades resulting from mining different sources

Sullivan

	1996	1995
Ore milled (tonnes)	1,538,700	1,616,200
Zinc		
Average ore grade	7.9%	7.5%
Concentrate (tonnes)	209,100	208,500
Average concentrate grade	51.7%	51.3%
Recovery	88%	88%
Lead		
Average ore grade	4.0%	4.1%
Concentrate (tonnes)	67,100	74,300
Average concentrate grade	63.8%	63.4%
Recovery	71%	71%
Silver		
Average ore grade (g/tonne)	16	17
Average ore grade (oz/ton)	.47	.51
No. of employees at year-end	572	577

than originally planned.

The Sullivan mine operated throughout 1996 except for four weeks of vacation shutdowns.

In 1995, employees and the company signed a collective agreement that will expire on December 31, 2001, the Sullivan's planned closure date. The

agreement provides final severance provisions on closure and, in the meantime, greater job flexibility and security as well as a plan to facilitate gradual workforce reduction towards closure.

In 1996, \$4.5 million was spent

on mine site reclamation. This brings the total spending on reclamation to \$23 million or approximately 40 percent of the total reclamation budget of \$60 million. This year's program consisted of the consolidation of old waste rock dumps into one stable area by moving 270,000 cubic metres of broken rock. An 800-metre drain was built at the base of the reprofiled area to collect any contaminated seepage for treatment. Another rock dump was successfully revegetated. A 42-hectare area of the gypsum pond from the former fertilizer operations was covered with a soil and rock system. More soil was added and landscaped to provide areas for planting 13,000 native trees and shrubs for shelter protection and forage for deer and elk. Rocky areas and tree snags were added to provide protected areas for small furbearing animals and nest sites for birds.

Ore reserves are classified as Measured, Indicated and Inferred. The reserves are reviewed annually by the company's engineering and geological staff and are based upon individual evaluations of operating results, drilling, other engineering data and long-term metal price forecasts. Provisions for dilution and mining recovery have been incorporated in the table at the right. The term "Measured" is limited to those reserves at a mine that can be projected from one or more exposed faces on the basis of actual operating results. Reserves are classified as "Indicated" where there is sufficient information about the deposit or a portion of it to form the basis of a mine production forecast. The term "Inferred" applies to reserves that are computed on the basis of more limited information but adequate geological data to form the basis of a preliminary mine production plan. **Ore reserve figures are total reserves at the mines and are not limited to Cominco's interest. Mineral Resources are shown in a separate table on the next page.**

ORE RESERVES¹

Zinc / Lead

(Measured or Indicated ore unless otherwise noted)

	Cominco Interest %	Tonnes (x000)	1996			1995			
			Zinc %	Lead %	Silver g/t	Tonnes (x000)	Zinc %	Lead %	Silver g/t
Operating Mines									
Red Dog — Main	100	50,100	19.5	5.3	100	52,200	19.5	5.3	100
Red Dog — Aqqaluk (Inferred)	100	76,000	13.7	3.6	66	76,000	13.7	3.6	66
Sullivan	100	8,800	8.0	4.4	24	10,800	8.0	4.5	26
Polaris	77.5	4,400	13.9	4.0		5,850	13.8	3.5	
Advanced Projects									
Kudz Ze Kayah	100	11,300	5.9	1.5	133	11,300	5.9	1.5	133
Pend Oreille	100	1,000	7.8	2.1					
Pend Oreille (Inferred)	100	4,900	7.4	1.0					
Sä Dena Hes	25	1,400	10.2	2.5	44	1,400	10.2	2.5	44

Copper / Gold / Silver

	Cominco Interest %	Tonnes (x000)	1996			1995			
			Copper %	Gold g/t	Silver g/t	Tonnes (x000)	Copper %	Gold g/t	Silver g/t
Operating Mines									
Highland Valley	50	495,000	0.42			503,900	0.42		
Highland Valley (Inferred)	50	43,000	0.44			29,300	0.43		
Quebrada Blanca	47.3	92,200	1.2			99,500	1.2		
Advanced Projects									
Cerattepe — Gossan	100	7,300		4.1	145	5,500		4.4	148
Cerattepe — Sulphide	100	4,100	4.9	1.0	21	3,800	4.9	1.0	21

Nickel

	Cominco Interest %	Tonnes (x000)	1996		1995	
			Nickel %	Tonnes (x000)	Nickel %	Tonnes (x000)
Operating Mine						
Glenbrook	100	230	1.25		335	1.27

Other Minerals

	Cominco Interest %	Tonnes (x000)	1996		1995	
			Garnet %	Tonnes (x000)	Garnet %	Tonnes (x000)
Operating Mine						
Alder	100	28,900	4.0		29,300	4.0

(97)
COMINCO
'96 Aq
→ Sullivan

Sullivan has been a good investment. But, the mine that made Trail what it is today could be all mined out in 2001. How will the city of Kimberley and Cominco cope?

TGS → Sullivan
TGS

DOWNDOWN

BY PATRICK WHITEWAY

The Sullivan mine, in southeastern British Columbia, 95 km from the Alberta border, is truly a great Canadian mine. It has probably created more wealth and more colourful stories than any other mine in the country. It has also created several challenges for winding the operation down.

Ever since the company which was to become Cominco Ltd. acquired the deposit in 1909, Sullivan has supplied ore and concentrates to the Trail smelter, 270 km to the west. Today, Sullivan supplies 40% of Trail's zinc concentrates and 80% of its lead concentrates.

Winning lead, zinc, copper, bismuth, cadmium, and indium from these mineralogically complex, but high-grade concentrates literally created the integrated metallurgical complex at Trail — the largest such complex in the world. But now, the end is in sight for the Sullivan mine. Finding new sources of concentrates for Trail has occupied much of Cominco's recent efforts.

