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THE CANADIAN MINERAL INDUSTRY
MONTHLY REPORT

February 1989

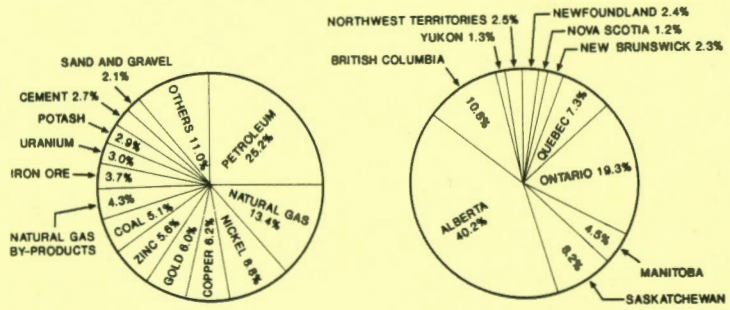
TABLE 3. METAL PRICES - 1988

	October	November
Copper		
Electrolytic, U.S. producer f.o.b. refinery, cents (U.S.)	136.648	150.920
Electrolytic, COMEX, 1st pos. plus 5¢, cents (C.)	166.904	185.133
Electrolytic, Standard, LME cash, cents (U.S.)	127.646	143.821
Lead		
New York, cents (U.S.)		
Montreal, cents (C.)		
LME cash, cents (U.S.)		
Silver		
New York, cents (U.S.) per troy oz.		
Toronto, cents (C.) per troy oz.		
LME cash, cents (U.S.) per troy oz.		
Zinc		
St. Louis, H.G., cents (U.S.)		
Montreal, Electrolytic, cents (C.)		
LME cash, cents (U.S.)		
Tin		
New York, dealers, cents (U.S.)		
Metals Week, composite, cents (U.S.)		
Gold		
London, p.m., US$ per troy oz.		
Average, (Sharps Pixley) US$ per troy oz.		
High, (Sharps Pixley) US$ per troy oz.		
Low, (Sharps Pixley) US$ per troy oz.		
Mercury		
New York, dealers, US$ per flask		
Nickel		
New York, dealers, cathode (U.S.)		
LME cash, US$		
Antimony		
New York, dealers, cents (U.S.)		

600.000
7.010
131.520
108.035
8.400
7.300
55.000
3.429
13.150

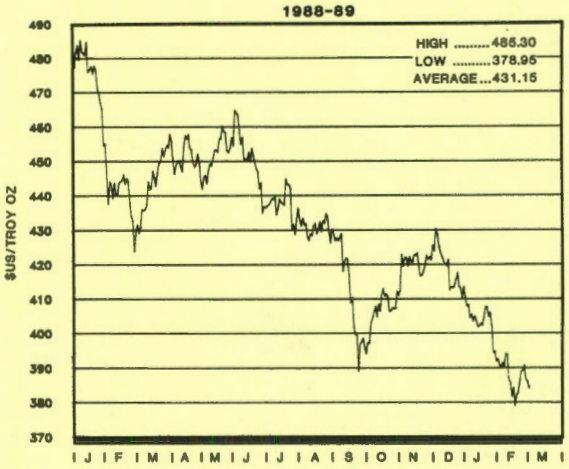
8.

CANADA, VALUE OF MINERAL PRODUCTION, 1988



% OF TOTAL BY COMMODITY % OF TOTAL BY PROVINCE

LONDON DAILY GOLD PRICES
1988-89



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THE CANADIAN MINERAL INDUSTRY

MONTHLY REPORT

Energy, Mines and Resources Canada
Énergie, Mines et Ressources Canada

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 FEBRUARY

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

HIGHLIGHTS

1. Gold prices continued their downward trend in February. The average monthly price fell to about US$388/oz. from US$404/oz. in January. Some analysts feel that gold prices could test the US$325 level by mid-year.

2. Nickel prices averaged US$8.42/lb. in February. Nickel markets remain tight with continuing strong demand and very low inventories.

ECONOMIC TRENDS

Table 1 provides a comparison of the volume of production of Canada's leading minerals for the months of November and December 1988, the corresponding months in 1987 and the yearly totals.

Table 2 provides information on Canada's Gross Domestic Product at factor cost by industry at 1981 prices. The data is also annualized and seasonally adjusted.

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 tax. Factor cost does, however, include subsidies and other taxes which are not a function of the level of output or sale.

Seasonally adjusted data represent time-series data from which the effects of repetitive and clearly defined seasonal fluctuations have been removed. 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 are subject to ongoing revision.

GDP at Factor Cost at 1981 prices increased by 0.5% in December, following a 0.2% gain in November and a 0.1% gain in October. In December, the GDP stood 3.4% above the level of the corresponding month in 1987. Services producing industries advanced by 0.4% in December, while the output of goods producing industries increased by 0.6%.

Table 3 shows the prices of selected metals for November and December 1988.

Tables 4 and 5 provide data on Canada's world role as a producer of certain important minerals for the years 1986 and 1987, respectively. In 1987, Canada ranked first in the production of nickel, uranium and zinc; second in asbestos, gypsum and potash; and third in aluminum, elemental sulphur, lead, molybdenum, the platinum group metals and titanium concentrates.

Tables 6 and 7 show the average annual prices of selected minerals over the period 1982-88. Table 6 provides prices in U.S. dollars and imperial units, except where noted. Table 7 provides prices in Canadian currency and metric units.

Tables 8 and 9 provide data on the selling price indexes for the mineral products industries and for mineral raw materials.

