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The Canadian Mineral Industry Monthly Report

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Minerals

Minéraux

PREFACE

This report is prepared in the Mineral Policy Sector of the Department of Energy, Mines and Resources. It is prepared from the best information available to us from many sources, but it is only intended to be a general review of the more important current developments in the Canadian mineral industry and of developments elsewhere that affect, or may affect, the Canadian industry. It should not be considered an authority for exact quotation or an expression of official Government of Canada views.

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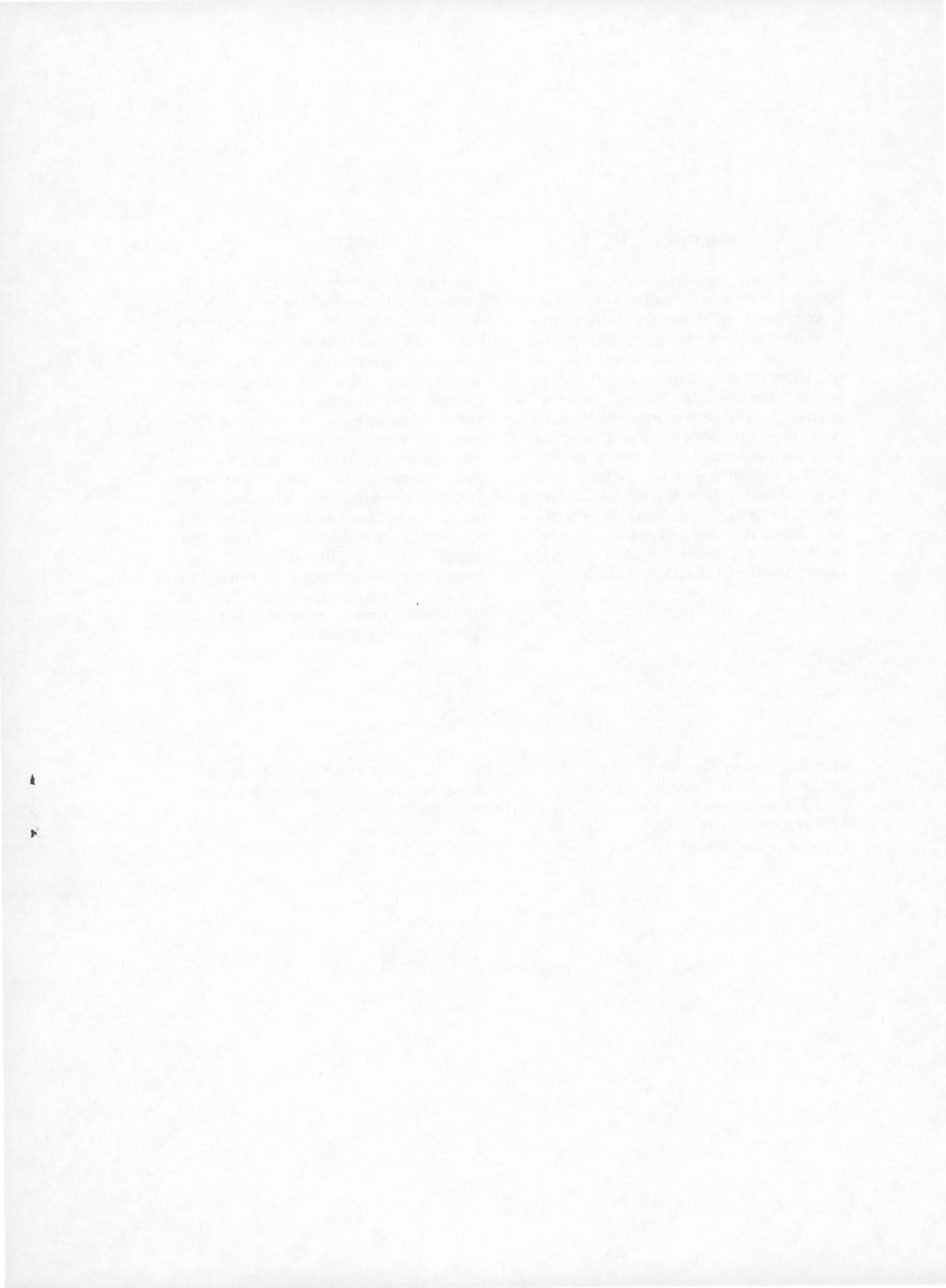
PRÉFACE

Ce rapport a été rédigé par le Secteur de la Politique Minérale du Ministère de l'Énergie, des Mines et des Ressources. Bien que nous ayons eu recours à de nombreuses sources pour vous fournir les meilleurs renseignements possibles, cet exposé n'a pour objet que de passer en revue les développements actuels les plus importants de l'industrie minière canadienne, de même que les progrès accomplis ailleurs qui peuvent intéresser l'industrie canadienne. On ne doit pas considérer cet exposé comme une source de renseignements précis ou comme l'expression des vues du Gouvernement canadien.

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CONTENTS

1	HIGHLIGHTS - FAITS SAILLANTS
3	ECONOMIC TRENDS
13	REGIONAL PROFILES
13	Manitoba
15	Newfoundland
18	METALLIC MINERALS AND PRODUCTS
18	Aluminum
18	Copper
20	Gold
21	Iron and Steel
22	Lead
23	Magnesium
23	Nickel
23	Silver
25	Tin
25	INDUSTRIAL MINERALS AND PRODUCTS
25	Anhydrous Ammonia
26	Asbestos
27	Potash
28	NEW PUBLICATIONS - NOUVELLES PUBLICATIONS

THE CANADIAN MINERAL INDUSTRY FOR JANUARY

L'INDUSTRIE MINÉRALE DU CANADA - JANVIER

The following constitutes a brief summary of the Canadian mineral industry based upon information that became available in January.

Voici un court résumé de l'activité dans l'industrie minière du Canada, selon les données obtenues en janvier.

HIGHLIGHTS

1. Canada's unadjusted index of Real Domestic Product was 141.3 in November 1979, an increase of 0.4 per cent from October 1979.
2. The RDP for Metal Mines was 101.7 in November 1979, an increase of 28.1 per cent from November 1978.
3. The Canadian producer price for copper climbed from \$1.23 a pound to \$1.51 a pound during the month of January 1980.
4. The high price for gold in January was \$850.00 (U.S.) per ounce, recorded on January 21. Prices declined from this high to close at \$635.00 (U.S.) an ounce for the month.
5. Canadian gold production for 1979 was estimated to be 49 175 kilograms compared with 53 967 kilograms in 1978.
6. Western Mines Limited of Vancouver reported during January that it expects to more than double the life of its silver-gold-copper-zinc mine in the Battle Lake area of Vancouver Island.

