

Wholly-Owned Operations

880642



**"W**e are making every effort to ensure employees get the counselling, job search, relocation and retraining assistance they need to find a new job when Bell closes. We have committed to provide each of them with these services for as long as it takes them to get another job offer."

*Ross McArthur*

**Ross McArthur**

Acting Mine Manager

**Bell Mine**

Location: Granisle, British Columbia  
Employees: 266  
Operation: an open pit copper mine and a 17,000 tonne per day mill

The Bell copper mine will close in June 1992 due to the depletion of ore. The mine opened in 1970 and has produced more than 1.1 million tonnes of copper concentrate over its life. Field test work is underway until June 1992 to determine if a heap leaching process could be used to extract copper from the waste rock piles. A reclamation fund has been established and the final closure plan will be completed in late 1992.

The mine was in 100% compliance with provincial and federal environmental regulations throughout 1991. This performance reflects the fact that employees have been kept informed about potential environmental problems and are well trained to manage any that may arise.

Bell employees won the 1991 President's Safety Award for the lowest serious injury frequency of all Noranda Minerals' operations. Bell had a total accident frequency of 11.4 for every 200,000 employee hours worked, a 15% improvement over 1990. As well, a group of Bell employees won a Noranda Minerals' Employee Recognition Award for their quick action in extinguishing a fire in the secondary crusher plant in August 1991. Their teamwork prevented serious damage to other surface facilities.

An Industrial Adjustment Service Committee, made up of representatives from the union, the local community, the government and the mine's staff, is dealing with employees' concerns as they face the mine's closure. Most employees have already undergone a skills assessment with an outside consultant as a first step in preparing for future employment. An outplacement office has also been established in Granisle. All laid off employees will continue to receive job search assistance until they get an offer of another job.

# Mineral Inventories

	Grade (1991)								
	1990 (000s tonnes)	1991 (000s tonnes)	Copper (%)	Zinc (%)	Lead (%)	Silver (oz/tonne)	Gold (oz/tonne)	Nickel (%)	Potash (%)
<b>Wholly-owned mines</b>									
Bell	6,436	<b>1,275</b>	0.70			0.03	0.01		
Central Canada Potash	421,514	<b>414,696</b>							28.7
Gaspé									
Needle Mountain	330	<b>35</b>	1.40						
Copper Mountain Oxide	20,178	<b>20,178</b>	0.44						
"E" Zone	6,115	<b>5,608</b>	2.64			0.41			
Geco	9,032	<b>6,119</b>	1.60	2.80		1.20			
Lyon Lake <sup>1</sup>	574								
Matagami Division	1,811	<b>2,259</b>	0.99	15.75		2.05	0.02		
<b>Brunswick Mining &amp; Smelting</b>									
Brunswick	83,940	<b>84,704</b>	0.31	8.86	3.57	3.21			
Heath Steele	18,258	<b>20,943</b>	0.61	6.96	2.31	1.58			
<b>Falconbridge<sup>2</sup></b>									
Kidd Creek	41,197	<b>37,169</b>	3.20	5.06		1.96			
Sudbury mines	45,010	<b>43,119</b>	1.46					1.68	
Dominicana	35,960	<b>35,318</b>						1.74	
Falconbridge Gold	374	<b>321</b>					0.41		
Zimbabwe	1,024	<b>980</b>					0.15		
<b>Hemlo Gold<sup>3</sup></b>									
Golden Giant	16,228	<b>15,072</b>					0.35		
Silidor	4,308	<b>3,718</b>					0.17		
<b>Kerr Addison/Minnova</b>									
Ansil	992	<b>546</b>	5.60	1.40		0.65	0.03		
Lac Shortt	525	<b>73</b>					0.13		
Opemiska <sup>4</sup>	183								
Samatosum	483	<b>108</b>	0.80	1.80	1.10	22.60	0.04		
Winston Lake	2,259	<b>1,826</b>	1.00	13.80		0.92	0.04		

Notes <sup>1</sup> Lyon Lake was shut down in May 1991.

<sup>2</sup> Falconbridge inventory is shown on a 100% basis.

<sup>3</sup> In February 1992, Noranda reduced its ownership of Hemlo from 55% to 46%.

<sup>4</sup> The Opemiska Division was shut down in June 1991.

planned for September 1992. Mine production of copper, gold and nickel is expected to be near 1991 levels, but ferronickel production will be lower in 1992 because of market related cut-backs. Volumes from Noranda Aluminum are expected to

approximate those in 1991. New collective agreements to be negotiated in 1992 include those at CCR, the CEZ zinc reduction plant, the Geco and Matagami base metal mines and the Falconbridge Sudbury office, clerical and technical workers.

Efforts over the coming year will continue to be directed at reducing unit costs and improving Noranda's competitive position in all areas. Operations and product lines which do not fit Noranda's long-term core activities will be re-structured, shut down or sold.