The Sullivan deposit is a shallow-dipping, saucer-shaped orebody of massive sulphides hosted by argillaceous quartzites of Precambrian age. The deposit sits at the nose of an anticline just below surface on the gentle, eastern slope of the Purcell Mountains. Since 1923, when the concentrator, near the Bavarian city of Kimberley, started treating ore from the Sullivan deposit, an incredible 153 million tons of ore grading 6.2% lead and 5.6% zinc have been milled.

Since 1949, ore has moved by rail from the main 3,700-ft. haulage level through an adit directly to the concentrator which sits at the base of the mountain on the valley floor. The mill presently treats 7,800 tons of ore per operating day (five days per week), or 1.8 million tons per year.

In total, about 15 million tons of zinc concentrates (at an average grade of 48% zinc and 2 oz. silver per ton) and 12 million tons of lead concentrates (grading 66% lead and 21 oz. silver per ton) have been produced and sold to Trail.

At today's metals prices, that represents an estimated value of production of about \$6 billion.

Today, the Sullivan mine has five years left. Reserves are 10.8 million tonnes, averaging 8.0% zinc, 4.5% lead and 26 grams silver per tonne as at December 31, 1995.

How will Cominco replace this valuable source of high-quality concentrates? What plans are being made to reclaim the massive tailings pond created by 87 years of mining? And how will the city of Kimberley (population 7,000) survive when the annual payroll of \$40 million disappears from the region's income? These are just some of the challenges facing the city, the company and its 615 Sullivan employees.

Discovered in 1892 by prospectors Ed Smith, John Cleaver, Pat Sullivan and Walter Burchett, before the technology needed to separate lead and zinc minerals even existed, the Sullivan deposit was sub-

sequently leased in 1909 by Consolidated Mining & Smelting Co., the predecessor of what is today Cominco Ltd. The following year, the company commenced the purchase of the property, which was completed in 1913.

The deposit's complex mineralogy proved to be the singly most significant defining factor in Cominco's corporate development. In fact, Sullivan's mineralogical complexity explains why Cominco has such a wealth of metallurgical expertise in Trail today.

While the principle ore minerals are galena and marmatite (a dark brown ferrous variety of sphalerite), the company has developed the know-how to recover several so-called "minor" metals as well. And thanks to the metallurgical know-how developed in Trail over the past 100 years to do just that (see separate story, page 10), these "minor" metals have yielded significant revenue for the company (accounting for 11% of Trail's revenues in 1995).

As Cominco sets course for the next millennium, that metallurgical expertise will be a major asset, says President and CEO, David A. Thompson.

SULLIVAN'S ROLE

Mark Brown, the present Superintendent of Engineering and Geology at Sullivan says employees have a very important mission. They (of which 28 are technical staff) would like to see the Sullivan mine closed down in a dignified manner.

The mine is still very profitable. In the



One consequence of recovering remnant pillars from the Sullivan deposit is that there are not a lot of productive set-ups for modern electric-hydraulic drill jumbos.

first six months of 1996, some 116,700 tonnes of zinc and 35,600 tonnes of lead concentrates were sold to Trail. Revenues during the period were \$57 million and the operating profit (before the deduction of British Columbia mining taxes) was \$14 million. The direct cost of producing a pound of zinc from the Sullivan mine is estimated to be US\$364. If economic conditions cooperate over the balance of the 1990s, the massive sulphides that remain in remnant pillars in the Sullivan deposit will be all mined out by 2001.

In keeping with the plan for a dignified closure, Cominco is

putting down a 2.4-kilometre diamond drill hole, about four kilometres east of the mine. The objective is to locate the faulted extension of the deposit. An earlier hole, drilled in the same vicinity, intersected sulphides but over narrow, uneconomic widths.

"It's quite a long-shot," says George Tikkanen, Cominco's Vice-President, Exploration, "but it's something we thought should be done before the mine closes."

The hole was about half complete at the time of our visit in late July 1996, and a new machine, capable of drilling to greater depths was being brought to the site.

In the company's search for new sources of concentrates David Thompson says the company is optimistic that production decisions can be made to develop two zinc-lead deposits — the Kudz Ze Kayah deposit in southeastern Yukon and the Pend d'Oreille deposit in Washington state.

Reserves at Kudz Ze Kayah presently stand at 11.3 million tonnes, grading 0.9% copper, 1.5% lead, 5.9% zinc, 133 grams silver per tonne and 1.3 grams gold per tonne while those at Pend d'Oreille are estimated at 6 million tonnes, grading 7.4% zinc and 1.2% lead.

Cominco picked up the former-producing Pend d'Oreille property in the second quarter of 1996 by acquiring the company Resource Finance Corp. of Toronto for \$33.8 million (Inmet Mining Corp. held 73.4% of RFC's shares). The property is located just 40 km from Trail.

FINAL CHALLENGES

If it were discovered today, the Sullivan deposit would be developed as a large open pit mine. But in 1910, none of today's large earth-moving equipment nor the means to economically separate lead and zinc minerals existed. So miners went underground and mined the ore selectively, hand-sorting for high-grade galena which was then shipped to Trail.

A mill was not constructed at Kimberley until 1923. And that was only after two years of painstaking metallurgical research and three years of test milling under the direction of Randolph W. Diamond (who would later become Executive Vice President, Western Region of the company between the first and second World War and who is an inductee of the Canadian Mining Hall of Fame). Differential flotation was a novel technique at the time. Three years of work and

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process refinement was required to establish an economic method of separating the two constituent minerals. This metallurgical success paved the way for a large expansion of the smelter at Trail.

Meanwhile, back at Sullivan, many different mining methods were implemented over the years — a legacy that presents the present mine operators with a special challenge. First pass mining left large irregular pillars in the upper part of the mine and long regular pillars dipping at about 30° in the lower areas, Brown says.

"In areas of the deposit which were mined by room-and-pillar methods, we have to come up with ways to recover the 30% of the ore which remains without losing stability," Brown says.

