

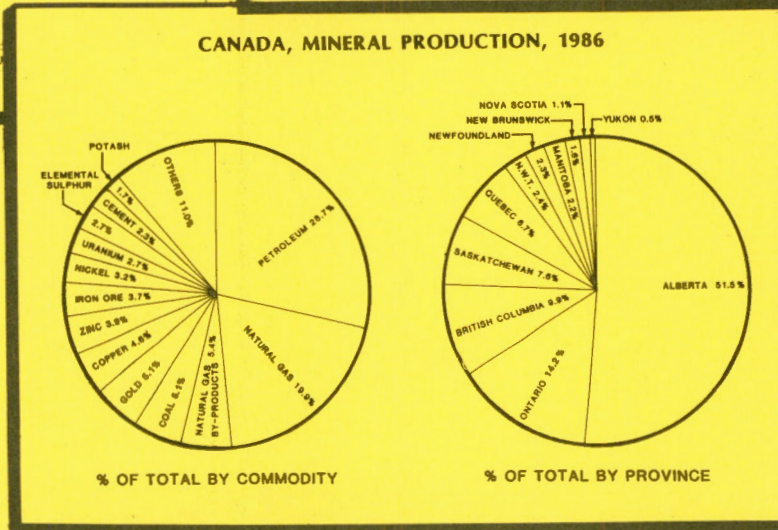
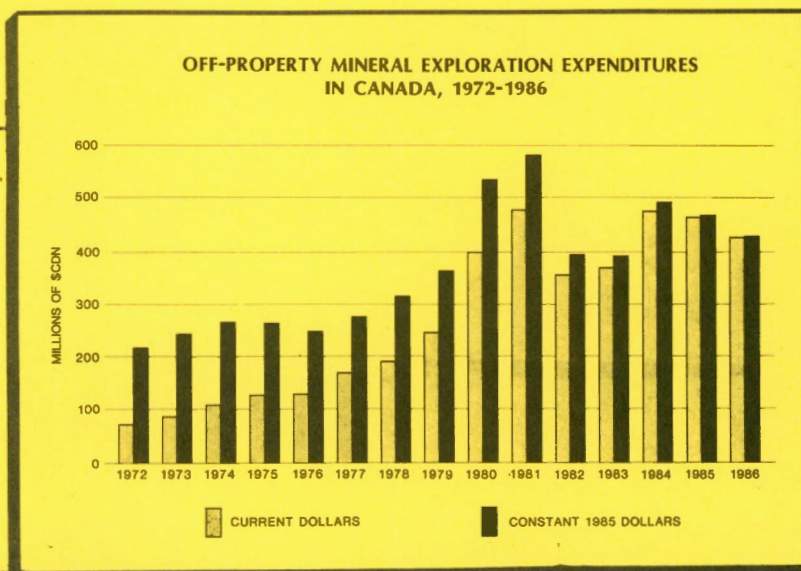
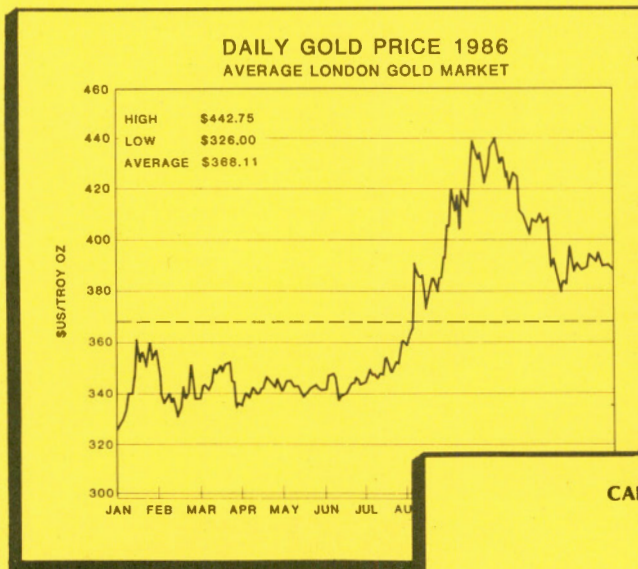
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THE CANADIAN MINERAL INDUSTRY

MONTHLY REPORT

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THE CANADIAN MINERAL INDUSTRY

MONTHLY REPORT



Energy, Mines and
Resources Canada

Hon. Gerald S. Merrithew,
Minister of State
(Forestry and Mines)

Énergie, Mines et
Ressources Canada

L'Hon. Gerald S. Merrithew,
Ministre d'État
(Forêts et Mines)

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PREFACE

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

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THE CANADIAN MINERAL INDUSTRY FOR OCTOBER

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

HIGHLIGHTS

1. Stelco Inc. has announced its intention to form a partnership with Jannock Limited, a company specializing in the fabrication of steel. This arrangement is expected to be of benefit to both companies.
2. The United States International Trade Commission has concluded hearings on the Cyprus Minerals Company petition. This petition sought to discontinue General System of Preferences (GSP) status on imports of molybdenum ore, concentrates and oxide. The findings have been sent to the United States Trade Representative, who is expected to render a decision by the end of October.
3. The Free Trade Agreement between Canada and the United States could have a significant impact on the uranium industry. As a result of this agreement, Canada will no longer require maximum upgrading of uranium in Canada before exporting to the United States, while the United States would eliminate the legislative restriction on enrichment of Canadian uranium..
4. INCO Limited, Esso Resources Canada Limited and Lacana Mining Corporation have joined Peat Resources Limited in a project to develop fuel peat from peatlands located in northern Ontario.
5. Entreprises Premier CDN of Rivière-du-Loup, Quebec, Canada's leading peat producer, has initiated its first public share offering. Part of the proceeds will be used to expand the company's activities in western Canada.
6. Potash prices in 1988 are expected to stay firm, even if U.S. anti-dumping action is terminated. Canadian sales to the United States in 1987 should lie between 3.9 and 4.0 million t (K₂O), compared with 4.1 million t in 1986.
7. The average price of gold on the London Gold Market increased marginally to \$US 465.76, up from the previous month's level of \$US 460.17.
8. The combined LME and Comex stocks of copper declined sharply between September 25 and October 23, from 188 081 t to 147 483 t, the lowest end of week inventory in 1987.

ECONOMIC TRENDS

Table 1 provides information on the volume of production of Canada's leading minerals. The first eight months of 1987, relative to 1986, showed production increases for most metals. The largest volume increases were noted for lead (37.5 per cent), uranium (18.3 per cent), and nickel and zinc (14.0 per cent).

Table 2 provides information on Canada's Gross Domestic Product (GDP) at factor cost by industry.

The value of GDP is shown in annualized, seasonally adjusted, constant 1981 dollars.

The annual rate shown for any given month is calculated by multiplying the figure for that month by twelve. It is important to note, however, that if a particular month has been influenced by special factors, such as a strike, the annualized data will reflect this bias.

Factor cost refers to output which is valued exclusive of excise taxes and duties, and provincial and municipal sales taxes. Factor cost does, however, include subsidies and other taxes which are not a function of the level of output or sale.

Seasonally adjusted data removes the effects of repetitive and clearly defined seasonal fluctuations from time series data. Such a practice permits the isolation of trends in the economy which might otherwise be obscured. Seasonal factors include such items as climate, trade practices and social institutions such as Christmas and Easter.

The GDP data is subject to ongoing revision.

Table 2 demonstrates that changes in output levels on an annualized basis shown for August 1987 were positive relative to August 1986, with the exception of Agriculture and the Cement Industry.

Table 3 shows the prices of selected minerals for July and August.

Table 4 shows total activity for Census Value-Added in the mining and mineral manufacturing industries for the years 1979-85 inclusive.

Tables 5 and 6 provide time series information on Gross Domestic Product for major industrial sectors and also for mining and mineral manufacturing. Note that the values are shown in 1981 dollars. The effect of inflation on prices has therefore been removed.

Tables 7, 8 and 9 show data associated with the principal statistics of the mineral manufacturing industry. These statistics provide important information on items such as the number of employees; cost of fuel, electricity, materials and supplies; salaries and wages; and value added.

Table 10 provides a time series illustrating employment, and salaries and wages in the mineral manufacturing industry.

The remaining tables, 11 through 15 inclusive, provide pertinent information on capital and repair expenditure across a broad spectrum of industrial sectors. Table 11 shows that the forecast for expenditures in the mining sector for 1987 is continuing to reveal a downward trend. Mineral manufacturing, however, as shown in Table 15, is forecasting increased capital and repair expenditures in 1987. These forecasts were, however, prepared prior to the stock market collapse in October.