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

		1987			1988			Percentage Changes		
		November	December	Total 12 Months	November	December	Total 12 Months	December 1988 / December 1987	December 1988 / November 1988	12 months 1988 / 1987
Metals										
Copper		64.3	69.9r	794.1	69.7	64.8	756.5	–7.3	–7.0	–4.7
Gold	kg	10 932.3	10 534.5r	115 817.6	10 956.3r	13 022.1	130 489.4	23.6	18.9	12.7
Iron ore		3 821.4	4 237.1r	37 701.8	3 739.8	3 869.3	39 839.4	–8.7	3.5	5.7
Lead		29.2	39.2r	373.2	22.6r	25.7	351.8	–34.4	13.7	–5.7
Molybdenum	t	859.9	1 029.0r	14 771.3	1 138.4	1 065.0	12 968.1	3.5	–6.4	–12.2
Nickel		18.2	18.7r	189.1	19.5	19.3	199.0	3.2	–1.0	5.2
Silver	t	69.2	130.8r	1 374.9	112.8r	111.5	1 371.5	–14.8	–1.2	–0.2
Uranium[1]	t	1 128.1	1 492.1r	13 612.2	1 098.0	993.5	12 325.3	–33.4	–9.5	–9.5
Zinc		100.2	96.4r	1 157.9	88.4r	75.5	1 277.9	–21.7	–14.6	10.4
Nonmetals										
Asbestos		57.9	60.0r	664.5	57.5	56.6	705.0	–5.7	–1.6	6.1
Clay products	$000	15 746.3	11 891.0	210 756.4	16 925.5r	11 804.3	188 714.5	–0.7	–30.3	–10.5
Gypsum		860.5	618.4	9 093.9	759.2	808.6	8 978.0	30.8	6.5	–1.3
Potash K_2O		558.5	763.9	7 668.4	638.8	735.9	8 190.0	–3.7	15.2	6.8
Cement		1 022.0	728.5	12 592.6	1 059.9	718.5	12 380.3	–1.4	–32.2	–1.7
Lime		186.8	214.0r	2 330.1	220.2	222.5	2 504.4	4.0	1.0	7.5
Salt		1 012.1	1 069.8r	10 129.1	984.1	1 104.0	10 647.0	3.2	12.2	5.1
Fuels										
Coal		5 972.6	5 699.4	61 169.2	6 077.1	..	..	..	..	..
Natural gas	million m^3	9 690.0	10 516.0	98 317.0	9 805.0	..	..	..	..	..
Crude oil and equivalent	000 m^3	8 218.0	8 522.0	95 222.0	8 235.0	..	..	..	..	..

[1] Tonnes uranium (1 tonne U = 1.2999 short tons U_3O_8).
r Revised; .. Not available.

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

Industry Sector	1987 December	1988 October	1988 November	1988 December	Percentage Change December 1988 / December 1987
	($ million)				
Total Economy	389 154.9	399 545.6	400 307.9	402 357.4	3.4
Primary Industries					
Agriculture	11 562.5	9 926.2	9 957.3	9 951.3	–13.9
Forestry	2 964.4	2 822.2	2 906.0	3 009.0	1.5
Fishing and Trapping	709.4	753.0	718.4	671.4	–5.4
Mines, Quarries and Oil Wells	22 852.9	23 638.0	23 568.3	23 837.6	4.3
Mining Industries	8 395.3	8 441.3	8 562.4	8 862.7	5.6
Gold Mines	1 491.2	1 596.5	1 598.9	1 833.1	22.9
Iron Mines	684.9	651.0	678.6	627.0	–8.5
Other Metal Mines	4 143.3	3 992.3	4 129.0	4 118.2	–0.6
Nonmetal Mines	780.7	851.8	838.6	880.7	12.8
Asbestos Mines	152.8	189.6	178.8	196.8	28.8
Mineral Fuels					
Coal Mines	1 035.6	1 045.8	1 030.2	1 098.6	6.1
Crude Petroleum and Natural Gas	12 871.3	13 759.1	13 797.3	13 750.8	6.8
Secondary Industries					
Manufacturing	77 094.9	78 682.6	78 561.3	78 791.7	2.2
Non-durable Manufacturing	33 295.7	33 409.1	33 371.4	33 537.0	0.7
Durable Manufacturing	43 799.2	45 273.5	45 189.9	45 254.7	3.3
Primary Metal Industries	6 457.6	6 284.4	6 346.7	6 502.3	0.7
Primary Steel Industries	2 672.5	2 523.8	2 552.6	2 630.7	–1.6
Steel, Pipe and Tube Industry	408.2	311.2	312.4	282.2	–30.9
Iron Foundries	356.7	361.7	371.3	386.8	8.4
Smelting and Refining	2 290.9	2 350.8	2 370.0	2 410.7	5.2
Nonmetallic Mineral Products	2 485.5	2 369.7	2 429.4	2 511.9	1.1
Clay Products Industry	87.5	84.9	95.7	104.0	18.9
Cement Industry	340.5	307.1	328.6	332.2	–2.4
Ready-mix Concrete Industry	475.3	437.8	479.6	499.9	5.2
Construction Industry	27 371.5	29 016.4	28 984.1	29 234.1	6.8
Transportation and Storage	17 528.1	18 289.0	18 492.7	18 345.7	4.7
Communications	11 552.3	12 266.5	12 379.3	12 554.4	8.7
Other Utilities	11 158.5	11 521.1	11 317.4	11 485.1	2.9
Wholesale Trade	21 897.4	22 536.6	22 858.2	23 115.0	5.6
Retail Trade	25 505.9	26 105.1	25 978.3	26 405.8	3.5
Finance, Insurance and Real Estate	56 187.4	58 540.8	59 023.5	59 362.6	5.7
Community, Business and Personal Service	39 162.1	40 936.6	40 980.9	40 997.0	4.7

