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1993 Year in Summary



Highland Valley Copper



Cover

*In the Valley pit a
22-yard electric shovel
loads a 170-tonne
haulage truck.*

Left

*The L-L tailings dam
is well on its way to
becoming the second
largest man-made earth
dam in the world.*

1993 - Year in Summary

Corporate Mission Statement

To optimize the long-term profitability of the mining and processing of mineral resources within the Highland Valley of British Columbia.

Corporate Objectives

Highland Valley Copper seeks continued improvements in all areas of operation to ensure that the best productivity and cost efficiencies are attained. The partnership will investigate and incorporate new technological and process improvements to maintain its leadership position in the mining world.

In addition, the partnership will maintain first-rate customer relations, secure competitive advantages and continue its geographical diversification in order to maximize sales returns on its concentrates.

Highland Valley Copper recognizes the employees to be one of its most important assets and will actively promote their safety, health and welfare.

The partnership has a commitment to enhance the relationship with the employees through team building, personal challenge and dialogue.

Highland Valley Copper will protect the environment and continue the reclamation of the disturbed lands.

Highland Valley Copper will undertake new exploration programs within the valley to ensure the longest possible economic life of the operation.

Introduction

In 1993, the mill availability reached a record 90.15% despite the change-out of three ring gears. Based on the 1992 results, Highland Valley Copper was awarded the John Ash Trophy as the safest large mining operation in British Columbia for the fourth consecutive year, and with a new record safety performance in 1993, the trophy will likely remain with us.

Mining was carried out in both the Valley and Lornex pits with the majority of the ore coming from the former. This year, waste stripping was confined to the Valley pit and a favourable waste-to-ore ratio will enable less mining to be carried out in 1994 without jeopardizing ore release. The remaining mine life is planned until year 2008.

The ore has continued to be hard to grind; the tonnage processed through the Highland Mill was only slightly greater than the year before. Copper production was lower than previous years owing to a lower grade from ore mined on the periphery of the ore body where oxidation has occurred. This also resulted in a lower recovery.

There are no known areas that are not in compliance with environmental legislation, reclamation permits or any other licences and permits.

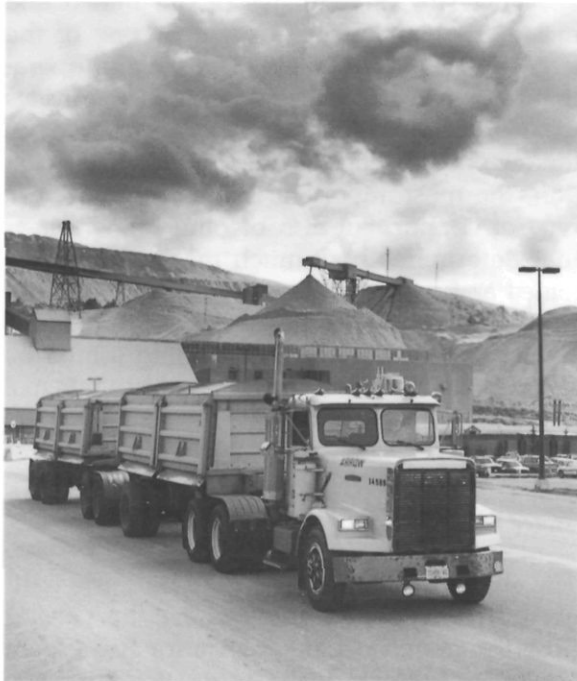
In terms of tonnages of ore mined and milled, Highland Valley Copper is one of the largest mines in the world. The scale of operation combined with efficient technology provides for a high level of productivity. However, of all the factors affecting the cost of copper production, the most important is the ore grade, not only of copper, but also of other minerals, as that determines how much material must be mined and processed to produce one pound of copper. Highland Valley Copper's ore grade is significantly lower than that being mined by competitors in other countries and has minimal amounts of other minerals.

Partnership

The shares in the net cash flow from the partnership remained unchanged for the year at 50% for Cominco Ltd., 33.6% for Rio Algom Limited, 13.9% for Teck Corporation (including 2.5% from Highmont) and 2.5% for Highmont Mining Company (excluding Teck's 2.5%).

Sales

Sales were \$274.3 million compared to the previous year's \$373.9 million. The substantial decrease was the result of the depressed copper price offset partly by the lower value of the Canadian dollar. At an average of \$.87 US/lb, the copper price was 84% of the 1992 price level; and the U.S. dollar averaged \$1.288 Cdn in 1993 against \$1.208 in 1992.



Copper concentrate leaving the mine on the way to world markets.

Employee costs totalled \$83 million in 1993. Energy costs such as electricity, diesel, gasoline and natural gas added up to \$40 million.

In 1993, Western World refined copper consumption rose by less than 0.5% to 9 million tonnes. Strong consumption growth was registered in North America, South America and some Asian countries. However, this was largely offset by falling consumption in Japan and most countries in Western Europe as the recession deepened in those countries.

Western World mine production of copper in concentrate fell slightly in 1993 due to various production disruptions and only limited capacity additions.

