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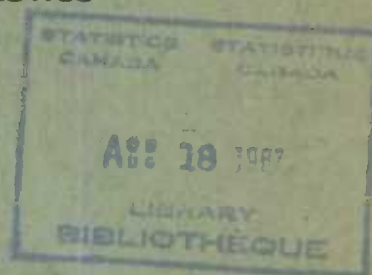
CANADA

DEPARTMENT OF TRADE AND COMMERCE

DOMINION BUREAU OF STATISTICS

+++ *Census of Industry* +++

MINING, METALLURGICAL & CHEMICAL STATISTICS



THE NON-FERROUS SMELTING

AND REFINING INDUSTRY

IN

CANADA



OTTAWA

1948

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THE NON-FERROUS SMELTING AND REFINING INDUSTRY IN CANADA, 1947

The Non-ferrous Smelting and Refining Industry, as defined for statistical purposes, includes only those firms engaged primarily in the smelting of non-ferrous ores or concentrates and the refining of metals recovered therefrom.

The net value added by the industry in the processing of crude or semi-crude material during 1947 totalled \$115,798,652 compared with \$69,565,922 in 1946. Refined products included gold, silver, nickel, copper, lead, zinc, aluminum, tin, magnesium, calcium, barium, antimony, bismuth, cobalt, cadmium, selenium, tellurium and sulphur; other end products of individual plants or companies were copper-nickel matte, cobalt salts, cobalt oxide, nickel oxide, nickel salts, bauxite concentrates, arsenious oxide, sulphuric acid, platinum metals residues, zinc oxide, zinc dust, and blister and anode copper. Statistics relating to the production of pitchblende products at Port Hope, Ontario, are not included in this report.

It should be noted, in a study of these data, that firms operating both mines and smelters may vary from year to year the nominal values of crude ores, etc., shipped from their mines to their own smelters, with the result that in some years the mining industry proper is favoured economically at the expense of the non-ferrous smelting and refining industry and vice versa. The total annual net value of commodity production for the Dominion as a whole is, however, not affected by these arbitrary internal evaluations.

Fuels and electricity used by the industry in 1947 totalled \$28,967,359 compared with \$22,287,572 in 1946. The value of chemicals and other process supplies consumed during the year amounted to \$25,068,884 as against \$16,000,964 in the preceding year.

Employees during 1947 totalled 17,449 compared with 14,546 in 1946 and salaries and wages paid amounted to \$40,767,871 compared with \$30,648,381 in the previous year.

Aluminum Company of Canada Ltd. - Production of aluminum is entirely by this company, which has its alumina plant at Arvida and reduction plants at Arvida, Ile Maligne, Shawinigan Falls, La Tuque and Beauharnois, all in the province of Quebec. These reduction plants have a total rated capacity of about 550,000 tons of aluminum a year or over 20 per cent of the estimated productive capacity of the world.

Fabricating plants are located at Kingston, Toronto and Etobicoke in Ontario and at Shawinigan Falls in Quebec. These plants consume only a small part of the company's production, and Aluminum Company of Canada is primarily a producer and exporter of aluminum ingot.

Developments in 1947 consisted mainly in adjusting production to meet the increased demand. The reduction plants at Shawinigan Falls, La Tuque and Beauharnois were closed and operations were concentrated at Arvida and Ile Maligne. Preparations were made at Shawinigan Falls to re-open the plant.

Note: This report was compiled by A. R. Deir, Mining Statistician.

The production of magnesium metal on a commercial scale began at Arvida, Quebec.

The principal imported raw materials used in the Canadian aluminum industry are bauxite from British Guiana, coal and coke from the United States, fluorspar from Newfoundland, and cryolite from Greenland and the United States.

Noranda Mines Ltd. (From the company's annual report) - During the period from March 1 to December 31, 1947, the smelter treated 648,753 tons of ore, concentrate, refinery slag and scrap brass from which 99,520,581 pounds of anodes were produced. Included in the total material smelted were 289,123 tons of ore, concentrate and scrap which was smelted for other companies on a toll basis. After deducting the copper, gold and silver which was recovered from secondary products such as refinery slag and scrap brass, the estimated recovery of new metals was 85,317,228 pounds of fine copper, 127,446 ounces of gold and 1,044,452 ounces of silver. The estimated recovery from Horne mine ore and concentrate was 29,856,764 pounds of copper, 85,461 ounces of gold and 319,215 ounces of silver.