TABLE 3. METAL PRICES - 1988

	November	December
Copper		
Electrolytic, U.S. producer f.o.b. refinery, cents (U.S.)	150.920	159.870
Electrolytic, COMEX, 1st pos. plus 5¢, cents (C.)	185.133	192.337
Electrolytic, Standard, LME cash, cents (U.S.)	143.821	153.935
Lead		
New York, cents (U.S.)	38.000	42.000
Montreal, cents (C.)	51.000r	51.000
LME cash, cents (U.S.)	31.327	33.117
Silver		
New York, cents (U.S.) per troy oz.	622.536	610.833
Toronto, cents (C.) per troy oz.	783.214	758.106
LME cash, cents (U.S.) per troy oz.	626.613	609.800
Zinc		
St. Louis, H.G., cents (U.S.)	71.248	73.440
Montreal, Electrolytic, cents (C.)	87.600	90.000
LME cash, cents (U.S.)	85.826	72.236
Tin		
New York, dealers, cents (U.S.)	342.125	342.806
Metals Week, composite, cents (U.S.)	457.671	460.285
Gold		
London, p.m., US$ per troy oz.	420.168	418.597
Average, (Sharps Pixley) US$ per troy oz.	420.067	419.147
High, (Sharps Pixley) US$ per troy oz.	424.250	429.000
Low, (Sharps Pixley) US$ per troy oz.	410.900	410.250
Mercury		
New York, dealers, US$ per flask	284.500	275.952
Nickel		
New York, dealers, cathode (U.S.)	5.720	7.421
LME cash, US$	6.052	7.675
Antimony		
New York, dealers, cents (U.S.)	95.000	95.429
Platinum		
New York, refined, US$ per troy oz.	600.000	600.000
Cadmium		
New York, dealers, US$	7.010	7.743
Aluminum		
LME cash, cents (C.)	131.520	131.562
LME cash, cents (U.S.)	108.035	110.000
Cobalt		
Shot/cathode/250 kg., US$	8.400	8.400
U.S. spot cathode, US$	7.300	7.413
Tungsten		
LMB ore, low, US$/MTU	55.000	55.750
Molybdenum		
M.W. dealer oxide, US$	3.429	3.460
Uranium		
Nuexco, US$ U_3O_8	13.150	12.500

Average U.S. Exchange Rate for November = 1.21738, December = 1.19602.
Note: Prices are per pound unless otherwise stated.
r Revised.

TABLE 4. CANADA'S WORLD ROLE AS A PRODUCER OF CERTAIN IMPORTANT MINERALS, 1986

		World	Rank of Five Leading Countries				
			1	2	3	4	5
Uranium (U concentrates)[1]	t	37 110	**Canada**	U.S.A.	South Africa	Australia	Namibia
	% of western world total		11 720	5 200	4 610	4 150	3 300
			31.6	14.0	12.4	11.2	8.9
Zinc (mine production)	000 t	6 757	**Canada**	U.S.S.R.	Australia	Peru	China
	% of world total		988	970	712	598	396
			14.6	14.4	10.5	8.9	5.9
Gypsum	000 t	86 509	U.S.A.	**Canada**	Japan	Spain	France
	% of world total		13 973	8 803	6 350•	5 498	4 398
			16.2	10.2	7.3	6.4	5.1
Potash (K_2O equivalent)	000 t	28 518	U.S.S.R.	**Canada**	East Germany	West Germany	France
	% of world total		10 228	6 697	3 485	2 162	1 610
			35.9	23.5	12.2	7.6	5.6
Sulphur, elemental	000 t	36 175	U.S.A.	**Canada**	U.S.S.R.	Poland	Mexico
	% of world total		9 859	5 750	5 280	4 900	2 054
			27.3	15.9	14.6	13.5	5.7
Titanium concentrates (ilmenite)	000 t	4 587	Australia	**Canada**	Norway	South Africa	U.S.S.R.
	% of world total		1 315	844[2]	771	454	445
			28.7	18.4	16.8	9.9	9.7
Asbestos	000 t	4 050	U.S.S.R.	**Canada**	Brazil	Zimbabwe	China
	% of world total		2 400	662	204	164	150
			59.3	16.3	5.0	4.0	3.7
Nickel (mine production)	000 t	770	U.S.S.R.	**Canada**	Australia	Indonesia	New Caledonia
	% of world total		166	164	77	67	65
			21.6	21.3	10.0	8.7	8.4
Platinum group metals (mine production)	kg	258 682	South Africa	U.S.S.R.	**Canada**	Japan	Australia
	% of world total		123 000	120 000	12 190	2 116	543
			47.5	46.4	4.7	0.8	0.2
Aluminum (primary metal)	000 t	15 549	U.S.A.	U.S.S.R.	**Canada**	Australia	West Germany
	% of world total		3 037	2 350	1 355	877	764
			19.5	15.1	8.7	5.6	4.9
Molybdenum (Mo content)	t	92 567	U.S.A.	Chile	U.S.S.R.	**Canada**	Mexico
	% of world total		42 627	16 581	11 400	11 251	3 500•
			46.0	17.9	12.3	12.2	3.8
Cobalt (mine production)	t	32 469	Zaire	Zambia	U.S.S.R.	**Canada**	Cuba
	% of world total		14 518	4 344	2 800	2 297	1 400
			44.7	13.4	8.6	7.1	4.3
Cadmium (refined production)	t	20 130	U.S.S.R.	Japan	U.S.A.	**Canada**	Belgium
	% of world total		2 700	2 489	2 352	1 484	1 380
			13.4	12.4	11.7	7.4	6.9
Silver (mine production)	t	13 311	Mexico	Peru	U.S.S.R.	**Canada**	U.S.A.
	% of world total		2 308	1 926	1 600	1 088	1 064
			17.3	14.5	12.0	8.2	8.0
Copper (mine production)	000 t	8 404	Chile	U.S.A.	U.S.S.R.	**Canada**	Zambia
	% of world total		1 400	1 147	1 030	699	513
			16.7	13.6	12.3	8.3	6.1
Lead (mine production)	000 t	3 374	U.S.S.R.	Australia	U.S.A.	**Canada**	Mexico
	% of world total		520	447	348	334	197
			15.4	13.2	10.3	9.9	5.8
Gold (mine production)	t	1 591	South Africa	U.S.S.R.	U.S.A.	**Canada**	Australia
	% of world total		640	315	117	103	75
			40.2	19.8	7.4	6.5	4.7