To accomplish this, the company is using the latest numerical modeling technology. N-Fold, a computer software program developed by Golder Associates, is used by mine planners to model optimum mining sequences from a rock mechanics perspective. Greatly assisting them in this process are the excellent plans and sections which have been produced over the years by the technical staff and which are preserved in the Sullivan vault.

Cemented rock fill may also be used in the mine for the first time. Placed in mined-out stopes, this would greatly facilitate the recovery of adjacent pillars.

For the past 40 years, the majority of production has come from the recovery of rib pillars. As the pillars are systematically mined down-dip, the ground caves, creating a so-called "retreat front" in much the same way as longwall mining. This front

presently extends for a distance along strike of about 1.2 km, meaning that careful planning and stope sequencing are necessary to maximize ore recovery.

Today, about 65-75% of all production (about 5,500 tons per day) comes from rib pillars, 150 to 400 metres below surface. The balance of daily production comes from a million-ton mass blast which was made in 1989. Development is either in the footwall beneath the pillars or within them and long-hole drilling is predominantly up-holes (see diagram, page 22).

While no new mine equipment purchases are anticipated to the end of the mine life, Brown says, the company recently purchased six new LHDs

equipped with 6.5-cu.-yd. buckets to replace 5-cu.-yd. units, some of which have been operated for 20 years. The move cut about \$1.50 from per-ton production costs, mainly through lower maintenance.

The only major capital expense anticipated over the remaining years of the mine's life is for a cement batch plant — part of the planned cemented rock fill program.

About 70% of all production drilling at Sullivan is still done with older, conventional pneumatic BBC drills, equipped with modern drill steel. In many cases, electric slushers are also the most cost-effective way to move ore to the LHD loading points.



Congratulations on 100 years. It has been a privilege to serve the Trail Smelter Complex of Cominco Ltd. with chain conveyors for the last 40 years. We wish Cominco Ltd., its employees and the community of Trail a prosperous future.

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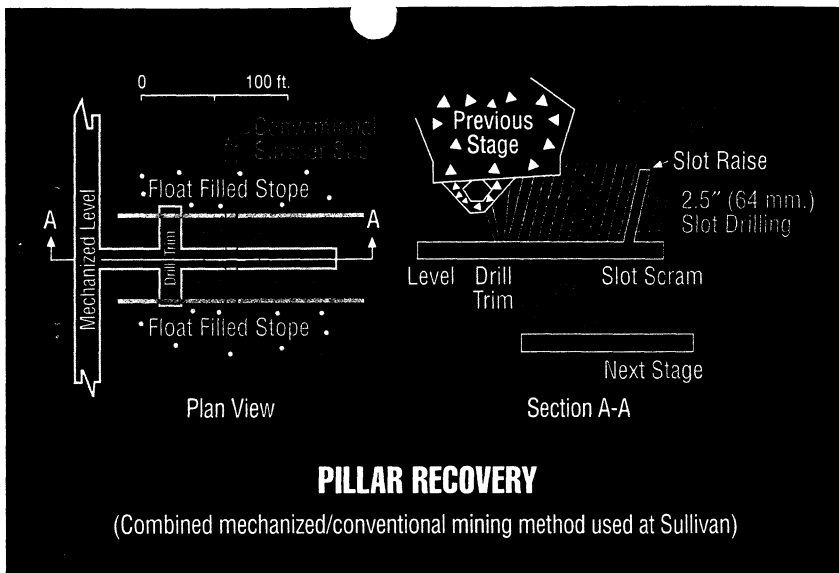
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Not only is the Sullivan operation a mixture of old and new mining technology, it is also a model operation when it comes to efficiently and safely loading up-holes with explosives. Mine operators come from around the world to see how Sullivan's miners accomplish this demanding task.

All ore is crushed underground to about 80% minus 1.5 inches and is hauled by train on the 3,700-ft. level to the concentrator.

"Our challenge will be to control costs in the last few years of production," Brown says. Production is presently about 1.8 million tons per year, but that will decline to 1.7 million tonnes in 1998 and 1.2 million tonnes in 2001, so unit costs could increase significantly. Total concentrate production costs are split about 75% for mining and 25% for milling.

Safely extracting the remaining ore from the Sullivan deposit is just another in a long string of challenges faced by mine. Operators have weathered many diverse challenges in the past, says General Manager Donald Boyle. The more recent challenges included an extensive mechanization program in the 1980s and a nine-month shutdown followed by a sizable downsizing of the workforce in the early '90s.

EVER-IMPROVING

In the Sullivan mill, one of the early challenges was to reject waste rock from the mill feed. About 30% of the feed material to the concentrator is now eliminated in a heavy media separation plant, which was constructed in 1949. Reject material (with a specific gravity of less than 2.95) is a very hard siliceous chert, typically grading 0.15% lead and 0.25% zinc. At one time, this material was used by Canadian Pacific as railway ballast. Today, it is stockpiled in the tailings impoundment area.

A string of technological improvements in the mill, including the installation of OK-16 flotation cells in 1988; a Fisher Provox distributed control system in 1990; two (800-hp) tower mills in the lead regrind circuit in 1993; a four-metre-diameter lead column flotation cell in 1993; and a hyperbaric filter for dewatering lead concentrates in 1993, have all contributed to an increase in concentrate grades to 52% for zinc and 64% for lead. Lower grades in the lower portion of the orebody require a finer grind to 80% passing 17 microns.

John Egan, the recently-appointed

Operating Manager of the Sullivan concentrator is optimistic that recoveries can be improved further and that concentrate grades can also be improved over the remaining life of the mine. Better recoveries would mean less metal would go to the tailings pond.

Over the years, an estimated 125 million tons of tailings have been deposited in several impoundment areas west of the mill. The total area affected is about 916 acres.