Canadian Copper Refiners Limited - While copper production in 1947 was only 79 per cent capacity, plans are being prepared for expansion to be completed within a year which will take care of expected increases in the tonnage of refinery receipts. Provision will also be made to produce certain special shapes to meet an increasing demand.

International Nickel Company of Canada, Ltd. (From the President's address April, 1948) - We refine in our plants nickel, copper, cobalt, selenium, tellurium, gold, silver and the platinum metals. The Company's rolling mills and foundries process part of these metals into rolled nickel, Monel, Inconel, Nimonic and other alloys. Sheets, rods, tubes, wire, forgings and castings were made. These commodities are produced in our rolling mill at Huntington, West Virginia, in our Wiggin rolling mills at Birmingham, England, and Glasgow, Scotland, and in our foundry at Bayonne, New Jersey. A plant to recover cobalt was brought into operation at Port Colborne last June and is now making approximately 15 tons of metal in oxide per month.

The new process plant which I mentioned last year will be completed at Copper Cliff before the year-end. Nickel oxide sinter contains approximately 75 per cent of nickel and is a densely sintered nodular nickel oxide which has been developed particularly for use in the manufacture of alloy steels. The material was initially introduced to the producers of rolled and forged alloy steel during the early part of 1947. Nickel oxide sinter has been generally accepted by the steel industry and is now used in the manufacture of both stainless and alloy steels. Consumers report that it is employed as a furnace addition to both cold and molten metal charges in either open hearth or electric furnace practice. It is expected that the use of nickel oxide sinter by the steel industry will increase as our new production facilities become available. In the meantime, the sinter we sell is produced in a pilot plant.

The direct flash smelting of nickel and copper sulphides with oxygen-enriched air and with commercial oxygen as a replacement for conventional reverberatory furnace smelting has been the subject of active research. In the initial stages, such research was confined to laboratory scale experimentation. Early in 1947, pilot plant operations were undertaken with a view to establishing the merits of the process for volume production. The results have been most promising, fully justifying a continuance of these activities.

Falconbridge Nickel Mines Ltd. (From the company's annual report) - During 1947 the ore treatment plants and smelter operated efficiently during 98.7% or more of their possible working time, to process a total of 731,925 tons of ore. Only the larger furnace in the smelter was operated throughout the year. The longest production interruption in the smelter occurred in June when 1.6 production days were lost while repairing the flue system. Repairs to the main stack and its lightning arrester were completed during July.

Deloro Smelting and Refining Co. Ltd. - The cobalt refinery at Deloro resumed treatment of Canadian ores, after having treated residues from Africa since 1940. Large stocks of Canadian ore, held mainly for the United States Government, remain untreated at Deloro. The company operates its silver furnaces only when the accumulation of silver-cobalt ores is enough to make the run worthwhile. Most of the refined white arsenic (As_2O_3) and arsenical insecticides made in Canada are produced by Deloro Smelting and Refining Co. which obtains raw material from the O'Brien mine in western Quebec and from the silver-cobalt arsenic mines of the Cobalt area.

Dominion Magnesium Ltd. - This firm was the only Canadian producer of magnesium during the war. Production temporarily ceased when the stockpile of metal became large enough to meet the current demands of the market. Equipment previously used for magnesium recovery is now used to produce metallic calcium. Calcium is being used by the research project on nuclear fission. Barium metal was added to the list of the firm's products. Metallic strontium was produced on an experimental scale.

Hudson Bay Mining and Smelting Co. Ltd. (From the company's annual report) The tonnage of zinc concentrates treated during the year was higher than in 1946, while the average zinc assay per ton of concentrates treated remained the same. The percentage of recovery of zinc concentrates treated to slab zinc produced was slightly lower than in 1946. The tonnage of high-quality four-nines-plus grade zinc produced was the largest for any year and considerably over last year's record high.

