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The Canadian Mineral Industry Monthly Report

May 1980



Energy, Mines and
Resources Canada

Énergie, Mines et
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.

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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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THE CANADIAN MINERAL INDUSTRY FOR MAY

L'INDUSTRIE MINÉRALE DU CANADA - MAI

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

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

HIGHLIGHTS

1. Canada's unadjusted index of Real Domestic Product was 137.6 in March, up 1.4 per cent from 135.7 in the previous month.
2. The index for Mines, Quarries and Oil Wells increased 2.3 per cent over the month from 115.5 in February to 118.1 in March.
3. The gold price was comparatively stable during the month of May and for most of the month was in the range of \$510 (U.S.) to \$515 (U.S.) per ounce.
4. The Mosquito Creek Gold Mining Company Limited poured its first gold bricks at the company's 90 tonne per day gold mine near Wells, British Columbia.
5. The International Wrought Copper Council has forecast a possible surplus in refined copper of 100 000 to 200 000 tonnes this year.

FAITS SAILLANTS

1. L'indice non pondéré du produit intérieur réel était de 137,6 en mars, soit une augmentation de 1,4 % par rapport à l'indice du mois précédent, qui était de 135,7.
2. L'indice des mines, des carrières et des puits de pétrole est passé de 115,5 en février à 118,1 en mars, soit une augmentation de 2,3 %.
3. Le prix de l'or était relativement stable en mai; il oscillait entre \$É.-U. 510 et \$É.-U. 515 l'once la majeure partie du temps.
4. La Mosquito Creek Gold Mining Company Limited a coulé ses premiers lingots d'or à sa mine d'or, d'une capacité de 90 tonnes par jour, qui se trouve près de Wells (Colombie-Britannique).
5. L'International Wrought Copper Council prévoit des excédents éventuels de cuivre de l'ordre de 100 000 à 200 000 tonnes cette année.

6. Bargaining for a new three-year contract for 39 000 copper mine workers in the U.S. was to begin early in June in Phoenix, Arizona.
7. Rio Tinto Zinc Corporation Limited (RTZ) has been asked by the Government of Panama to proceed further in the Cerro, Colorado copper project.
8. The Potash Corporation of Saskatchewan (PCS) reported a profit of \$77.9 million in calendar 1979.
6. Les négociations en vue d'obtenir un nouveau contrat de trois ans pour les 39 000 mineurs de cuivre des États-Unis devaient commencer au début de juin à Phoenix, en Arizona.
7. Le Gouvernement de Panama a demandé à la Rio Tinto Zinc Corporation Limited (RTZ) de poursuivre les travaux à la mine de cuivre Cerro Colorado.
8. La Potash Corporation of Saskatchewan (PCS) rapporte des profits de l'ordre de 77,9 millions de dollars en 1979.

ECONOMIC TRENDS

Table 1 shows the unadjusted indexes of Real Domestic Product (RDP) for Canada. The overall RDP index for March was 137.6, up 1.4 per cent from 135.7 in February 1980.

Mines, quarries and oil wells showed an increase of 2.3 per cent, moving from 115.5 in February to 118.1 in March while coal mines recorded the most substantial increase of 27.7 per cent during the period. Iron mines decreased 10.7 per cent from 105.2 to 93.9.

The index for primary metal industries showed an increase of 0.7 per cent while non-metallic mineral products industries decreased 1.0 per cent in March.

Table 2 compares volume of production in eighteen major minerals. Significant increases were recorded in copper (10.5 per cent), lead (30.8 per cent), uranium (13.2 per cent), asbestos (13.1 per cent) and salt (16.0 per cent) over the month of March in comparison with the previous month. Production was down for iron ore (15.1 per cent), molybdenum (12.6 per cent) and zinc (11.3 per cent) during the period.

Tables 3 and 4 show the most recent Capital and Repair Expenditures for mining, quarrying and oil wells by region and by type of mining. Total actual expenditures in 1978 exceeded \$5 billion while intentions in 1980 approach \$9 billion. Table 5 shows the expenditures for the non-fuel mineral industry only.