After rising by over 3% in 1992, refined copper production rose by less than 1% in 1993 to slightly less than 9 million tonnes. Output of electrowon copper from leaching operations continued to increase, but production of secondary copper from scrap declined as scrap supplies were tightened by falling copper prices and exports to China.

Trade with the former Eastern Bloc countries remained a significant factor in the copper market in 1993. Imports from the C.I.S. and Poland continued but at a lower rate than in the past two years. Meanwhile, exports to China remained strong, and overall net East/West trade added about 200,000 tonnes to Western World supplies in 1993.

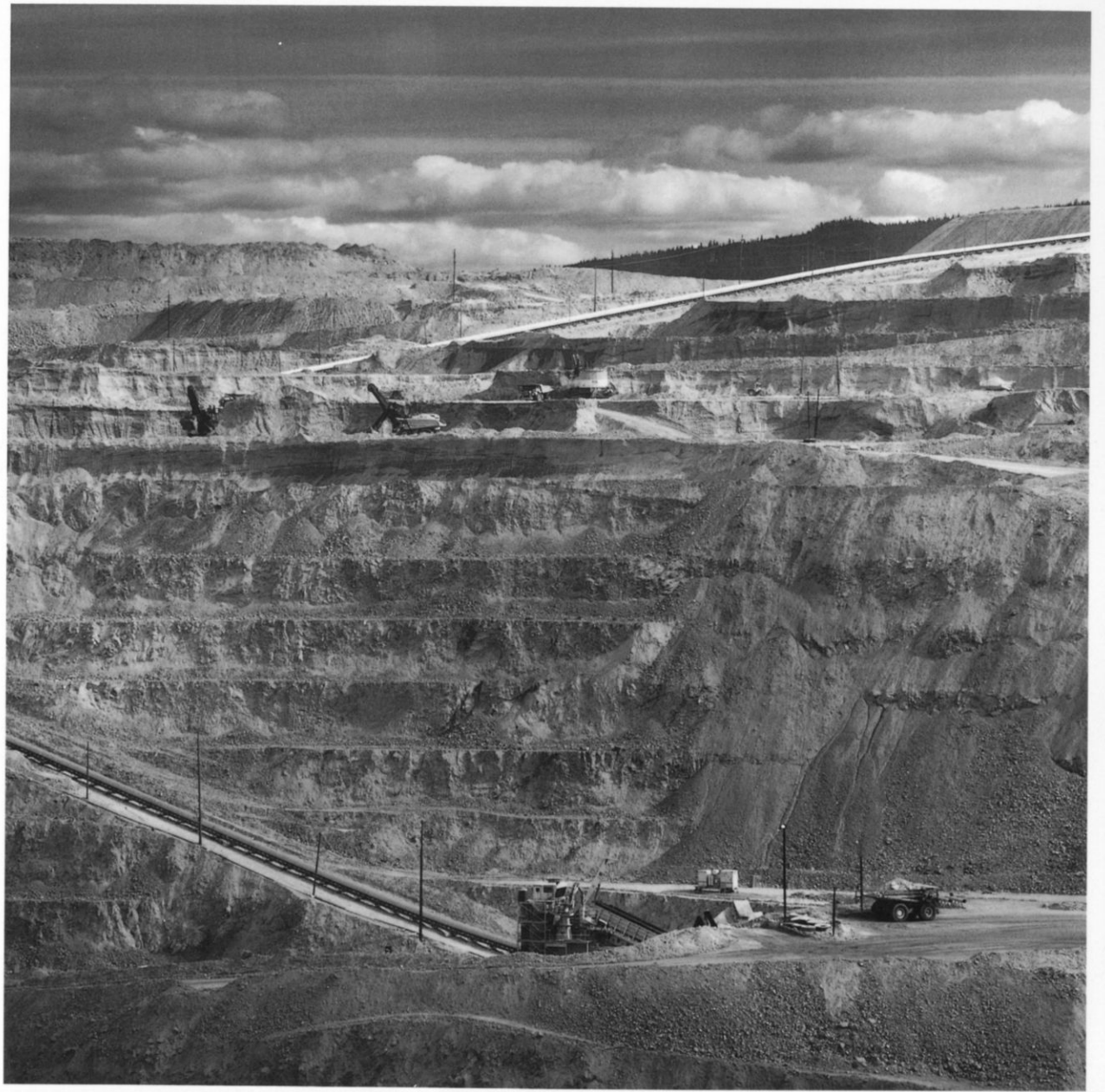
The net market balance in refined copper was a surplus of slightly less than 200,000 tonnes as compared to a surplus slightly greater than this amount in 1992. Most of this surplus

accumulated in London Metal Exchange inventories which rose by 245,000 tonnes during the year and peaked at 614,000 tonnes in October. The stronger copper market in North America was reflected in COMEX inventories which declined by 27,000 tonnes during the year.

Reacting to strong copper demand and firm copper prices which have kept byproduct molybdenum production high, molybdenum has been in oversupply since 1989. Depressed by over nine months' accumulated inventory, prices were at historic lows entering 1993. During the year, production cutbacks by primary molybdenum producers resulted in a marginal reduction in inventories and the price began to recover. The Metals Week Dealer Oxide molybdenum price averaged \$2.32 US/lb Mo in 1993 as compared to \$2.21 US/lb in 1992.