The cadmium plant treated precipitates from the zinc purification plant and produced a total of 172,896 pounds of metallic cadmium, having an average purity of 99.9806 per cent. Production was higher and purity lower than for the preceding year.

The copper smelter operated satisfactorily during the year, and all available material was smelted. The tonnage of pay charge was slightly higher than in the previous year and amounted to 445,109 tons. The tonnage and average assay values of Hudson Bay concentrates and ores smelted, and the tonnage of custom concentrates treated, were as follows:

Tons H.B. concentrates and ores	Assay values per ton			Tons custom concentrates
	Au-oz.	Ag-oz.	Cu. %	
412,901	0.269	3.58	10.70	30,621

Consolidated Mining and Smelting Company of Canada, Ltd. (From the company's annual report) - The production of lead, silver and zinc was slightly lower than in 1946. This was caused chiefly by the treatment of lower grade ore from the Sullivan mine. During the year, there was a substantial increase in our customs ore business, encouraged not only by higher metal prices but also by more attractive treatment rates offered by your Company. A total of 27,504 tons was

received during 1947 from sixty-six mines. Net value to the shippers was \$1,604,565. A still further substantial increase is anticipated.

The extensive use of by-product oxygen from our chemical operations for oxygen-enrichment of air for metallurgical furnaces is of particular interest. Oxygen-enriched air has been used in our zinc roasters and chemical plants to great advantage for many years, but during 1947 it was established from extensive tests that its use in lead blast furnaces and in the slag fuming plant offers great promise.

Table 1 - PRINCIPAL STATISTICS OF THE NON-FERROUS METALLURGICAL INDUSTRY IN CANADA, 1945-1947

	1945	1946	1947
Number of companies	9	9	9
Number of plants	17	15	16
Number of administrative and office employees	2,749	2,238	2,538
Salaries \$	6,812,501	6,277,577	7,690,271
Number of workmen	14,022	12,308	14,911
Wages \$	27,040,619	24,370,784	33,077,600
Value of plant products (gross)(a) \$	355,676,526	304,718,524	453,033,942
Estimated cost of ores, concentrates, etc., treated \$	219,204,858	196,864,066	283,199,047
Cost of fuel and purchased electricity \$	26,837,162	22,287,572	28,967,359
Process supplies (other than ores, fuel, etc.) \$	19,735,628	16,000,964	25,068,884
Value added by smelting (net)(b).. \$	89,898,878	69,565,922	115,798,652

(a) The gross value of production should not be interpreted as the ultimate sale value of finished metal only, as it represents the combined values of all industry (smelting, refining, etc.) and products (blister, copper matte, etc.) and in this sense represents a duplication in values.

(b) See preceding text.

Note: Data in this report do not include those relating to Eldorado Mining and Refining Ltd. which mines and refines pitchblende products.

Table 2 - NUMBER OF WORKMEN, BY MONTHS, 1946 and 1947 (Administrative and Office Employees not Included)

Month	1946		1947	
	Male	Female	Male	Female
January	10,780	88	13,923	65
February	11,210	75	14,091	63
March	11,434	71	14,161	61
April	11,709	69	14,238	61
May	12,240	70	14,412	63
June	12,591	58	14,751	66
July	12,746	59	15,418	69
August	12,599	60	15,332	69
September	12,478	60	15,572	65
October	12,648	64	15,493	68
November	13,169	66	15,426	69
December	13,211	65	15,328	67
AVERAGE	12,239	69	14,845	66