TABLE 1

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

Industry or Industry Group	1979			1980			Percentage Changes				
	Feb	Mar	Average 1st 3 Months	Feb	Mar	Average 1st 3 Months	1980		1980		1st 3 Months 1980 1979
							Feb 1979	Mar 1979	Feb 1980	Mar 1980	
Real Domestic Product	134.7	136.1	132.9	135.7	137.6	134.2	0.7	1.1	1.4	1.0	
Primary Industries											
Agriculture	52.8	46.9	50.4	54.4	39.3	50.0	3.0	▲16.2	▲27.8	▲0.7	
Forestry	125.9	133.2	122.0	132.2	141.0	123.6	5.0	5.9	6.7	1.3	
Fishing and Trapping	39.0	82.0	49.8	42.4	57.7	45.8	8.7	▲29.6	36.1	▲8.1	
Mines, Quarries and Oil Wells	110.0	110.2	107.9	115.5	118.1	114.8	5.0	7.2	2.3	6.4	
Metal Mines	79.6	82.5	78.8	98.4	98.3	95.3	23.6	19.2	▲0.1	20.8	
Placer and Gold Quartz Mines	60.2	54.4	57.7	55.5	50.6	54.0	▲7.8	▲7.0	▲8.8	▲6.3	
Iron Mines	105.4	98.9	98.5	105.2	93.9	94.6	▲0.2	▲5.1	▲10.7	▲3.9	
Other Metal Mines	74.2	79.8	75.0	98.8	101.7	97.4	33.2	27.4	2.9	29.9	
Mineral Fuels	131.6	126.9	127.5	123.1	127.1	125.0	▲6.5	0.2	3.2	▲1.9	
Coal Mines	230.2	225.6	229.7	198.7	253.7	209.7	▲13.7	12.5	27.7	▲8.7	
Crude Petroleum and Natural Gas	123.5	118.8	119.1	116.9	116.7	118.1	▲5.3	▲1.8	▲0.2	▲0.8	
Nonmetal Mines	130.6	136.5	128.7	138.3	145.1	136.0	5.9	6.3	4.9	5.7	
Asbestos Mines	86.6	104.9	87.7	99.3	90.6	89.8	14.7	▲13.6	▲8.8	2.4	
Secondary Industries											
Manufacturing	141.6	144.5	137.4	140.6	143.2	135.9	▲0.7	▲0.9	1.8	▲1.1	
Nondurable Manufacturing	139.6	141.0	134.9	140.8	141.8	136.0	0.9	0.6	0.7	0.8	
Petroleum and Coal Products Industries	143.3	151.7	147.4	152.0	146.8	150.2	6.1	▲3.2	▲3.4	1.9	
Durable Manufacturing	143.6	148.0	139.8	140.4	144.5	135.8	▲2.2	▲2.4	2.9	▲2.9	
Primary Metal Industries	133.0	133.7	130.5	137.2	138.2	135.4	3.2	3.4	0.7	3.8	
Iron and Steel Mills	151.9	150.1	149.3	157.8	158.9	156.6	3.9	5.9	0.7	4.9	
Steel Pipe and Tube Mills	141.5	151.1	142.3	161.7	158.5	147.8	14.3	4.9	▲2.0	3.8	
Iron Foundries	155.9	159.8	142.9	112.9	120.9	111.7	▲27.6	▲24.3	7.1	▲21.9	
Smelting and Refining	96.6	96.4	96.0	112.4	111.7	111.5	16.4	15.9	▲0.6	16.1	
Nonmetallic Mineral Products Industries	110.3	113.5	104.4	111.7	110.6	104.5	1.3	▲2.6	▲1.0	0.1	
Cement Manufacturers	78.8	91.7	80.0	80.0	85.0	79.6	1.5	▲7.3	6.3	▲0.5	
Ready-mix Concrete Manufacturers	43.4	66.7	49.8	52.8	62.3	53.0	21.7	▲6.6	18.0	6.4	
Construction Industry	103.2	103.1	102.3	97.9	97.6	97.0	▲5.1	▲5.3	▲0.3	▲5.2	
Transportation, Storage, Communication	143.9	140.6	145.1	152.7	155.9	152.0	6.1	4.2	2.1	4.8	
Electric Power, Gas and Water Utilities	210.8	192.5	199.3	200.4	198.3	205.8	▲0.6	8.7	▲5.4	3.2	
Trade	131.4	136.2	128.7	128.3	134.9	127.0	▲2.4	▲1.0	5.1	▲1.3	
Finance, Insurance, Real Estate	153.3	153.6	152.8	160.3	159.6	159.2	4.6	3.9	▲0.4	4.2	
Community, Business and Personal Service	137.5	139.4	137.4	138.9	143.7	140.4	1.0	3.1	3.5	2.2	
Public Administration and Defence	125.4	126.3	125.4	123.1	123.9	123.1	▲1.8	▲1.9	0.6	▲1.9	