The majority of Highland Valley Copper's copper concentrates are sold under long-term frame contracts to smelters in Japan, other Far East countries, Spain and elsewhere. These contracts provide for the periodic negotiation of commercial terms, normally held every one to three years.

*Deep within the Valley
pit is one of the two
moveable in-pit crushers.*





*John Seymour, lining
machine operator, relines
the inside of one of
the large semi-autogenous
grinding mills.*

Operations

The key performance indicators for 1993, together with comparisons to the previous four years, are shown on page 15.

Production for the mine totalled 95 million tonnes which comprised 44.6 million tonnes ore and 50.4 million tonnes of waste. The waste-to-ore ratio was 1.13.

Mine equipment availabilities were satisfactory. A new 37-yd³ rope shovel was commissioned and two of the 15-yd³ shovels were retired. Truck productivity exceeded the plan.

A total of 44.4 million tonnes of ore were processed through the Highland Mill. The resultant average throughput of 121,843 tonnes per day was slightly more than last year. Mill availability was 90.15%, a new record.

Copper production amounted to 345.6 million payable pounds contained in 393,003 tonnes of concentrate compared to the previous year of 377 million pounds and 422,340 tonnes of concentrate, respectively. In 1993, the grade of ore mined was 0.417% compared to the previous year of 0.451%. This, coupled with a recovery of 87.3% compared to the record recovery of 89.0% in 1992, accounts for the lower copper production.

Production of molybdenum totalled 3.8 million pounds with lower recoveries through the year. A considerable number of changes have been made to the molybdenum flotation section and recoveries reached toward the year-end were encouraging.

Industrial Relations and Personnel

Highland Valley Copper employed 1,140 people at year-end, down 50 from the previous year. The reductions came mostly from the mine where the efficient large equipment fleet, the 1992 crusher moves and the mine dispatch system have resulted in a rise in productivity.

The collective agreement with Local 7619 of the United Steelworkers expired on September 30, 1993. Negotiations for a new agreement have been ongoing since early September and remained unfinished at year-end. Work continued under an extension of the old agreement.

Integration of corporate goals and objectives with those of employees is progressing. Performance Management techniques are being introduced which will result in expanded job horizons for both supervisory and hourly employees.

Employee training encompassed 37,000 hours, equal to 1.7% of total hours worked.

At the end of 1993, Highland Valley Copper employees resided in the following communities.

	%
Kamloops	40
Logan Lake	34
Ashcroft	10
Merritt	8
Cache Creek	3
Lower Nicola	2
Other	3

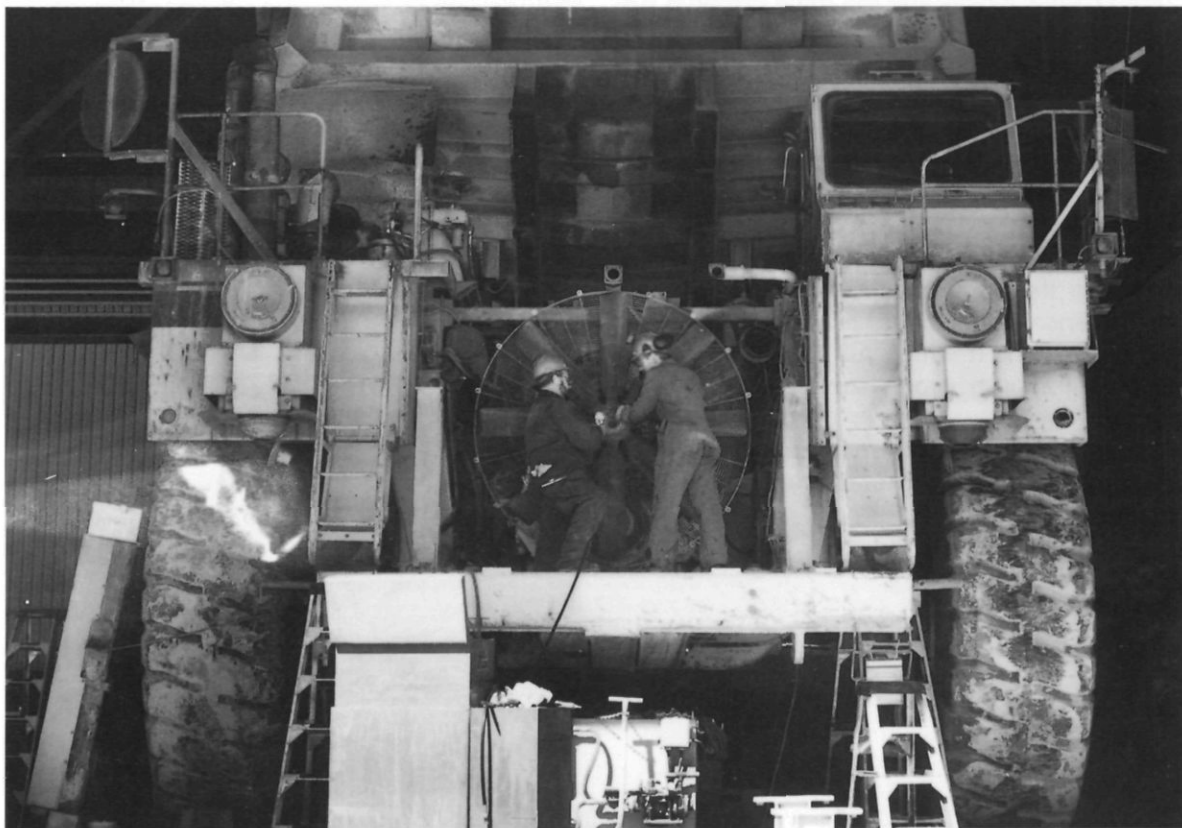
Property taxes paid to Logan Lake, Ashcroft and the regional and provincial governments amounted to \$1.9 million.



