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The Canadian Mineral Industry Monthly Report

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Resources Canada

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Ressources Canada

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.

Mineral Policy Sector
Department of Energy, Mines
and Resources
580 Booth Street
Ottawa, Canada K1A 0E4

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.

Secteur de la Politique Minérale
Ministère de l'Énergie, des Mines
et des Ressources
580, rue Booth
Ottawa, Canada K1A 0E4

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THE CANADIAN MINERAL INDUSTRY FOR NOVEMBER

L'INDUSTRIE MINÉRALE DU CANADA - NOVEMBRE

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

Ceci constitue un résumé des événements survenus dans l'industrie minière du Canada, selon les renseignements disponibles en novembre.

HIGHLIGHTS

1. Canada's unadjusted index of Real Domestic Product was 161,6 in September.
2. The index for Mines, Quarries and Oil Wells increased 1.7 per cent from 114.7 in August to 116.6 in September.
3. The U.S. copper strike was settled late in November, when workers at the last two companies, ASARCO Incorporated and Anaconda Copper Company returned to work.
4. Noranda Mines Limited announced on November 12 that negotiations with the Export Development Corporation and several commercial banks involved in the financing of Noranda's Andacollo copper mining project in Chile had been unsuccessful, and the engineering activities on the project had been suspended.
5. Swiss customs statistics show that the U.S.S.R. shipped twenty-five tonnes of gold to Switzerland in September and nine tonnes in October.

FAITS SAILLANTS

1. L'indice non désaisonnalisé du produit intérieur réel du Canada était de 161,6 en septembre.
2. En septembre, l'indice des mines, carrières et puits de pétrole était de 116,6, soit une augmentation de 1,7 % par rapport au niveau de 114,7 en août.
3. La grève touchant l'industrie américaine du cuivre a été réglée à la fin de novembre lorsque les travailleurs des deux dernières sociétés, l'ASARCO Incorporated et l'Anaconda Copper Company, se sont remis au travail.
4. Le 12 novembre, la Noranda Mines Limited a annoncé que les négociations entreprises avec la Société pour l'expansion des exportations et plusieurs banques commerciales relativement au financement du projet Andacollo (Chili) d'exploitation minière du cuivre avaient été infructueuses et que les travaux d'ingénierie du projet avaient été mis en suspens.
5. Les Statistiques douanières de la Suisse ont révélé que l'U.R.S.S. y a expédié 25 tonnes d'or en septembre et 9 tonnes en octobre.

6. Inco Metals Company announced on November 7, an across-the-board 6 per cent discount on its nickel products bought for delivery in December and the first quarter of 1981.

7. Potash Corporation of Saskatchewan announced the start of construction on a new potash mine at Bredenbury near the Saskatchewan - Manitoba border.

6. Le 7 novembre, l'Inco Metals Company a annoncé un rabais général de 6 % sur le prix d'achat des produits de nickel qui seront livrés en décembre et dans le premier trimestre de 1981.

7. La Potash Corporation of Saskatchewan a annoncé le début de la construction d'une nouvelle mine de potasse à Bredenbury, près de la limite Saskatchewan-Manitoba.

ECONOMIC TRENDS

Table 1 shows Canada's unadjusted indexes of Real Domestic Product (RDP) in terms of 1971=100. The overall index for September 1980 was 161.6, a strong increase of 19.8 per cent over the previous month. Mines, quarries and oil wells showed a modest increase of 1.7 per cent from 114.7 in August to 116.6 in September. In the mining sector, iron mines showed the greatest increase over the period of 16.6 per cent. The index for mineral fuels decreased 3.4 per cent and nonmetal mines showed an increase of 9.3 per cent during the month.

In the manufacturing sector, primary metal industries increased 14.7 per cent with iron and steel mills and iron foundries showing strong increases of 26.9 and 24.4 per cent respectively.

Table 2 gives volume of production for Canada's leading minerals. Significant changes were recorded in September compared with the previous month in gold (up 14.7 per cent), iron ore (down 20.5 per cent), molybdenum (down 20.6 per cent), uranium (up 25.6 per cent), gypsum (up 19.0 per cent) and salt (up 26.1 per cent).

Table 3 compares Canada's mineral trade for the first six months of 1979 and 1980. Total mineral imports from January to June, 1980 reached \$3.7 billion compared with \$2.2 billion during the same period of 1979, a 65.6 per cent increase. At the same time exports totalled \$4.9 billion in 1979 compared with \$7.3 billion in 1980, a 49.4 per cent increase. Figures A, B, C and D illustrate the contribution of each sector to the total.