TABLE 2

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

		1979			1980			Percentage Changes		
		February	March	Total 3 months	February	March	Total 3 months	March 80	March 80	1st 3 months
								March 79	February 80	1980 1979
Metals										
Copper		44.7	53.2	142.4	58.1	64.2	182.1	+20.7	+10.5	+27.9
Gold	kg	3 888.0	4 380.3	12 318.9	3 767.8	4 090.9	11 796.3	-6.6	+8.6	-4.2
Iron ore		1 661.9	2 667.4	6 627.1	2 567.0	2 180.2	6 424.0	-18.3	-15.1	-3.1
Lead		26.6	27.2	79.3	14.6	19.1	52.4	-29.8	+30.8	-33.9
Molybdenum	t	1 249.8	1 054.9	3 405.8	990.4	865.4	2 841.0	-18.0	-12.6	-16.6
Nickel		5.8	7.2	19.3	15.9	17.4	48.6	+141.7	+9.4	+151.8
Silver	t	94.6	100.5 ^r	305.4 ^r	98.3	103.4	299.5	+2.9	+5.2	-1.9
Uranium ¹	t	296.1	661.9 ^r	1 436.2 ^r	461.8	522.6	1 600.3	-21.1	+13.2	+11.4
Zinc		87.8	86.8	262.1	76.4	67.8	218.6	-21.9	-11.3	-16.6
Nonmetals										
Asbestos		109.3	123.2	341.0	91.8	103.8	287.2	-15.8	+13.1	-15.8
Gypsum		444.8	585.4	1 411.5	525.5	505.0	1 553.4	-13.7	-3.9	+10.0
Potash K ₂ O		427.9	613.6	1 581.0	541.7	553.3	1 624.3	-9.8	+2.1	+2.7
Salt		710.6	464.0	1 892.4	522.5 ^r	606.1	1 729.5	+30.6	+16.0	-8.6
Cement		387.0	611.8	1 358.4	462.3	513.4	1 357.2	-16.1	+11.0	-0.1
Lime	
Fuels										
Coal		2 513.7	2 724.0	8 116.9	2 587.7	2 794.0	8 186.9	+2.6	+8.0	+0.9
Natural gas	million m ³	8 388.9	8 361.9 ^r	26 197.4 ^r	7 934.2 ^r	8 178.8	25 586.9	-2.2	+3.1	-2.3
Crude oil and equivalent	000 m ³	7 430.0	8 062.3 ^r	22 910.6 ^r	7 314.3 ^r	7 884.6	23 072.1	-2.2	+7.8	+0.7

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

TABLE 3
 Canada, Capital and Repair Expenditures
 Mining, Quarrying and Oil Wells, 1978-80¹

		Construction	Machinery and Equipment	Total
		(millions of dollars)		
Atlantic Region	1978	124.6	172.4	297.0
	1979	271.9	203.5	475.4
	1980	341.7	225.1	566.8
Quebec	1978	150.0	228.0	378.0
	1979	185.6	299.7	485.3
	1980	244.8	338.3	583.1
Ontario	1978	221.2	259.4	480.6
	1979	318.6	288.1	606.7
	1980	381.5	354.8	736.3
Prairie Region	1978	2 430.5	707.7	3 138.2
	1979	3 189.0	835.3	4 024.3
	1980	4 324.9	973.2	5 298.1
British Columbia	1978	407.6	227.0	634.6
	1979	541.9	282.9	824.8
	1980	716.2	460.5	1 176.7
Northwest Territories and Yukon	1978	243.3	70.1	313.4
	1979	227.7	147.8	375.5
	1980	209.9	215.0	424.9
Canada	1978	3 577.2	1 664.6	5 241.8
	1979	4 734.7	2 057.3	6 792.0
	1980	6 219.0	2 566.9	8 785.9

¹ 1978 Actual, 1979 Preliminary actual, 1980 Intentions.

TABLE 4

Canada, Capital and Repair Expenditures - Mining, Quarrying and Oil Wells, 1978-80¹

	Capital Expenditures			Repair Expenditures			Capital and Repair		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
	(millions of dollars)								
Metal mines									
Gold	36.7	47.0	66.3	17.8	19.3	21.4	54.5	66.3	87.7
Iron	103.6	148.8	187.2	213.7	284.5	298.0	317.3	433.3	485.2
Copper-gold-silver	131.2	202.6	356.8	156.1	164.5	178.6	287.3	367.1	535.4
Silver-lead-zinc	62.3	88.2	99.2	38.6	42.6	45.2	100.9	130.8	144.4
Other metal mines	242.8	385.9	546.0	115.1	109.6	127.5	357.9	495.5	673.5
Total metal mines	576.6	872.5	1 255.5	541.3	620.5	670.7	1 117.9	1 493.0	1 926.2
Nonmetal mines									
Asbestos	103.0	105.0	94.3	94.1	100.2	109.5	197.1	205.2	203.8
Other nonmetal mines ²	320.9	321.7	408.1	213.2	247.5	277.2	534.1	569.2	685.3
Total nonmetal mines	423.9	426.7	502.4	307.3	347.7	386.7	731.2	774.4	889.1
Mineral fuels									
Petroleum and gas	2 902.9	3 973.4	5 406.6	489.8	551.2	564.0	3 392.7	4 524.6	5 970.6
Total mining industry	3 903.4	5 272.6	7 164.5	1 338.4	1 519.4	1 621.4	5 241.8	6 792.0	8 785.9

¹ 1978 Actual, 1979 Preliminary actual, 1980 Intentions; ² Includes coal mines, gypsum, salt, potash and miscellaneous nonmetal mines and quarrying.