Table 3 - FUEL AND ELECTRICITY USED IN THE NON-FERROUS SMELTING AND REFINING INDUSTRY, 1946 and 1947

Kind	Unit of measure	For Light and Power		For Metallurgical Purposes	
		Quantity	Cost	Quantity	Cost
			\$		\$
1946					
Bituminous coal: Canadian ...	short ton	6,172	61,423	202,521	1,611,379
Imported ...	short ton	31,765	262,163	399,515	3,323,001
Coke	short ton	838	11,178	207,008	2,606,694
Gasoline	Imp.gal.	157,376	48,582	155,155	52,997
Kerosene or coal oil	Imp.gal.	13,833	2,648	8,903	2,128
Fuel oil and diesel oil	Imp.gal.	203,261	17,649	29,487,461	1,948,226
Wood (cords of 128 cubic feet)	cord	12	145	1,630	21,827
Charcoal	lb.	...	...	1,260,034	25,318
Gas: Manufactured	M cu.ft.	...	...	8,979	8,171
Natural	M cu.ft.	...	...	422	321
Electricity purchased	K.W.H.	807,740,131	2,027,808	5,290,492,836	10,255,914
TOTAL .....	...	...	2,431,596	...	19,855,976
Electricity generated -					
For own use	K.W.H.	11,190,000	...	...	...
For sale	K.W.H.	4,528,000	14,630	...	...
1947					
Bituminous coal: Canadian ...	short ton	4,281	43,623	214,397	1,821,478
Imported ...	short ton	28,172	242,332	600,653	5,275,832
Coke	short ton	1,007	14,637	268,012	3,644,512
Gasoline	Imp.gal.	183,287	58,072	155,754	45,523
Kerosene or coal oil	Imp.gal.	12,116	2,435	8,274	2,119
Fuel oil and diesel oil	Imp.gal.	323,921	42,147	35,620,219	2,821,524
Wood (cords of 128 cubic feet)	cord	...	...	1,674	24,830
Charcoal	lb.	...	...	1,095,347	26,437
Gas: Manufactured	M cu.ft.	...	...	6,621	6,279
Natural	M cu.ft.	...	...	439	374
Electricity purchased	K.W.H.	758,408,571	1,909,021	6,744,744,405	12,986,184
TOTAL .....	...	...	2,312,267	...	26,655,092
Electricity generated -					
For own use	K.W.H.	1,383,075	...	538,773,525	...
For sale	K.W.H.	6,591,796	18,868

Non-ferrous

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Table 4 - POWER EMPLOYED IN THE NON-FERROUS SMELTING AND REFINING INDUSTRY, 1947

	Ordinarily in Use		In Reserve or Idle	
	Number of units	Total horse power	Number of units	Total horse power
Steam engines	20	920	2	2,574
Steam turbines	10	9,420	8	11,929
Diesel engines	14	4,139	3	525
Gasoline, gas and oil engines, other than Diesel engines	20	2,425	2	200
Electric motors (except motor- generator sets) -				
(a) Operated by purchased power.	10,742	257,155	3,207	70,235
TOTAL	10,806	274,059	3,222	85,463
(b) Operated by power generated by above primary units	430	6,351	63	3,192
Stationary boilers	51	36,554	14	6,702
Motor-generator sets	168	110,074	28	16,321

Table 5 - AVERAGE ANNUAL METAL PRICES, IN CANADIAN DOLLARS, 1938-1947

Year	Gold	Silver	Copper	Lead	Zinc
	Troy oz.	Troy oz.	Pound	Pound	Pound
			(Dollars)		
1938	35.17	0.435	0.0997	0.034	0.031
1939	36.14	0.405	0.101	0.032	0.031
1940	38.50	0.382	0.101	0.034	0.034
1941	38.50	0.3826	0.101	0.034	0.034
1942	38.50	0.4216	0.101	0.034	0.034
1943	38.50	0.4525	0.1175	0.037	0.040
1944	38.50	0.430	0.120	0.045	0.043
1945	38.50	0.47	0.1255	0.05	0.0644
1946	36.75	0.8365	0.128	0.0675	0.0781
1947	35.00	0.72	0.2039	0.1367	0.1123

Table 6 - TOTAL PRIMARY PRODUCTION OF GOLD IN CANADA, 1943-1947 (From all types of ores)

Year	Fine ounces	\$
1943	3,651,301	140,575,088
1944	2,922,911	112,532,073
1945	2,696,727	103,823,990
1946	2,832,554	104,096,359
1947	3,070,221	107,457,735