[1] Total of western world. [2] This is 70–80% TiO_2 slag.
• Estimate.

TABLE 5. CANADA'S WORLD ROLE AS A PRODUCER OF CERTAIN IMPORTANT MINERALS, 1987P

		World	Rank of Five Leading Countries				
			1	2	3	4	5
Uranium (U concentrates)[1]	t	36 790	**Canada**	U.S.A.	South Africa	Australia	Namibia
	% of western world total		12 440	5 000	3 960	3 780	3 540
			33.8	13.6	10.8	10.3	9.6
Zinc (mine production)	000 t	6 862	**Canada**	U.S.S.R.	Australia	Peru	China
	% of world total		1 158	950	754	613	344
			16.9	13.8	11.0	8.9	5.0
Nickel (mine production)	000 t	784	**Canada**	U.S.S.R.	Australia	New Caledonia	Indonesia
	% of world total		189	173	73	59	57
			24.1	22.1	9.3	7.5	7.3
Gypsum	000 t	90 003	U.S.A.	**Canada**	Japan	Spain	France
	% of world total		14 163	9 094	6 352•	5 534	4 508
			15.7	10.1	7.3	6.1	5.0
Potash (K_2O equivalent)	000 t	29 708	U.S.S.R.	**Canada**	East Germany	West Germany	France
	% of world total		10 889	7 267	3 510	2 201	1 539
			36.7	24.5	11.8	7.4	5.2
Asbestos	000 t	4 059	U.S.S.R.	**Canada**	Brazil	Zimbabwe	China
	% of world total		2 400	665	210	164	150
			63.8	14.6	3.9	3.8	3.3
Molybdenum (Mo content)	t	88 440	U.S.A.	Chile	**Canada**	U.S.S.R.	Mexico
	% of world total		34 073	16 856	14 771	11 500	3 600•
			38.5	19.1	16.7	13.0	4.1
Platinum group metals (mine production)	kg	266 573	South Africa	U.S.S.R.	**Canada**	Japan	Australia
	% of world total		131 000	121 000	10 930	2 170	622
			49.1	45.4	4.1	0.8	0.2
Sulphur, elemental	000 t	37 363	U.S.A.	U.S.S.R.	**Canada**	Poland	Mexico
	% of world total		9 362	6 120	5 876	4 930	2 291
			25.1	16.4	15.7	13.2	6.1
Aluminum (primary metal)	000 t	16 322	U.S.A.	U.S.S.R.	**Canada**	Australia	West Germany
	% of world total		3 343	2 370	1 540	1 024	738
			20.5	14.5	9.4	6.3	4.5
Titanium concentrates (ilmenite)	000 t	4 584	Australia	Norway	**Canada**	Malaysia	U.S.S.R.
	% of world total		1 393	853	850[2]	500	454•
			30.4	18.6	18.5	10.9	9.9
Lead (mine production)	000 t	3 377	U.S.S.R.	Australia	**Canada**	U.S.A.	Peru
	% of world total		510	486	373	318	192
			15.1	14.4	11.0	9.4	5.7
Cobalt (mine production)	t	28 739	Zaire	Zambia	U.S.S.R.	**Canada**	Cuba
	% of world total		11 874	4 479	2 670	2 490	1 840
			41.3	15.6	9.3	8.7	6.4
Silver (mine production)	t	14 055	Mexico	Peru	U.S.S.R.	**Canada**	U.S.A.
	% of world total		2 461	2 055	1 550	1 375	1 238
			17.5	14.6	11.0	9.8	8.0
Cadmium (refined production)	t	20 070	U.S.S.R.	Japan	U.S.A.	**Canada**	Belgium
	% of world total		2 600	2 450	2 176	1 481	1 308
			13.0	12.2	10.8	7.4	6.5
Copper (mine production)	000 t	8 733	Chile	U.S.A.	U.S.S.R.	**Canada**	Zambia
	% of world total		1 418	1 256	1 010	794	527
			16.2	14.4	11.6	9.1	6.0
Gold (refined production)	t	1 575	South Africa	U.S.S.R.	U.S.A.	**Canada**	Australia
	% of world total		607	300	155	116	108
			38.5	19.0	9.8	7.4	6.9

[1] Total of western world. [2] This is 70–80% TiO_2 slag.
P Preliminary; • Estimate.