Logan Lake, home to many Highland Valley Copper employees.

Safety

The safety program performance has again produced the best results for large mines in the Province of British Columbia. They were at a new record low with a frequency rate of 1.27 and a severity rate of 27.69.



Heavy duty mechanics Arnold Blair, left, and David Churchman are dwarfed by the 170-tonne haulage truck as they work at replacing the engine.

During 1993, Highland Valley Copper was recognized for the fourth consecutive year as being the safest large mine in B.C., winning the John Ash Trophy for 1992. It appears that the mine will again win this award for 1993.

One aspect of the program of accident prevention and loss control is to ensure where possible that employees who are partially disabled due to a work or home-related injury or illness are productively employed while they recover or, if the condition is such that the employee will not return to his or her former capacity, alternate employment is identified. Where this is not possible within the originating department, the employee may be assigned to the Modified Work Centre. This 6,000-square-foot facility is a warehouse refurbished in 1993 and adapted for rehabilitation as well as the recycling and re-use of mine supplies.

In 1993, 200 employees participated in the program, resulting in the equivalent of an additional 16 person-years of productive employment. The Centre itself accounted for one-half of this employment, returning in excess of \$120,000 in salvaged mine supplies. A 30% reduction in days lost due to compensable injuries can at least in part be attributed to this program.

*Truck driver Daryl
McLachlan, left, and
shovel operator Ray
Mosley refurbish a
wheelbarrow at the
Modified Work Centre.*