FAITS SAILLANTS

1. L'indice non rajusté du produit intérieur réel du Canada a été de 141,3 en novembre 1979, soit un accroissement de 0,4% par rapport au mois précédent.
2. L'indice du P.I.R. pour les mines d'extraction de métal a été de 101,7 en novembre 1979, soit une hausse de 28,1% en un an.
3. Le prix canadien du cuivre à la production est passé de \$1,23 à \$1,51 la livre durant le mois de janvier 1980.
4. Le prix de l'or a atteint son sommet le 21 janvier, s'établissant à \$US 850. Le prix a ensuite décliné pendant le reste du mois, le marché clôturant à \$US 635 l'once pour le mois.
5. La production d'or du Canada en 1979 a été de quelque 49 175 kilogrammes, comparativement à 53 967 en 1978.
6. La Western Mines Limited, de Vancouver, a signalé en janvier qu'elle s'attend à plus que doubler la vie utile de sa mine d'argent-or-cuivre-zinc située dans la région du Lac Battle, près de l'île Vancouver.

7. The monthly average silver price for January 1980 was \$38.26 (U.S.) an ounce compared with \$21.79 (U.S.) an ounce for December and \$16.60 (U.S.) an ounce for November.
8. The Mexican government has put an excess profit tax on silver and gold sales, effective January 26, 1980.
9. Potash production in 1979 reached 6 175 000 tonnes K_2O , a new record, compared to 6 123 000 tonnes in 1978.
7. Le prix moyen d'une once d'argent en janvier 1980 a été de \$US 38,26, comparativement à \$US 21,79 en décembre et \$US 16,60 en novembre.
8. Le Mexique vient d'imposer une taxe sur les profits excessifs des ventes d'or et d'argent, qui entrera en vigueur le 26 janvier 1980.
9. La production de potasse en 1979 a culminé à 6 175 000 tonnes, nouveau record. En effet, en 1978, elle n'a été que de 6 123 000 tonnes.

ECONOMIC TRENDS

Table 1 shows Canada's unadjusted indexes of Real Domestic Product in terms of 1971=100. The overall index for November was 141.3, up 0.4 per cent from October.

The index for mines, quarries and oil wells increased 0.5 per cent during the month. Iron mines moved from 109.0 in October to 123.7 in November, an increase of 13.5 per cent. Primary metal industries increased 1.6 per cent with smelting and refining showing the largest increase in the group of 8.5 per cent.

Table 2 compares volume of production for eighteen major Canadian minerals. Significant increases in output were recorded over the month in iron ore (up 13.3 per cent), lead (up 59.3 per cent), molybdenum (up 27.2 per cent), uranium (up 18.2 per cent) and gypsum (14.0 per cent). Decreases were recorded in asbestos (7.4 per cent), cement (21.4 per cent) and coal (7.6 per cent).

Table 3 gives the employment and earnings in mining and smelting and refining from 1977 to 1979. Employment in smelting and refining declined 13.4 per cent from 1978 to 1979 while average weekly earnings over the same period increased 10.2 per cent. Tables 4 and 5 show a further breakdown of average weekly wages and hours in selected sectors in both current and constant dollars with accompanying figures A and B.

Table 6, the percentage change in labour income for selected industries shows that mines, quarries and oil wells experienced the largest increase over the 1978-1979 period of 16.9 per cent.

Table 7 shows the days lost due to strikes and lockouts from 1977 to 1979 for all sectors of the economy. A total of 6,555,210 days were lost during the first nine months of 1979 with 1,559,850 days lost in the mining industry.

TABLE 1

Canada, Indexes of Real Domestic Product, by Industries Unadjusted (1971=100)

Industry or Industry Group	1978			1979			Percentage Changes			
	Oct	Nov	Average 1st 11 Months	Oct	Nov	Average 1st 11 Months	Oct 1979	Nov 1979	Nov 1979	1st 11
							Oct 1978	Nov 1978	Oct 1979	Months 1979 1978
Real Domestic Product	137.3	138.8	135.4	140.7	141.3	139.4	2.5	1.8	0.4	2.9
Primary Industries										
Agriculture	26.1	43.1	124.4	34.6	46.4	120.9	32.6	7.7	34.1	-2.9
Forestry	154.8	167.0	122.1	123.0	126.1	121.9	-20.5	-24.5	2.5	-0.2
Fishing and Trapping	161.0	92.7	130.7	116.4	76.8	127.3	-27.7	-17.2	-34.0	-2.6
Mines, Quarries and Oil Wells	109.4	110.0	104.8	119.9	120.5	113.7	9.6	9.5	0.5	8.5
Metal Mines	89.4	79.4	85.4	100.0	101.7	91.5	11.9	28.1	1.7	7.1
Placer and Gold Quartz Mines	61.1	60.5	64.2	63.3	62.9	58.0	3.6	4.0	-0.6	-9.6
Iron Mines	134.1	120.0	79.2	109.0	123.7	120.9	-18.7	3.1	13.5	52.7
Other Metal Mines	79.7	70.4	88.0	99.6	98.1	85.8	25.0	39.3	-1.5	-2.5
Mineral Fuels	115.7	127.5	112.1	128.0	126.6	125.0	10.6	-0.7	-1.1	11.5
Coal Mines	232.1	251.4	225.9	252.3	230.3	243.2	8.7	-8.4	-8.7	7.7
Crude Petroleum and Natural Gas	106.2	117.4	102.8	117.8	118.1	115.3	10.9	0.6	0.3	12.2
Nonmetal Mines	124.4	131.7	120.1	136.4	145.9	131.0	9.6	10.8	7.0	9.0
Asbestos Mines	83.5	83.8	86.0	94.4	100.9	93.7	13.1	20.4	6.9	8.9
Secondary Industries										
Manufacturing	144.0	146.3	134.2	146.5	147.4	140.2	1.7	0.8	0.6	4.5
Nondurable Manufacturing	142.9	144.0	133.3	146.1	147.7	140.6	2.2	2.6	1.1	5.4
Petroleum and Coal Products Industries	138.0	149.8	135.8	140.7	149.7	143.9	2.0	-0.1	6.4	6.0
Durable Manufacturing	145.0	148.7	135.0	146.9	147.2	139.8	1.3	-1.0	0.2	3.6
Primary Metal Industries	126.0	131.5	124.2	134.2	136.3	125.6	6.5	3.7	1.6	1.1
Iron and Steel Mills	141.0	150.0	137.0	155.7	155.6	147.3	10.4	3.7	-0.1	7.5
Steel Pipe and Tube Mills	139.1	133.2	131.3	172.5	164.8	145.8	24.0	23.7	-4.5	11.0
Iron Foundries	162.6	164.3	133.0	124.7	117.1	128.2	-23.3	-28.7	-6.1	-3.5
Smelting and Refining	93.1	93.9	101.6	98.2	106.5	88.5	5.5	13.4	8.5	-12.9
Nonmetallic Mineral Products Industries	162.8	149.6	134.6	153.9	150.2	137.9	-5.5	0.4	-2.4	2.4
Cement Manufacturers	171.6	137.9	131.4	183.7	159.1	146.1	7.1	15.4	-13.4	11.2
Ready-mix Concrete Manufacturers	157.1	127.4	113.3	145.6	125.0	111.5	-7.3	-1.9	-14.1	-1.6
Construction Industry	136.8	124.0	122.6	130.2	118.5	115.5	-4.8	-4.4	-9.0	-5.8
Transportation, Storage, Communication	148.1	148.2	145.2	158.6	157.5	154.8	7.1	6.3	-0.7	6.7
Electric Power, Gas and Water Utilities	151.4	169.2	156.5	159.2	175.2	167.0	5.2	3.5	10.1	6.7
Trade	143.3	149.1	138.9	145.9	149.7	142.1	1.8	0.4	2.6	2.3
Finance, Insurance, Real Estate	153.6	154.2	150.2	158.1	157.5	155.4	2.9	2.1	-0.4	3.4
Community, Business and Personal Service	137.4	137.9	134.0	142.8	143.6	138.3	3.9	4.1	0.6	3.2
Public Administration and Defence	126.7	126.0	129.2	124.7	123.9	127.6	-1.6	-1.7	-0.6	-1.2