TABLE 1

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

Industry or Industry Group	1979			1980			Percentage Changes			
	Aug	Average		Aug	Average		Aug 1980		Sept 1980	1st 9 Months 1980
		Sept	1st 9 Months		Sept	1st 9 Months	Aug 1979	Sept 1979	Aug 1980	
Real Domestic Product	135.8	162.9	138.4	134.9	161.6	138.6	-0.7	-0.8	19.8	0.2
Primary Industries										
Agriculture	41.4	659.7	132.1	48.8	654.8	137.0	17.9	-0.7	1241.8	3.7
Forestry	137.6	137.9	119.5	107.8	127.1	106.3	-21.7	-7.8	17.9	-11.1
Fishing and Trapping	256.9	115.9	143.8	172.2	98.4	123.5	-33.0	-15.1	-42.9	-14.1
Mines, Quarries and Oil Wells	118.7	120.5	114.4	114.7	116.6	117.9	-3.4	-3.2	1.7	3.1
Metal Mines	104.6	98.5	87.0	86.9	92.7	94.7	-16.9	-5.9	6.7	8.8
Placer and Gold Quartz Mines	58.6	52.4	56.9	49.1	53.1	53.9	-16.2	1.3	8.1	-5.2
Iron Mines	136.5	137.7	119.0	93.3	108.8	104.5	-31.6	-21.0	16.6	-12.2
Other Metal Mines	98.9	91.1	80.6	87.1	90.6	94.2	-11.9	-0.5	4.0	16.9
Mineral Fuels	117.1	121.1	124.9	121.5	117.4	122.1	3.8	-3.1	-3.4	-2.2
Coal Mines	218.4	262.1	243.5	289.8	287.3	258.7	32.7	9.6	-0.9	6.2
Crude Petroleum and Natural Gas	108.8	109.6	115.2	107.7	103.5	110.9	-1.0	-5.6	-3.9	-3.7
Nonmetal Mines	118.0	143.6	129.2	122.8	134.2	133.3	4.1	-6.5	9.3	3.2
Asbestos Mines	96.9	96.4	93.7	96.9	97.4	90.0	0.0	1.0	0.5	-4.0
Secondary Industries										
Manufacturing	125.4	144.1	133.9	120.7	138.5	130.0	-3.7	-3.8	14.8	-2.9
Nondurable Manufacturing	132.8	143.7	133.5	128.2	139.9	132.4	-3.5	-2.6	9.1	-0.8
Petroleum and Coal Products Industries	150.3	138.3	140.8	147.3	125.9	141.6	-2.0	-9.0	-14.5	0.6
Durable Manufacturing	118.2	144.6	134.2	113.3	137.3	127.5	-4.1	-5.0	21.2	-5.0
Primary Metal Industries	108.3	122.6	122.9	112.7	129.3	126.0	4.1	5.5	14.7	2.6
Iron and Steel Mills	131.3	150.2	144.3	120.8	153.3	142.4	-8.0	2.1	26.9	-1.3
Steel Pipe and Tube Mills	116.7	139.8	122.2	117.3	126.8	119.2	0.5	-9.3	8.1	-2.4
Iron Foundries	88.0	115.9	121.0	76.1	94.7	97.1	-13.5	-18.3	24.4	-19.8
Smelting and Refining	75.3	76.2	85.4	110.6	106.5	110.2	46.9	39.8	-3.7	29.0
Nonmetallic Mineral Products Industries	134.6	147.0	121.2	120.2	133.4	111.2	-10.7	-9.3	11.0	-8.3
Cement Manufacturers	194.0	191.0	145.2	166.9	164.0	131.8	-14.0	-14.1	-1.7	-9.3
Ready-mix Concrete Manufacturers	155.2	161.4	108.3	138.4	139.9	99.5	-10.8	-13.3	1.1	-8.2
Construction Industry	147.1	147.1	122.8	132.6	133.8	113.2	-9.9	-9.0	0.9	-7.8
Transportation, Storage, Communication	164.5	162.7	156.3	169.0	168.4	161.9	2.7	3.5	-0.4	3.6
Electric Power, Gas and Water Utilities	145.9	147.0	166.1	146.1	150.6	168.1	0.1	2.4	3.1	1.2
Trade	144.8	150.6	141.1	141.2	146.1	137.5	-2.5	-3.0	3.5	-2.6
Finance, Insurance, Real Estate	154.8	156.0	152.5	160.0	160.8	159.3	3.4	3.1	0.5	4.4
Community, Business and Personal Service	131.3	140.7	136.8	135.5	144.3	140.6	3.2	2.6	6.5	2.8
Public Administration and Defence	134.5	129.6	129.6	134.3	129.8	129.2	-0.1	0.2	-3.4	-0.3

TABLE 2

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

	1979			1980			Percentage Changes		
	August	September	Total 9 months	August	September	Total 9 months	September 80	September 80	1st 9 months
							September 79	August 80	1980 1979
Metals									
Copper	71.0	58.4	449.5	56.9	58.8	541.6	+0.7	+3.3	+20.5
Gold	3 915.5	3 851.6	35 865.8	3 615.5	4 148.2	36 355.1	+7.7	+14.7	+1.4
Iron ore	6 879.0	6 210.7	45 207.0	5 230.5	4 156.2	36 742.2	-33.1	-20.5	-18.7
Lead	25.8	38.1	239.1	16.4	14.7	192.1	-61.4	-10.4	-19.7
Molybdenum	974.4	930.6	8 953.9	1 258.1	999.0	9 370.3	+7.4	-20.6	+4.7
Nickel	14.2	12.8 ^r	84.4 ^r	15.3 ^r	14.1	142.1	+10.2	-7.8	+68.4
Silver	99.8	114.7	879.7	77.5	77.2	830.8	-32.7	-0.4	-5.6
Uranium ¹	387.4	581.8	4 551.6	382.2	480.2	4 438.0	-17.5	+25.6	-2.5
Zinc	106.1	144.5	909.4	44.3	46.4	594.7	-67.9	+4.7	-34.6
Nonmetals									
Asbestos	143.6	135.6	1 091.7	135.8	137.0	957.9	+1.0	+0.9	-12.3
Clay products	..	..	..	10 703.8	12 063.3	81 226.2	..	+12.7	..
Gypsum	867.0	791.3	5 876.5	525.6	625.7	5 827.1	-20.9	+19.0	-0.8
Potash K ₂ O	579.9	600.1	5 289.7	639.9 ^r	632.0	5 291.8	+5.3	-1.2	+0.04
Cement	1 256.1	1 226.3	8 424.5	1 149.5	1 134.4	7 614.3	-7.5	-1.3	-9.6
Lime	..	..	..	167.3	174.8	1 531.9	..	+4.5	..
Salt	485.2	581.8	4 808.9	466.4	588.1	5 047.7	+1.1	+26.1	+5.0
Fuels									
Coal	2 567.1	2 801.6	24 415.1	3 102.4 ^r	3 147.0	26 714.8	+12.3	+1.4	+9.4
Natural gas	6 693.4	6 612.5 ^r	68 975.2 ^r	6 157.4 ^r	6 496.1	63 702.6	-1.8	+5.5	-7.6
Crude oil and equivalent	7 626.8	7 539.8 ^r	69 105.5 ^r	7 572.6 ^r	7 508.6	67 794.1	-0.4	-0.8	-1.9