TABLE 1. CANADA, PRODUCTION OF LEADING MINERALS ('000 TONNES EXCEPT WHERE NOTED)

		1986			1987			Percentage Changes		
		July	August	Total 8 months	July	August	Total 8 months	August 1987 August 1986	August 1987 July 1987	1st 8 months 1987 1986
Metals										
Copper		55.0	57.3	482.2	53.6	61.2	486.0	+6.8	+14.2	+0.8
Gold	kg	8 973.0	8 912.6 ^r	68 273.7	9 293.6 ^r	9 415.1	70 949.0	+5.6	+1.3	+3.9
Iron ore		3 444.2	2 687.0 ^r	22 618.7	2 943.4	3 255.1	22 526.0	+21.1	+10.6	-0.4
Lead		14.1	49.4	177.0	29.6	42.4	243.4	-14.2	+43.2	+37.5
Molybdenum	t	877.3	853.1	8 067.3	972.7 ^r	884.8	8 165.2	+3.7	-9.0	+1.2
Nickel		4.5	6.2	105.6	3.3	11.1	120.4	+79.0	+236.4	+14.0
Silver	t	88.7	77.2 ^r	702.7	100.9	93.8	759.4	+21.5	-7.0	+8.1
Uranium ¹	t	845.2	862.8	6 956.2	521.1	1 047.6	8 231.7	+21.4	+101.0	+18.3
Zinc		88.1	166.6	688.5	95.2	126.0	785.3	-24.4	+32.4	+14.0
Nonmetals										
Asbestos		45.8	48.7	418.8	58.9	58.3	429.9	+19.7	-1.0	+2.6
Clay products	\$000	19,316.1	18,369.3 ^r	115,121.4	22,048.4	18,067.0	138,426.5	-1.6	-18.1	+20.2
Gypsum		945.8	900.0	6 124.8	954.4 ^r	852.4	5 951.4	-5.3	-10.7	-2.8
Potash K ₂ O		370.6	549.0	4 468.7	422.5	425.1	5 009.6	-22.6	+0.6	+12.1
Cement		1 181.3	1 159.2 ^r	6 532.9	1 404.8 ^r	1 311.5	7 712.6	+13.1	-6.6	+18.1
Lime		184.8	180.7	1 481.5	157.3	180.5	1 506.7	-0.1	+14.7	+1.7
Salt		718.8	751.8 ^r	6 884.3	742.1 ^r	762.0	6 064.3	+1.4	+2.7	-11.9
Fuels										
Coal		3 640.2	4 351.2 ^r	37 585.5	4 978.8	4 645.9	38 193.0	+6.8	-6.7	+1.6
Natural gas	million m ³	6 116.0	6 085.0 ^r	58 716.0	6 526.0	6 223.0	62 029.0	+2.3	-4.6	+5.6
Crude oil and equivalent	000 m ³	8 048.0	7 995.0 ^r	60 223.0	8 294.0	7 894.0	62 122.0	-1.3	-4.8	+3.2

¹ Tonnes uranium (1 tonne U = 1.2999 short tons U₃O₈).^r Revised.

TABLE 2. CANADA, REAL GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY, IN 1981 PRICES, MONTHLY (SEASONALLY ADJUSTED AT ANNUAL RATES)

Industry Sector	1986	1987			Per cent Change
	August	June	July	August	Aug. '87 Aug. '86
	(\$ millions)				
Total Economy	364,543.2	378,237.2	379,610.9	382,567.7	4.9
Primary Industries					
Agriculture	12,294.0	11,301.6	11,324.4	11,450.4	-6.9
Forestry	2,513.5	2,762.4	2,805.6	2,782.8	10.7
Fishing and Trapping	614.8	735.6	664.8	691.2	12.4
Mines, Quarries and Oil Wells	21,047.0	21,405.6	21,824.4	22,334.4	6.1
Mining Industries	7,305.0	8,118.0	8,091.6	8,140.8	11.4
Gold Mines	1,053.0	1,218.0	1,255.2	1,263.6	20.0
Iron Mines	455.1	553.2	549.6	603.6	32.6
Other Metal Mines	3,804.7	4,272.0	4,131.6	4,158.0	9.3
Nonmetal Mines	806.4	830.4	800.4	852.0	5.7
Asbestos Mines	111.5	151.2	189.6	166.8	49.6
Mineral Fuels					
Coal Mines	952.8	975.6	1,047.6	975.6	2.4
Crude Petroleum and Natural Gas	11,777.8	11,874.0	12,232.8	12,628.8	7.2
Secondary Industries					
Manufacturing	70,225.4	74,325.6	73,836.0	74,702.4	6.4
Non-durable Manufacturing	32,089.2	32,842.8	32,944.8	32,695.2	1.9
Durable Manufacturing	38,136.2	41,482.8	40,891.2	42,007.2	10.2
Primary Metal Industries	5,312.2	5,934.0	5,650.8	5,931.6	11.7
Primary Steel Industries	2,117.5	2,325.6	2,352.0	2,390.4	12.9
Steel, Pipe and Tube Industry	253.5	301.2	345.6	375.6	48.2
Iron Foundries	394.1	438.0	421.2	446.4	13.2
Smelting and Refining	1,934.6	2,227.2	1,898.4	2,094.0	8.2
Nonmetallic Mineral Products	2,183.3	2,378.4	2,422.8	2,418.0	10.7
Clay Products Industry	96.8	84.0	98.4	94.8	-2.1
Cement Industry	285.0	330.0	338.4	331.2	16.2
Ready-Mix Concrete Industry	365.5	439.2	439.2	426.0	16.6
Construction Industry	25,172.6	27,576.0	27,794.4	28,010.4	11.3
Transportation and Storage	16,198.7	16,528.8	16,489.2	16,304.4	0.7
Communications	10,243.6	10,965.6	11,031.6	11,250.0	9.8
Other Utilities	10,747.9	11,529.6	11,667.6	11,581.2	7.8
Wholesale Trade	18,885.1	20,356.8	20,486.4	20,577.6	9.0
Retail Trade	24,117.2	25,486.8	25,213.2	25,660.8	6.4
Finance, Insurance and Real Estate	51,812.2	54,036.0	54,873.6	55,515.6	7.1
Community, Business and Personal Service	38,257.6	38,151.2	38,396.9	38,496.5	0.6

TABLE 3. METAL PRICES - 1987

	July	August
Copper		
Electrolytic, U.S. producer f.o.b. refinery, cents (U.S.)	79.019	80.783
Electrolytic, Comex, 1st pos. plus 5¢, cents (Cdn.)	107.664	109.531
Electrolytic, Standard, LME cash, cents (U.S.)	76.677	79.510
Lead		
New York, cents (U.S.)	42.000	42.000
Montreal, cents (Cdn.)	55.750	55.750
LME cash, cents (U.S.)	30.065	29.875
Silver		
New York, cents (U.S.) per troy oz.	767.841	784.738
Toronto, cents (Cdn.) per troy oz.	1,054.086	1,072.405
LME cash, cents (U.S.) per troy oz.	763.487	788.470
Zinc		
St. Louis, H.G., cents (U.S.)	45.668	44.430
Montreal, Electrolytic, cents (Cdn.)	64.500	64.500
LME cash, cents (U.S.)	37.594	36.440
Tin		
New York, Straits, cents (U.S.)	302.630	311.714
Metals Week, composite, cents (U.S.)	403.092	411.479
Gold		
London, p.m., \$US per troy oz.	450.517	461.147
Average, (Sharps Pixley) \$US per troy oz.	450.424	461.067
High, (Sharps Pixley) \$US per troy oz.	462.500	473.400
Low, (Sharps Pixley) \$US per troy oz.	443.350	453.300
Mercury		
\$US per flask	295.652	313.333
Nickel		
Major Producer Cathode, cents (Cdn.)	424.260	424.182
Major Producer Cathode, cents (U.S.)	320.000	320.000
LME cash, \$US	2.156	2.407
Antimony		
New York, dealers, cents (U.S.)	108.913	109.048
Platinum		
New York, refined, \$US per troy oz.	600.000	600.000
Cadmium		
New York, producers, \$US	1.875	1.941
Aluminum		
LME cash, cents (Cdn.)	99.413	108.852
LME cash, cents (U.S.)	74.983	82.117
Cobalt		
Shot/cathode/250 kg., \$US	7.000	7.000
U.S. spot cathode, \$US	6.750	6.740
Tungsten		
LMB ore, low, \$US/MTU	48.000	44.000
GSA domestic, \$US/STU	31.350	31.350
Molybdenum		
M.W. dealer oxide, \$US	2.584	2.946
Uranium		
Nuexco, \$US U ₃ O ₈	16.925	16.810

Average U.S. Exchange Rate for July = 1.32581364, August = 1.3255713

Note: Prices are per pound unless otherwise stated.