In 1991, Cominco produced a detailed closure plan for the Sullivan operation and presented it to the various provincial ministries responsible for ensuring an orderly closure of the mine and mill. A public liaison committee reviewed the plan over a period of two years, says Bruce Dawson, Superintendent Services and Reclamation. Various concerns and deficiencies were pointed out by the committee and the plan was improved. The committee continues to meet twice per year. Cominco expects to spend \$54 million to reclaim the mine and mill site (\$24 million has been spent on various environment projects so far).

THE TWILIGHT YEARS

If the current exploration drilling east of the faulted-off Sullivan deposit does not locate sulphides of sufficient thickness and grades to allow economic mining, one of the greatest lead/zinc deposits in the country will be all played out in 2001.

To that end, a new labour contract was negotiated in 1995 without any production disruption. The contract was the longest ever concluded at Sullivan and provides employees with the certainty and stability they need to concentrate on the job at hand — making sure that the queen of lead-zinc deposits goes out like a lady.

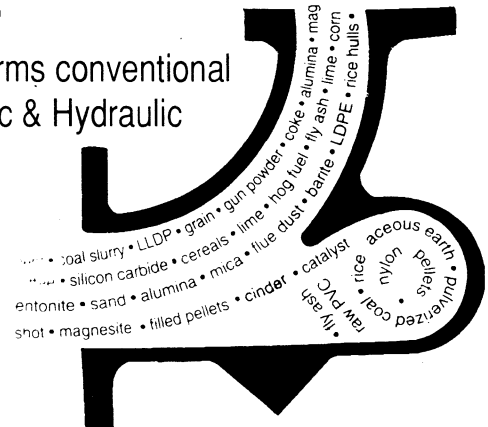
Many long-time Sullivan employees plan to retire and remain in Kimberley (about 800 Cominco pensioners already reside in the East Kootenay area); plans are well advanced to construct a residential subdivision west of the city; and there is a possibility that a silicon metal plant will be constructed in the area. For these reasons, town officials are very optimistic that the community will survive and thrive, as a tourist/golf/ski resort destination.

"Cominco's role in this future may be diminishing, but we are committed to helping make the transition happen," says General Manager Boyle.

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→ SULLIVAN

1993 Cominco Ann. Rpt.

**TRAIL
PRODUCTION OF REFINED METALS**

		1993	1992
Zinc	tonnes	218,500	228,500
Lead	tonnes	87,200	91,500
Silver	kilograms	152,900	202,100
Gold	kilograms	463	700
No. of employees at year-end ¹		1,946	2,148

¹ Includes Trail Fertilizer Operations

Red Dog

The Red Dog zinc-lead mine is in northwest Alaska, about 145 kilometres north of Kotzebue. The property is owned by the NANA Regional Corporation and leased to Cominco Alaska Incorporated, a wholly owned subsidiary. NANA is a corporation organized under the provisions of the Alaska Native Claims Settlement Act. Under the lease agreement, Cominco Alaska owns and operates the facilities and NANA receives an annual royalty payment. Annual production of zinc, lead and bulk concentrates is trucked 84 kilometres from the mine to the port site on the Chukchi Sea, and stored until the three-month summer shipping season when the sea is ice-free.

As a result of intensive research, operational changes were made in 1993 in the concentrator to improve overall metal production. Annual throughput increased from 1,435,000 tonnes in 1992 to 1,700,600 tonnes in 1993 as a result of improved operation of the grinding circuit. Ore grades were slightly lower than those in 1992 but still in excess of average reserve grade. During the fourth quarter, design levels of zinc concentrate production were achieved. A U.S. \$21 million grinding circuit expansion was initiated in the third quarter and completed in the first quarter of 1994. This, in conjunction with further changes to the concentrator circuit, will result in zinc concentrate production above original design levels by year-end.

During the 1993 shipping season, 421,000 tonnes of concentrate were loaded onto nine vessels and shipped to customers in Canada, Japan, Korea and Europe compared with 429,100 tonnes in 1992. Red Dog was unprofitable due to low prices for zinc, lead

and silver, and lower than design production volumes.

About 50 percent of the employees are NANA shareholders, and the commitment to training and local employment continues.

RED DOG

		1993	1992
Ore milled	tonnes	1,700,600	1,435,200
Zinc			
Average ore grade		18.4%	19.9%
Concentrate	tonnes	422,400	368,200
Average concentrate grade		54.8%	57.0%
Lead			
Average ore grade		5.7%	6.0%
Concentrate	tonnes	44,200	25,400
Average concentrate grade		50.9%	46.8%
Silver			
Average ore grade			
	g/tonne	96	99
Bulk			
Concentrate	tonnes	23,100	37,200
Average concentrate grade			
Zinc		16.2%	23.0%
Lead		38.9%	27.0%
No. of employees at year-end		320	293

Sullivan

The wholly owned Sullivan zinc-lead mine at Kimberley, B.C., was shut down for an 11-week period over the summer and one week in December for inventory control and vacation purposes, compared with vacation shutdowns totalling four weeks in 1992.

Due to the longer shutdown, zinc concentrate production totalled 175,200 tonnes, down from the previous year. All zinc concentrate production was shipped to Trail. At year-end, 2,500 tonnes were held in inventory, down from the 13,000 tonnes held at the end of 1992. Lead concentrate production of 67,100 tonnes, down from the previous year but on plan for 1993, was also shipped to Trail. No lead concentrate was held in inventory at year-end.

An \$8 million lead regrind project in the mill was completed in March 1993 on schedule and under budget. The project resulted in slightly higher grade zinc concentrates, and improved lead and zinc re-

Cominco and Cominco Resources are also in a joint venture with a third company to drill a promising gold property on an island of Vanuatu in the South Pacific. Jointly sponsored Cominco Resources-

Cominco Ltd. programs are also planned in Argentina, Greenland and Germany, while developments in China and the Commonwealth of Independent States will be monitored for opportunities.