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

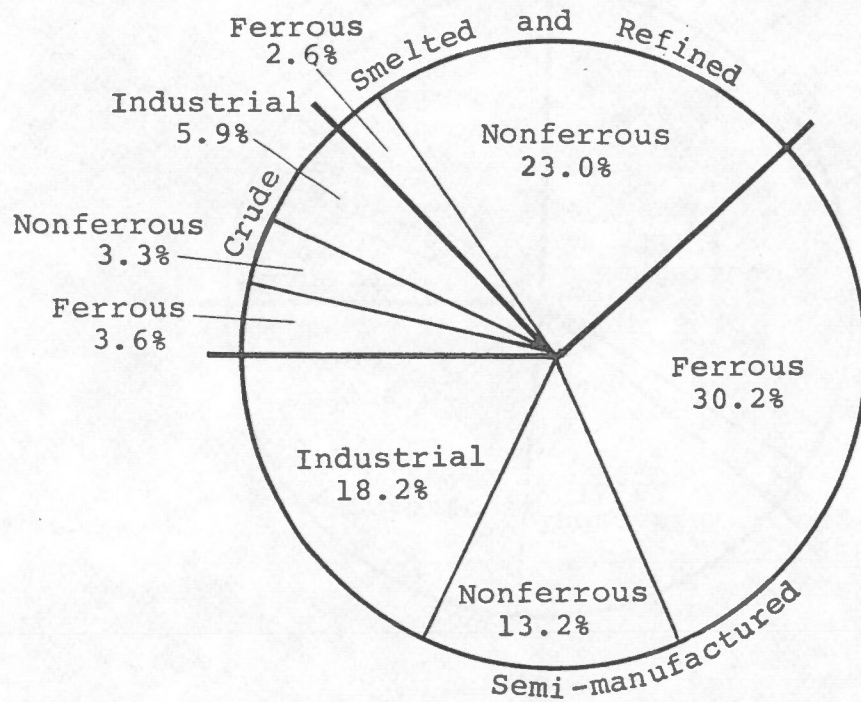
TABLE 3

Canada's Nonfuel Mineral Trade, First Six Months, 1979-80

	Imports January-June			Exports January-June		
	1979 (millions of dollars)	1980	% Change	1979 (millions of dollars)	1980	% Change
Crude						
Ferrous	78.1	130.7	+ 67.5	545.8	546.0	+ 0.1
Nonferrous	73.4	477.3	+550.3	594.7	886.8	+49.1
Industrial	130.2	141.9	+ 9.0	761.8	1 062.4	+39.5
Total	281.7	749.9	+166.2	1 902.3	2 495.2	+31.2
Smelted and Refined						
Ferrous	58.4	86.4	+ 48.0	91.0	111.0	+22.0
Nonferrous	508.0	1 393.1	+174.2	1 652.5	3 226.5	+95.3
Total	566.4	1 479.5	+161.2	1 743.5	3 337.5	+91.4
Semi-Manufactured						
Ferrous	666.2	671.2	+ 0.8	740.7	833.3	+12.5
Nonferrous	293.0	313.8	+ 7.1	220.6	325.9	+47.7
Industrial	402.5	445.4	+ 10.7	294.2	328.0	+11.5
Total	1 361.7	1 430.4	+ 5.1	1 255.5	1 487.2	+18.5
Total mineral trade ¹	2 209.8	3 659.8	+ 65.6	4 901.3	7 319.9	+49.4

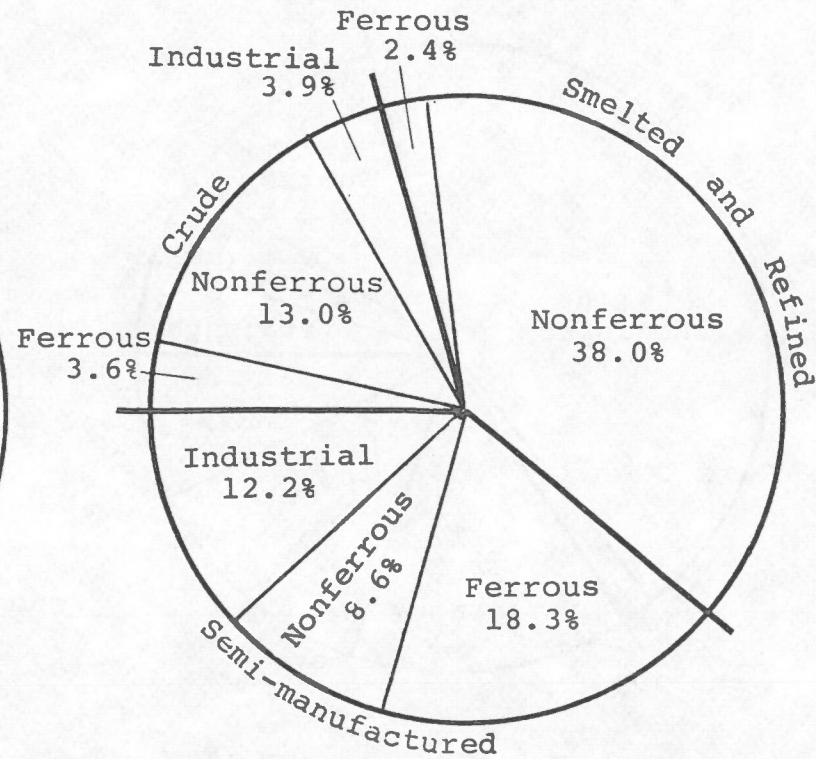
¹ Excluding scrap.