TABLE 4. CANADA, CENSUS VALUE ADDED, TOTAL ACTIVITY, MINING AND MINERAL MANUFACTURING INDUSTRIES, 1979-85

	1979	1980	1981	1982	1983	1984	1985
	(\$ million)						
Mining							
Metallic minerals							
Gold	322.8	588.8	519.0	566.2	693.6	660.8	635.3
Silver-lead-zinc	671.9	513.6	380.3	351.1	294.2	465.7	275.3
Nickel-copper-zinc	2,469.7	2,992.2	2,007.9	1,144.9	1,567.3	2,008.1	1,868.5
Iron	1,022.2	1,005.0	1,036.0	761.4	644.6	681.1	817.1
Uranium	525.4	559.3	610.3	600.1	496.9	772.5	813.1
Miscellaneous metal mines	179.7	243.3	150.2	73.7	33.2	72.1	65.4
Total	5,191.6	5,902.2	4,703.8	3,497.4	3,729.8	4,660.5	4,474.7
Industrial minerals							
Asbestos	456.8	473.4	431.5	267.3	254.9	252.7	217.6
Gypsum	27.5	26.9	31.3	26.6	35.1	40.2	50.7
Peat	38.8	42.7	47.8	41.1	43.0	47.1	63.0
Potash	613.5	900.4	889.7	488.5	455.4	717.1	428.8
Sand and gravel	91.5	92.0	98.3	75.6	90.3	104.9	132.9
Stone	121.7	123.4	122.5	109.4	119.5	160.1	207.5
Miscellaneous nonmetals	140.1	152.8	171.0	183.5	201.8	240.5	226.8
Total	1,489.8	1,811.6	1,791.9	1,192.1	1,200.0	1,562.5	1,327.2
Fuels							
Coal	658.6	621.6	671.1	838.0	893.1	1,314.2	1,264.5
Petroleum and natural gas	12,554.1	14,917.3	15,924.6	18,899.8	22,171.3	25,008.4	25,428.7
Total	13,212.7	15,538.9	16,595.8	19,733.5	23,064.3	26,322.6	26,693.2
Total mining industry	19,894.1	23,252.7	23,091.4	24,443.0	27,994.1	32,545.7	32,495.1
Mineral manufacturing							
Primary metal industries							
Primary steel	2,424.3	2,537.9	2,750.9	2,149.9	2,464.9	2,939.6	3,105.9
Steel pipe and tube	280.4	297.6	378.3	320.3	213.4	389.6	388.2
Iron foundries	298.2	266.9	266.0	279.9	326.0	447.7	471.5
Smelting and refining	1,401.0	1,976.9	1,808.9	1,493.0	1,912.4	2,236.9	2,202.4
Aluminum rolling, casting and extruding	249.0	273.5	292.8	289.9	328.2	394.7	284.3
Copper and alloy rolling, casting and extruding	131.5	103.7	129.3	101.6	117.7	147.8	134.7
Metal rolling, casting and extruding, nes	198.9	203.6	210.4	169.2	234.1	323.1	355.2
Total	4,983.3	5,660.1	5,836.6	4,803.8	5,596.9	6,879.3	7,042.1
Nonmetallic mineral products industries							
Cement manufacturers	388.8	357.3	422.2	387.4	407.5	421.9	490.7
Lime manufacturers	49.3	59.5	62.8	60.1	66.2	75.4	70.1
Concrete products manufacturers	328.7	324.6	378.5	349.7	333.6	376.5	463.9
Ready-mix concrete manufacturers	341.6	352.4	430.1	388.6	405.0	397.5	455.3
Clay products (domestic clay)	87.5	84.6	82.0	57.1	78.2	87.7	92.9
Clay products (imported clay)	44.9	51.6	50.9	37.9	37.2	37.3	41.4
Glass manufacturers	294.9	308.1	364.6	339.6	403.8	460.9	466.4
Glass products manufacturers	141.0	143.6	141.0	144.9	209.8	258.1	320.7
Abrasive manufacturers	79.4	92.1	95.9	80.4	91.4	101.9	97.8
Other nonmetallic mineral products industries	460.0	477.5	483.4	426.7	487.6	571.5	672.5
Total	2,226.2	2,251.3	2,510.5	2,272.4	2,521.4	2,788.4	3,171.8
Petroleum and coal products industries							
Petroleum refining	1,390.9	1,750.1	2,641.5	2,108.4	2,563.7	2,498.2	2,478.8
Manufacturers of lubricating oil and greases	38.3	26.7	35.0	31.7	24.8	56.1	75.7
Other petroleum and coal products industries	30.5	36.0	39.3	39.9	52.6	42.1	41.0
Total	1,459.8	1,812.8	2,715.8	2,180.1	2,641.1	2,596.4	2,595.5
Total mineral manufacturing	8,669.2	9,724.2	11,062.9	9,256.2	10,759.5	12,264.1	12,809.3
Total mining and mineral manufacturing	28,563.3	32,977.0	34,154.3	33,699.3	38,753.6	44,809.8	45,304.5

nes Not elsewhere specified.

TABLE 5. CANADA, GROSS DOMESTIC PRODUCT OF INDUSTRIAL PRODUCTION, MINING AND MINERAL MANUFACTURING AT FACTOR COST, 1980-86

(1981=100)	1980	1981	1982	1983	1984	1985	1986P
	(\$ millions)						
Total industrial production	86,879.6	88,675.3	80,910.0	84,981.6	91,963.8	96,502.3	96,894.3
Total mining	19,660.2	17,453.5	16,462.9	17,019.1	18,968.4	19,901.4	19,000.1
Metals							
Gold mines	402.1	487.0	655.7	732.9	797.7	907.1	1,047.0
Iron mines	780.1	820.7	559.5	528.1	637.6	711.1	680.5
Other metal mines	3,383.5	2,514.6	2,134.8	2,229.6	2,545.7	2,495.5	2,607.8
Fuels							
Crude oil and natural gas	11,557.4	9,787.0	9,836.1	10,115.2	10,618.1	11,141.8	10,906.0
Nonmetals							
All nonmetals	741.0	751.3	572.6	630.3	799.2	699.6	715.8
Asbestos	372.5	358.3	248.7	243.3	240.5	244.8	196.4
Salt	67.7	71.0	77.3	81.7	92.9	91.2	98.3
Coal	431.3	466.3	436.9	447.3	656.5	703.2	637.0
Quarry and sand pits	329.1	314.6	230.2	219.4	247.9	220.7	243.6
Services related to mining	1,977.9	1,882.7	1,711.1	1,791.3	2,332.3	2,686.4	1,867.7
Mineral manufacturing							
Primary metals	4,710.5	5,101.0	3,967.1	4,452.1	5,107.2	5,121.5	5,094.7
Primary steel	2,405.1	2,378.2	1,810.2	1,954.6	2,231.9	2,201.5	2,176.8
Steel pipe and tube mills	317.5	322.4	206.1	167.4	238.4	252.2	194.2
Iron foundries	260.8	238.8	230.6	234.2	300.6	297.7	310.8
Nonferrous smelting and refining	1,292.2	1,610.0	1,282.8	1,546.4	1,705.4	1,725.1	1,744.4
Nonmetallic mineral products	2,093.7	2,015.7	1,674.4	1,753.4	1,900.2	2,048.7	2,171.0
Cement	332.2	318.5	254.8	245.9	271.8	302.2	320.5
Concrete products	316.6	311.6	257.4	243.5	278.2	326.1	363.7
Ready-mix concrete	333.2	350.8	276.7	281.7	290.4	326.5	362.7
Glass and glass products	414.2	422.0	397.4	466.7	512.7	528.1	528.1
Miscellaneous nonmetallic products	576.3	505.2	418.4	438.1	466.8	474.4	488.1
Petroleum and coal products	741.2	858.8	732.9	695.6	695.5	679.7	677.2

P Preliminary.

TABLE 6. CANADA, GROSS DOMESTIC PRODUCT BY INDUSTRIES AT FACTOR COST, 1980-86^r

(1981=100)	1980	1981	1982	1983	1984	1985	1986P
	(\$ millions)						
Gross domestic product, all industries	307,388.8	319,537.0	307,521.8	317,201.5	333,274.0	347,708.9	358,938.2
Agriculture	9,736.0	10,611.2	10,933.4	10,610.2	10,810.8	10,703.4	11,579.1
Forestry	2,094.4	2,045.0	1,849.1	2,352.5	2,078.4	2,119.4	2,366.2
Fishing and trapping	493.1	565.3	547.2	541.3	468.5	539.2	541.1
Mines (including milling), quarries and oil wells	19,660.2	17,453.4	16,462.9	17,019.1	18,968.4	19,901.4	19,000.1
Electric power, gas and water utilities	8,781.7	8,950.3	8,976.8	9,376.0	10,151.1	10,765.4	10,973.0
Manufacturing	59,460.7	61,648.1	54,844.3	57,954.5	62,200.3	65,190.5	66,255.8
Construction	22,526.9	25,095.1	23,051.3	23,367.7	23,043.0	24,053.6	24,628.5
Transportation and storage	14,600.3	14,428.6	13,222.0	13,928.4	15,117.4	15,814.4	16,183.4
Communications	8,094.3	8,728.3	8,821.5	8,979.7	9,288.6	9,715.9	10,338.4
Trade, wholesale	14,425.6	15,413.6	13,590.9	14,326.4	15,440.6	16,331.3	17,652.7
Trade, retail	19,531.1	19,661.3	18,860.4	19,731.6	20,800.3	22,388.0	23,238.7
Community, business and personnel services	30,428.2	32,911.3	32,644.3	32,487.6	35,017.1	36,468.7	39,079.0
Finance, insurance and real estate	43,050.1	44,155.3	44,690.3	46,177.7	48,698.7	51,447.5	53,390.3
Government service	21,146.0	21,714.9	22,349.1	22,678.4	22,933.4	23,109.6	23,264.1

P Preliminary, ^r revised.