TABLE 2

Canada, Production of Leading Minerals
(¹000 tonnes except where noted)

	1978			1979			Percentage Changes			
	October	November	Total 11 months	October	November	Total 11 months	November 79	November 79	1st 11 months	
							November 78	October 79	1979 1978	
Metals										
Copper		55.2	36.9	598.8 ^r	62.4	59.6	571.5	+61.5	-4.5	-4.6
Gold	kg	4 449.7	4 211.2 ^r	47 303.5 ^r	4 167.4	4 448.0	44 481.2	+5.6	+6.7	-6.0
Iron ore		6 050.0	5 966.4	38 024.7	4 437.0	5 027.5	54 671.5	-15.7	+13.3	+43.8
Lead		37.4	35.1	288.9	17.2	27.4	283.6	-21.9	+59.3	-1.8
Molybdenum	t	1 187.5	898.5	12 903.1	668.6	850.8	10 473.3	-5.3	+27.2	-18.8
Nickel		4.6	5.2	121.8 ^r	15.4	14.7	115.7	+182.7	-4.6	-5.0
Silver	t	126.5	115.1	1 143.1	93.5	93.1	1 066.3	-19.1	-0.4	-6.7
Uranium ¹	t	597.0	1 055.1	6 853.3	518.4	612.8	5 682.9	-41.9	+18.2	-17.1
Zinc		97.8	108.0 ^r	931.9 ^r	86.0	83.7	1 079.1	-22.5	-2.7	+15.8
Nonmetals										
Asbestos		138.0	120.2	1 292.5	137.6	127.4	1 356.6	+6.0	-7.4	+5.0
Gypsum		902.5	800.0 ^r	7 473.2 ^r	779.1	887.9	7 543.5	+11.0	+14.0	+0.9
Potash K ₂ O		494.8	545.7	5 795.7	591.7	633.2	6 514.6	+16.0	+7.0	+12.4
Salt		576.9	659.0	5 701.7	629.7	640.0	6 078.6	-2.9	+1.6	+6.6
Cement		1 227.6	921.9	9 973.3	1 267.0	996.0	10 784.5	+8.0	-21.4	+8.1
Lime		195.6	179.9	1 860.0
Fuels										
Coal		2 614.3	2 795.4	27 600.2	3 012.5	2 782.0	30 209.7	-0.5	-7.6	+9.5
Natural gas	million m ³	7 130.3	8 135.1 ^r	80 077.0 ^r	7 863.4 ^r	9 023.1	85 836.4	+10.9	+14.8	+7.2
Crude oil and equivalent	000 m ³	7 254.5	7 648.9 ^r	74 522.7 ^r	8 095.0	7 702.5	84 676.3	+0.7	-4.9	+13.6

¹ Tonnes uranium (1 tonne U = 1.299 9 short tons U₃O₈).^r Revised; .. Not available.

TABLE 3

Canada, Mining Employment and Earnings,¹ 1977-79

		1977	1978	January-September		Percent Change
				1978	1979	1979/1978
Employment						
Metals	thousands	64.4	55.7	56.9	57.4	+0.9
Industrial Minerals	thousands	16.0	15.6	15.8	16.3	+3.2
Structurals ²	thousands	3.9	3.8	3.8	3.4	-10.5
Smelting and Refining	thousands	33.1	30.9	32.0	27.7	-13.4
Average Weekly Earnings						
Metals	dollars	343.51	365.08	358.17	404.00	+12.8
Industrial Minerals	dollars	315.80	342.87	337.23	375.09	+11.2
Structurals ²	dollars	290.28	317.20	315.94	339.08	+7.3
Smelting and Refining	dollars	324.22	347.46	344.32	379.42	+10.2

Source: Statistics Canada.

¹ Includes salaried employees; ² Quarries and sandpits.

TABLE 4

Canada, Average Weekly Wages and Hours of Hourly-rated Employees

	1977	1978	January to September		Percentage Change 1979/1978
			1978	1979	
Mining					
Average hours per week	40.6	40.5	40.4	41.0	+1.5
Average weekly wage (\$)	329.45	354.09	347.77	390.44	+12.3
Metals					
Average hours per week	39.8	39.4	39.2	40.2	+2.6
Average weekly wage (\$)	325.75	344.69	337.17	380.70	+12.9
Mineral fuels					
Average hours per week	41.3	41.0	40.9	40.8	-0.2
Average weekly wage (\$)	333.51	367.16	363.65	404.61	+11.3
Industrial minerals					
Average hours per week	40.3	40.5	40.3	40.1	-0.5
Average weekly wage (\$)	301.92	326.07	320.03	358.07	+11.9
Manufacturing					
Average hours per week	38.7	38.8	38.7	38.8	+0.3
Average weekly wage (\$)	245.13	264.53	261.67	285.46	+9.1
Construction					
Average hours per week	38.7	39.0	39.2	39.6	+1.0
Average weekly wage (\$)	372.83	398.52	397.50	431.14	+8.5

FIGURE A

Canada, Average Weekly Wages of Hourly-rated Employees
(available data: January-September 1979)