CANADA'S NON-FUEL MINERAL IMPORTS, FIRST SIX MONTHS, 1979 AND 1980



January-June 1979

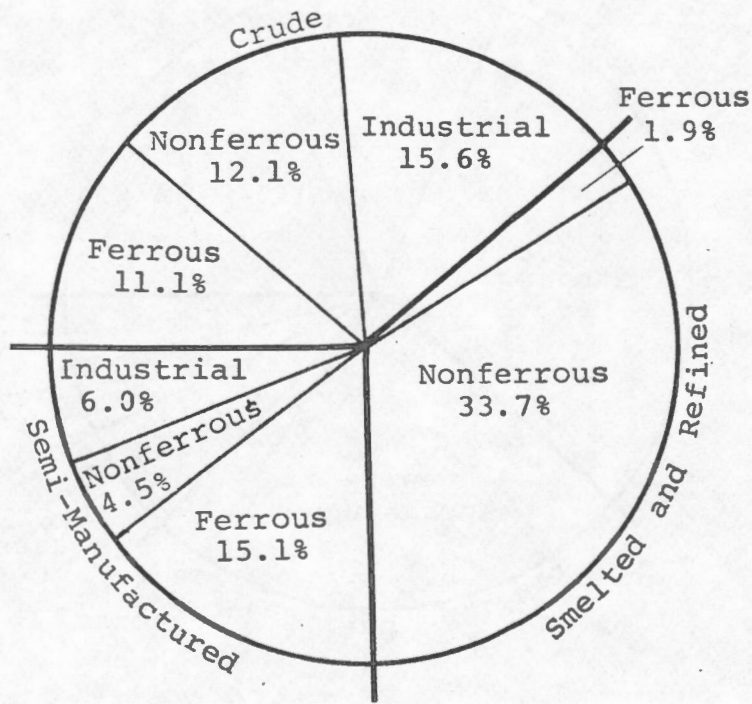
Figure A



January to June 1980

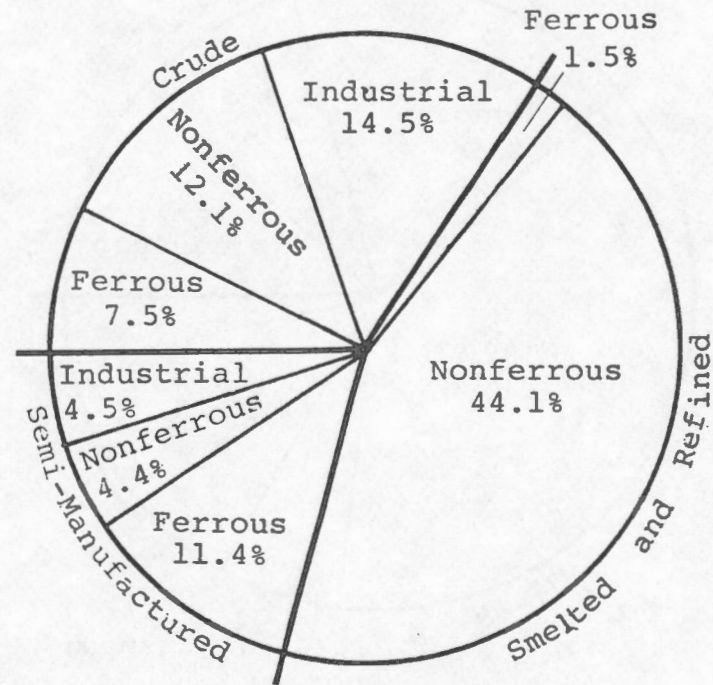
Figure B

CANADA'S NON-FUEL MINERAL EXPORTS, FIRST SIX MONTHS 1979 AND 1980



January - June 1979

Figure C



January - June 1980

Figure D

**TAXATION AND LEGISLATION AFFECTING THE
MINERAL AND ALLIED INDUSTRIES IN CANADA**

Provincial

British Columbia

BCR 382/80 under the Mineral Act and the Mining (Placer) Act has designated the Province of British Columbia as a mineral reserve and a placer mining reserve in respect of the mineral uranium, and has placed a moratorium effective until February 28, 1987 on exploration, development, mining or production of uranium in the Province.

The Table of Fees, BCR 587/77 under the Mineral Act, is amended by BCR 438/80 by the addition of:

For each mineral claim or 2-post claim in respect of which a complaint is made under section 50 ... \$200.00

Newfoundland

The Petroleum and Natural Gas (Crown Reserves) Regulations, 1980 being NR 307/80 under the Petroleum and Natural Gas Act, has declared the sections listed in the annexed schedule to be crown reserves.

REGIONAL PROFILE

Ontario

Value of Mineral Production

While the value of output of Ontario's mineral industry was up by one-fifth in 1979 compared with the previous year, the effect of the labour dispute at Sudbury during the first five months of the year was evident. Physical output of copper, gold, silver, platinum metals and iron ore was lower than the previous year; nickel, zinc and uranium output were about the same; each commodity showed a substantial increase in value.

In 1980, continuing growth in output should lead to an increase for the year as a whole compared with 1979; over and above the rate of inflation. Precious metal prices, gold, silver and the platinum group, are all much higher than last year and will contribute to Ontario's total value of production. Growth in production value will be supported by copper and zinc prices, which have varied little throughout the year, apart from the speculative surge in sympathy with the price of gold in January and February. Lead, on the other hand, felt the effect of the North American recession and its price is down somewhat.

Principal Mineral Production, 1979P

Commodity	Value (¹ 000,000)	Change 1978-1979 (per cent)	Proportion of Canada
Nickel	605	27.4	73.1
Copper	435	34.3	28.7
Uranium	391	26.0	58.9
Iron Ore	286	-7.3	15.1
Zinc	391	26.0	24.0
Cement	216	14.8	29.4
Gold	213	37.5	39.0
Silver	167	90.0	37.0
Sand and Gravel	163	12.8	36.3
Stone	109	14.9	31.4
Metals	2,533	23.7	31.7
Nonmetals and Structural Materials	710	14.1	19.9
Fuels	28	6.6	0.2
Total	3,271	21.2	12.5

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Socio-Economic Indicators

		Change Over Previous Year	Proportion Compared with All Canada
		(per cent)	
Population, July 1980	8,576,000	0.8	35.8
Labour Force August 1980	4,510,000	1.1	37.8
Persons Employed August 1980	4,221,000	0.7	38.0
Persons Unemployed August 1980	289,000	20.9	34.7
Employment in Mining* June 1980	33,200	4.1	21.2
Average Weekly Earnings** in Mining, June 1980	\$420.58	12.4	91.3
Provincial Gross Domestic Product 1978	\$90.8 billion	10.5	39.2

Source: Statistics Canada.