TABLE 7. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES, 1985

	Mineral Manufacturing Activity								Total Activity ¹		
	Production and Related Workers				Costs				Employees (number)	Salaries and Wages (\$000)	Value Added (\$000)
	Establish- ments (number)	Employees (number)	Person- hours Paid (000)	Wages (\$000)	Fuel and Electric- ity (\$000)	Materials and Supplies (\$000)	Value of Shipments (\$000)	Value Added (\$000)			
Primary metal industries											
Primary steel	59	36 396	77 549	1,249,863	502,907	4,199,153	7,695,677	3,094,771	47 685	1,699,323	3,105,899
Steel pipe and tube	40	4 806	10 799	156,974	29,507	791,719	1,216,506	387,419	5 978	196,175	388,191
Iron foundries	101	6 470	13 935	182,557	44,280	274,194	777,188	469,028	7 750	228,925	471,519
Smelting and refining	30	21 443	43 572	749,994	424,357	1,931,007	4,595,599	2,187,463	30 567	1,151,737	2,202,355
Aluminum rolling, cast- ing and extruding	70	4 755	10 658	143,015	42,984	901,250	1,343,789	376,232	6 196	201,222	384,285
Copper and alloy roll- ing, casting and extruding	39	2 545	5 272	64,533	15,204	347,923	501,763	138,571	3 012	79,638	134,683
Metal rolling, casting and extruding, nes	96	4 574	9 704	113,871	29,153	461,624	840,433	352,806	5 620	149,827	355,169
Total	435	80 989	171 489	2,660,807	1,088,392	8,906,869	16,970,955	7,006,289	106 808	3,707,847	7,042,100
Nonmetallic mineral products industries											
Cement	24	2 240	5 034	81,756	166,235	146,745	795,683	484,497	3 533	130,689	490,694
Lime	14	601	1 278	19,926	47,671	23,463	140,142	69,434	783	26,582	70,118
Concrete pipe	50	1 402	3 011	34,628	6,201	79,413	190,049	109,378	1 791	47,416	110,094
Structural concrete products	53	1 883	3 988	48,730	4,488	78,357	232,278	152,611	2 329	64,644	151,905
Other concrete products	288	3 757	7 599	77,570	15,393	158,436	369,234	196,946	4 216	93,904	201,934
Ready-mix concrete	584	7 599	15 672	203,311	53,281	704,361	1,196,666	437,980	9 210	253,874	455,336
Gypsum products	27	1 494	3 193	40,042	33,817	163,905	381,044	182,490	2 455	68,799	191,458
Clay products (domestic)	39	1 142	2 412	26,795	26,578	23,237	141,412	92,211	1 579	41,503	92,939
Clay products (imported)	49	954	1 873	16,763	4,318	18,451	62,174	40,617	1 148	21,910	41,365
Primary glass	18	5 843	12 378	165,542	71,328	187,712	731,342	468,552	7 758	232,071	466,440
Glass products	127	4 243	8 932	99,833	14,650	290,256	619,088	313,466	5 114	126,925	320,686
Abrasives	28	1 409	2 983	34,407	31,743	101,532	229,326	94,112	1 895	52,735	97,815
Refractory products	21	984	2 073	25,631	8,297	69,082	159,950	81,923	1 587	44,650	88,297
Mineral insulating products	39	2 044	4 369	57,740	34,288	142,550	317,590	142,771	3 372	104,466	211,242
Other nonmetallic mineral products	171	3 168	6 443	69,107	15,550	116,154	313,163	180,157	3 835	88,743	181,431
Total	1 532	38 763	81 238	1,001,780	533,838	2,303,654	5,879,141	3,047,145	50 605	1,398,911	3,171,754
Petroleum and coal products industries											
Petroleum refining products	33	5 545	12 601	241,441	359,867	20,777,440	23,990,750	2,504,330	15 326	681,414	2,478,816
Lubricating oils and greases	29	544	1 210	15,861	5,117	205,975	277,939	70,380	900	27,062	75,694
Other petroleum and coal products	59	347	703	8,557	5,505	107,146	152,139	39,500	513	13,585	40,956
Total	121	6 436	14 515	265,859	370,489	21,090,561	24,420,828	2,614,210	16 739	722,061	2,595,466
Total, mineral manu- facturing industries	2 088	126 188	267 242	3,928,446	1,992,719	32,301,083	47,270,927	12,667,645	174 152	5,828,819	12,809,320

¹ Includes sales and head offices.
nes Not elsewhere specified.

TABLE 8. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRY BY REGION, 1985

	Mineral Manufacturing Activity								Total Activity ¹		
	Production and Related Workers				Costs				Employees (number)	Salaries and Wages (\$000)	Value Added (\$000)
	Establish- ments (number)	Employees (number)	Person- hours Paid (000)	Wages (\$000)	Fuel and Electri- city (\$000)	Materials and Supplies (\$000)	Value of Shipments (\$000)	Value Added (\$000)			
Atlantic Provinces	132	X	X	X	X	X	X	X	X	X	X
Quebec	506	30 578	61 736	939,562	621,137	7,711,268	11,536,465	3,079,314	42 081	1,398,565	3,081,899
Ontario	837	71 362	154 091	2,237,325	958,653	13,857,241	21,195,147	6,358,094	98 549	3,311,379	6,457,471
Prairie Provinces	367	X	X	X	X	X	X	X	X	X	X
British Columbia	245	X	X	X	X	X	X	X	X	X	X
Yukon and Northwest Territories	1	X	X	X	X	X	X	X	X	X	X
Canada	2 088	126 188	267 242	3,928,446	1,992,719	32,301,083	47,270,927	12,667,645	174 152	5,828,819	12,809,320

¹ Includes sales and head offices.

X Confidential, included in Canadian total.

TABLE 9. CANADA, PRINCIPAL STATISTICS OF THE MINERAL MANUFACTURING INDUSTRIES, 1979-85

	Mineral Manufacturing Activity							Total Activity ¹			
	Production and Related Workers				Costs						
	Establish- ments (number)	Employees (number)	Person- hours Paid (000)	Wages ((\$000)	Fuel and Electri- city ((\$000)	Materials and Supplies ((\$000)	Value of Production ((\$000)	Value Added ((\$000)	Employees (number)	Salaries and Wages ((\$000)	Value Added ((\$000)
1979	2 115	145 929	308 770	2,614,816	1,118,146	19,116,369	28,318,690	8,522,128	202 695	3,910,454	8,669,240
1980	2 143	146 606	308 312	2,927,363	1,272,902	22,045,572	32,177,335	9,417,966	204 872	4,386,065	9,599,868
1981	2 124	140 914	293 781	3,187,784	1,560,453	28,125,138	39,495,229	10,862,006	203 051	4,932,893	11,062,937
1982	2 106	124 304	256 900	3,175,123	1,537,247	27,801,486	38,496,873	9,078,253	182 665	5,070,760	9,256,207
1983	2 143	119 093	246 101	3,281,473	1,701,521	29,177,081	41,675,029	10,580,670	171 719	5,128,268	10,759,467
1984	2 182	124 147	262 222	3,710,851	1,901,089	31,588,420	45,014,678	12,147,253	175 107	5,605,097	12,264,066
1985	2 088	126 188	267 242	3,928,446	1,992,719	32,301,083	47,270,927	12,667,645	174 152	5,828,819	12,809,320

¹ Includes sales and head offices.