TABLE 5

Canada, Capital and Repair Expenditures - Non-fuel Mineral Industry, 1978-80¹

	Capital Expenditures			Repair Expenditures			Capital and Repair		
	1978	1979	1980	1978	1979	1980	1978	1979	1980
	(millions of dollars)								
Mining									
Metal mines	576.6	872.5	1 255.5	541.3	620.5	670.7	1 117.9	1 493.0	1 926.2
Nonmetal mines	423.9	426.7	502.4	307.3	347.7	386.7	731.2	774.4	889.1
Total	1 000.5	1 299.2	1 757.9	848.6	968.2	1 057.4	1 849.1	2 267.4	2 815.3
Smelting and refining									
Smelting and refining	180.4	236.4	355.6	232.1	227.5	260.8	412.5	463.9	616.4
Iron and steel	309.5	353.1	617.8	507.6	613.6	711.5	817.1	966.7	1 329.3
Total	489.9	589.5	973.4	739.7	841.1	972.3	1 229.6	1 430.6	1 945.7
Semi-manufacturing									
Steel pipe and tube mills	35.8	72.3	55.9	37.9	39.0	44.9	73.7	111.3	100.8
Iron foundries	37.9	39.9	26.4	44.1	35.1	36.2	82.0	75.0	62.6
Metal rolling, casting and extruding	42.5	53.6	70.4	39.2	35.7	40.5	81.7	89.3	110.9
Nonmetallic mineral products	279.9	402.5	369.9	207.8	206.8	219.2	487.7	609.3	589.1
Total	396.1	568.3	522.6	329.0	316.6	340.8	725.1	884.9	863.4
Total mineral industry	1 886.5	2 457.0	3 253.9	1 917.3	2 125.9	2 370.5	3 803.8	4 582.9	5 624.4

¹ 1978 Actual, 1979 Preliminary actual, 1980 Intentions.

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.

Ontario, Production of Principal Minerals, 1979P

Commodity	\$ Value (^{'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

P Preliminary.

Highlights

According to press reports, a number of old gold mines in Ontario are being prepared for reopening or are being extensively tested. They include the Duport property at Shoal Lake in the Kenora area, Davidson Tisdale Mines Limited's property in Tisdale Township near Timmins, Pamour Porcupine Mines, Limited's Powell Township property in the Matachewan area and the Goldlund Mines Limited property in Echo Township.

Expansion has been scheduled at some of Ontario's long-established gold mines. At Red Lake, Campbell Red Lake Mines Limited, which is already Canada's leading gold producer, is enlarging its facility by 30 per cent at a cost of more than \$10 million, and Dickenson Mines Limited, where development work has indicated a possible substantial increase in ore reserves, will build a \$9 million extension. In the Timmins-Porcupine area, Pamour-Porcupine Mines, Limited is expanding its mining and milling facilities and acquiring other properties in the area, and the 70-year old Dome mine is undergoing a four-year, \$50 million expansion, which should increase its capacity by one half.

The most recent report on the Detour Lake gold discovery north of Cochrane indicates 6.2 million tons averaging 0.19 ounces per ton.

Construction continues on the new concentrator at the minesite of Denison Mines Limited at Elliot Lake and on the Texasgulf Inc. copper smelter/refinery at Kidd Creek near Timmins.

Ore reserves at the Mattabi Mines Limited property at Sturgeon Lake have been extended in a recent drilling program, and the operation is to go from open pit to underground in 1981.

Caland Ore Company Limited laid off 110 people of a total work force of 170 on April 30, 1980, citing low demand for iron ore as the reason. This brings to 295 the number of persons laid off since November 1979.

Provincial Government Actions

Ontario's Royal Commission on the Northern Environment awarded a \$104,000 contract to Laurentian University to investigate the possibility of new mining activity in Ontario north of the 50th parallel.

A 20-year development plan for northern Ontario outlined by the provincial government would include development of three new mines, the Cargill Township phosphate deposit near Kapuskasing, the Detour Lake gold prospect, 140 kilometres northeast of Cochrane, and the Onakawana lignite deposits, 90 kilometres north of Cochrane.

Federal-Provincial Funded Activity

Geological and mineral deposit compilation open-file reports have been released by the Ontario Geological Survey on work done in the Upper Ottawa Valley under the Community and Rural Resource Development Sub-Agreement.