* Mines, Quarries and Oil Wells, including milling, SIC 050-099. Data for firms of 20 or more employees only, Catalog 72-002.

** Earnings of All Employees, in firms of 20 or more employees, Catalog 72-002.

Highlights

An agreement was announced between Hollinger Argus and Goldlund Mines Limited whereby the former company will investigate the possibility of a 500 ton-a-day operation on Goldlund's Echo Twp. gold property. Goldlund has been carrying out an intensive examination of this property for more than a year.

Northgate Exploration have acquired two promising gold properties, one in the Timmins area where previous work had indicated 3/4 million tons of ore grading 0.15 oz. a ton, and one near Sudbury. Also near Sudbury, the old Jerome mine is the subject of fund raising prior to anticipated reopening.

The Algoma Steel Corporation announced a \$300 million seamless tube steel mill will be built at Sault Ste. Marie that should provide some 500 new jobs.

Texasgulf announced recently an apparent extension of the south orebody that is still open at depth, and at the nearby Hoyle Creek gold property high grade drill intersections have been reported.

Work continues on the Detour Lake gold discovery north of Cochrane where 6.2 million tons averaging 0.19 ounces per ton have been reported. The joint venturers have approached the provincial government for infrastructure assistance.

When a power failure caused the shutdown of the Chromasco Limited magnesium plant near Renfrew and the layoff of 400 of the workforce of 475, it was feared that the work stoppage might have been a long one. However, the situation returned to normal in about three weeks.

Provincial Government Actions

A new Ontario Mineral Exploration Program (OMEP) went into effect September 1, 1980. Under this program grants may be made to qualifying individuals, or income tax rebates to companies of up to 25 per cent of amounts spent on eligible exploration in Ontario. In the first month 34 applications were received, mainly related to gold exploration.

Federal-Provincial Funded Activity

In Eastern Ontario, Precambrian and Quaternary mapping and industrial mineral and construction aggregate deposit studies were carried out under the \$4 million Minerals Program of the Eastern Ontario Development Sub-Agreement.

METALLIC MINERALS AND PRODUCTS

Aluminum

During the month, Alcan Aluminium Limited announced construction plans in Malaysia and Brazil. Aluminium Company of Malaysia Berhad (Alcom) announced that an aluminum sheet and foil mill would be built near Kuala Lumpur. The plant will have a capacity of producing 24 000 tonnes of aluminum sheet products and 6 000 tonnes of aluminum foil and will cost \$50 million. In Brazil, Alcan's subsidiary, Alcan Alumínio do Brasil S.A., will build a hot rolling mill to complement its cold rolling mill at Pindamonhangaba, between Rio de Janeiro and Sao Paulo. This is expected to cost \$150 million U.S. and to come on stream in 1984.

According to Reuters News Agency, Guymine Guyana Mining Enterprise Ltd. for the first time this year achieved in September its monthly production target of 18 000 tonnes of calcined alumina. The company hopes to produce 169 000 tonnes between October and December and a total for the year of 475 000 tonnes. Bauxite production was down due to electrical and other problems.

World primary aluminum production, according to the International Primary Aluminium Institute, was 1.082 million tonnes in October. This compares to 1.023 million tonnes in October 1979 and 1.039 million metric tonnes in September 1980. At the end of November LME aluminum stocks had risen to their highest level at 65 675 tonnes, with a corresponding fall in price.

The Aluminum Company of America (Alcoa) plans to stop casting, rolling and painting operations in Wales, affecting 560 to 765 employees out of a total of 1,900. The reason for the cut-back is to reduce substantial financial losses. In America, Alcoa is to idle two primary aluminum pot lines at its Point Comfort, Texas smelter. Annual capacity of each of the lines is about 22 700 tonnes and 300 employees will be affected.

Kaiser Aluminum & Chemical Corporation announced that its rolling mill in Koblenz, West Germany is to be modernized. The project, which is expected to increase annual output of heat treated plate to about 9 100 tonnes from the present 900 tonnes, should be completed in 1983 at a cost of about \$U.S. 80 million. The company is confident that the European and German aircraft industry will be a growing market for fabricated aluminum products.

Japan's international trade and industry ministry (MITI) has revised downwards the country's primary aluminum demand and supply for 1980. Despite reduced production, stocks are currently in excess of 190 000 tonnes. Expected demand is 1.63 million tonnes and production, 1.05 million tonnes. The shortfall will be made up through imports mainly from the U.S. Canada's exports in the first nine months of 1980 were about 80 000 tonnes, down 14.7 per cent from last year.

Copper

Copper prices for wirebar on the London Metal Exchange (LME) were relatively stable during November, ranging from 89.4 cents (U.S.) to 93.97 cents (U.S.) a pound. The high price was recorded November 5, and the low price November 7. On November 28, the last LME trading day of the month, the price was 89.7 cents (U.S.) a pound. The Canadian producer price for wirebar ranged from \$1.12625 to \$1.15625 a pound, with the price \$1.12625 a pound at the end of the month. Copper stocks in COMEX and LME warehouses at month-end were 155 063 tonnes and 122 875 tonnes respectively (total 277 938 tonnes), compared with 162 517 tonnes and 124 500 tonnes respectively (total 287 017 tonnes) at the end of October.

The Equity Silver Mines Limited near Smithers, British Columbia (operated by Placer Development Limited), a silver-copper-gold-antimony deposit, is reported to have commenced production in early September.

Hudson Bay Mining and Smelting Co., Limited has signed a joint venture agreement for the development of the Trout Lake (Embury Lake) orebody, a short distance from Flin Flon, Manitoba. A letter of intent had been signed earlier this year. Hudson Bay will be the operator of the mine, and will earn a 44 per cent interest in the venture by spending about \$28 million to develop the property. Ore will be treated in the company's Flin Flon concentrator. Surface work at the new mine has begun, with initial production of 815 tonnes per day scheduled for mid-1982, climbing to 1 630 tonnes per day in 1983. The other partners are Granges Exploration AB and Granges International Mining, both of Sweden, Outokumpu Oy:n of Finland, and Manitoba Mineral Resources Ltd. (a Manitoba Crown Corporation). The Scandinavian partners will hold 29 per cent and Manitoba Mineral Resources 27 per cent in the joint venture. The Trout Lake deposit was discovered by Granges Exploration Canada in 1976, and has reserves of 3 500 000 tonnes averaging 2.6 per cent copper, 4.3 per cent zinc, with gold and silver values.