Table 7 - SOURCE OF CANADIAN GOLD PRODUCTION, 1943-1947

Year	In alluvial gold	In crude gold bullion produced at mines	In base bullion produced at lead smelters	In blister copper	In ores, matte, slags, etc. exported	Total gold produced
	%	%	%	%	%	fine oz.
1943	1.45	78.71	0.19	15.61	4.04	3,651,301
1944	1.14	78.98	0.12	15.41	4.35	2,922,911
1945	1.55	76.77	0.09	15.30	6.29	2,696,727
1946	2.15	80.91	0.16	13.48	3.30	2,832,554
1947	1.74	84.41	0.15	9.40	4.30	3,070,221

Table 8 - TOTAL PRIMARY PRODUCTION OF SILVER IN CANADA, 1943-1947 (From all types of ores)

Year	Fine ounces	\$
1943	17,344,569	7,849,111
1944	13,627,109	5,859,656
1945	12,942,906	6,083,166
1946	12,544,100	10,493,139
1947	12,504,018	9,002,893

Table 9 - SOURCE OF CANADIAN SILVER PRODUCTION, 1943-1947

Source	1943	1944	1945	1946	1947
	(Per cent)				
In silver-cobalt ores	0.81	5.05	3.68	3.05	2.41
In base bullion (*)	45.58	35.52	39.52	46.72	43.96
In gold ores (bullion and placer)	3.07	3.18	3.38	3.79	4.03
In blister and anode copper	37.28	39.10	36.55	31.72	31.43
In matte, copper ores and silver-lead ores, etc., exported (other than silver-cobalt ores)	13.26	17.15	16.87	14.72	18.17

(*) Chiefly from silver-lead ores.

Table 10 - TOTAL PRIMARY PRODUCTION(*) OF COPPER IN CANADA, 1943-1947 (From all types of ores)

Year	Tons	\$
1943	287,595	67,170,601
1944	273,535	65,257,172
1945	237,457	59,322,261
1946	183,968	46,632,093
1947	225,862	91,541,388

(*) Blister copper plus recoverable copper in concentrates and matte exported.

Table 11 - TOTAL PRODUCTION OF NEW COPPER IN CANADA, BY SOURCES, 1946 and 1947

	1946		1947	
	Pounds	Value \$	Pounds	Value \$
In blister and anode copper produced (*)	333,856,435	42,733,624	396,835,392	80,914,735
In ores, concentrates and any copper matte exported	17,515,212	2,241,946	41,800,358	8,402,305
In nickel-copper matte exported	16,565,228	1,656,523	13,027,343	2,224,848
TOTAL	367,936,875	46,632,093	451,723,093	91,541,888

(*) Contains a relatively small quantity of copper contained in gold and silver ores shipped to Canadian smelters.

Table 12 - PRODUCTION(*) OF REFINED COPPER IN CANADA, 1943-1947

Year	Tons
1943	251,495
1944	256,244
1945	228,861
1946	167,221
1947	202,427

(*) From all sources.

Table 13 - TOTAL PRODUCTION(*) OF NICKEL IN CANADA, 1943-1947

Year	Tons	\$
1943	144,009	71,675,322
1944	137,299	69,204,152
1945	122,565	61,982,133
1946	96,062	45,385,155
1947	118,621	70,650,764

(*) Includes nickel in matte exported, refined nickel produced in Canada, and nickel in oxides and salts sold or produced.

Table 14 - TOTAL PRIMARY PRODUCTION OF ALUMINUM IN CANADA, 1943-1947 (from imported ores)

Year	Tons
1943	495,750
1944	462,065
1945	215,713
1946	193,400
1947	299,061

Table 15 - TOTAL PRIMARY PRODUCTION(*) OF LEAD IN CANADA, 1943-1947 (From all types of Canadian ores)

Year	Tons	\$
1943	222,030	16,870,041
1944	152,291	13,706,199
1945	173,497	17,349,723
1946	176,987	23,893,230
1947	161,668	44,200,124

(*) Lead content of base bullion produced in Canada plus recoverable lead in ores exported.