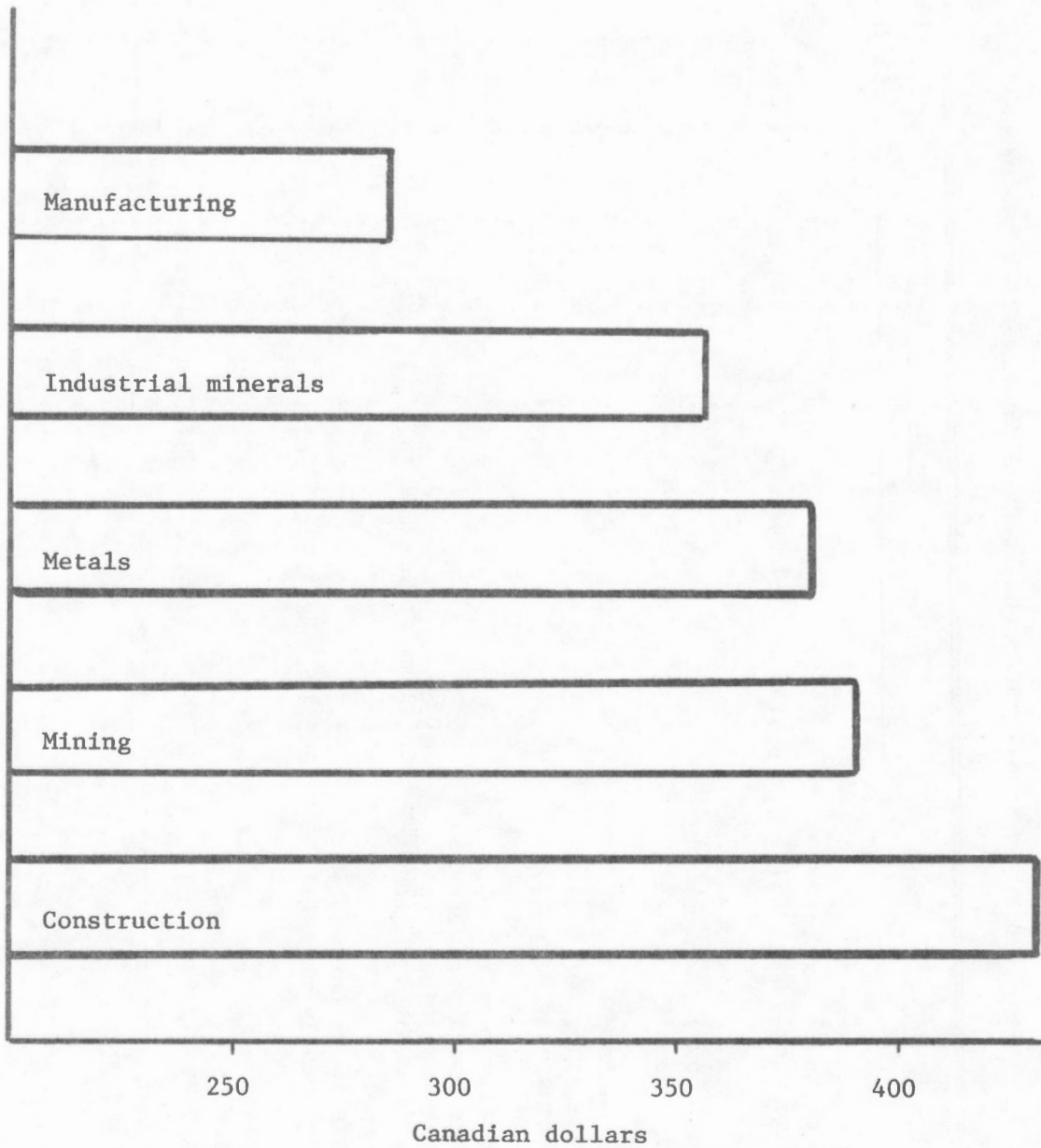


TABLE 5

Canada, Average Weekly Wages of Hourly-rated Employees in Current and 1971 Dollars

	1977	1978	January to September		Percent Change 1979/1978
			1978	1979	
Current dollars					
All mining	329.45	354.09	347.77	390.44	+12.3
Metals	325.75	344.69	337.17	380.70	+12.9
Gold	280.34	300.94	296.73	329.71	+11.1
Mineral fuels	333.51	367.16	363.65	404.61	+11.3
Coal	303.53	321.98	319.13	355.87	+11.5
Industrial minerals	301.92	326.07	320.03	358.07	+11.9
1971 dollars					
All mining	204.88	202.11	200.56	206.58	+3.0
Metals	202.58	196.74	194.45	201.43	+3.6
Gold	174.34	171.77	171.12	174.45	+2.0
Mineral fuels	207.41	209.57	209.72	214.08	+2.1
Coal	188.76	183.78	184.04	188.29	+2.3
Industrials minerals	187.76	186.11	184.56	189.46	+2.6

TABLE 6

Canada, Per Cent Change in Labour Income (current dollars) by Industry

	1976-1977	1977-1978	1978-1979 ^e
	%	%	%
All goods producing industries	9.1	6.7	11.2
Forestry	10.2	11.1	10.7
Mines, quarries and oil wells	13.8	5.2	16.9
Manufacturing industries	8.4	10.1	12.7
Construction industry	8.5	-3.4	4.2
All service producing industries	10.5	10.0	10.5

^e Estimate

TABLE 7

Canada, Person-days Lost Due to Strikes and Lockouts 1977-79

	1977	1978	January - October	
			1978	1979
Agriculture	-	20	20	10
Forestry	22,170	67,810	43,920	83,080
Fishing	14,960	1,200	1,200	0
Mines	91,050	1,699,460	1,157,380	1,559,850
Manufacturing	1,665,460	2,527,980	2,288,440	3,014,440
Construction	404,990	1,232,610	1,186,090	84,010
Transportation and utilities	527,100	945,480	885,650	916,420
Trade	128,470	245,950	247,310	186,940
Finance	10,720	7,520	2,740	26,040
Service	328,150	407,650	314,550	302,360
Public administration	114,810	257,140	284,950	333,330
Various industries	-	-	-	48,730 ¹ .
Total	3,307,880	7,392,820	6,412,250	6,555,210

Source: Labour Canada

¹. Includes provincial government employees working in various industries.

- Nil.

REGIONAL PROFILES

MANITOBA

The value of mineral production has declined sharply in 1978, principally because of a large drop in the output of nickel and to a less extent of zinc. In 1979, this total value rebounded to more than \$585 million, 27.4 per cent higher than in 1978, mainly because of higher prices for metals. The mineral industry of Manitoba has some important segments, but compared with many other parts of Canada, it has relatively less impact on the provincial economy. The continuing high level of prices for metals gives a basis for a somewhat optimistic view of the immediate future for the production of minerals in the province.