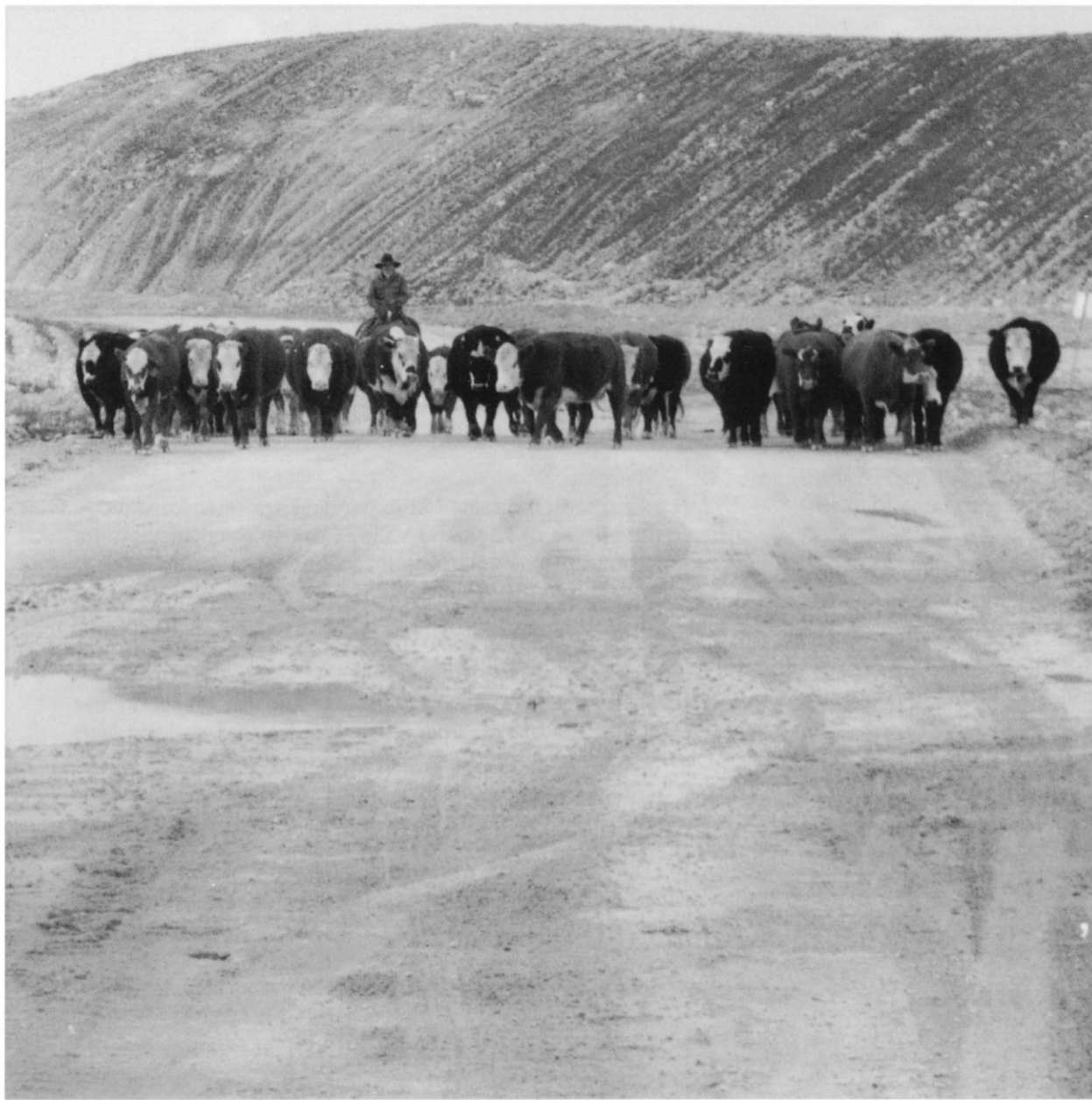


*Contract tree planters
Claude Beaulieu,
foreground, and Sylvain
Flotte plant shrubs on the
Highmont waste dumps.
This planting signals the
beginning of the end of
the mine's temporary use
of the land.*

Environmental Policy

Highland Valley Copper is committed to the concept of sustainable development, which requires balancing good stewardship in the protection of human health and the natural environment with the need for economic development. Diligent application of technically proven and economically feasible environmental protection measures will be exercised throughout exploration, mining, processing and decommissioning activities to meet the objectives of legislation and to ensure the adoption of best management practices. To implement this policy, Highland Valley Copper will:

1. Identify any existing or possible future environmental risks and exposures, not only at the operations, but also in the transportation of mine supplies and production to and from the mine;
2. Assess, plan, construct and operate its facilities in compliance with all applicable legislation providing for the protection of the environment, employees and the public;
3. Institute and, during the life of the mine, carry out a program of environmental protection and reclamation, and upon termination of mining
 - a) return the land and watercourses to an acceptable standard of productive use that ensures the physical stability of landforms and structures;
 - b) remove all structures, equipment and scrap; and
 - c) leave watercourses stable and of acceptable water quality;
4. In the absence of legislation, apply cost-effective best management practices to advance environmental protection and to minimize environmental risks;
5. Maintain an active, continuing, self-monitoring program to ensure compliance with government and corporate requirements;
6. Subject all areas to periodic environmental, health and safety audits, and report the findings arising out of such audits to Highland Valley Copper's Environment Committee;
7. Foster research directed at expanding scientific knowledge of the impact of Highland Valley Copper's activities on the environment, of environment/economy linkages and of improved treatment technologies;
8. Encourage reduction, re-use and recycling of mine supplies;
9. Work proactively with government and the public in the development of equitable, cost-effective and realistic laws for the protection of the environment;
10. Enhance communications and understanding with governments, employees and the public; and
11. Encourage the reporting to the Vice-President, General Manager, of a known or suspected departure from this policy or related procedure.



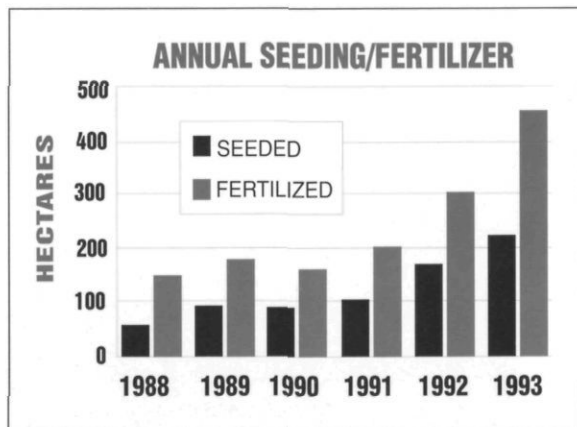
*Ranchers ride herd on
some wayward range
cattle that were attracted
to new growth on the
recently seeded Highmont
waste dumps.*

Environment

The partnership is in compliance with environmental legislation, reclamation permits and other licences and permits.

At year-end, the comprehensive plan for reclamation and the eventual decommissioning of the operations was updated. In addition to the \$10,250,000 security provided earlier to the provincial government, reclamation provisions are made in the partnership's accounts.

The total area disturbed by mining activities is 5,760 hectares of which 850 hectares of inactive areas have been prepared for reclamation and seeded for one or more years.



Decommissioning continued at the Bethlehem and Highmont sites. The only facilities left on the Highmont site are the maintenance shop and four pump houses. On the Bethlehem site, the remaining major structures are the PCB storage building, four pumphouses, the mill and the mine maintenance shop; the latter two buildings are used for storage of surplus equipment.