Ore Reserves - 1993

(Metric units)

Operating Mines (Measured and Indicated Ore unless otherwise noted¹)

	Cominco Ltd. Interest	1993				1992			
		Ore Tonnes × 1000	Pb %	Zn %	Ag g/t	Ore Tonnes × 1000	Pb %	Zn %	Ag g/t
Sullivan	100	14,800	4.7	8.0	26	15,800	4.7	7.9	26
Polaris	77.5	8,600	3.7	13.4		9,500	3.7	14.0	
Magmont	50	2,500	8.3	1.2		2,600	8.5	1.3	
Red Dog	100 ³	56,800	5.5	18.4	93	58,200	5.5	18.4	93
		14,100 ²	2.7	10.0	41	14,100 ²	2.7	10.0	41
Glenbrook	79.6	466	1.27% Ni			650	1.25% Ni		
Highland Valley	50	595,000	0.42% Cu			633,000	0.41% Cu		
		32,000 ²	0.45% Cu			35,000 ²	0.45% Cu		
Owens Lake	100	30,000	Na ₂ CO ₃ equiv.			30,000	Na ₂ CO ₃ equiv.		
Snip	60	655	27.0 g/t Au			641	28.5 g/t Au		
		156 ²	23.7 g/t Au			230 ²	26.7 g/t Au		
María	29	41	7.0% Cu, 0.4% Mo			250	7.9% Cu, 0.4% Mo, 42 g/t Ag		
		250	1.7% Cu, 0.65% Mo			215 ²	1.8% Cu, 0.7% Mo, 10 g/t Ag		

Advanced Projects (Measured and Indicated Ore unless otherwise noted¹)

	Cominco Ltd. Interest	1993		1992	
		Ore Tonnes × 1000	Grade	Ore Tonnes × 1000	Grade
Quebrada Blanca Enriched Zone	43.6	89,000	1.3% Cu	89,000	1.3% Cu
Mariquita	59.2	33,000	0.47% Cu	21,000	0.53% Cu
Alder	35.5	30,000	4.0% Garnet	30,000	4.0% Garnet
Cerattepe	59.2	1,100	10.0% Cu	1,200	10.0% Cu
		1,600	5.2 g/t Au, 200 g/t Ag		

¹ Mineral reserves of Cominco and Associated Companies are classified as measured, indicated and inferred. The reserves are reviewed annually by the Company's engineering and geological staff and are based upon individual evaluations of operating results, drilling, other engineering data, and long-term metal price forecasts. The term "measured" is limited to those reserves at a mine that can be projected from one or more exposed faces on the basis of actual operating results. Reserves are classified as "indicated" where there is sufficient information about the deposit or a portion of it to form the basis of a mine production forecast. Reserves computed on the basis of more limited information but adequate geological data to form the basis of a preliminary mine production plan are classified as "inferred." Ore reserve figures are total reserves at the mines and are not limited to Cominco's interest.

² Inferred Ore.

³ Subject to escalating royalty.

Other Resources

	Cominco Ltd. Interest	1993		1992	
		Ore Tonnes × 1000	Grade	Ore Tonnes × 1000	Grade
Pebble Copper (Probable Resource)	100	420,000	0.35% Cu, 0.4 g/t Au	420,000	0.35% Cu, 0.4 g/t Au
Quartz Hill (Probable Resource)	100	210,000	0.22% MoS ₂	210,000	0.22% MoS ₂
(Possible Resource)		1,100,000	0.12% MoS ₂	1,100,000	0.12% MoS ₂
Quebrada Blanca Protore (Possible Resource)	46.1	225,000	0.5% Cu	225,000	0.5% Cu
Sheep Creek (Possible Resource)	59.2	4,000	4.0% Cu	4,000	4.0% Cu
Pinchi (Possible Resource)	100	1,100	3.2 kg/t Hg	1,100	3.2 kg/t Hg
Cerattepe (Possible Resource)	59.2	3,800	2.0% Cu	3,800	2.1% Cu
Mariquita (Possible Resource)	59.2	10,000	0.43% Cu		

⁴ The term "resource" is used for an estimate of mineralization of expected economic merit, but before complete geological, mine, metallurgical and cost data are available. The term "probable resource" is used when sufficient information is known about the geology, thickness, grade, continuity and extent of the deposit to permit defined grade and tonnage figures. "Possible resource" is a projection of mineralization computed on the basis of limited drilling but a reasonable understanding of the geology and the distribution and correlation of metal values.

SKY.TSXv

Stikine Gold Corporation

November 2003

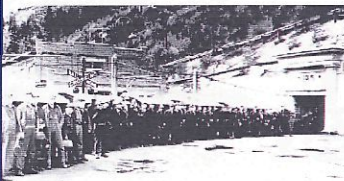
TWENTY BILLION DOLLAR LEGEND:

TWENTY BILLION DOLLAR TARGET

Inside this issue:

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*Del. 5/03
(N.W.M.A.)*



The prolific Sullivan Mine located at Kimberley, British Columbia, was in production for almost 100 years. The world renowned deposit produced an estimated \$20 Billion of base and precious metals and is legendary in terms of its size and ore grade.

The Sullivan deposit lies in one of the world's best mineralized corridors and it has long been speculated that a sister deposit exists close by.

Cominco has quietly explored the area immediately north of the Sullivan Mine for the past 30 years, recently culminating in the identification of a large-

scale target only 4km away.

Dubbed the 'Sullivan Deeps' target because of its relative depth to the Sullivan Mine, it remains untested as a result of the mine's recent closure.

Cominco publicly released a summary of its exploration data for the first time late in 2001, and it has taken until now for us to successfully complete negotiations and community consultations for a new phase of exploration.

Stikine Gold Corporation (SKY.TSXv) has an option agreement to earn a 50% interest in the Sullivan Deeps Project Claims.