Economic Indicators

			Change Over	Proportion compared
			Previous Year	with all Canada
			(per cent)	
Population,	'000	1,030.3	-0.2	4.4
July 1, 1979				
Labour Force	'000	491	0.6	4.2
August 1979				
Employment	'000	467	1.5	4.3
August 1979				
Unemployment	'000	24	-17.2	3.1
August 1979				
Employed in Mining*	'000	5.7	-1.7	4.0
August 1979				
Average weekly wages,**				
mining & milling,	\$	373.83	10.0	90.1
August 1979				
GPP		9,300	9.4	4.0
(1978 preliminary)\$000,000				

* Mines, Quarries and Oil Wells, including milling, SIC 050-099. Data for firms of 20 or more employees only.

** Earnings of All Employees, in firms of 20 or more employees.

Production of Principal Minerals, 1979 (Preliminary)

Commodity	Value (\$'000)	Change From 1978 (per cent)	Proportion compared with all Canada
Nickel	221,918	38.1	26.9
Copper	139,288	40.6	9.2
Crude Petroleum	48,005	4.5	0.6
Zinc	44,604	2.0	4.0
Cement	38,712	12.1	5.3
Sand and Gravel	30,000	7.2	6.7
Cobalt	14,814	69.8	18.0
Gold	14,357	37.5	2.6
Silver	10,221	79.3	2.3
Stone	9,920	15.0	2.9
Metals	446,840	35.4	5.6
Structural Materials	83,337	9.0	4.8
Fuels	48,005	4.5	0.3
Non-metals	7,256	0.1	0.4
Total	585,438	27.4	2.2

Exploration Activity

The upturn that began in 1978 continued in 1979. Taking and drilling have both increased strongly. The major companies - Inco Limited, Hudson Bay Mining and Smelting Co., Limited and Sherritt Gordon Mines Limited - have substantially increased their exploration programs. Other companies, including Esso Minerals Canada and Granges Essem A/B, are active. Base metal belts, the northwestern part of the province, adjacent to the active uranium activity of northern Saskatchewan, and old gold camps are receiving particular attention.

Mining Developments

Under the terms of a 10-year production agreement, Hudson Bay Mining and Smelting is developing the small rich copper-zinc-gold-silver property jointly owned by Falconbridge Nickel Mines Limited and Stall Lake Mines Limited and located about a mile from Hudson Bay's Stall Lake mine in the Snow Lake area. Production is scheduled to commence in the latter part of 1982, and the ore will be shipped to the nearby Stall Lake Concentrator that Hudson Bay began operating in June 1979.

With higher tantalum pentoxide prices, Tantalum Mining Corporation of Canada Limited announced in November that it would spend \$1 million to expand its processing plant nearly 40 per cent to a rated capacity of about 226 000 tonnes a year. Recent improvements in technology will enable the company to start processing tantalum-bearing tailings. Also, a feasibility study is planned for a lithium processing plant at the mine site.

Provincial Government Activity

A major change in organization took place in November with the formation of the Department of Energy and Mines. The Minister of this new department is the Honourable Donald W. Craik, who retains his responsibilities for Finance, Manitoba Hydro and the Manitoba Energy Council. The Deputy Minister is Paul Jarvis, who was Deputy Minister of the former Department of Mines, Natural Resources and Environment. The Mineral Resources Division (the mines sector) of the former department has been moved intact in the new department, with Dr. Ian Haugh as Executive Director.

NEWFOUNDLAND

Rebounding from reduced output in 1978 resulting from the three-month strike in the iron ore industry, Newfoundland's mineral production reached the record total of \$1.1 billion in 1979. Iron ore output was up very strongly, 68 per cent over the previous year to \$949 million. Zinc output rose 6.7 per cent in volume, but 34.2 per cent in value. Copper output fell 3 700 tonnes to 7 800 t and 2.9 per cent in value to \$18.4 million. The value of asbestos more than doubled compared with 1978 to \$41 million.

Exploration Activity

Exploration activity in the province remained high in 1979, as it had the year before when about 9,000 claims were staked. The previous annual staking record had been about 2,500 claims. This activity was due in part to the large amount of basic geoscientific work being done by the province's Department of Mines and Energy under combined federal/provincial funding. Newfoundland has also opened to claim-staking large areas formerly held under long term concessions.

Westfield Minerals Limited continued its program of exploration in the Deer Lake area. The company spent close to \$1 million in 1979 stripping, trenching and diamond drilling in the search for the source of very high grade, uranium-bearing boulders.

Production of Principal Minerals, 1979 (Preliminary)

Commodity	Value (\$000)	Change From 1978	Proportion compared with all Canada (per cent)
Iron ore	949,449	68.3	50.3
Zinc	49,075	34.2	4.4
Asbestos	41,019	123.2	6.4
Copper	18,415	-2.9	1.2
Cement	8,180	43.9	1.1
Sand & Gravel	7,950	6.7	1.9
Lead	7,692	6.6	1.9
Gypsum	5,085	2.9	11.9
Silver	4,318	32.9	1.0
Metals	1,033,565	62.9	12.9
Non-metals	47,645	92.7	2.6
Fuels	-	-	-
Structural Materials	18,942	19.2	1.1
Total	1,100,152	63.0	6.8

Mining Developments

Production in 1982 is planned for the Brinco Limited - Urangesellschaft Canada Limited, Kitts-Michelin uranium deposits in east-central Labrador if permission to open the mine is obtained. Hearings to this effect took place before an environmental assessment committee late in 1979. Eventual output of about 600 000 kg of U₃O₈ a year is expected.

Layoffs continued during 1979 at ASARCO Incorporated's Buchans mine. About 300 people were still employed at year-end, compared with 1,000 people when the mine was operating at full capacity; it is expected to close in mid-1980. Exploration continues in the Buchans area, and about 60 jobs may result if a planned operation to recover barite from tailings goes ahead.

Economic Indicators

			Change Over Previous Year	Proportion compared with all Canada (per cent)
Population, July 1, 1979	'000	574.8	0.9	2.4
Labour Force August 1979	'000	226	3.7	1.9
Employment August 1979	'000	199	6.4	1.8
Unemployment August 1979	'000	27	-12.9	3.5
Employed in Mining* August 1979	'000	6.0	3.4	4.2
Average weekly wages,** mining & milling, August 1979	\$	412.36	4.9	99.4
GPP (1978 preliminary)\$000,000		2,988	5.0	1.3

* Mines, Quarries and Oil Wells, including milling, SIC 050-099. Data for firms of 20 or more employees only.

** Earnings of All Employees, in firms of 20 or more employees.

Provincial Government Activity

Activity supported under the \$12 million Canada-Newfoundland Minerals Sub-Agreement 1976-1981, will continue during 1980.