TABLE 6. AVERAGE ANNUAL PRICES[1] OF SELECTED MINERALS, 1982–88[2]

	Unit of Measure	1982	1983	1984	1985	1986	1987	1988
Aluminum, London Metal Exchange	¢/lb.	44.966	65.342	56.526	47.850	52.179	71.004	115.394
Antimony, New York dealer	$/lb.	1.072	0.913	1 512	1.311	1.219	1.116	1.039
Asbestos, No. 4T cement fibre	C$/t	876.000	1 083.000	1 083 000	1 083.000	1 083.000	1 083.000	1 080.000
Bismuth, New York dealer	$/lb.	1.533	1.653	4.132	4.932	3.017	3.629	5.726
Cadmium, New York dealer[3]	$/lb.	1.113	1.129	1.693	1.208	1.248	1.768	7.031
Calcium, metal crowns (Producer Price List)	$/lb.	3.050	3.050	3.099	3.504	3.920	3.850	3.850
Chrome, U.S. metal, 9% carbon	$/lb.	4.450	4.450	4.450	4.450	3.021	2.700	2.700
Cobalt, metal, shot/cathode/250 kg	$/lb.	12.500	12.500	12.417	11.700	11.242	7.000	7.532
Columbium, pyrochlore	$/lb.	3.250	3.250	3.250	3.209	2.600	3.250	2.600
Copper, electrolytic cathode, COMEX	¢/lb.	65.820	71.902	61.320	60.988	61.649	77.837	119.183
Gold, London[4]	C$/troy oz.	465.102	520.792	466.781	433.227	510.628	592.011	538.024
Iridium, Impala producer	$/troy oz.	600.000	600.000	600.000	600.000	600.000	513.750	420.000
Iron ore, taconite pellets	¢/ltu	80.500	80.500	80.500	80.500	80.500	77.548	72.441
Lead, producer	C¢/lb.	32.887	26.770	33.517	26.179	30.885	47.985	46.013
Magnesium, U.S. primary ingot (Producer Price List)	$/lb.	1.340	1.365	1.455	1.480	1.530	1.530	1.563
Manganese, U.S. metal, regular	¢/lb.	86.274	67.583	73.542	80.000	79.450	80.687	86.417
Mercury, New York dealer	$/flask (76 lb.)	370.934	322.443	314.381	310.957	232.785	295.503	335.517
Molybdenum, dealer, oxide	$/lb.	4.100	3.635	3.557	3.247	2.871	2.899	3.449
Nickel, New York dealer, cathode	$/lb.	2.328[r]	2.180[r]	2.221[r]	2.260[r]	1.855[r]	2.278[r]	6.122
Osmium, New York dealer	$/troy oz.	130.000	133.113	466.479	913.125	698.854	632.458	588.750
Palladium, Impala producer	$/troy oz.	110.000	130.000	146.667	126.905	130.595	150.000	150.000
Platinum, Impala producer	$/troy oz.	475.000	475.000	475.000	475.000	519.147	600.000	600.000
Potash, coarse, major producer, 60% contained, K_2O[5]	$/st	72.480	71.500	65.000	55.729	46.750	68.000	86.000
Rhodium, Impala producer	$/troy oz.	600.000	600.000	627.500	892.708	1 194.583	1 240.000	1 275.000
Ruthenium, New York dealer	$/troy oz.	25.615	28.529	104.183	100.269	73.423	69.796	62.204
Selenium, New York dealer	$/lb.	3.766	3.722	8.995	7.248	5.596	6.479	10.085
Silver, Handy & Harman, Toronto	C$/troy oz.	9.831	14.154	10.828	8.674	7.862	9.593	8.043
Sulphur elemental, North American deliveries	C$/t	68.300	60.170	69.222	100.775	107.959	88.234	71.050
Tantalum, tantalite ore, spot	$/lb.	31.540	23.146	29.438	26.292	18.008	20.542	37.700
Tellurium, major producer, slab	$/lb.	10.000	9.000	11.000	11.000	10.000	10.006	14.250[e]
Tin, New York dealer	$/lb.	5.869	6.013	5.678	5.279[r]	2.941	3.156	3.309
Titanium, slag	$/lt	150.000	150.000	150.000	150.000	150.000	150.000	215.838
Tungsten, London Metal Bulletin - ore	$/mtu	103.992	79.029	79.146	64.925	42.554	44 492	52.015
Uranium, U_3O_8[6]	C$/lb.	44.234	38.500	34.600	35.380	34.000	30.000	30.000
Vanadium, pentoxide, metallurgical	$/lb.	3.350	3.350	3.350	3.350	3.350	3.350	3.350
Zinc, special high grade	C¢/lb.	49.167	52.632	63.823	56.876	55.129	57.794	74.988

[1] Prices, except where noted, are in United States currency. [2] Sources: Alberta Energy Resource Industries Monthly Statistics, Engineering and Mining Journal, Metals Week, Northern Miner and Mineral Commodity Summaries. [3] 1982–86 U.S. producer price. 1987 and 1988 New York dealer price. [4] Average afternoon fixings of London bullion dealers, converted to Canadian dollars. [5] Annual average not available, indicative price given. [6] From EMR publications on assessment of Canada's uranium supply and demand.
[r] Revised; [e] Estimated.

TABLE 7. CANADIAN AVERAGE ANNUAL PRICES OF SELECTED MINERALS, 1982-88[1]