8379235800 kg
7,951,503,500 kg
926,420,950 kg
9311,151 kg

18,545,264,216 lbs	Pb
17,514,325,312 lbs	Zn
297,850,947 oz	Ag
21,390,226 lbs	Sn
11,258,323 lbs	Cu

(5,111,268 kg)

Sullivan Deeps

SULLIVAN

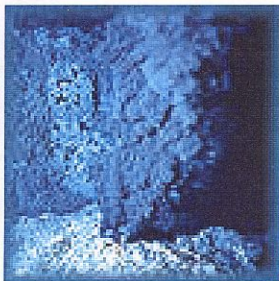
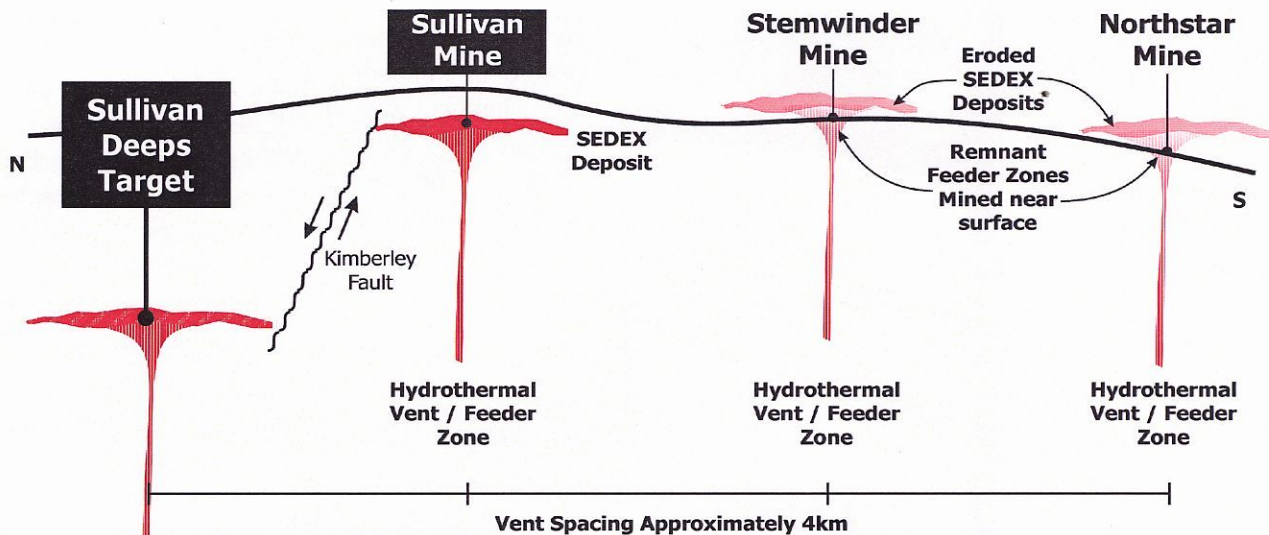
Gigantic Production Record



The Sullivan Mine is located at Kimberley in the East Kootenay region of British Columbia. Like the town's development itself, much of southeast BC has benefited from infrastructure such as mills and smelters, hydropower, power distribution, roads and rail services that were originally established to service the legendary mine. Many other communities have been influenced by the mine's long-term success, not the least of which

is the nearby town of Trail - the location of Teck Cominco's smelting and refining services, currently receiving concentrates from around the world. The old adage "a good place to look for a mine is next to an existing one..." is very appropriate in this geological setting, but also the benefits of finding a deposit near existing power, communities and trained workforce, and smelter are economically significant.

Hydrothermal Vents, Feeder Zones & Mineralized Corridors



Sea floor Black Smoker off the Oregon Coast—similar to a Sullivan hydrothermal vent

Geologists and engineers at the Sullivan Mine have long speculated that a 'faulted-off' portion of the orebody may be located north of the mine. This theory came about when mining progressed to the north of the deposit and it was observed that the Kimberley Fault literally cuts the north end of the Sullivan deposit.

The current geological model focuses on the style of mineralization; known as 'sedimentary exhalative' or

SEDEX. These deposits form at the seafloor as a result of metals belching from 'black smokers' or hydrothermal vents. These vents are like hot springs, but contain massive quantities of sulphide minerals containing lead, zinc, silver and tin at the Sullivan.

Hydrothermal vents are also called feeder zones by geologists and generally occur along a structural break in the earth's crust, essentially lining up as a 'corridor' of feeder zones.

The Sullivan Corridor includes the Sullivan Mine deposit, the Stemwinder Mine feeder zone and the Northstar Mine feeder zone. In plan view these feeder zones align perfectly and the geological interpretation above shows how the Stemwinder and Northstar SEDEX deposits have been eroded away over time to the current-day topography. Sullivan Deeps is in this corridor and is Stikine's primary target to drill and discover!

Geology + Geophysics = Large Scale Target

The hydrothermal vents that produced the metals in the Sullivan orebody did so for a long time, but eventually the vents stopped ejecting sulphide minerals. The resulting large-scale, flat-lying deposits were covered by layered sedimentary rocks over geologic time.

Cominco geologists discovered that those overlying or 'hangingwall' sedimentary rocks have a unique series of barcode-like light/dark markers that could be used to accurately provide an estimate of the distance above the Sullivan 'Time' horizon. Further, the Sullivan Markers, shown at top right, can be used to measure the depth of that horizon over a very large area, in the picture rocks from up to 170km away are matched in the sedimentary sequence.