As a follow-up on a feedlot study in 1992, an Agriculture Canada research project is being scheduled for the Bethlehem site in 1994, to investigate the effects of high molybdenum forage on cattle. High heavy metal uptake, especially molybdenum, occurs in vegetation growing on the reclaimed lands and on the shores of tailings ponds.

Short- and long-term water management planning was undertaken, including aquatic studies to assess the impact on fish. The studies in the Trojan tailings pond have been very encouraging in that trout show no effects from heavy metals.

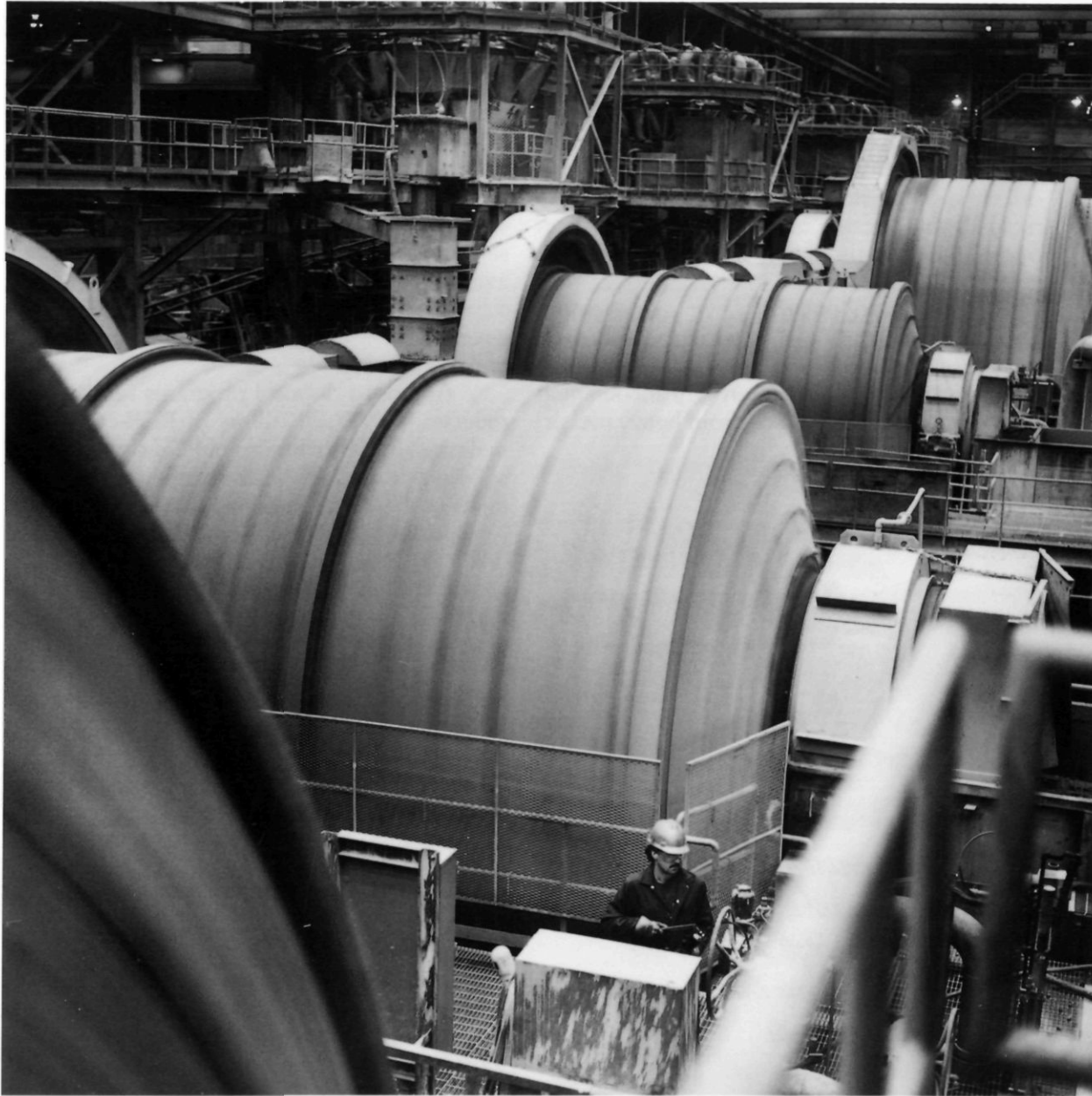


Senior environmental engineers Bob Hamaguchi, left, and Darrell Martindale net fish from the Bethlehem Trojan tailings pond for testing purposes.

Ten reportable environmental incidents occurred during the year; all were reported to the Ministry of Environment and cleaned up satisfactorily. Five of these incidents involved oil and diesel losses from heavy mobile equipment inside the property. An unauthorized bypass of the sewage treatment plant took place into the tailings system. A release of hydrogen sulphide and sulphur dioxide gases occurred in the mill; after evacuation, the incident was quickly brought under control.