Socio-Economic Indicators

		Change Over Previous Year	Proportion Compared with All Canada (per cent)
Population			
October 1, 1979	8,517,700	0.6	35.9
Labour Force			
February 1980	4,259,000	1.9	38.1
Persons Employed			
February 1980	3,946,000	1.9	38.6
Persons Unemployed			
February 1980	313,000	1.3	33.0
Employment in Mining*			
November 1979	29,400	27.3	21.1
Average Weekly Earnings** in Mining, November 1979	\$409.17	12.8	92.0
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.

Under the same Sub-Agreement, deposit studies and surface mapping are continuing under the Kirkland Lake Incentives Program, which saw the publication of airborne geophysical maps last year.

In Eastern Ontario, Precambrian and Quaternary mapping and industrial mineral and construction aggregate deposit studies are being started this season under the Minerals Program of the Eastern Ontario Development Sub-Agreement.

METALLIC MINERALS AND PRODUCTS

Copper

Copper prices on the London Metal Exchange (LME) ranged from \$.900 (U.S.) to \$.979 (U.S.) a pound during May. On May 1 the price was \$.917 (U.S.) a pound and by May 30 had risen to \$.962 (U.S.) a pound. The Canadian producer price, which was \$1.09-1.10 a pound at the beginning of May dropped to \$1.06 a pound on May 16, then rose to \$1.12 a pound on May 27.

At month end, copper stocks in the COMEX and LME warehouses stood at 142 533 tonnes and 116 150 tonnes respectively.

The International Wrought Copper Council has forecast a possible surplus in refined copper of 100 000 to 200 000 tonnes this year, assuming no supply disruptions. When stockpile changes and east-west trade are considered, this compares to a deficit of about 540 000 tonnes in 1979. According to the council, production and consumption of refined copper rose to record levels of 7.05 million tonnes and 7.59 million tonnes respectively in 1979.

In the United States, bargaining for a new three-year contract for 39,000 copper mine workers was to begin early in June in Phoenix, Arizona. The current contract expires at most companies on June 30. Copper workers were to be represented by the Nonferrous Coordinated Bargaining Committee, a coalition of several unions, with copper producers to bargain individually. Copper producers scheduled to negotiate are Kennecott Copper Corporation, Inspiration Consolidated Copper Company, Cities Service Company, Newmont Mining Corporation, The Anaconda Company, Phelps Dodge Corporation and ASARCO Incorporated.

Although when copper prices and producer earnings were high earlier this year it was anticipated that companies would likely settle with the unions to avert a strike, company bargaining positions are less predictable now, and strike action would now seem more likely.

At the company's annual meeting, company President Alfred Powis stated that Noranda Mines Limited is continuing negotiations on the Andacolla copper deposit in Chile, and expects to commence production in 1983. Noranda expects to commence full-scale design and development of this deposit in 1980.

Rio Tinto Zinc Corporation Limited (RTZ) has been asked by the Government of Panama to proceed further in the Cerro Colorado copper project, following the approval of proposals submitted by RTZ

for development of an open pit mine. The Panamanian government State Mines Development Corporation (CODEMIN) has stated that Cerro Colorado has a reserve potential of 1 300 000 000 tonnes of average grade 0.78 per cent. According to CODEMIN, maximum operating capacity would be 184 000 tonnes of blister copper per year.

Corporacion National del Cobre de Chile (CODELCO), the Chilean state copper company has stated that CODELCO's total 1979 copper output was 910 199 tonnes, up from 876 495 tonnes in 1978. Of the 1979 production, the Chuquicamata mine contributed 507 200 tonnes, the El Salvador mine 78 100 tonnes and Andina 46 700 tonnes. CODELCO's export shipments of copper in 1979 amounted to 852 341 tonnes, up from 824 387 tonnes in 1978.

Gold

The gold price was comparatively stable during the month of May. The opening price for the month on the London Gold Market was \$507.75 (U.S. per ounce and the low for the month of \$490.00 (U.S.) was recorded at the afternoon fixing. Prices moved up from this low and for most of the month was in the price range of \$510.00 (U.S.) to \$515.00 (U.S.) per ounce. Prices began an upward trend at the end of the month and closed at the month's high of \$535.50 (U.S.) per ounce. Prices continued their upward surge into June and the opening gold price was \$563.00 (U.S.) per ounce.

The monthly average gold price for May 1980 of the afternoon fixing prices on the London Gold Market, was \$513.820 (U.S.) (\$602.76 Cdn.) per ounce of gold compared with an average price of \$517.41 (U.S.) (\$613.44 Cdn.) for April 1980.

The International Monetary Fund (IMF) held its forty-fifth and final gold auction under the present program on May 7, 1980 and awarded a total of 443,200 fine ounces of gold to 21 successful bidders at an average price of \$504.90 (U.S.) per ounce of gold. Prices offered by successful bidders ranged from \$506.20 (U.S.) to \$511.15 (U.S.) per ounce of gold. Bids received totalled 1.82 million ounces of gold. Most of the successful bidders were European bullion dealers or banks but sales were made to banks and bullion dealers in the United States and Canada.