The U.S. copper strike was settled late in November, when workers at the last two companies, ASARCO Incorporated and Anaconda Copper Company, returned to work. Only about half of the 2 500 striking Anaconda workers were to get their jobs back, owing to the previously announced closures of the company's smelter at Anaconda, Montana and refinery at Great Falls, Montana.

In Peru, miners at the Cuajone copper mine of Southern Peru Copper Corporation went on strike on November 12. The 1,500 workers were demanding higher pay, the reinstatement of 102 workers dismissed under the former military regime and the dropping of charges against other miners accused of acts of sabotage. The company's copper refinery at Ilo has continued to operate. The administrative staff at Cuajone also went on strike on November 21, demanding higher pay and improved working conditions, then returned to work on November 24. The miner's strike was still continuing at month-end. Annual copper output at Cuajone is about 180 000 tonnes, almost half of Peru's total copper production.

Noranda Mines Limited announced on November 12 that negotiations with the Export Development Corporation and several commercial banks involved in the financing of Noranda's Andacolla copper mining project in Chile had been unsuccessful, and that engineering activities on the project had been suspended. The project is owned 51 per cent by Noranda and 49 per cent by Enami, a state-owned Chilean mining group. A Noranda spokesman stated that the final financing proposal from the banks was unacceptable to Noranda shareholders and that Noranda was in discussions with its partner to decide what other steps to take, particularly to determining if other financing is available. Noranda had expected to start production at a rate of 36 000 tonnes of ore a day in the second quarter of 1983, to yield 77 000 tonnes of copper a year. Ore reserves at Andacolla are estimated to be about 210 million tonnes averaging 0.56 per cent copper, with a small content of gold and silver.

Subsequently, on November 20, Chilean Minister of Mines Carlos Quinones, stated that the Chilean government would call for international tenders for developing and exploiting the Andacolla deposit. The Chilean government will reimburse Noranda for the cost of the preliminary work done on the project. Under its contract with the government, Noranda had until December 1978 to complete preliminary studies and until August 1979 to decide whether to go ahead with the project. This deadline had been extended to enable Noranda to attempt to arrange financing.

Gold

The monthly average for November, 1980 of the afternoon fixing gold prices on the London Gold Market was \$623.46 (U.S.) (\$739.42 Cdn.) per ounce of gold compared with an average price of \$661.15 (U.S.) (\$772.88 Cdn.) for October, 1980.

Gold prices continued to show some weakness during November, breaking below the \$600 (U.S.) per ounce barrier on November 7 and again on November 11. The low fixing price for November was the afternoon fixing on November 7 at \$596.00 per ounce. The month's high was \$655 at the morning fixing on November 5, immediately following the U.S. Presidential election. The subsequent drop of almost \$60 per ounce over two days is attributed by some to renewed confidence in the American economy under a Republican administration. The American dollar has been gaining strength of late and rising interest rates make non-interest bearing gold less attractive as an investment. For the last two weeks of November the price of gold moved up and down in a range between \$610 and \$635 per ounce in quiet trading.

Officials of the Reserve Bank of the Republic of South Africa confirmed that South Africa withheld part of its gold production from the market in September and again in October. Foreign exchange reserves are now at a level where South Africa can afford to build up its gold reserves, thereby providing some support in a weak market.

Swiss customs statistics show that the U.S.S.R. shipped twenty-five tonnes of gold to Switzerland in September and nine tonnes in October. This is probably related to Soviet commodity purchases forced by poor harvests of grain and oil seed crops and the accompanying need for foreign exchange. The Soviets have proven to be shrewd traders, taking care to dispose of gold in ways that will cause little market disturbance.

The Republican victory in the U.S. elections make it seem most unlikely that the U.S. Treasury will resume its gold auctions within the next four years. Actual remonetization of gold is unlikely; however, the Republican Party does feel that gold has a role to play in monetary affairs.

Iron and Steel

Sydney Steel Corporation (Sysco) has proposed a three phase, \$351.5 million 10-year renovation program. The first phase from 1981 to 1985 (\$171.5 million) represents a holding action, consisting of making urgently needed improvements to existing equipment and adding what is needed to reduce production inefficiencies. In 1981, \$67.5 million would be spent on coke oven and blast furnace improvements and \$34 million would be spent on rail mill improvements; during 1982 and 1983 \$31.5 million would be spent on further improvements to coke ovens; and during the 1984-85 period \$38.5 million would be spent on improvements to blast furnaces and open hearths. The second phase would begin in 1986 and extend to 1989. This would involve a cost of \$180 million for the installation of basic oxygen steelmaking furnaces. All the above cost estimates are in 1980 dollars. The third phase would begin in 1989 and involve the forward integration into additional finished products, which are not immediately identified. A cost estimate for phase three is not given.

All of the cash flow calculations made in the Sysco Business Plan do not take into account debt servicing.

Mercury

The General Services Administration (GSA) received no bids on mercury at its November, 1980 offering of 1,000 flasks. This mercury will be offered under competitive sealed bidding, opening on December 9, 1980.

In October the GSA awarded only 500 flasks of mercury out of the 1,000 flasks offered at a price of \$406 per flask.

Molybdenum

USW workers at Lornex Mining Corporation's copper and molybdenum mine in Highland Valley, B.C. returned to work November 6, 1980 after a week-long wildcat strike. It was reported that the walkout was caused by a dispute over a grievance decision.