Approved disposal programs resulted in a reduction of 47,000 litres of PCB-containing materials, 3,900 kilograms of PCB-contaminated solid waste and 31 PCB-contaminated transformers. Seven large askarel transformers were replaced in the Highland mill, leaving only one unit to be dealt with in 1994. Only seven PCB-contaminated transformers remain in service and these are expected to be put in storage next year.

The commissioning of the Fluids Recovery Facility in May marked a milestone in the move to greater product management and environmental risk reduction. The \$600,000 facility allows the mine to recycle four major waste streams to the advantage of the mine and the environment. The two major waste oil streams (hydraulic and gear) are processed on-site without the transportation risk and the added cost of refinery reprocessing. The third waste stream (transmission and engine oil), which cannot be recycled on-site at the present time, is sampled and recycled at an oil refinery. The last waste stream is the engine coolant. Pending manufacturer approval to re-use the product in the mine



*Lube maintenance
worker Dave Swayze
doing his rounds in the
Highland Mill, the
world's second largest.*

trucks, this waste stream is being used for dust suppression on the rotary drills. Using this former waste product has eliminated the purchase of one product (methanol). On-site reprocessing is carried out by an environmental company using patented, proven technology to reconstitute the waste products to meet all original quality standards.

This state-of-the-art facility has demonstrated that environmental and economic issues can be mutually supportive.

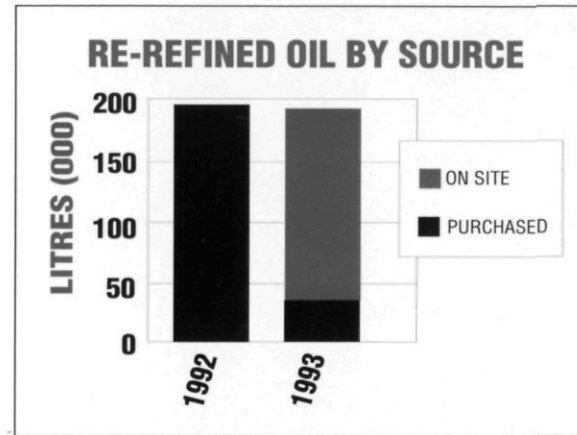
The major energy-saving program for the year was the conversion of the mill lighting to a high pressure sodium medium. Furthermore, 22 motors were replaced by energy efficient units and two 500 hp variable frequency drives were

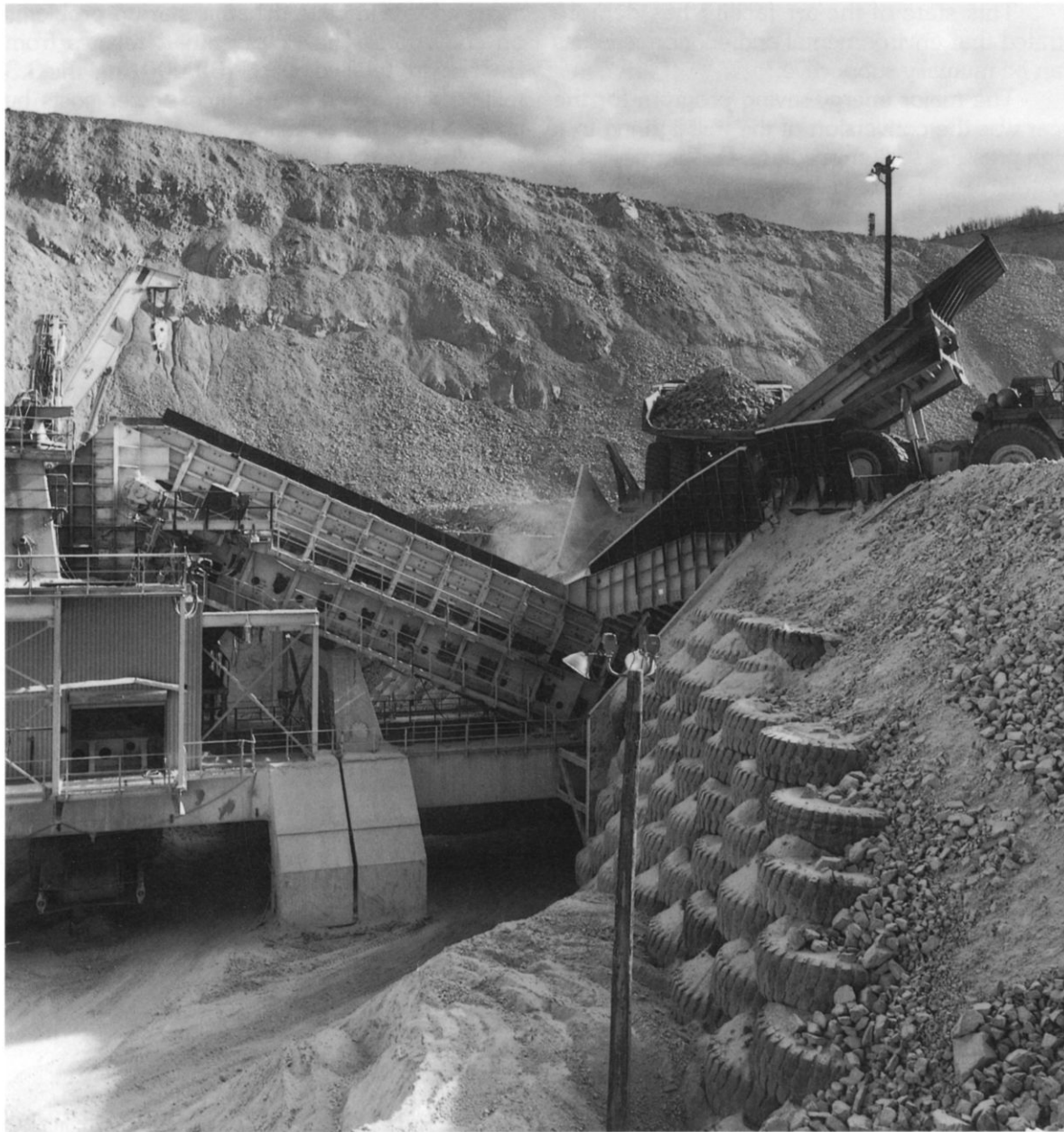
acquired to eliminate dynamic startup problems on conveyors. The Power Smart rebates from B.C. Hydro totalled over \$400,000, and the 3.3 million kwh saved will reduce power costs by about \$120,000 annually.