The first IMF gold auction was held on June 2, 1976 and over the four-year period during which the IMF auctioned gold a total of 24,997,600 ounces of gold were sold. Also during this period 24,507,063 ounces of gold were restituted to member countries in four installments.

The IMF has over 100 million ounces remaining in its reserves but no decision has been taken on the future treatment of this gold.

The Mosquito Creek Gold Mining Company Limited poured its first gold bricks at the company's 90-tonne per day gold mine near Wells, British Columbia. The property is owned 50 per cent by Peregrine Petroleum Ltd. Peregrine also owns about 140,000 shares of Mosquito Creek. Reserves are estimated to be about 37 000 tonnes of comparatively good grade ore. This property is in the area of the former producer The Cariboo Gold Quartz Mining Company, Limited, a substantial producer of gold. Mining began in November and the ore was stockpiled on surface until the mill was completed early in 1980.

Campbell Chibougamau Mines Ltd. has brought the new gold circuit of its mill in the Chibougamau district, northwestern Quebec into operation to treat ore from the nearby Gwillim gold deposit. Low grade stockpiled ore was milled during the tune-up period and the first gold brick was poured in May.

The company reports that the mill is now treating in excess of 180 tonnes of ore per day from the Gwillim Mine. Indicated reserves are estimated to be 175 000 tonnes averaging about 7 grams of gold per tonne. The mine property was originally owned by Yorbeau Mines Inc. and Chibougamau Mining & Smelting Co. Inc. After the terms of an agreement with Campbell Chibougamau relating to the recouping of expenditures are completed these two companies will have a total of 25 per cent share in the mines profit.

The United States Treasury announced on May 20, 1980 that under the authority of the American Arts Gold Medallion Act, that the first gold medallions will be offered for sale in early summer. The first issue will consist of one million medallions of one-half ounces of gold and 500,000 medallions of one ounce of gold for a total of one million ounces of gold. The one-ounce medallions will weigh 1.11 troy ounces and will contain one troy ounce of gold and the one-half ounce medallion will weigh 0.555 troy ounces, and will contain one half troy ounce of gold. Diameter of the one ounce medallion will be 1.26 inches and of the one half ounce will be 1.08 inches. In all 10 medallions will be offered over a period of five years.

Sales of the medallions have been limited to three medallions of each size to each individual to ensure that a maximum number of people can take advantage of the opportunity to own the medallions. The charge to a customer will be based on the previous day's closing price on the New York Commodity Exchange on the day the order is placed in addition to a premium to cover production and distribution costs. These medallions will compete against the Republic of South Africa's one ounce krugerrand and the Canadian one ounce maple leaf coin.

Nickel

On May 1, 1980 the Honourable Harry C. Parrott, Ontario Minister of the Environment, introduced a new control order in the Ontario Legislative Assembly which severely reduces the amount of sulphur dioxide emission that Inco Limited is allowed at its Sudbury operations. The control order principally affects Inco's Copper Cliff smelting complex and states that SO₂ emissions from it shall not exceed 2 208 tonnes a working day commencing July 1, 1980. A further reduction to 1 769 tonnes a day is to become effective June 30, 1983. The current emission limit from the Copper Cliff smelter of 3 266 tonnes a day has been in effect since December 31, 1976. Inco's emissions at its current level of production is about 2 360 tonnes a day. Inco in Sudbury is currently producing at over 80 per cent of its nominal capacity of 340 million pounds of nickel a year. A public hearing on the order is to be held June 4, in Sudbury, after which Inco has fifteen days to appeal the order. If the company appeals the order, the application date of July 1 for the order could be delayed for an indeterminate period.

Silver

As with gold the silver price was comparatively stable during the month of May. The opening price for the month as quoted by Handy & Harman of New York was \$12.15 (U.S.) per ounce. Prices improved moderately until about the middle of May when it started a small downward trend to reach a low for the month of \$10.80 (U.S.) per ounce of silver, the lowest price since August 31, 1979. The price increased from this low to close at a high of \$13.55 (U.S.) per ounce of silver for the month.

The monthly average silver price for May, 1980 as quoted by Handy & Harman of New York was \$12.53 (U.S.) per ounce of silver compared with \$14.50 (U.S.) for April and \$24.13 (U.S.) for March. The average silver price in Canadian dollars (Handy & Harman) for the month of May was \$472.68 per kilogram (\$14.70 per ounce) compared with \$552.85 per kilogram (\$17.20 per ounce) for April and \$906.85 per kilogram (\$28.21 per ounce) for March.