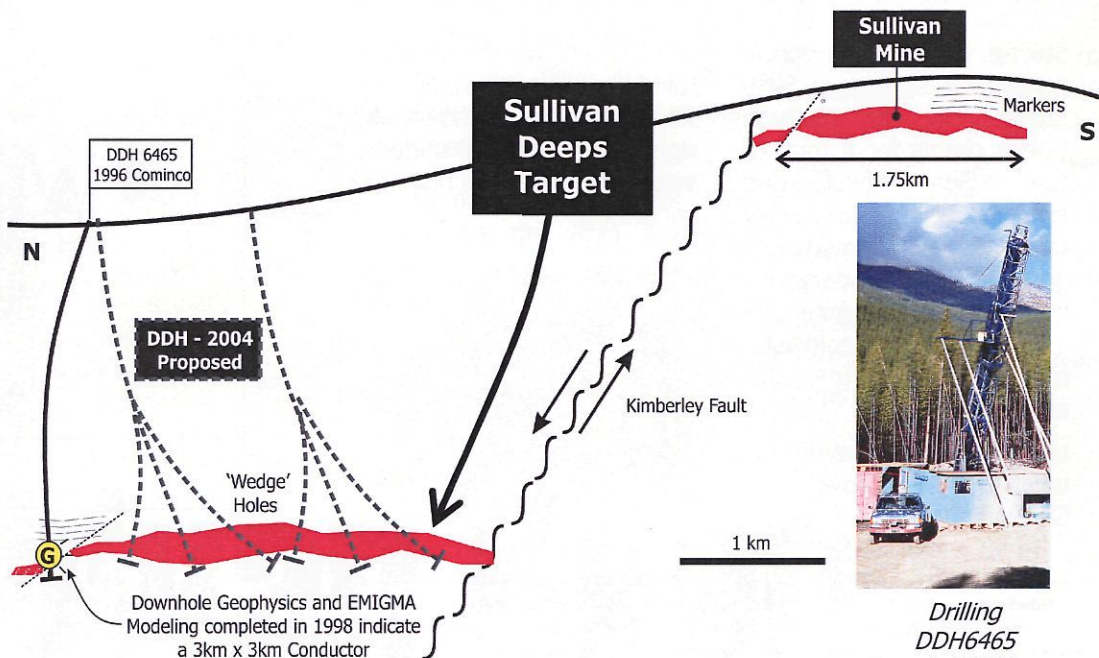
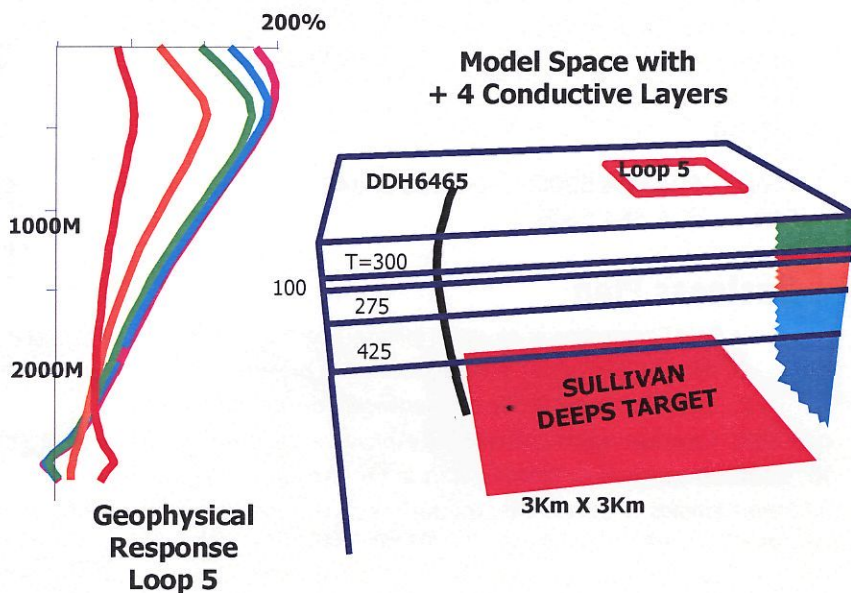
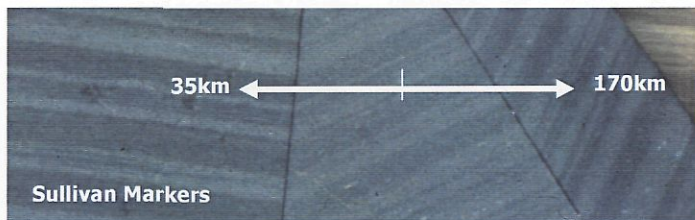
Cominco drilled a series of exploration holes targeting the Sullivan Deeps, the most recent completed in 1996. The core was logged and the hangingwall markers compared to provide confirmation of the Sullivan Horizon, found to be at a depth of approximately 2,450m (8,050 feet). While that hole failed to intersect an orebody, it was later shown to have come very close.

Downhole and surface geophysics was employed to measure the electromagnetic signature of the rocks. The work conclusively showed a large-scale conductor at the target depth (shown at right).

A computer model was used to estimate the size of the target based on the geophysics response. This work was only completed in 1998 and by this time the mine was committed to shutting down, such that no further exploration work was conducted.

The computer model indicated that a geophysical conductor approximately 3km x 3km must be present to account for the strength of the anomaly at the target depth.

In summary, the large geophysical response is at the same target horizon indicated by markers and contained within the Sullivan mineralized corridor, making this one of the most outstanding drill targets in the world today.



Work Plan and Schedule

Compelling evidence for another Sullivan-sized deposit exists at Sullivan Deeps—perhaps even larger in footprint than the Sullivan itself. Our plan is to drill test the target starting in early 2004 with potential first intercepts three to four months later.

The plan also includes the use of wedge holes to make several intercepts of the Sullivan Deeps target from primary holes. If successful, additional holes may be drilled to confirm the size of the target, as shown in the graphic on page 3.

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Business Plan

Stikine Gold Corporation is an active mineral explorer in an emerging mining market. Stikine plans to;

1. Acquire world-class mineral exploration projects with near-term drill targets;
2. Organize a qualified and experienced management team;
3. Leverage smart and efficient exploration investment and maximize value to shareholders; and,
4. Properly relate Stikine's story to the investment community.