TABLE 10. CANADA, EMPLOYMENT, SALARIES AND WAGES IN THE MINERAL MANUFACTURING INDUSTRIES, 1979-85

	Unit	1979	1980	1981	1982	1983	1984	1985
Primary metal industries								
Production and related workers	Number	95 942	97 530	92 337	82 186	77 579	81 454	80 959
Salaries and wages	\$000	1,725,904	1,980,423	2,120,019	2,157,186	2,216,614	2,564,420	2,660,807
Annual average salary and wage	\$	17,989	20,306	22,960	26,248	28,572	31,483	32,866
Administrative and office workers	Number	30 812	28 920	32 831	31 029	27 773	27 496	25 849
Salaries and wages	\$000	713,279	787,022	938,790	1,010,847	964,429	1,033,620	1,047,040
Annual average salary and wage	\$	23,149	27,214	28,595	32,577	34,725	37,592	40,506
Total primary metal industries								
Employees	Number	126 754	126 450	125 168	113 215	105 352	108 950	106 808
Salaries and wages	\$000	2,432,183	2,767,445	3,058,809	3,168,033	3,181,043	3,598,040	3,707,847
Annual average salary and wage	\$	19,188	21,886	24,438	27,982	30,194	33,025	34,715
Nonmetallic mineral products industries								
Production and related workers	Number	41 813	40 799	40 145	33 997	34 097	36 155	38 763
Salaries and wages	\$000	710,622	743,254	818,566	751,915	800,755	883,604	1,001,780
Annual average salary and wage	\$	16,995	18,217	20,390	22,117	23,485	24,439	25,844
Administrative and office workers	Number	14 935	15 287	15 124	13 952	13 353	12 738	11 842
Salaries and wages	\$000	297,211	333,815	369,899	383,405	391,901	394,619	397,129
Annual average salary and wage	\$	19,900	21,837	24,458	27,480	29,349	30,980	33,536
Total nonmetallic mineral products								
Employees	Number	56 748	56 086	55 269	47 949	47 450	48 893	50 605
Salaries and wages	\$000	1,007,833	1,077,069	1,188,455	1,135,320	1,192,656	1,278,223	1,398,911
Annual average salary and wage	\$	17,760	19,203	21,503	23,678	25,135	26,143	27,644
Petroleum and coal products industries								
Production and related workers	Number	8 174	8 277	8 432	8 121	7 417	6 538	6 436
Salaries and wages	\$000	185,290	203,686	249,199	266,022	264,104	262,827	265,859
Annual average salary and wage	\$	22,668	24,609	29,554	32,757	35,608	40,200	41,308
Administrative and office workers	Number	11 019	11 769	14 182	13 380	11 500	10 726	10 303
Salaries and wages	\$000	285,148	337,865	436,430	501,385	490,465	466,006	456,202
Annual average salary and wage	\$	25,887	28,708	30,773	37,473	42,649	43,446	44,279
Total petroleum and coal products								
Employees	Number	19 193	20 046	22 614	21 501	18 917	17 264	16 739
Salaries and wages	\$000	470,438	541,551	685,629	767,407	754,569	728,833	722,061
Annual average salary and wage	\$	24,511	27,015	30,319	35,692	39,888	42,217	43,136
Total mineral manufacturing industries								
Production and related workers	Number	145 929	146 606	140 914	124 304	119 093	124 147	126 188
Salaries and wages	\$000	2,621,816	2,927,363	3,187,784	3,175,123	3,281,473	3,710,851	3,928,446
Annual average salary and wage	\$	17,966	19,968	22,622	25,543	27,554	29,891	31,132
Administrative and office workers	Number	56 766	55 976	62 137	58 359	52 626	50 960	47 964
Salaries and wages	\$000	1,295,638	1,458,702	1,745,109	1,895,637	1,846,795	1,894,246	1,900,371
Annual average salary and wage	\$	22,824	26,059	28,085	32,482	35,093	37,171	39,621
Total mineral manufacturing industries								
Employees	Number	202 695	202 582	203 051	182 665	171 719	175 107	174 152
Salaries and wages	\$000	3,910,454	4,386,065	4,932,893	5,070,760	5,128,268	5,605,097	5,828,819
Annual average salary and wage	\$	19,292	21,651	24,294	27,760	29,864	32,010	33,470

TABLE 11. CANADA, CAPITAL AND REPAIR EXPENDITURES BY SELECTED INDUSTRIAL SECTOR, 1985-87

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Machinery and			Machinery and			Machinery and		
		Construction	Equipment	Total	Construction	Equipment	Total	Construction	Equipment	Total
		(\$ million)								
Agriculture	1985	849.0	2,288.5	3,137.5	324.6	1,275.7	1,600.3	1,173.6	3,564.2	4,737.8
	1986 ^P	761.6	2,130.4	2,892.0	342.7	1,337.1	1,679.8	1,104.3	3,467.5	4,571.8
	1987 ^f	736.7	1,992.9	2,729.6	350.3	1,428.1	1,778.4	1,087.0	3,421.0	4,508.0
Forestry	1985	109.4	95.7	205.1	78.6	245.2	323.8	188.0	340.9	528.9
	1986 ^P	97.1	113.9	211.0	72.4	197.6	270.0	169.5	311.5	481.0
	1987 ^f	115.6	127.5	243.1	87.0	214.5	301.5	202.6	342.0	544.6
Mining ¹	1985	9,273.0	1,632.2	10,905.2	518.1	2,137.2	2,655.3	9,791.1	3,769.4	13,560.5
	1986 ^P	6,089.0	1,078.3	7,167.3	432.1	2,073.6	2,505.7	6,521.1	3,151.9	9,673.0
	1987 ^f	5,740.1	1,081.0	6,821.1	420.1	2,078.4	2,498.5	6,160.2	3,159.4	9,319.6
Construction	1985	240.2	960.7	1,200.9	59.0	925.7	984.7	299.2	1,886.4	2,185.6
	1986 ^P	289.0	1,155.0	1,444.0	59.1	924.2	983.3	348.1	2,079.2	2,427.3
	1987 ^f	312.1	1,247.6	1,559.7	59.7	933.4	993.1	371.8	2,181.0	2,552.8
Housing	1985	21,169.8	-	21,169.8	2,975.1	-	2,975.1	24,144.9	-	24,144.9
	1986 ^P	25,593.4	-	25,593.4	3,042.9	-	3,042.9	28,636.3	-	28,636.3
	1987 ^f	28,487.8	-	28,487.8	3,112.4	-	3,112.4	31,600.2	-	31,600.2
Manufactur- ing	1985	2,565.6	8,950.5	11,516.1	894.1	5,187.8	6,081.9	3,459.7	14,138.3	17,598.0
	1986 ^P	2,417.4	11,492.1	13,909.5	864.0	5,168.2	6,032.2	3,281.4	16,660.3	19,941.7
	1987 ^f	2,604.4	13,331.9	15,936.3	957.0	5,408.0	6,365.0	3,561.4	18,739.9	22,301.3
Utilities	1985	6,770.1	6,905.3	13,675.4	1,971.3	5,041.7	7,013.0	8,741.4	11,947.0	20,688.4
	1986 ^P	6,726.6	6,929.8	13,656.4	1,940.3	5,123.7	7,064.0	8,666.9	12,053.5	20,720.4
	1987 ^f	7,622.5	7,889.2	15,511.7	2,013.2	5,289.9	7,303.1	9,635.7	13,179.1	22,814.8
Trade	1985	666.6	1,801.2	2,467.8	242.2	359.3	601.5	908.8	2,160.5	3,069.3
	1986 ^P	658.9	1,807.4	2,466.3	215.6	328.9	544.5	874.5	2,136.3	3,010.8
	1987 ^f	934.5	1,998.7	2,933.2	216.6	328.7	545.3	1,151.1	2,327.4	3,478.5
Other ²	1985	16,445.9	9,780.3	26,226.2	2,829.2	1,367.8	4,197.0	19,275.1	11,148.1	30,423.2
	1986 ^P	17,891.2	10,476.5	28,367.7	2,911.8	1,533.2	4,445.0	20,803.0	12,009.7	32,812.7
	1987 ^f	20,133.1	11,698.1	31,831.2	3,070.3	1,675.2	4,745.5	23,203.4	13,373.3	36,576.7
Total	1985	58,089.6	32,414.4	90,504.0	9,892.2	16,540.4	26,432.6	67,981.8	48,954.8	116,936.6
	1986 ^P	60,524.2	35,183.4	95,707.6	9,880.9	16,686.5	26,567.4	70,405.1	51,869.9	122,275.0
	1987 ^f	66,686.8	39,366.9	106,053.7	10,286.6	17,356.2	27,642.8	76,973.4	56,723.1	133,696.5
Mining as a percentage of total	1985	16.0	5.0	12.0	5.2	12.9	10.0	14.4	7.7	11.6
	1986 ^P	10.1	3.1	7.5	4.4	12.4	9.4	9.3	6.1	7.9
	1987 ^f	8.6	2.7	6.4	4.1	12.0	9.0	8.0	5.6	7.0

¹ Includes mines, quarries and oil wells. ² Includes finance, real estate, insurance, commercial services, institutions and government departments.

P Preliminary; ^f Forecast; - Nil.