Geological Mapping: Geological mapping parties will be in the field continuing work that has been underway since the start of the sub-agreement. Ten parties will continue mapping on the Island of Newfoundland. Some mapping projects are nearing completion and others have been published in preliminary form. In Labrador, an intensive effort is being carried out to extend geological mapping of the Grenville Province.

Support Services: A core-shack, financed under the sub-agreement is under construction at Torbay and is expected to be completed shortly. Designed to store diamond drill core, the building will also serve as a rock laboratory. When the facility is ready the provincial Department of Mines and Energy will assemble core from various drill sites across the island. It will be kept available for inspection by mining companies and others involved in mineral exploration.

METALLIC MINERALS AND PRODUCTS

Aluminum

Aluminum Company of Canada, Limited is actively pursuing feasibility studies for expanding its power generating and smelting complex at Kitimat, British Columbia. The decision to proceed with a proposed \$2.0 billion expansion program (spread over the next 10-20 years) is dependent on financing and world market conditions for aluminum. The bulk of the metal from the new smelters (estimated at 520 000 tonnes additional capacity) would be for export.

A recent newspaper article quoted the British Columbia Minister for Energy Mines and Petroleum Resources as stating that all future hydro-electric development on B.C. rivers will be done through the British Columbia Hydro and Power Authority. An Alcan spokesman said it is unlikely to have any impact on company plans.

The forecast for aluminum in Europe is that production capacity in Europe will rise by less than 3 per cent per year through to 1983, while demand will increase at an annual rate of 5-6 per cent over the next three years. It is unlikely that capacity can be raised or productivity increased due to energy costs and environmental controls.

It was reported that Pechiney Ugine Kuhlmann Development, Inc. is to undertake a feasibility study for a bauxite extraction plant (800 000 tonnes-a-year) and an aluminum facility (annual capacity of 200 000 tonnes) in the state of Orissa, India. The proposed project is part of a trade and development framework agreement between France and India.

Copper

Copper prices on the London Metal Exchange rose from \$1.02 (U.S.) to a high of \$1.37 (U.S.) a pound, on January 30, dropping to \$1.34 a pound at month end. The Canadian producer price climbed from \$1.23 a pound to \$1.51 a pound during the Month. At month end, copper stocks in the LME and COMEX warehouses stood at 117 100 tonnes and 103 500 tonnes respectively.

A production agreement has been reached by Hudson Bay Mining and Smelting Co., Limited with Falconbridge Nickel Mines Limited and Stall Lake Mines Limited. Under the terms of the agree-

ment, Hudson Bay undertakes to spend some \$10 million to develop for production the Rod deposit of Stall Lake Mines Ltd., near Snow Lake, Manitoba. It is anticipated that production will commence in the second half of 1982. Previous work indicated an ore reserve of 610 210 tonnes averaging 5.38 per cent copper, 2.28 per cent zinc, with values in silver and gold.

The management of Craigmont Mines Limited plans to dissolve the company and distribute company assets to shareholders when its copper mine near Merritt, British Columbia closes early in 1981. President Ross Duthie told the annual meeting that if the price of copper should rise to \$2.00 (U.S.) per pound, the mine could be operated for a few months longer, but that the remaining material is very low grade.

Noranda Lakeshore Mines, Inc., of Casa Grande, Arizona announced on January 9 that it intends to begin a \$25.0 million capital development program to bring its oxide orebody into production. Initial production is planned for July, 1980, at a rate of 6 000 tonnes per day. The work force, currently 109 employees will be increased to 500 by July.

Some 9,800 workers at the El Teniente mine, Chile's second largest copper mine with an annual output of 260 000 tonnes of copper, went out on strike on January 25 to support their demand for a 33 per cent wage increase. The company had previously offered 9 per cent. The strike was settled on February 1 when the employees accepted a new pay offer by Corporacion del Cobre de Chile (CODELCO).

Also in Chile, Luis Alberto Reyes, vice president of CODELCO, the Chilean state copper company, has forecast that Chilean copper output is expected to decline steadily, beginning in 1980, owing to lower ore grades. Output at CODELCO's large mines will total 830 000 to 850 000 tonnes in 1980, compared with 915 065 tonnes last year. Total Chilean copper output in 1979 amounted to 1 065 000 tonnes, with medium and small mines accounting for some 150 000 tonnes of this. Chilean copper production was 1 035 005 tonnes in 1978 and 1 056 000 tonnes in 1977. Grades of ore to be produced at Chuquicamata will decline to 1.03 per cent Cu by the year 2000 from 2.07 per cent in 1980, at El Teniente to 1.26 per cent from 1.54 per cent and at El Salvador to 0.90 per cent from a current 1.12 per cent. The grade of ore to be produced from the Andina Mine is expected to remain unchanged at 1.10 per cent.

CODELCO hopes to complete studies later this year on the expected decline in grades.

In October 1979, the U.S. Federal Trade Commission (FTC) accepted a final consent agreement under antitrust laws, that requires the Atlantic Richfield Company (ARCO), a large U.S. oil company, to divest itself of certain U.S. copper properties acquired with the

acquisition of The Anaconda Company by ARCO. A negotiated settlement resulted in the consent order, with a condition attached to the sale of Anaconda to ARCO being that the copper properties not be sold to a list of "ineligible producers" of eight U.S. and three Canadian companies or any other producers having more than 5 per cent of the U.S. copper market. The Canadian producers included are Noranda Mines Limited, Inco Limited, and the Anglo American group, which includes Hudson Bay Mining and Smelting Co., Limited which in turn controls Inspiration Consolidated Copper Company of the United States.

Following formal objections by the eight "ineligible U.S. producers", a modified consent order from the FTC reduced the list of disqualified producers to only the three Canadian companies and raised the market share for disqualification of other purchasers from 5 per cent to 10 per cent.

Gold

The gold price continued its upward trend in January 1980 and new highs were recorded. Uncertainties relating to the world's economic and political situation, especially in Afghanistan and Iran, and action by speculators were largely responsible for the activity in the gold market. The opening gold price and the low for the month of January, 1980 on the London Gold Market, was \$559.00 (U.S.) per troy ounce. This was up considerably from the closing price for the year 1979 of \$524.00 (U.S.) an ounce. The high price for January was \$850.00 (U.S.), per ounce, recorded on January 21. Equivalent Canadian price was \$986.77. Prices declined from this high to close at \$635.00 (U.S.) an ounce for January.

The monthly average gold price for January, 1980, of the afternoon fixing prices on the London Gold market, was \$675.31 (U.S.) (\$785.97 Cdn.) per ounce of gold for December 1979. For comparison the average gold price for January 1979 was \$227.27 (U.S.) (\$270.41 Cdn.) per ounce.