Stikine intends to exceed the expectations of investors by presenting a new and focused company at the beginning of a cyclical mining market. We believe the mining market will respond robustly to the combined effects of:

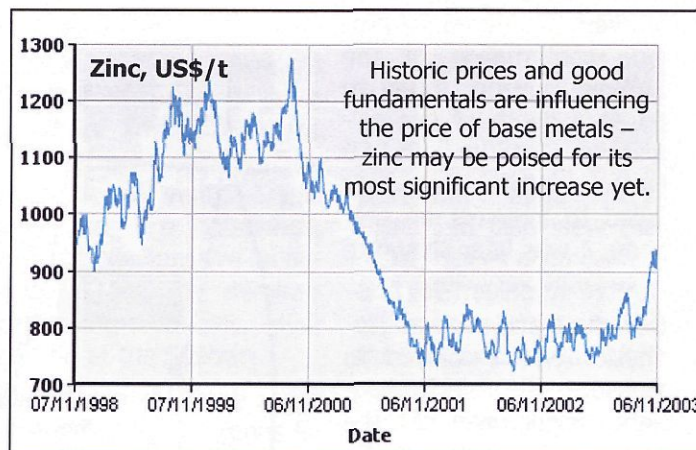
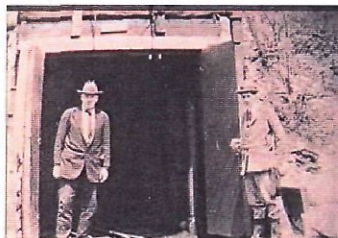
- an improved outlook for base metal and gold / prices;
- renewed investor support for well-managed junior companies; and,
- ongoing junior company and/or project acquisitions by senior companies.

Potential Value and Demand for Base Metals

Stikine has an option agreement to earn a 50% interest in the Sullivan Deeps claims for a total of C\$4 million in exploration expenditure. A discovery of a deposit immediately north of the legendary Sullivan Mine will ignite the imagination of geologists, miners and financiers around the world!

Ultimately the value of what may be discovered at Sullivan Deeps is depend-

ant on the world demand for base metals, some of which, like zinc (shown at right), are currently undervalued compared to historical prices.



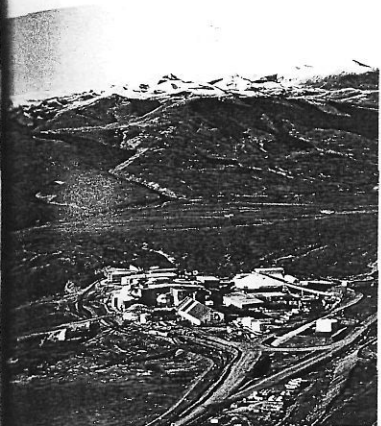
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Sullivan Deeps

TWENTY
BILLION
DOLLAR
TARGET:

TWENTY
BILLION
DOLLAR
LEGEND



Red Dog

The Red Dog mine in Alaska is a partnership of Teck Cominco and the Northwest Alaska Native Association (NANA), and is the largest zinc mine in the world.

An expansion of the mill, at a cost of US\$105 million, increased concentrate production capacity to an annual rate of 1.1 million tonnes, containing 615,000 tonnes of zinc.

Energy costs increased by 29% compared with 2000 and accounted for 16% of the total site operating costs, giving impetus to continued exploration for shale gas in the Red Dog area.

Red Dog Mine, Alaska, USA

100%	1997	1998	1999	2000	2001
Tonnes mined (000's)	3,814	3,697	5,220	6,591	7,294
Tonnes milled (000's)	1,929	2,497	2,978	3,045	3,211
Zinc grade (%)	20.3	21.4	20.8	21.0	19.9
Lead grade (%)	5.2	5.2	5.2	4.7	5.1
Zinc recovery (%)	86.5	84.9	84.0	83.1	80.9
Lead recovery (%)	62.4	57.4	59.1	57.9	59.0
Zinc production (million lbs)	742	981	1,148	1,171	1,141
Lead production (million lbs)	140	160	196	183	210
Capital expenditures (\$ millions)	101	34	9	109	74
Pro forma (100%) operating profit (\$ millions)	96	54	117	121	4

The operation continued its mandate to increase the number of employees who are shareholders of the NANA and at year end, 56% of those working at the mine or hauling concentrate were NANA shareholders.

Z I N C M I N I N G

Sullivan Mine, B.C., Canada

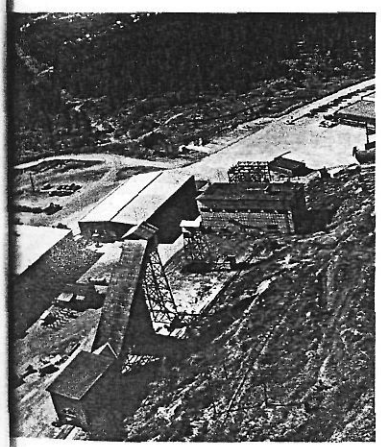
100%	1997	1998	1999	2000	2001
Tonnes milled (000's)	1,580	1,916	1,730	1,613	1,320
Zinc grade (%)	7.2	6.0	6.2	6.6	6.4
Lead grade (%)	3.7	3.5	3.0	3.1	3.4
Zinc recovery (%)	88.7	85.7	86.3	87.2	86.3
Lead recovery (%)	71.3	72.5	68.9	67.2	71.6
Zinc production (million lbs)	222	216	203	204	160
Lead production (million lbs)	92	108	81	73	70
Pro forma (100%) operating profit (loss) (\$ millions)	13	(16)	(16)	(29)	(18)

The Sullivan zinc, lead mine, a cornerstone of Cominco for many years, finally exhausted its ore reserves and closed in Q4, 2001 after 92 years of production.

Over the life of the mine concentrates were produced containing 8 million tonnes of zinc and 8 million tonnes of lead as well as 286 million ounces of silver. During its final year the Sullivan concentrator produced zinc concentrate with a 53.3% contained zinc grade, the highest in its history.

While "The Sullivan" was its mainstay for decades, the town of Kimberley has broadened its base and is now a major tourist destination.

2001 AR



Sullivan