TABLE 12. CANADA, CAPITAL AND REPAIR EXPENDITURES IN MINING¹ BY GEOGRAPHICAL REGION, 1985-87

		Capital Expenditures			Repair Expenditures			Capital and Repair Expenditures		
		Machinery and			Machinery and			Machinery and		
		Construction	Equipment	Total	Construction	Equipment	Total	Construction	Equipment	Total
(\$ million)										
Atlantic Region	1985	1,389.3	176.8	1,566.1	14.4	176.3	190.7	1,403.7	353.1	1,756.8
	1986P	806.0	140.6	946.6	16.7	182.6	199.3	822.7	323.2	1,145.9
	1987 ^f	560.9	101.5	662.4	17.0	180.8	197.8	577.9	282.3	860.2
Quebec	1985	280.4	67.8	348.2	31.2	197.3	228.5	311.6	265.1	526.7
	1986P	255.0	60.4	315.4	22.1	185.6	207.7	277.1	246.0	523.1
	1987 ^f	213.0	83.3	296.3	21.3	187.1	208.4	234.3	270.4	504.7
Ontario	1985	494.6	143.8	638.4	47.2	343.6	390.8	541.8	487.4	1,029.2
	1986P	385.2	149.4	534.6	41.5	339.4	380.9	426.7	488.8	915.5
	1987 ^f	475.6	198.6	674.2	42.4	343.6	386.0	518.0	542.2	1,060.2
Prairie Region	1985	5,603.2	1,104.3	6,707.5	364.5	957.0	1,321.5	5,967.7	2,061.3	8,029.0
	1986P	3,643.7	623.6	4,267.3	305.4	923.1	1,228.5	3,949.1	1,546.7	5,495.8
	1987 ^f	3,722.5	574.0	4,296.5	294.6	925.2	1,219.8	4,017.1	1,499.2	5,516.3
British Columbia	1985	616.3	111.4	727.7	44.4	398.0	442.4	660.7	509.4	1,170.1
	1986P	377.8	92.1	469.9	39.6	384.6	424.2	417.4	476.7	894.1
	1987 ^f	540.1	93.8	633.9	40.6	394.4	435.0	580.7	488.2	1,068.9
Yukon and Northwest Territories	1985	889.2	28.1	917.3	16.4	65.0	81.4	905.6	93.1	998.7
	1986P	621.3	12.2	633.5	6.8	58.3	65.1	628.1	70.5	678.6
	1987 ^f	228.0	29.8	257.8	4.2	47.3	51.5	232.2	77.1	309.3
Canada, total	1985	9,273.0	1,632.2	10,905.2	518.1	2,137.2	2,655.3	9,791.1	3,769.4	13,560.5
	1986P	6,089.0	1,078.3	7,167.3	432.1	2,073.6	2,505.7	6,521.1	3,151.9	9,673.0
	1987 ^f	5,740.1	1,081.0	6,821.1	420.1	2,078.4	2,498.5	6,160.2	3,159.4	9,319.6

¹ Includes mines, quarries and oil wells.P Preliminary; ^f Forecast.

TABLE 13. CANADA, CAPITAL AND REPAIR EXPENDITURES IN MINING¹ AND MINERAL MANUFACTURING INDUSTRIES, 1985-87

	1985			1986P			1987 ^f		
	Capital	Repair	Total	Capital	Repair	Total	Capital	Repair	Total
	(\$ million)								
Mining industry									
Metal mines									
Gold	504.7	113.5	608.2	453.4	116.2	569.6	656.5	133.1	789.6
Silver-lead-zinc	95.3	94.9	190.2	56.8	88.6	145.4	98.8	89.8	188.6
Copper-gold-silver	264.5	246.3	510.8	216.1	229.1	445.2	219.9	234.2	454.1
Iron	113.0	201.4	314.4	115.3	196.9	312.2	84.5	184.9	269.4
Other metal mines	398.4	304.8	703.2	319.6	282.9	602.5	326.2	277.0	603.2
Total metal mines	1,375.9	950.9	2,326.8	1,161.2	913.7	2,074.9	1,385.9	919.0	2,304.9
Nonmetal mines									
Asbestos	34.4	50.5	84.9	35.1	40.4	75.5	43.8	37.1	80.9
Other nonmetal mines ²	889.3	518.3	1,407.6	582.9	510.3	1,093.2	596.0	528.8	1,124.8
Total nonmetal mines	923.7	568.8	1,492.5	618.0	550.7	1,168.7	639.8	565.9	1,205.7
Mineral fuels									
Oil, crude and gas ³	8,605.6	1,135.6	9,741.2	5,388.1	1,041.3	6,429.4	4,795.4	1,013.6	5,809.0
Total mining industries	10,905.2	2,655.3	13,560.5	7,167.3	2,505.7	9,673.0	6,821.1	2,498.5	9,319.6
Mineral manufacturing									
Primary metal industries									
Iron and steel mills	439.4	766.0	1,205.4	786.3	786.7	1,573.0	956.6 ^e	811.2	1,767.8
Steel pipe and tube mills	114.3	74.6	188.9	154.3	60.0	214.3	74.6 ^e	61.0	135.6
Iron foundries	36.7	62.5	99.2	47.5	56.6	104.1	33.6 ^e	57.3	90.9
Smelting and refining	946.4	374.5	1,320.9	577.8	385.9	963.7	510.5 ^e	449.9	960.4
Aluminum rolling, casting and extruding	40.1	52.5	92.6	45.9	56.0	101.9	63.9 ^e	53.1	117.0
Copper and copper alloy, rolling, casting and extruding	6.4	8.5	14.9	8.5	8.7	17.2	19.7 ^e	8.9	28.6
Metal rolling, casting and extruding	29.5	17.7	47.2	29.8	18.5	48.3	26.6 ^e	14.5	41.1
Total primary metal industries	1,612.8	1,356.3	2,969.1	1,650.1	1,372.4	3,022.5	1,685.5	1,455.9	3,141.4
Nonmetallic mineral products									
Cement	27.7	72.0	99.7	42.3	69.6	111.9	53.8 ^e	75.9	129.7
Stone products	1.2	0.5	1.7	1.6	1.6	3.2	1.3 ^e	1.6	2.9
Concrete products	32.3	30.8	63.1	41.0	25.1	66.1	39.4 ^e	21.7	61.1
Ready-mix concrete	32.1	57.4	89.5	31.8	61.3	93.1	52.6 ^e	55.5	108.1
Clay products	4.8	4.6	9.4	23.8	6.9	30.7	23.7 ^e	7.3	31.0
Glass and glass products	84.2	41.7	125.9	93.9	33.2	127.1	85.2 ^e	28.8	114.0
Abrasives	10.2	16.3	26.5	12.5	14.5	27.0	13.4 ^e	11.8	25.2
Lime	5.8	9.5	15.3	6.7	4.7	11.4	7.5 ^e	5.3	12.8
Other nonmetallic mineral products	34.1	59.0	93.1	48.0	61.7	109.7	63.0 ^e	61.0	124.0
Total nonmetallic mineral products	232.4	291.8	524.2	301.6	278.6	580.2	339.9	268.9	608.8
Petroleum and coal products									
Petroleum refineries	331.6	284.1	615.7	408.2	285.4	693.6	545.0 ^e	353.2	898.2
Petroleum and coal products	4.1	3.8	7.9	4.4	13.3	17.7	5.1 ^e	12.8	17.9
Total petroleum and coal products	335.7	287.9	623.6	412.6	298.7	711.3	550.1	366.0	916.1
Total mineral manufacturing industries	2,180.9	1,936.0	4,116.9	2,364.3	1,949.7	4,314.0	2,575.5	2,090.9	4,666.4
Total mining and mineral manufacturing industries	13,086.1	4,591.3	17,677.4	9,531.6	4,455.4	13,987.0	9,396.6	4,589.4	13,986.0

¹ Does not include cement, lime and clay products (domestic clay) manufacturing, smelting and refining. ² Includes coal mines, gypsum, salt, potash and miscellaneous nonmetal mines and quarrying.
P Preliminary; f Forecast; e Estimate.

TABLE 14. CANADA, CAPITAL AND REPAIR EXPENDITURES IN THE MINING INDUSTRY¹, 1981-87

	1981	1982	1983	1984	1985	1986P	1987 ^f
	(\$ million)						
Metal mines							
Capital							
Construction	1,331.3	1,099.4	839.1	942.2	1,053.5	858.4	1,006.7
Machinery	576.4	370.6	312.0	372.7	322.4	302.8	379.2
Total	1,907.7	1,470.0	1,151.1	1,314.9	1,375.9	1,161.2	1,385.9
Repair							
Construction	151.9	112.4	93.3	99.6	104.5	83.1	84.3
Machinery	900.8	805.1	728.0	861.1	846.4	830.6	834.7
Total	1,052.7	917.5	821.3	960.7	950.9	913.7	919.0
Total capital and repair	2,960.4	2,387.5	1,972.4	2,275.6	2,326.8	2,074.9	2,304.9
Nonmetal mines²							
Capital							
Construction	647.8	888.6	1,123.3	658.6	573.6	324.9	406.9
Machinery	417.7	563.3	433.9	571.7	350.1	293.1	232.9
Total	1,065.5	1,451.9	1,557.2	1,230.3	923.7	618.0	639.8
Repair							
Construction	26.0	28.6	25.5	47.2	39.3	26.8	26.0
Machinery	447.8	431.8	401.5	454.8	529.5	523.9	539.9
Total	473.8	460.4	427.0	502.0	568.8	550.7	565.9
Total capital and repair	1,539.3	1,912.3	1,984.2	1,732.3	1,492.5	1,168.7	1,205.7
Mineral fuels							
Capital							
Construction	5,825.1	6,019.2	6,034.1	6,643.5	7,645.9	4,905.7	4,326.5
Machinery	1,206.3	1,420.5	880.6	686.7	959.7	482.4	468.9
Total	7,031.4	7,439.7	6,914.7	7,330.2	8,605.6	5,388.1	4,795.4
Repair							
Construction	514.4	484.4	427.4	283.4	374.3	322.2	309.8
Machinery	639.0	698.3	656.7	709.5	761.3	719.1	703.8
Total	1,153.4	1,182.7	1,084.1	992.9	1,135.6	1,041.3	1,013.6
Total capital and repair	8,184.8	8,622.4	7,998.8	8,323.1	9,741.2	6,429.4	5,809.0
Total mining							
Capital							
Construction	7,804.2	8,007.2	7,996.5	8,244.3	9,273.0	6,089.0	5,740.1
Machinery	2,200.4	2,354.4	1,626.5	1,631.1	1,632.2	1,078.3	1,081.0
Total	10,004.6	10,361.6	9,623.0	9,875.4	10,905.2	7,167.3	6,821.1
Repair							
Construction	692.5	625.4	546.2	430.2	518.1	432.1	420.1
Machinery	1,987.6	1,935.2	1,786.2	2,025.4	2,137.2	2,073.6	2,078.4
Total	2,680.1	2,560.6	2,332.4	2,455.6	2,655.3	2,505.7	2,498.5
Total capital and repair	12,684.7	12,922.2	11,955.4	12,331.0	13,560.5	9,673.0	9,319.6

¹ Does not include cement, lime and clay products (domestic clays) manufacturing, smelting and refining. ² Includes coal mines, asbestos, gypsum, salt, potash, miscellaneous nonmetals, quarrying and sand pits.