At the annual meeting of Texasgulf Inc. it was announced that initial engineering work on construction of a precious metal refinery at its Kidd Creek mine at Timmins, Ontario has begun. The refinery could be in operation by 1982 following the completion of the copper refinery. The Kidd Creek mine is the largest producer of silver in Canada.

Zinc

Cyprus Anvil Mining Corporation lifted its force majeure on shipments of lead and zinc concentrates from its Faro, Yukon Territory, mine and mill on May 7 because the rail bridge between the operation and its principle port has been repaired. Cyprus declared force majeure on April 16, after a landslide destroyed the centre stand of a White Pass and Yukon railroad bridge seven miles from Skagway, Alaska.

INDUSTRIAL MINERALS AND PRODUCTS

Asbestos

On May 26, 1980 the Quebec Superior Court ruled in favour of the constitutionality of Quebec Government legislation aimed at the expropriation of the Quebec assets of Asbestos Corporation Limited (54.6 per cent owned by General Dynamics Corporation, St. Louis, Missouri). No immediate action to seize the \$119 million assets is indicated, pending an appeal by ACL. An earlier injunction in the Quebec Court of Appeals against expropriation would likely be considered in effect during the appeal period.

Directors of Abitibi Asbestos Mining Company Limited announced last month that a decision by year-end is to be made on possible development of the company's property near Amos, Quebec. Extensive exploration and bulk sampling has outlined reserves of approximately 100 million tonnes containing 3.5 per cent fibre in groups 4 to 6. Capital cost estimates were previously indicated to be about \$400 million for a 200 000 tonne-a-year plant. Abitibi is 60 per cent owned by Brinco Limited.

Potash

The Potash Corporation of Saskatchewan (PCS) reported a profit of \$77.9 million in calendar 1979. The company plans to spend at least 1 per cent of its gross annual sales on R & D.

PCS is embarking on a research program with the objective of improving transportation, mining, salt separation and extraction as well as producing new products.

A \$1.3 million pilot plant to manufacture potassium sulphate is under construction at the Cory mine. It is projected that it may lead to the production of about 200 000 tpy of potassium sulphate in 2 to 3 years.

The plant will test an ion exchange process on sodium sulphate (Na_2SO_4) and potassium chloride (KCl) to produce potassium sulphate (K_2SO_4) and thus will also be of benefit to the sodium sulphate industry of the Prairie provinces.

MINERAL FUELS AND PRODUCTS

Crude Oil and Natural Gas

A resource that receives very little public attention is the oil and gas of Ontario. The press is more concerned with large single discoveries as opposed to numerous small discoveries. Discoveries such as Hibernia (oil), West Pembina (oil) and Elsworth (gas) understandably attract more attention because their potential size could impact on Canada's overall declining oil reserves and projected needs for gas reserves. But if one were to look at an oil and gas activity map, then one could see that much of the exploration and development is for smaller pools.

The first discovery of oil in North America was at Oil Springs, Ontario in 1858 and although small by today's standards, kept Ontario as the centre of the Canadian oil industry for nearly a century. In the Great Lakes region, oil and gas exploration began in 1913 on Lake Erie. This area is primarily gas prone with production coming from shallow-depth Silurian reservoirs.

The Ontario Ministry of Petroleum Resources estimates reserves of 0.5 trillion cubic feet of gas for Lake Erie on the Canadian side. Anschutz (Canada) Exploration Ltd. and The Consumers' Gas Company have begun drilling for the 1980 season. Anschutz plans to drill a total of 70 wells penetrating the Thorold, Grimsby and Whirlpool sands at depths of about 5,000 feet. Silurian wells have typically produced at an average of 176,500 cubic feet per day, but it is anticipated that deeper zones may produce 10-20 times as much. Anschutz's exploration programme utilizes two drilling barges, whereas Consumers' plans to use two jackups and a drillship to drill 80 wells.

Currently, the four U.S. states bordering Lake Erie (Michigan, Pennsylvania, Ohio and New York) do not allow exploration in the lake, but with past gas shortages during winter months, these states are considering allowing offshore development.

Coal

Canadian and Japanese officials met in late April and early May to discuss a major coal development program in northeastern British Columbia. The development could ultimately involve the annual export of over 5 million tonnes of coking and thermal coal from several new mines in the Peace River coalfield north and east of Prince George. To facilitate this development, a new townsite, new branch and spur rail lines, upgrading of existing rail lines and a new coal terminal at Prince Rupert would be required. This would be the largest coal-related development in Canadian history and one of the largest coal commitments undertaken by the Japanese steel industry in recent years. A number of companies hold leases in this coalfield and production could expand beyond the 5 million tonne level. Federal-provincial discussions concerning these potential coal developments are continuing.