	Unit of Measure	1982	1983	1984	1985	1986	1987	1988
Aluminum, London Metal Exchange	$/kg	1.223	1.775	1.614	1.440	1.598	2.076r	3.131
Antimony, New York dealer	$/kg	2.917	2.481	4.316	3.947	3.734	3.262	2.819
Asbestos, No. 4T cement fibre	$/t	876.000r	1 083.000r	1 083.000r	1 083.000	1 083.000	1 083.000	1 080.000
Bismuth, New York dealer	$/kg	4.171	4.491	11.795	14.847	9.241	10.609	15.538
Cadmium, New York dealer[2]	$/kg	3.028	3.067	4.833	3.637	3.823	5.812	19.079
Calcium, metal crowns (Producer Price List)	$/kg	8.298	8.286	8.846	10.549	12.008	11.255	10.447
Chrome, U.S. metal, 9% carbon	$/kg	12.107	12.090	12.703	13.396	9.253	7.893	7.327
Cobalt, metal, shot/cathode/250 kg	$/kg	34.009	33.961	35.446	35.222	34.436	20.463	20.439
Columbium, pyrochlore	$/kg	8.842	8.830	9.278	9.660	7.964	9.501	7.055
Copper, electrolytic cathode, COMEX	$/kg	1.791	1.953	1.750	1.836	1.888	2.275	3.234
Gold, London[3]	$/g	14.953	16.744	15.007	13.929	16.417	19.034	17.298
Iridium, Impala producer	$/g	23.806	23.773	24.978	26.341	26.802	21.902	16.621
Iron ore, taconite pellets	¢/mtu	97.776	97.638	102.588	108.187	110.082	101.204	87.757
Lead, producer	¢/kg	72.503	59.018	73.892	57.715	68.090	105.789	101.441
Magnesium, U.S. primary ingot (Producer Price List)	$/kg	3.646	3.709	4.153	4.455	4.687	4.473	4.241
Manganese, U.S. metal, regular	$/kg	2.347	1.836	2.099	2.408	2.434	2.359	2.345
Mercury, New York dealer	$/kg	13.279	11.527	11.808	12.317	9.382	11.366	11.980
Molybdenum, dealer, oxide	$/kg	11.155	9.876	10.154	9.775	8.794	8.475	9.359
Nickel, New York dealer, cathode	$/kg	6.334r	5.923r	6.340r	6.804r	5.682r	6.659r	16.613
Osmium, New York dealer	$/g	5.158	5.274	19.419	40.088	31.218	26.963	23.299
Palladium, Impala producer	$/g	4.364	5.151	6.106	5.571	5.834	6.395	5.936
Platinum, Impala producer	$/g	18.847	18.820	19.774	20.853	23.191	25.579	23.744
Potash, coarse, major producer, 60% contained, K_2O[4]	$/t	98.599	97.128	92.775	83.884	71.601	99.392r	116.685
Rhodium, Impala producer	$/g	23.806	23.773	26.123	39.192	53.363	52.863	2.462
Ruthenium, New York dealer	$/g	1.016	1.130	4.337	4.402	3.280	2.976	2.462
Selenium, New York dealer	$/kg	10.246	10.112	25.677	21.820	17.141	18.940	21.826
Silver, Handy & Harman, Toronto	$/kg	316.074	455.062	348.128r	278.876r	252.769	308.422	258.595
Sulphur elemental, North American deliveries	$/t	68.300	60.170	69.222	100.775	107.959	88.234	71.050
Tantalum, tantalite ore, spot	$/kg	85.811	62.885	84.034	79.150	55.161	60.050	102.302
Tellurium, major producer, slab	$/kg	27.207	24.452	31.401	33.115	30.631	29.250	38.669
Tin, New York dealer	$/kg	15.968	16.337	16.209	15.892r	9.009	9.226	8.979
Titanium, slag	$/t	182.191	181.933	191.158r	201.591	205.121	195.757	261.472
Tungsten, London Metal Bulletin - ore	$/mtu	128.336	97.392	102.481	88.656	59.125	58.996	64.024
Uranium, U[5]	$/kg	115.000	100.000	90.000	92.000	89.000	79.000	110.000
Vanadium, pentoxide, metallurgical	$/kg	9.114	9.102	9.563	10.085r	10.262r	9.793r	9.091
Zinc, special high grade	$/kg	1.084	1.160	1.407	1.254	1.215	1.274	1.653

[1] Sources: Alberta Energy Resource Industries Monthly Statistics, Engineering and Mining Journal, Metals Week, Northern Miner and Mineral Commodity Summaries. [2] 1982–86 U.S. producer price. 1987 and 1988 New York dealer price. [3] Average afternoon fixings of London bullion dealers, converted to Canadian dollars. [4] Annual average not available, indicative price given. [5] From EMR publications on assessment of Canada's uranium supply and demand.

r Revised.

TABLE 8. CANADA, MINERAL PRODUCTS INDUSTRIES, SELLING PRICE INDEXES, 1982-88

Base (1981 = 100)	1982	1983	1984	1985	1986	1987	1988p
Iron and steel products industries							
Ferro-alloy and steel foundries	104.3	104.1	110.5	113.3	114.7	113.3	116.8
Iron foundries	107.4	109.0	112.2	116.6	119.8	121.9	125.8
Primary steel industries	108.7	109.9	113.5	115.7	116.9	118.4	125.2
Steel pipe and tube mills	109.8	108.9	111.0	112.1	112.4	113.0	119.2
Nonferrous primary metal products industries							
Aluminum rolling, casting and extruding	99.9	103.6	116.2	111.2	114.4	117.7	137.9
Copper and alloy, rolling, casting and extruding	93.4	99.2	91.4	93.0	95.9	108.6	144.2
Jewellery and silverware manufacturers	88.6	99.9	90.6	87.7	94.9	99.9	94.6
Metal rolling, casting and extruding, n.e.s.	96.6	99.7	106.6	100.9	102.3	108.6	125.7
Nonferrous metal smelting and refining industries	90.6	95.6	98.1	91.7	95.2	106.5	143.9
Nonmetallic mineral products industries							
Agricultural chemicals industries	102.5	100.2	103.8	104.2	101.7	102.1	108.6
Cement industries	117.9	123.7	128.0	133.9	137.3	138.4	139.9
Clay products from domestic clay	112.8	120.5	130.7	143.0	152.6	164.4	169.5
Clay products from imported clay	110.4	115.5	118.1	121.5	128.1	135.2	142.3
Concrete products	111.2	115.0	113.8	114.0	120.5	126.5	136.3
Glass and glass products	109.4	114.5	119.0	121.1	126.0	131.0	138.0
Nonmetallic mineral insulating materials industries	110.6	112.7	113.4	120.8	121.8	127.3	133.3
Refined petroleum and coal products industries	115.7	121.8	127.1	133.5	107.2	101.9	95.3
Fabricated metal products industries							
Agricultural implements industry	112.5	119.7	125.3	130.3	133.3	135.7	137.8
Fabricated structural metal products	107.8	108.5	110.8	115.3	118.0	120.6	128.2
Hardware, tool and cutlery manufacturers	111.6	115.7	121.6	128.0	132.5	137.5	144.9
Heating equipment manufacturers	111.6	117.5	121.9	127.2	129.6	132.9	137.9
Other metal fabricating industries	107.1	109.5	114.6	119.1	123.5	126.5	133.1
Power boiler and heat exchanger industry	106.0	110.7	114.2	120.0	130.0	141.5	149.2
Stamped pressed and coated metal products	107.1	112.5	115.8	118.4	123.2	127.1	131.6
Wire and wire products manufacturers	106.7	107.2	113.0	115.5	116.4	118.1	124.2