P Preliminary; ^f Forecast.

TABLE 15. CANADA, CAPITAL AND REPAIR EXPENDITURES IN THE MINERAL MANUFACTURING INDUSTRIES, 1981-87

	1981	1982	1983	1984	1985	1986P	1987 ^f
	(\$ million)						
Primary metal industries¹							
Capital							
Construction	330.1	278.3	112.5	318.6	593.8	334.3	299.9
Machinery	1,289.6	927.5	550.6	712.6	1,019.0	1,315.8	1,385.6
Total	1,619.7	1,205.8	663.1	1,031.2	1,612.8	1,650.1	1,685.5
Repair							
Construction	139.0	99.2	111.4	119.6	125.2	121.3	143.9
Machinery	1,053.3	1,021.6	1,053.1	1,215.7	1,231.1	1,251.1	1,312.0
Total	1,192.3	1,120.8	1,164.5	1,335.3	1,356.3	1,372.4	1,455.9
Total capital and repair	2,812.0	2,326.6	1,827.6	2,366.5	2,969.1	3,022.5	3,141.4
Nonmetallic mineral products²							
Capital							
Construction	93.4	32.0	14.8	26.6	39.2	31.9	41.0
Machinery	254.0	134.4	125.5	151.0	193.2	269.7	298.9
Total	347.4	166.4	140.3	177.6	232.4	301.6	339.9
Repair							
Construction	23.7	20.7	20.7	26.3	21.2	24.0	23.0
Machinery	227.5	211.1	204.1	236.5	270.6	254.6	245.9
Total	251.2	231.8	224.8	262.8	291.8	278.6	268.9
Total capital and repair	598.6	398.2	365.1	440.4	524.2	580.2	608.8
Petroleum and coal products							
Capital							
Construction	629.9	890.8	629.6	321.4	248.3	309.5	406.7
Machinery	215.0	333.7	211.2	111.0	87.4	103.1	143.4
Total	844.9	1,224.5	840.8	432.4	335.7	412.6	550.1
Repair							
Construction	212.9	218.5	196.0	230.3	213.0	222.5	274.4
Machinery	89.1	101.2	68.6	79.3	74.9	76.2	91.6
Total	302.0	319.7	264.6	309.6	287.9	298.7	366.0
Total capital and repair	1,146.9	1,544.2	1,105.4	742.0	623.6	711.3	916.1
Total mineral manufacturing industries							
Capital							
Construction	1,053.4	1,201.1	756.9	666.6	881.3	675.7	747.6
Machinery	1,758.6	1,395.6	887.3	974.6	1,299.6	1,688.6	1,827.9
Total	2,812.0	2,596.7	1,644.2	1,641.2	2,180.9	2,364.3	2,575.5
Repair							
Construction	375.6	338.4	328.1	376.2	359.4	367.8	441.4
Machinery	1,369.9	1,333.9	1,328.1	1,531.5	1,576.6	1,581.9	1,649.5
Total	1,745.5	1,672.3	1,653.9	1,907.7	1,936.0	1,949.7	2,090.9
Total capital and repair	4,557.5	4,269.0	3,298.1	3,548.9	4,116.9	4,314.0	4,666.4

¹ Includes smelting and refining. ² Includes cement, lime and clay products manufacturing.
P Preliminary; ^f Forecast.

METALLIC MINERALS AND PRODUCTS

Copper W. McCutcheon

Metal Prices Cents (U.S.)/lb.

	London Metal Exchange (LME) Grade A Cash Settlement Oct. 1-30	Commodities Exchange, Inc. (Comex) 1st Position Oct. 1-29
High	93.9	86.0
Low	80.3	75.2
Average	89.0	83.0
Year to Date Average	72.6	70.3
Year to Date Average Cents Cdn	96.5	93.4

Events related to the decline of values in major stock exchanges throughout the world, also unsettled the metals markets, including that of copper. The October low and high prices on the LME occurred on sequential days. The premia on both LME and Comex prices vary considerably: premia of up to 9 cents (U.S.)/lb. in New York reflected the shortage of "nearby" metal.

The backwardation of three-month copper with respect to cash copper, that started in early March, continued through October and ranged from 1.1 to 8.4 cents (U.S.)/lb. The LME cash settlement price averaged 0.68 Special Drawing Rights/lb. (SDR/lb.) for the period of October 1-30.

Between September 25 and October 23, combined LME and Comex stocks declined sharply from 188 081 t to 147 483 t. This was the lowest end of week inventory in 1987.

The Selbaie operation in northwestern Quebec will put its A2 underground zone into production by the last quarter of 1988 augmenting both the underground B zone and the open pit A1 zone currently in operation. The reserves of the A2 zone are 1.94 million t at 2.24 per cent copper, 1.04 per cent zinc, 1.23 g/t gold and 19.38 g/t silver. The B and A1 zones will be mined simultaneously at a rate of 1 650 tpd, while the A2 zone will continue at a rate of 5 000 tpd. The 1988 production is forecast at 52 million lb. of copper.

Development of the Escondida project in northern Chile may be announced in mid-June 1988. The project would be the largest single exporter of copper concentrates. Proposed changes in the Chilean tax laws calling for a 4 per cent withholding tax on interest payments for foreign debt may be one reason for the delay in the announcement.

Metallgesellschaft AG forecast that the consumption of copper would rise by 1 to 1.5 per cent for the coming year, and that most nonferrous prices would remain firm.

A 45 000 tpy electrowinning plant is being commissioned at the Morenci mine in Arizona. A further expansion of 22 500 tpy will commence once the original plant is operational.

The Japan Overseas Economic Cooperation Fund will provide a loan to assist the Philippine Associated Smelting and Refining Corp. (PASAR) in expanding its facilities by 25 per cent to 172 500 tpy. The expansion is estimated to cost about \$US 50 million.

Gold

D. Law-West

The average price of gold on the London Gold Market increased marginally to \$US 465.76 from \$460.17 for the previous month.

On October 2, the Ontario Court of Appeal upheld the previous ruling of the Supreme Court of Ontario that Lac Minerals Ltd. turn over ownership of the Page-Williams mine to International Corona Resources Ltd. The ruling will not be enforced until the end of this year by which time there will be a decision as to whether the Supreme Court of Canada will agree to hear a final appeal by Lac. The Page-Williams mine will continue to be operated by a committee representing all the companies involved.

Joint venture partners, Canamax Resources Inc. and Pamorex Minerals Inc. have opened the Bell Creek mine near Timmins in northern Ontario. Production, from the 385 tpd mine/mill complex, is expected to reach nearly 800 kg of gold per year. The proven and probable reserves have been estimated at 995 000 t, grading 5.8 g/t.

Molybdenum

David Fong

The U.S. International Trade Commission (ITC) has sent its findings to the United States Trade Representative (USTR), with respect to the Cyprus Minerals Company petition to discontinue General System of Preferences (GSP) status on the importation of molybdenum oxide, ore and concentrates. The USTR is expected to make its decision by the end of October.

In its findings, ITC is reported to have said that imports of molybdenum ore have not been an important factor in the U.S. market due mainly to the absence of independent roasters. In addition, ITC found that Chile and Mexico could not easily expand their markets for molybdenum products in the United States because of their supply commitments in markets other than those of the United States.

ITC also found that, despite the comparable quality of molybdenum products from Chile and Mexico with those of the United States, price tags from the Latin American producers are lower than those of the U.S. producers, but are equivalent to those of other foreign producers. Because of the low prices, Chile has been able to establish its presence in the U.S. markets.

Steel

Robert McInnis

The Canadian steel industry operated at 72.5 per cent of capacity during the month of September, up slightly from the 70.0 per cent rate of August. Production totalled 1 113 000 t in August and 1 160 000 t in September.

Stelco Inc. announced, on October 1, an investment of \$81.3 million for a half-interest in a partnership to be formed with Jannock Limited. Jannock is a major fabricator of steel, employing 1 500 people. Its annual sales reached \$350 million last year. The deal provides Stelco with a captive market for its steel and the opportunity to participate in downstream manufacturing of steel products. Jannock obtains an assured source of steel.