Coleman Collieries Limited recently announced that it is negotiating a contract for the conversion of waste coal into saleable thermal coal. The contract would involve the cleaning of old reject coal and the marketing of this to a cement company in Tokyo. The Japanese company will conduct pilot tests this summer using samples of the reclaimed coal.

In Nova Scotia an experimental program is assessing the possibility of reclaiming coal from a waste dump near the old Princess Mine. A three-month trial project will investigate the potential for reclaiming waste coal and restoring the land to its original state. The reclaimed coal would be marketed to the nearby Lingan power station on Cape Breton Island.

The Alberta government realized more than \$5 million from the recent disposition of provincial Crown coal rights. The sale of leases to explore for coal were concentrated in the area east of Red Deer. Provincial utilities and oil and gas companies were the major purchasers of the leases.

Uranium

Brinco Limited has indicated in its 1979 Annual Report that its subsidiary Brinex Limited (formerly British Newfoundland Exploration Limited) will not likely proceed this year with the

development of its Kitts-Michelin project in eastern Labrador, due to the depressed uranium market. An agreement reached last year with Commonwealth Edison Company of Chicago has been revised, also because of the market. Commonwealth Edison will purchase a 40 per cent interest in the project and surrounding exploration lands for \$14 million, subject to regulatory approval, but may defer its decision to proceed with the project at this time. Brinco retains the right to repurchase the 40 per cent interest if an alternative buyer of product is identified.

On May 29, 1980, the Premier of Newfoundland announced that his government had accepted a recommendation from a provincial board of inquiry, under the chairmanship of C.W. Powell, that "a development licence for the Kitts-Michelin project be withheld until Brinex can show that it can and will safely dispose of the radioactive waste from its proposed mine and mill".

Canadian Occidental Petroleum Ltd. and Inco Metals Company have announced that their winter drilling program has resulted in the discovery of a new mineralized zone, 520 metres south of its McClean Lake deposit, the discovery of which was announced last year. The McClean Lake deposit is located 11 km northwest of Rabbit Lake, Saskatchewan. Of 84 holes drilled in the new zone, 15 had significant thicknesses of mineralization and yielded assay values greater than 0.085 per cent U over sections of at least 1.5 metres. The mineralization occurs along a strike length of some 945 metres at a depth of about 150 metres.

The federal government has selected a site in the vicinity of Blind River, Ontario for the construction of a new uranium refining facility. The plant will be built by Eldorado Nuclear Limited at a cost of some \$130 million; it will have an annual capacity of 9 070 tonnes U a year as uranium hexafluoride (UF₆). The previous government had earlier endorsed Eldorado's decision to build the plant at a site in Hope township, near Port Hope, Ontario, and site preparation had already commenced. The new government believes it important that resources be processed as close to producing areas as feasible. The decision also recognizes that the ultimate selection of a safe site for interim storage and for underground disposal facilities for spent nuclear fuel will likely be nearer producing areas.

Rio Algom Limited has announced that it has concluded an agreement with Korea Electric Company (KECO) providing for the delivery to KECO of 1 603 tonnes of uranium from Rio's Elliot Lake facilities over the period 1981 to 1990. The agreement is subject to the approval of the Government of Canada.

ESI Resources Limited, a wholly owned subsidiary of Earth Sciences Incorporated of Golden, Colorado, has commissioned a plant that will recover uranium from phosphoric acid produced by Western Co-operative Fertilizers Limited at its fertilizer complex in Calgary, Alberta. This will be Canada's first production of uranium as a

byproduct of phosphoric acid. The phosphate rock is imported from the United States, and uranium will be recovered at the rate of some 60 tonnes U per year for United States customers.

A Bill was recently introduced in Australia's House of Representatives that would impose an export duty on uranium concentrates produced in Australia's Northern Territory. The proposed rate of duty would be 11 cents per kilogram of contained uranium oxide. The proceeds of the tax, estimated to be about \$A 945,000 over the next 3 years, would be used to contribute to the cost of the federal government's environmental monitoring and research activities related to uranium mining in the Northern Territory.

INFORMATION FROM THE TECHNICAL RECORDS CENTRE

Canadian Industries Limited changed its name effective 1 Jan. 1980 to C-I-L Inc.

Quaker State Oil Refining Company of Canada Limited changed its name 13 Feb. 1980 to Quaker State Inc.

S.E.R.E.M. Ltd. changed its name 24 Jan. 1980 to SEREM Ltd. - SEREM Ltée

Quebec Uranium Mining Corporation amalgamated with Cuvier Mines Ltd. into a new company under the name of Cuvier Mines Inc. - Les Mines Cuvier Inc.

NEW PUBLICATIONS

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

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 mai.

Annual Reviews of the Canadian Mineral Industry, 1978, Manganese; Silicon; Titanium; Canadian Reserves of Selected Mineral Commodities.

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.