Canadian gold production for 1979 was estimated to be 49 175 kilograms compared with 53 967 kilograms in 1978. The gold price trend was significantly upwards. The opening price on the London Gold Market for 1979 was \$227.15 (U.S.) per ounce, slightly above the year's low and it reached an all time high of \$524.00 (U.S.) on December 31. The average gold price for 1979 was \$306.70 (U.S.) (\$359.25 Cdn.) compared with \$193.23 (U.S.) (\$220.40 Cdn.) per troy ounce for 1978.

The International Monetary Fund (IMF) held its forty first gold auction on January 2, 1980, under the bid price method and awarded a total of 440,000 fine ounces of gold to five successful bidders at an average price of \$562.85 (U.S.) per troy ounce. Prices offered by successful bidders ranged from \$561.00 (U.S.) per ounce to \$564.01 (U.S.) per ounce. Bids were received for a total 1,342,400 ounces, indicating an active interest although the actual number submitting bids was only ten. The bidders were European banks or affiliated companies.

The Treasury Department of the United States did not hold a gold auction in January 1980.

Iron and Steel

Although no firm contracts have been signed with Foothills Pipe Lines Ltd. for the supply of pipes for the Alaska Highway natural gas pipeline the company's board of directors of Interprovincial Steel and Pipe Corporation Ltd. (IPSCO) of Regina has approved a \$41 million capital expenditure for the expansion of their Regina and Edmonton steelmaking plants.

The expansion is expected to be completed in 15 months and will include a 125-tonne electric arc furnace, four new soaking pits and a spiral pipe mill in Regina. Another spiral pipe mill will also be added to the IPSCO's Edmonton operation.

Some 265 permanent new jobs will be created by the expansion at Regina and 100 at Edmonton.

The board of directors of British Steel Corporation is planning reduction in its steelmaking plant capacity due to a decrease in demand for steel products in the United Kingdom and in its other markets. British Steel's current capacity is 21.5 million tonnes of raw steel and the board plans to reduce capacity to 15 million tonnes a year (Canada's capacity at the end of 1979 was 18 million tonnes a year). This would reduce employment considerably and perhaps by as much as 50 000.

In order to protest the proposed reduction in jobs the employees at British Steel have been on strike for about one month. British Steel owns 41.7 per cent of Sidbec-Normines Inc. and takes the same percentage of the company's annual production of iron ore pellets. Sidbec-Normines operates a 6 million-tonne-a-year iron ore pellet plant at Port Cartier, Quebec. At present, production destined for British Steel is being stockpiled at Port Cartier.

Lead

During January 1980 lead prices weakened in mid-month and firmed at the close to the same general level as prevailed one month earlier. At month-end LME prices were equivalent to 53 (U.S.) cents a pound. Canadian and U.S. producers prices were 57 cents a pound and 48-52 cents a pound respectively. Stocks of lead in LME warehouses declined steadily during the month, from 17 525 tonnes on January 31 to 15 075 tonnes on February 1.

Western Mines Limited of Vancouver reported during January that it expects to more than double the life of its silver-gold-copper-zinc mine in the Buttle Lake area of Vancouver Island. The presence of a new orebody was confirmed in recent diamond drilling. Mine life is now expected to be at least doubled from the previously expected four years. The mine produces zinc, lead, silver and gold.

The U.S. Bureau of Mines reported U.S. mine production of lead in 1979 to be 463 000 tonnes, about 4 per cent less than in 1978. Primary metal production was reported to be slightly more than the 515 000 tonnes produced in 1978. Secondary metal production was 689 000 tonnes of lead, which was about 60 per cent of apparent consumption. Imports of lead metal into the United States were over 180 000 tonnes. Transportation was the major lead use with 61 per cent being used in batteries, 12 per cent in gasoline additives, 6 per cent in paints, 3 per cent in construction and 2 per cent in electrical uses.

A bill H.R. 6089 to delay implementation of ad valorem rates of duty on unwrought lead in the U.S. was introduced into the U.S. Congress. The bill responds to strong pressure by a coalition of lead consuming companies to reduce or delay the new tariff, which is an effective increase from the former specific duty rate to a 3.5 per cent ad valorem rate.

The U.S. Environmental Protection Agency has formally softened its policy concerning the sale of leaded gasoline from retail service stations. The EPA decided not to enforce the requirement issued in 1973 that large gasoline stations which run out of unleaded gas must also stop selling leaded gas even if there were ample supplies of the latter. The decision not to enforce the rule was motivated by a desire not to withhold available gasoline of any type from the market place.

Magnesium

A feasibility study, to evaluate expansion of magnesium production by Chromasco Limited, is in its final stages. Decision to proceed, is expected by mid-year. This company has extended its agreement with Pechiney Ugine Kuhlmann Development, Inc. of France to use that company's furnace technology. It has not yet been decided whether the proposed 13 600 tonne a year expansion will be located in Ontario or Quebec.

According to Metal Bulletin, Magohrom Oour Bela Stena of Yugoslavia has opened a new magnesium plant at Baljevac in Serbia. This plant has a capacity of about 4 530 tonne a year and was built with the technical assistance of Pechiney Ugine Kuhlmann Development, Inc.

Nickel

The refineries of AMAX Nickel, Inc. in Louisiana and Inco Metals Company in Wales are still on strike. Inco's Clydach refinery has been on strike since October 18 and there are no indications of an early settlement. Because of the strike and damage caused to the refinery by a flood at the end of December, Inco Europe has declared force majeure on delivery of its cobalt salts and its battery grade nickel powders. It is estimated that after the strike is settled several months will be required to repair the floor damage and attain pre-strike levels of production. AMAX's Port Nickel refinery has been on strike since the end of August and since then the plant has been operated at reduced capacity by supervisory and salaried personnel. No progress has been reported in resolving the dispute with its employees. AMAX appears able to continue to supply its customers with nickel products.

Silver

Silver continued its sharp upward trend in January 1980, reaching an all time high of \$48.00 (U.S.) a troy ounce on January 21. The opening price for the month as quoted by Handy & Harman of New York was \$37.75 (U.S.) an ounce, up significantly from the closing price for 1979 of \$28.00 (U.S.). The low silver price for January was \$34.00 (U.S.) a troy ounce being recorded on January 10 and 31. The unsettled condition of the world, both economically and

politically were partly responsible for the silver price increase but actions by speculators played an important role. The rules and regulations governing the operation of the silver futures markets in the United States were adjusted to ensure an orderly trading market and to reduce the adverse effect of excessive speculation.

The monthly average silver price for January 1980 was \$38.26 (U.S.) an ounce compared with \$21.79 (U.S.) an ounce for December and \$16.60 (U.S.) an ounce for November, the price more than doubling in the two month period. The average silver price in Canadian dollars for the month of January 1980 was \$1,428.71 per kilogram (\$444 per troy ounce) compared with \$812.24 per kilogram (\$25.26 per ounce) for December. The high Canadian silver price was \$55.73 per ounce.