The Canadian Department of External Affairs' Steel Export Monitoring Programme reported that steel exports to the United States, excluding Temporary Import Bond Transactions and Fabricated Structural, totalled 282 745 t in September, up from 237 045 t the previous month.

Steel exports to the United States, declared as Canadian origin, reached 801 000 t in the third quarter of 1987, a decline of 10.5 per cent from the second quarter and 24 per cent from the first quarter.

Uranium

R.T. Whillans

Early in October, Canada and the United States entered into a Free Trade Agreement (FTA) that could have a significant impact on Canada's uranium industry. Based on the preliminary transcript of the FTA, Canada agreed to "eliminate its requirements that uranium exports be upgraded to the maximum extent possible in Canada prior to export" while the United States agreed to "eliminate the legislative restriction on enrichment of Canadian uranium".

The FTA "binds the Parties not to adopt policies requiring minimum levels of equity holdings by their nationals in domestic firms controlled by investors of the other Party, or requiring forced divestiture". It was also agreed "that all existing laws, regulations, and published policies and practices not in conformity with any of the obligations described [in the investment section] shall be grandfathered".

On October 23, Cigar Lake Mining Corporation (CLMC) announced that it had received final approval from Saskatchewan Environment and Public Safety to proceed with its \$40 million test mining project at Cigar Lake in northeastern Saskatchewan, and had also completed negotiations for its surface lease and human resources agreements. The 490 m-deep shaft will be collared in 1987 and sunk in 1988/89; 5 000 t of ore will then be mined and stockpiled in a six-month mining test.

Late in 1986, CLMC had submitted its proposal for the underground program, designed to study the feasibility of various mining methods, and begun an environmental impact study in support of the project; it received an Underground Exploration Permit from the Atomic Energy Control Board in mid-1987.

INDUSTRIAL MINERALS AND PRODUCTS

Peat

Michel Prud'homme

INCO Limited, Esso Resources Canada Limited and Lacana Mining Corporation have joined Peat Resources Limited in a project to develop fuel peat from peatlands located in northern Ontario. A \$400,000 engineering feasibility and market study will be carried out to examine the economic viability of developing and operating a 250 000 tpy peat processing plant to provide fuel for both industrial and power generation purposes. Depending on the results of this study, the initial production program will involve the design and construction of a \$30 million fuel peat demonstration plant.

The Solidarity Fund of the Quebec Federation of Labour (QFL) has announced the acquisition of about a 6 per cent interest in Entreprises Premier CDN of Rivière-du-Loup, Quebec, after injecting \$3 million in the company's share capital. Entreprises Premier CDN is Canada's leading peat producer and has initiated its first public share offering through the Toronto, Vancouver and Montreal stock exchanges. In Quebec the shares will be eligible under the Quebec Stock Savings Plan (QSSP). The company expects to raise \$12 million through the issue of 1.5 million shares of \$8. It will use part of the proceeds to expand its activities in western Canada, by acquiring a Crown corporation that already operates a peat bog in the Prairie Provinces. Entreprises Premier CDN manages a dozen operations in Quebec and an extraction site in Manitoba.

Potash

George S. Barry

Reaction of the market place to U.S. potash anti-dumping action is as follows:

- U.S. potash demand in 1987 is forecast at 4.8 to 4.9 million t K₂O (5.0 million t in 1986).
- There is no evidence of increased imports in the United States from offshore competitors. East Germany and the U.S.S.R. are offering only small tonnages.
- Israel, the largest offshore exporter, expects to sell less than 200 000 t in the United States in 1987; thus at the upper end of their traditional tonnage.
- Prices in the United States are very firm, ranging from \$US 80 to \$93/t.
- All U.S. producers and Israel maintain prices at the same high Canadian level.
- Offshore prices range from \$US 70 to \$76/t, f.o.b. Vancouver, and are moving higher. Demand is excellent.
- Fall fertilizer sales in the United States are slow but better than would have been expected only a few weeks ago.
- Canadian sales in the United States in 1987 should total between 3.9 and 4.0 million t K₂O compared to 4.1 million t in 1986.
- Canadian sales in the United States in the first half of 1988 are forecast at 2.2 to 2.3 million t K₂O. (Note that total sales for 1988 may still be around 4.1 million t since sales in the first half of a year are always higher).
- Prices in 1988 are expected to stay firm even if U.S. anti-dumping action is terminated as a result of a negative ITC ruling on injury. A drop of \$15 to \$20/t would be considered normal under these circumstances.

EXPLORATION

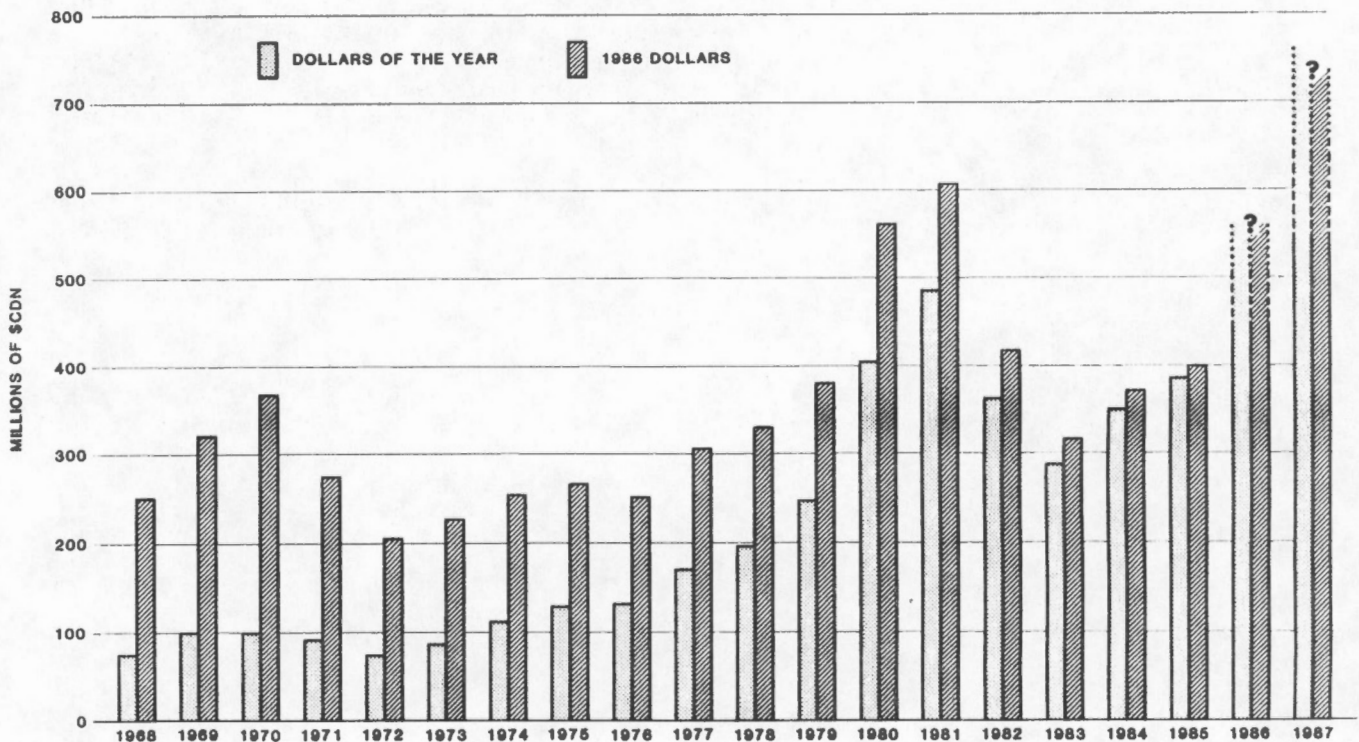
Annual Field Expenditures on Off-Property Mineral Exploration in Canada, 1968-85 D.A. Cranstone

Off-property ("general") field expenditures are a good indicator of exploration activity away from current mines. Reliable field expenditure data are available as far back as 1968. Statistics Canada also gathers statistics on land costs (such as lease rentals) and various overhead and administration costs related to exploration but has done so only since 1980; such related costs generally add some 25 per cent to field expenditures.

The graph below shows annual off-property field expenditures in dollars-of-the-year as well as in constant (1986) dollars (i.e., adjusted for inflation). Rising metal prices, especially in gold, which briefly reached \$US 850 per ounce in 1980, led to the conspicuous peak in exploration in 1980/81. When metal prices declined, in 1982/83, so did exploration. From 1984 on, a growing interest in gold spurred exploration activity again, aided by the introduction in 1983 of flow-through shares as a financing vehicle with tax advantages for investors.

Off-property field expenditures in 1986, not yet entirely compiled, are expected to have been substantially higher than those of 1985, and field expenditures in 1987 are already certain to exceed the 1981 all-time high.

(Note: this bar graph supersedes the illustrative, outdated one on the cover).



SPECIAL ITEM

56th Annual Convention
Prospectors and Developers Association of Canada
March 6-9, 1988
Royal York Hotel
Toronto, Ontario, Canada

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