Nickel

Citing competitive reasons, Inco Metals Company announced on November 7 an across-the-board 6 per cent discount on its nickel products bought for delivery in December and the first quarter of 1980. Pressure had been mounting on nickel prices due to weak demand and climbing producer inventories. Prices before the discount were \$3.45 (U.S.) a pound for melting nickel and \$3.30 and \$3.35 a pound for Sinter 75. The nickel price on the London Metal Exchange, after having rested at \$3 to \$3.05 a pound for some time, dropped below the \$3 level just prior to Inco's announcement. Other major producers responded with a temporary discount of the same magnitude and duration.

Falconbridge Nickel Mines Limited announced that its Falconbridge Dominicana C. por A. subsidiary will resume production of ferronickel at its Bonao plant in early January. Production at the Dominican Republic operation had been temporarily suspended at the end of July due to weakness in international markets for ferronickel.

Under pressure from a 35 per cent increase in fuel costs in early November, and a weak nickel market, Inco Limited announced that its 80 per cent owned subsidiary in Guatemala, Exploraciones y Explotaciones Mineras Izabal S.A. (Exmibal), will remain shutdown for all of 1981. The operations will be maintained on a standby basis and all personnel will continue to be paid. Certain tax changes with regard to nickel are under consideration by the Guatemalan government and are currently pending before the Guatemalan Congress, but Inco stressed that the shutdown would be required irrespective of the decision of Congress.

In Australia, Broken Hill Proprietary Company Limited and Western Mining Corporation Limited announced a joint venture agreement to mine the Carnilya Hill deposit. Last year, Western Mining had started development of the project which has reserves estimated at 388 000 tonnes averaging 3.78 per cent nickel. Mine life is expected to be six years.

Labour-management disputes in Zimbabwe resulted in a nine day strike at the Trojan nickel mine and a week-long disruption at the Shangani nickel operation. At Anglo American Corporation of South Africa Ltd.'s Trojan mine, workers were protesting the dismissal of the chairman of the Workers' Committee but returned to work without securing his reinstatement. Miners at Johannesburg Consolidated Investment Co. Ltd.'s Shangani facility returned to work after obtaining a pay increase.

Platinum Group Metals

Rustenburg Platinum Mines Ltd. announced conclusion of a ten-year take-or-pay contract to supply platinum and rhodium for car catalyts. Rustenburg declined to name the buyers or specify the amount of metal, but industry observers feel that the purchasers are likely Japanese car manufacturers. Japanese car output has remained strong in the teeth of a general slump in the world automotive industry. Platinum markets have been flat over the past year with lower demand for car catalyts being offset by greater platinum usage in the manufacture of unleaded gasoline. The market for rhodium continues to be weak despite a substantial producer price cut at the end of August.

Silver

The silver price was relatively stable during the month of November. The opening price as quoted by Handy & Harman of New York was \$19.40 (U.S.) per ounce. The high of \$19.65 (U.S.) per ounce of silver was recorded on November 5, the day after the United States presidential election. The general uncertainty following the election resulted in a decline in the silver price and the low of \$17.68 (U.S.) was recorded on November 11. The price improved in the latter part of the month fluctuating between \$18.42 (U.S.) and \$19.35 (U.S.) per ounce, closing at \$18.75 (U.S.) per ounce of silver.

The monthly average Handy & Harman silver price for November, 1980 was \$18.65 (U.S.) per ounce compared with \$20.18 (U.S.) per ounce for October. The average silver price in Canadian dollars (Handy & Harman) for the month of November was \$713.61 per kilogram (\$22.20 per ounce) compared with \$756.04 per kilogram (\$23.52 per ounce) for October.

Production of an unleached concentrate commenced in September, 1980, at the Sam Goosly silver-copper property of Equity Silver Mines Limited, located 37 kilometres south of Houston, British Columbia. Placer Development Limited holds a 70 per cent interest in the property and has management responsibility. The other 30 per cent is held by shareholders of Equity Silver Mines Limited. Designed capacity of the concentrator is 4 500 tonnes of ore per day. Estimated cost of the project is \$107 million. Redesign of the leaching plant has substantially increased the overall construction costs. The leaching section of the plant will not be in operation until mid-1981. Ore is being mined by open pit methods from the Southern Tail Zone. Ore reserves are estimated at 6.8 million tonnes grading 131 grams of silver and

1.38 grams of gold per tonne and 0.48 per cent copper with some antimony. A second zone, the Main Zone, will be mined later. The Main Zone ore reserves have been estimated at 21.2 million tonnes grading 98.4 grams of silver per tonne and 0.35 per cent copper with some gold and antimony.

The unleached concentrates will be shipped to Japanese smelters for treatment but the amount shipped may be limited to the space available at the smelters. The mine will not attain full economic benefit until the leach plant, which will remove the antimony and arsenic from the concentrators, is in operation by mid 1981.

At full production Equity Silver will be one of the major silver producers in Canada. Annual mine output has been estimated at 177 000 kilograms of silver, 6 400 tonnes of copper and 1 700 tonnes of antimony.

The strike at the silver mine of Sunshine Mining Company, Idaho, which began on March 15, 1980 was settled on November 8, 1980. Sunshine is one of the major silver-producing mines in the United States. Lost production has been estimated at over 2.5 million ounces of silver.

The General Services Administration (GSA) of the United States sold 140 173 troy ounces of silver on November 19, 1980 from bullion reclaimed from Veterans Administration. The successful bidder for most of the silver was Westway Metals Corporation, Englewoods Cliffs, New Jersey, which submitted bids ranging from \$18.75 to \$18.81 per ounce of silver. Mocatta Metals Corporation, New York, the only other successful bidder was awarded 661 ounces of silver at a price of \$16.501 per ounce. Earlier in the year, January 16, 1980, the GSA awarded 209,835 troy ounces of silver from the Veterans Administration at a price of \$36.41 per troy ounce for 398 ounces to one bidder and at prices ranging from \$43.00 to \$44.00 to the only other successful bidder.