p Preliminary; n.e.s. Not elsewhere specified.

TABLE 9. CANADA, SELLING PRICE INDEXES OF MINERAL RAW MATERIALS,1982-88

Base (1981 = 100)	1982	1983	1984	1985	1986	1987	1988P
Metallic materials							
Copper concentrates	88.0	92.4	80.8	86.6	89.5	106.3	142.1
Iron ore	103.5	105.2	109.5	114.0	115.5	111.4	105.2
Lead concentrates	70.6	57.5	73.1	56.7	67.7	106.2	102.8
Nickel concentrates	91.3	84.5	92.8	99.4	87.2	97.0	229.7
Other base metals, n.e.s.	90.5	95.3	104.8	94.8	96.8	103.6	126.1
Precious metals	82.5	99.0	84.9	77.2	86.6	99.2	90.0
Gold ingots	83.1	98.0	85.0	78.2	88.1	100.5	91.5
Platinum	76.5	99.6	87.5	74.1	119.3	139.0	63.5
Silver	75.4	111.2	82.1	65.8	59.8	72.9	121.4
Radioactive concentrates	110.3	98.5	95.1	91.9	91.1	89.2	80.1
Zinc concentrates	89.9	96.3	118.4	105.0	101.7	108.0	141.0
Nonmetal materials							
Asbestos	100.7	110.9	110.4	108.0	107.7	107.8	108.7
Other nonmetallic materials, n.e.s.	110.5	110.1	114.3	116.0	117.5	117.8	123.0
Potash (muriate)	104.6	91.8	99.5	93.5	92.0	99.0	133.7
Sand and gravel	109.2	108.8	108.2	109.4	112.1	117.3	128.0
Silica sand	110.5	117.2	114.6	118.4	122.1	122.6	131.4
Stone	112.8	123.6	127.5	133.8	138.9	143.4	149.8
- building	112.0	123.2	127.6	132.9	136.5	141.3	145.3
- crushed	114.9	127.6	134.6	143.3	151.0	157.3	164.7
- other	112.0	123.2	127.6	132.9	136.5	141.3	145.3
Sulphur	112.8	98.9	114.4	167.2	179.1	145.9	117.9
Mineral fuels							
Coal, thermal	110.3	111.0	118.6	119.5	119.3	120.2	107.0
Natural gas	127.6	134.3	131.4	131.6	129.2	124.9	115.1
Oil, crude	120.6	130.0	131.8	138.9	80.1	88.6	69.0

P Preliminary; n.e.s. Not elsewhere specified.

METALLIC MINERALS AND PRODUCTS

Gold

D. Law–West (613) 992-4327

Gold prices continued their downward trend in February, dropping to US$378.95, the lowest price since August 1986. The average monthly price dropped to $387.97 from $404.45 in January (see graph on cover page). There are some analysts who feel that gold prices could test the $325 level by the middle of the year.

Placer Dome Inc. announced, on February 14, the pour of the first gold bullion bar at its wholly–owned Dona Lake mine located in northwestern Ontario. Project development began in the third quarter of 1987 and was completed on schedule at a cost of $43 million. The underground mine and mill have a production rate of 55 t/d and will produce about 1245 kg/y of gold. Proven and probable reserves are 750 000 t grading 7.5 g/t. There are an additional 1.17 Mt grading 5.3 g/t at depth. Estimated cash operating cost for the first five years of operation is US$225/oz.

Placer Dome expects that its share of gold production from all sources will reach 37.3 t in 1989.

At the beginning of the month, Hope Brook Gold Inc. announced the temporary suspension of milling at its gold mine in southwestern Newfoundland. During the three to four week shutdown, modifications will be made to the effluent treatment plant that will allow larger volumes of liquid to be treated. This will bring the effluent quality up to required standards. Underground production and development will continue uninterrupted.

The Brazilian government announced a ban on the use of mercury for recovery of gold. Mercury amalgamation is used mainly in the Amazon region of the country where prospectors accounted for at least 60% of the 170 t of mercury imported into Brazil. The extraction process requires about 2 kg of mercury for each kg of gold. While modern and more expensive technology is available to recapture the mercury, in the Amazon region, the ionized mercury escapes to the atmosphere resulting in dangerous levels building up in the environment. There will be great difficulty for the government to enforce the new restrictions.

Nickel

R. Telewiak (613) 992-4481

Nickel prices averaged US$8.42/lb. for February. The nickel market remains tight with demand continuing to be strong and inventories very low.