Canada's primary production of silver in 1979 was estimated at 1 184 000 kilograms, down somewhat from the 1 266 927 kilograms produced in 1978. In 1978 Canada was the third largest silver producer in the world but its position in 1979 could be challenged by the United States and Peru. The silver price in 1979 was erratic but the trend was moderately upwards for the first eight months of the year and sharply upwards in the latter part of the year. The average silver price for 1979 as quoted by Handy & Harman of New York was \$11.094 (U.S.) per troy ounce. The average Canadian silver price for 1979 was \$417.353 per kilogram (\$12.98 per ounce). The opening silver price for 1979 was \$5.966 (U.S.) per ounce, near the year's low and the closing price was \$28.00 (U.S.) per ounce, the high for the year. Political and economic events and announcements largely affected the silver market in 1979.

Negotiations between Dome Mines Limited and Earth Resources Company of Dallas, Texas for Dome to purchase the mining assets of Earth Resources have been terminated. The mining assets included a 52.5 per cent interest in the producing De Lamar silver mine in Idaho.

The Mexican government has put an excess profit tax on silver and gold sales, effective January 26, 1980. The tax will be at a level of 40 per cent determined by a formula taking into account revenue from silver and gold sales, cost of production, reasonable profit level and other factors and adjustments will be made on a monthly basis. The government estimates increased annual revenue from this source will amount to about 7 to 8 billion pesos (1 peso equivalent to about \$0.05 Canadian).

Tin

The U.S. Senate passed the final version of the controversial tin-silver-diamond disposal bill which authorized the sale of 35,000 lt of tin (5,000 lt of which is to be contributed to the International Tin Agreement) and 3 million carats of diamonds but **no** silver. The bill also authorizes \$273 million for stockpile acquisitions at some future date.

Bolivia is totally against any U.S. tin sales proposal. Bolivia has hinted that it may not participate in the Sixth International Tin Agreement, which will take effect on July 1, 1981. Bolivia views the GSA sales as harming the Bolivian economy, to the extent of a loss in foreign exchange of \$60 - \$100 million per year, and a threat to the country's fragile return to democracy.

It was reported that Brazil has decided against immediate participation in the International Tin Agreement. One of the reasons for not joining was the potential impact such a move would have on present production schedules. Brazil is taking a closer look at its tin reserves.

INDUSTRIAL MINERALS AND PRODUCTS

Anhydrous ammonia

On January 18, the U.S.A., imposed a quota on imports of anhydrous ammonia from the U.S.S.R. The quota will be in effect for one full year to January 18, 1981 and will be 1,000,000 short tons.

It was only in December of 1979 that a similar curtailment of imports from the U.S.S.R., requested by U.S.A., producers was rejected by Jimmy Carter because it was not "in the national interest".

Imports of ammonia from the U.S.S.R., were below 1 million short tons in 1979 but were expected to be in the 1 to 2 million short tons per year range starting in 1980.

Asbestos

Woodsreef Mines Limited, N.S.W. Australia, continues to operate at a loss. Accumulated losses to date have reached more than \$41 (million and government assistance has reached \$2.8 (A) million. The parent company, Woodsreef Minerals Ltd. of Toronto, is planning new financing of approximately \$5 (Cdn) million as part of a plan to remove it's subsidiary from receivership. Output of fibre since the operation began in February, 1972 through September, 1979 amounted to 407 918 tonnes.

Some of the parent company's ambition to persevere with additional financing is apparently based on optimism surrounding the development by the subsidiary of a wet milling process designed to increase fibre recovery and to eliminate environmental problems.

A Soviet technical exchange delegation visited the Quebec asbestos mining region between November 26 and December 6, 1979. The tour was at the invitation of The Quebec Asbestos Mining Association and was part of a program of reciprocal visits which first began in 1960.

Representatives of the Soviet group, headed by A.Y. Anpilov, Deputy Minister of Building Materials of the U.S.S.R., were interested primarily in mining-milling technology and classification of asbestos fibres. The need for close cooperation in environmental dust emission control was also emphasized, although health problems were stated to be almost non-existent in the U.S.S.R., "thanks to measures taken in order to improve health and safety conditions in our mines and mills".

The Soviets stated that approximately 80 per cent of total asbestos production was used by the asbestos-cement industry and with continuing industrialization the same percentage of production will continue to be absorbed for a number of years. It was also reported that a new complex, Kiembay, is expected to produce about 225 000 tonnes of fibre a year, with an ultimate goal to reach 450 000 tonnes a year.

United Asbestos Inc., Matachewan, Ontario, announced that it has signed a formal agreement with the Toronto Dominion Bank for a \$35 million loan (also see September, 1979 monthly report). The loan will be used to discharge all existing indebtedness and will permit the company to recover possession and control of its assets as well as removal of the trustee for the principal secured creditors.

Potash

Production in 1979 was 6 715 000 tonnes K_2O , a new record, compared to 6 123 000 tonnes in 1978. Shipments, at 7 150 000 tonnes however are a much better indicator of unusually strong world demand for potash. Drastic curtailment of exports from the U.S.S.R. is the main reason for this condition.

A forecast of Canadian production of potash in the 1980's was completed by the Industrial Minerals Section of EMR. At 90 per cent of capacity utilization projections are as follows:

<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>
	(thousands of tonnes K_2O equivalent)						
6 715	7 200	7 300	8 100	8 600	9 800	10 900	11 600

There is a high probability that market conditions will allow for high productivity rates at least to 1982, past that year however a world surplus cycle may result in capacity utilization of less than 90 per cent perhaps for some years as low as 80 per cent.

NEW PUBLICATIONS

The following publications were prepared in the Mineral Policy Sector, Department of Energy, Mines and Resources and released for distribution in January:

NOUVELLES PUBLICATIONS

Les publications suivantes ont été préparées par le Secteur de la politique minérale du ministère de l'Énergie, des Mines et des Ressources et diffusées pour distribution au cours du mois de janvier.

Annual Reviews of the Canadian Mineral Industry, 1978,
Lightweight Aggregates; Chromium; price \$1.00 a copy.

Revue annuelle de l'industrie minérale du Canada, 1978:
Le fer et l'acier; la potasse; prix: \$1 l'exemplaire.

Canadian Minerals yearbook, 1977.
price Canada \$35.00, Other Countries \$42.00.

The above publications are available from the Canadian Government Publishing Centre, Supply and Services Canada, Ottawa.

Les publications ci-dessus sont disponibles en s'adressant au: Centre d'édition du gouvernement du Canada, Approvisionnement et Services Canada, Ottawa.