**1991 Mine Production**

	Company's % Interest	Copper mt	Zinc mt	Lead mt	Silver 000 oz	Gold 000 oz	Nickel mt	Potash 000 mt
<b>Mining Operations</b>								
Bell	100	25,557			116	31.0		
Central Canada Potash	100							1,055
Gaspé	100	25,088			455			
Geco	100	15,282	45,125		1,172	2.0		
Lyon Lake (1)	100	240	4,182	437	249	0.5		
Matagami Division	100	2,681	56,616		464	3.3		
<b>Brunswick Mining and Smelting</b>								
Brunswick (2)	64	6,007	172,401	42,740	4,084			
Heath Steele	91	3,128	55,649	13,796	797			
<b>Falconbridge (3)</b>								
Kidd Creek	50	58,192	59,807		2,969			
Sudbury mines	50	17,111					17,087	
Dominicana	43						14,532	
Falconbridge Gold	28					27.1		
<b>Hemlo Gold Mines (4)</b>								
Golden Giant	46				24	443.4		
Silidor	25					38.7		
<b>Kerr Addison/Minnova</b>								
Ansil	26	32,071			299	34.5		
Lac Shortt	25					45.4		
Opemiska (5)	26	5,710			117	10.9		
Samatosum	18	1,159	2,520	1,280	3,673	5.3		
Winston Lake	26	3,439	54,051		192	7.8		
<b>Total production</b>		<b>195,665</b>	<b>450,351</b>	<b>58,253</b>	<b>14,611</b>	<b>649.9</b>	<b>31,619</b>	<b>1,055</b>
<b>Company's interest</b>		<b>161,712</b>	<b>341,851</b>	<b>40,760</b>	<b>9,610</b>	<b>290.2</b>	<b>29,468</b>	<b>1,055</b>

Notes:

(1) The Lyon Lake operation was shut down in May 1991.  
 (2) Brunswick production was reduced in 1990 and 1991 due to a strike.

(3) On a basis consistent with the way the Company records revenues, production is shown on a 100% basis for all operations except Falconbridge, where 50% of production is shown.

(4) In February 1992, Noranda reduced its ownership of Hemlo from 55% to 46%.  
 (5) Opemiska Division ceased production in June 1991.

**1991 Refined Metal Production**

	Company's % Interest	Copper 000 mt	Zinc 000 mt	Lead 000 mt	Silver* 000 oz	Gold 000 oz	Nickel 000 mt
Brunswick	64			43	1,648		
CCR	100	327			22,588	1,227	
CEZ	95		199				
Kidd Creek	50	58	69		2,790		
Nikkelverk	50	19					29
Dominicana	43						15
<b>Total production</b>		<b>404</b>	<b>268</b>	<b>43</b>	<b>25,378</b>	<b>1,227</b>	<b>44</b>

\*Not additive because Brunswick's silver production is further refined by CCR.

# Management Discussion and Analysis

metal and lower demand in North America caused primary aluminum prices to fall by more than 19%, with year-end quotations, in real terms, at an all-time low.

Operating earnings for the Noranda Aluminum group were \$55 million in 1991, \$20 million lower than 1990 results. The earnings decline was caused by lower aluminum prices and weak economic conditions, cushioned partially by a forward sale of 20% of 1991 production at favourable prices.

The New Madrid Missouri smelter operated at capacity with reduced costs due to improved productivity and alumina, power and labour contracts tied to aluminum prices.

Norandal's operating earnings were \$20 million, \$23 million lower than 1990 due to very poor markets for building products and commodity sheet. Foil operations continued to perform well.

Norandex improved its operating earnings by \$8 million over 1990 despite continued weakness in the housing industry. Vinyl siding operations showed improvement due to lower raw material costs.

American Racing Equipment, which manufactures and distributes custom aluminum and steel automotive wheels, improved earnings as a result of production

cost reductions, despite lower automotive demand.

## Wire Rope Industries

Wire Rope Industries is Canada's largest fabricator of steel wire rope, with two manufacturing plants and 18 industrial supply distribution centres in Canada.

Total sales for Wire Rope Industries were \$130 million in 1991, a decline of \$10 million from 1990 sales of \$140 million. The 1991 operating loss of \$4 million, including special restructuring provisions totalling \$2 million, compared unfavourably

with break-even results in 1990.

## Outlook

Metal markets are likely to remain oversupplied early in 1992. Additional production capacity, however, is limited, so that even modest improvements in demand should cause stocks to fall and prices to recover from their currently depressed levels.

Noranda's production of zinc, lead and silver should be higher in 1992 due to increased output from Brunswick, which will more than offset the decline with the closure of the Samatosum mine

## 1991 Mineral Inventories

	000 tonnes	Copper %	Zinc %	Lead %	Silver oz/mt	Gold oz/mt	Nickel %	Potash %
<b>Mining Operations</b>								
Bell	1,275	0.70			0.03	0.01		
Central Canada								
Potash	414,696							28.7
Gaspé								
Needle Mtn.	35	1.40						
Copper Mtn. Oxide "E" Zone	20,178	0.44						
	5,608	2.64			0.41			
Geco	6,119	1.60	2.80		1.20			
Matagami Division	2,259	0.99	15.75		2.05	0.02		
<b>Brunswick Mining and Smelting</b>								
Brunswick	84,704	0.31	8.86	3.57	3.21			
Heath Steele	20,943	0.61	6.96	2.31	1.58			
<b>Falconbridge*</b>								
Kidd Creek	37,169	3.20	5.06		1.96			
Sudbury mines	43,119	1.46					1.68	
Dominicana	35,318						1.74	
Falconbridge Gold	321					0.41		
Zimbabwe	980					0.15		
<b>Hemlo Gold Mines</b>								
Golden Giant	15,072					0.35		
Silidor	3,718					0.17		
<b>Kerr Addison/Minnova</b>								
Ansil	546	5.60	1.40		0.65	0.03		
Lac Shortt	73					0.13		
Samatosum	108	0.80	1.80	1.10	22.60	0.04		
Winston Lake	1,826	1.00	13.80		0.92	0.04		

\*Falconbridge inventory is shown on a 100% basis.