In the Philippines, the second auction of the nickel complex of Nonoc Mining & Industrial Corporation was held on February 2. Two bids were received but both were rejected by the government. Dallhold Nickel Management Pty Ltd., owned by Alan Bond of Australia, bid US$350 million; and Gulf Sea Services, of Singapore bid US$352 million. While both bids were more than the $300 million minimum set by the government, they were rejected due to non–compliance with the terms for a down payment. The government has decided to stop conducting bidding. Three companies have been requested to submit proposals to the government for direct negotiations on the plant. These companies are Falconbridge Limited, Dallhold Nickel and White Rock Mining Corporation of South Korea.

In South Korea, construction continued on the 12 000 t/y nickel refinery of Korea Nickel Corporation. The plant which will be converting nickel oxide sinter into utility nickel is scheduled to open in June 1989. The plant will largely be supplying nickel to the stainless steel complex of Pohang Iron and Steel Co. Ltd. (Posco), which is expected to open in April.

SPECIAL ITEM

The National Mineral Inventory (NMI)

Natural Graphite

The National Mineral Inventory contains comprehensive information on mineral deposits and occurrences located all over Canada. Information is available in two main formats: 1) The Mineral Deposit Information System (MINSYS); and 2) on NMI cards.

An example of a MINSYS printout for a number of natural graphite deposits and occurrences is shown on the next page. There are currently 251 sets of NMI records for Canadian deposits and occurrences of natural graphite. Most are for Quebec, for which there are 82 records. There are 74 records for Ontario, 36 records for Saskatchewan, and 59 records for the rest of Canada.

NMI cards provide information on:

- the name and location of a deposit
- the deposit's owner or operator
- mineral commodities present
- the exploration and development history
- references to assessment reports and articles on the deposit.

For example, the NMI card for the Beidelman deposit in Ontario indicates that this natural graphite deposit, located in Lyndoch Township, is in crystalline limestone. It was discovered in 1880. Development work was carried out on the property in 1917 and in 1943. The last known owner of the property was Federal Zinc and Lead Company, Limited, in 1948. The NMI record includes seven bibliographic and five map references.

For further information on NMI holdings of information on natural graphite or on any other mineral commodity, contact:

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GRAPHITE IN CANADA
02/21/1989

PROV.	N.T.S.[1]	NMI NO.	OCCURRENCE NAME	HOLDER'S NAME	YEAR[2]	COMMODITIES[3]	S[4]	ADMIN AREA	LAT	LONG	RECORD[5]
NFLD	012H08	Cu 3	Moose Brook	Crown Land		Cu, Pyr, Mo, Grp	8	Green Bay	491929	560244	R 1985
NS	011E03	Grp 1	Stewiacke River	Unknown		Grp	9	Colchester	451200	631400	R 1967
NB	021H05	Grp 1	Golden Grove	Glenvet Res L	1987	Grp	7	Simonds	452112	655818	R 1987
QUE	031F15	U 4	Calumet Uranium	Atlanta Ms L	1967	U, Th, Mo, Grp	2	Grand Calumet	454710	764315	R 1980
QUE	031G11	Grp	Walker Mine	Davis M P	1920	Grp, Mic, Phs	7	Buckingham	453805	752924	A 1980
QUE	031J11	Grp	Standard	Thermo Metals L	1954	Grp	4	Boyer	463227	751314	R 1980
ONT	031C09	Grp 1	Timmins Mine	Lodi Metals Inc	1988	Grp	3	North Burgess	444423	761840	R 1988
ONT	031C10	Grp 1	Kirkham Graphite	Stewart Lake Res Inc	1987	Grp	2	Bedford	443335	763428	R 1987
ONT	031C12	Tlc 1	Eldorado Talc	Eldorado Mng + Milling C	1920	Tlc, Grp	4	Madoc	443555	773245	A 1985
ONT	031E01	Grp 1	Harcourt–Mumford	Frobisher L	1951	Grp	2	Cardiff	430410	781004	R 1981
ONT	031F03	Grp 2	Beidelman	Federal Zinc + Lead C L	1880	Grp	2	Lyndoch	451500	771330	R 1981
MAN	052E12	Pyr 4	Mink No. 14	Selco Expl C L	1964	Pyr, Grp	8	6 12 EPM	493110	955147	R 1973
SASK	064D06	Grp 1	Pollon Lake – 2016	Deep Bay Graphite	1977	Grp, Cu, Ag	2	Reindeer	562300	1030730	R 1978
SASK	074C16	Pyr	Careen Lake Anomaly	Vespar Ms L	1970	Pyr, Grp	8	La Ronge	565701	1080432	A 1977
NWT	025K13	Mic 1	Lake Harbour	Hudson Bay Expl + Dev C L	1918	Grp, Mic	3	Arctic & Hudson Bay	624920	694800	R 1967

1 National Topographic System

3 Commodities present

Ag = silver
Cu = copper
Grp = graphite
Mic = mica
Mo = molybdenum
Ph = phosphate
Pyr = pyrite
Th = thorium
Tlc = talc
U = uranium

2 Year of discovery

4 Commodity status code:

1 = being recovered
2 = unexploited, in reserves
3 = was recovered, reserves remain
4 = was recovered, no reserves
5 = unrecovered significant, in major deposit
6 = unrecovered minor, in major deposit
7 = in significant occurrence, not major deposit
8 = in assays of minor occurrence
9 = no assays; minor occurrence

5 Year record made

A = adopted provincial card
R = NMI card

Commodity significance: codes 1–4, major; codes 5–9, minor.
Deposit significance: codes 1–6, major; codes 7–9, minor.