An external environmental audit took place in September, 1992. In early 1993, action plans were developed to address the potential issues, and regular reviews have been conducted as part of the follow-up.

Internal field audits have been carried out on reclamation, effluent water operating conditions and industrial refuse site management. A detailed chemical audit was done in August by summer students to determine the types of ozone-depleting and chlorofluorocarbon (CFC) substances still on-site, the packaging of these products and the level of compliance of Material Safety Data Sheets.

The daily mine tours attracted 2,100 visitors during the year.





Ore Reserves

Measured and Indicated/Proven and Probable ore reserves of Highland Valley Copper as of January 4, 1994, were estimated to be 594.6 million tonnes at an average grade of 0.425% copper and 0.0073% molybdenum.

Exploration

No exploration within the Highland Valley was carried out during 1993. A program has been scheduled for 1994.

Outlook

The outlook for the mine operations in the coming year is good. The in-pit crushers are favourably located closer to the bottom of the Valley pit and the next move is not scheduled until 1996. The addition of a new, large shovel in 1993 increases the confidence level in meeting production targets. High levels of efficiency, utilization and productivity of mining equipment are anticipated.

Mill availabilities are projected to exceed 90%. A major focus will be on improving copper recoveries.

Copper ore from the Valley pit begins the journey to the concentrator through an in-pit crusher.

Highland Valley Copper Statistics

	1993	1992	1991	1990	1989*
Sales (\$000,000's)	274.3	373.9	343.0	408.3	326.1
Tonnage Mined (000's metric tonnes)	95,048	96,269	94,006	95,986	60,599
Ore Milled (000's metric tonnes)	44,473	44,064	46,292	46,263	32,324
Average Tonnes Mined Per Day	260,410	263,031	257,551	262,975	233,973
Average Tonnes Milled Per Day	121,843	120,394	126,827	126,749	124,802
Average Mill Head Grade (%)					
Copper	0.417	0.451	0.441	0.428	0.425
Molybdenum	0.009	0.009	0.008	0.008	0.009
Average Mill Recovery (%)					
Copper	87.30	89.01	86.94	85.42	85.23
Molybdenum	41.80	43.49	45.27	52.45	47.45
Metal in Concentrate Produced (000's)					
Copper (payable pounds)	345,563	376,985	378,377	360,859	249,578
Molybdenum (contained pounds)	3,789	3,987	3,841	4,208	3,051
Silver (contained ounces)	1,912	2,095	2,110	1,967	1,377
Gold (contained ounces)	12.8	13.8	14.0	13.0	9.5
Concentrates Produced (metric tonnes)					
Copper	393,003	422,340	439,930	417,437	289,965
Molybdenum	3,209	3,333	3,223	3,551	2,550
Average Concentrate Grade (%)					
Copper	41.2	41.9	40.3	40.5	40.4
Molybdenum	53.5	54.3	54.1	53.8	54.2
Average Prices					
Copper, LME \$ US/lb	.87	1.04	1.06	1.21	1.29
Molybdenum, Metals Week \$ US/lb Mo	2.32	2.21	2.38	2.85	3.40
Number of Employees at Year-end	1,140	1,190	1,194	1,227	1,248

* Note: The 1989 statistics were negatively affected by the 15-week strike.

Management Committee

Cominco Ltd.

W.J. Robertson
D.L. Johnston
R.A. Mundie

Rio Algom Limited

C.A. Macaulay, Chairman
D.A. Cumming
M.S. Parrett

Officers

P. Hansen	President
A.D. MacPhail	Vice-President, General Manager
G.F. Reynard	Vice-President, Marketing
R.E. Caines	Manager, Mining
P. King-Jones	Manager, Milling
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R.J. Killough	Manager, Industrial Relations & Personnel

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*The Highland Mill -
a model of efficiency and
technology.*





Highland Valley Copper

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