Tin

The United States General Services Administration on December 1 conducted its first daily, off-the-shelf offering of tin under a new disposal system that replaces the unsuccessful fortnightly bidding system. The offering price was \$6.82 (U.S.) per pound, which was within the \$6.77 - \$6.85 range of the New York spot price on that day but well above the current London Metal Exchange price. Consequently, no bids were received under the offering. Tin prices have fallen significantly over the past two months (from about \$7.60/lb. at the end of October and about \$7.90/lb. at the end of September).

Tungsten

Production at Canada Tungsten Mining Corporation Limited's (Cantung) operation in the Northwest Territories has been interrupted by a labour dispute. The company's 189 unionized workers went on strike November 14. The main unresolved issues concern improved housing and wage increases.

INDUSTRIAL MINERALS AND PRODUCTS

Asbestos

The Japanese Environmental Agency plans to undertake a three-year environmental research program studying possible hazards associated with asbestos. The study will commence in April, 1981 to evaluate dust emissions and to examine the need for future legislative controls. At present, a guideline provides that concentration of asbestos fibres in the workplace atmosphere shall not exceed 2 fibres greater than 5 microns long per cubic centimetre.

Potash

Potash Corporation of Saskatchewan announced the start of construction on a new potash mine at Bredenbury near the Saskatchewan-Manitoba border. The mine will have a capacity of 3.26 million tonnes of product (KCl) and will be completed in late 1985 or early 1986. Environmental impact studies will be carried out and additional drilling to determine reserves will be conducted. Construction will employ up to 1,450 people and over 400 permanent jobs will be created.

With the current announcement, and taking into account the expansion at existing PCS mines (by 2.63 million tonnes - 1983) the corporation expects to reach a total operational capacity of 9.3 million tonnes (KCl) in 1986.

Sulphur

At the end of the month Texasgulf Inc. announced that Frasch sulphur, f.o.b. Tampa, would increase in price to \$138 (U.S.) per tonne in December. This latest in a string of price increases should improve the sales value of Alberta shipments. In July 1980 the average price of sulphur, f.o.b. Alberta, peaked at \$69.33 (Can.) per tonne up from \$25.74 (Can.) a year earlier. It is likely that by year-end even higher net-backs will be realized and that annual shipments will have increased by 15 per cent over the 1979 level.

MINERAL FUELS AND PRODUCTS

Crude Oil and Natural Gas

Gulf Canada Resources Inc. and the Alberta government, through AOSTRA, have recently announced plans to go ahead with an oil sands pilot project. This facility will be located in the Surmont area, south of Fort McMurray, on in-place reserves of some 15 billion barrels. The estimated cost of the project will be \$130 million, with \$9.6 million being allocated towards a two-year engineering study.

Should the initial study results prove successful, Gulf will continue into the final eight-year phase with construction and operation. To date, \$6 million has been spent towards developing this pilot project. Through the use of horizontal wells and steam injection technology, Gulf and AOSTRA anticipate recovery rates between 40 and 50 per cent, as compared to 30 per cent for conventional recovery schemes.

Much of the oil-bearing deposits in the Surmont area are covered by 900 feet of overburden, thus making surface mining uneconomic. This type of proposed extraction is expected to give a much better recovery rate with less environmental damage.

Uranium

ERRATA- The conversions from pounds U_3O_8 to kilograms U were incorrect as shown in Paragraph 3, page 28 of the October issue. The correct prices should have been as follows:

\$66.00/kg U (\$25.40/lb U_3O_8)
\$67.60/kg U (\$26.00/lb U_3O_8)
\$65.00/kg U (\$25.00/lb U_3O_8)

In Chile, officials of Sociedad Minera Pudahuel Ltda (SMP) announced that production of uranium oxide will start at their Cascada copper mine in October 1981 at a rate of 20 tonnes (uranium)* annually. The operation, recently purchased from Empresa Sagasca for \$37 million (U.S.), has an annual copper output capacity of 14 000 tonnes. SMP will spend \$8 million (U.S.) for the uranium recovery facility and plans to market the concentrate overseas if the Chilean government decides not to purchase the output. Production costs are expected to be about U.S. \$26.00/kg U.

Uranium oxide production has reportedly begun in Bolivia, at the Cotaje mine near Potosi. This supports an earlier announcement by the Bolivian Nuclear Energy Commission (COBOEN) that trial production of concentrates was planned. Built at a reported cost of \$500,000 (U.S.), the facility has an output capacity of 12 kg*/day or 4 tonnes*/year. COBOEN is awaiting a government policy decision for marketing domestic uranium production.

Argentina's National Commission of Atomic Energy (CNEA) is proceeding with the development of the Sierra Pintada uranium mine and ore processing plant in Mendoza province, at a reported cost of \$120 million (Cdn.). The operation, scheduled for production in 1983, is expected to produce 635 tonnes* of uranium concentrate annually. According to Argentine officials, production of uranium oxide in 1979 was 145 tonnes* and is expected to total 180 tonnes* in 1980.

In Morocco, L'Office Cherifien des Phosphates (OCP) reportedly is planning the construction of uranium extraction units at each of its three phosphoric acid plants at Safi. The first unit is to be built during 1981 and should be in production in 1983. The annual output capacity of each unit is reported to be 200 tonnes* of uranium oxide.

The extraction of uranium from phosphoric acid was also expected this month at Gabes, in Tunisia, according to a recent statement by that country's Minister of Transport. Production from the fertilizer plant, which processes phosphate containing 50-60 grams/tonne uranium, is expected to reach 120 tonnes uranium/year.

At Mounana in south-east Gabon construction has begun on a new uranium ore treatment plant, owned by the Franceville company of Uranium Mines, COMUF. Production is scheduled for 1982 at an anticipated rate of 1 500 tonnes uranium/year.

* Quantity likely represents uranium although variously reported as uranium oxide or uranium concentrate.

NEW PUBLICATIONS

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

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 novembre.

Revue annuelle de l'industrie minérale du Canada, 1978:
l'étain; sommaire de données statistiques.

Revue annuelle de l'industrie minérale du Canada, 1979:
le calcium; le césium; la potasse, le sulfate de sodium.
Prix \$1 l'exemplaire.

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.