Table 16 - REFINED LEAD PRODUCTION IN CANADA, 1943-1947

Year	Total from all sources (tons)	From primary material only
1943	224,493	223,871
1944	143,556	142,581
1945	163,142	162,538
1946	165,744	165,076
1947	162,000	161,394

Table 17 - TOTAL PRIMARY PRODUCTION(*) OF ZINC IN CANADA, 1943-1937 (From all types of Canadian ores)

Year	Tons	\$
1943	305,377	24,430,174
1944	275,412	23,685,405
1945	258,607	33,308,556
1946	235,310	36,755,450
1947	207,863	46,486,010

(*) Refined zinc produced in Canada plus recoverable zinc in ores exported.

Table 18 - REFINED NEW ZINC PRODUCED IN CANADA, 1943-1947

Year	Short tons
1943	206,510
1944	168,518
1945	182,266
1946	185,683
1947	177,878

Table 19 - PRODUCTION OF CADMIUM IN CANADA, 1943-1947

Year	Pounds	\$
1943	786,611	904,602
1944	526,970	579,667
1945	646,064	639,603
1946	802,648	979,230
1947	718,534	1,235,879

Table 20 - PRODUCTION OF SELENIUM IN CANADA, 1943-1947

Year	Pounds	\$
1943	374,013	654,523
1944	298,592	537,466
1945	379,187	728,039
1946	521,867	949,798
1947	518,559	969,705

Table 21 - PRODUCTION OF TELLURIUM IN CANADA, 1943-1947

Year	Pounds	\$
1943	8,600	15,050
1944	10,661	18,657
1945	484	929
1946	15,848	24,405
1947	9,194	15,814

Table 22 - PRODUCTION OF PRIMARY TIN IN CANADA, 1943-1947

Year	Pounds	\$
1943	776,937	450,623
1944	516,626	299,643
1945	849,983	492,990
1946	874,186	507,028
1947	714,198	517,794

Table 23 - PRODUCTION OF PRIMARY BISMUTH METAL IN CANADA, 1943-1947

Year	Pounds	\$
1943	407,597	562,484
1944	123,875	154,844
1945	189,815	260,047
1946	240,504	336,706
1947	284,372	560,213

Table 24 - PRODUCTION OF PRIMARY MERCURY METAL IN CANADA, 1943-1947

Year	Pounds	\$
1943	1,690,240	4,559,200
1944	735,908	1,210,375
1945 .....	...	...
1946 .....	...	...
1947 .....	...	...

Table 25 - PRODUCTION OF PRIMARY ANTIMONY IN CANADA, 1943-1947

Year	Pounds	\$
1943	1,114,166	189,408
1944	1,987,933	281,000
1945	1,667,951	290,557
1946	642,145	96,322
1947	1,150,463	384,255

Table 26 - PRODUCTION(*) OF COBALT FROM CANADIAN ORES, 1943-1947

Year	Pounds	\$
1943	175,961	191,407
1944	36,283	34,106
1945	109,123	90,026
1946	73,900	70,215
1947	572,673	875,644

(*) In metal, salts and oxides produced in Canada and metal in crude ores exported. Exclusive of metal in ores placed on Government stock pile at Deloro, Ontario during 1943 and 1944, but includes metal content of ores shipped from stock pile.

Table 27 - PRODUCTION OF MOLYBDENITE CONCENTRATES IN CANADA, 1943-1947

Year	Tons	\$
1943	392	549,515
1944	1,064	1,079,698
1945	489	411,663
1946	318	295,640
1947	380	309,048

Table 28 - PRODUCTION OF TUNGSTEN CONCENTRATES IN CANADA, 1943-1947

Year	Pounds	\$
1943	1,508,621	1,083,538
1944	386,745	245,780
1945	1,153	1,045
1946 .....	...	...
1947	496,023	680 792

Table 29 - PRODUCTION OF MAGNESIUM METAL IN CANADA, 1943-1947

Year	Pounds	\$
1943	7,153,974	2,074,652
1944	10,579,778	2,575,695
1945	7,358,545	1,607,264
1946	320,677	75,538
1947	Not available	

Table 30 - PRODUCTION OF ARSENIC(*) (As_2O_3) IN CANADA, 1943-1947

Year	Tons	\$
1943	1,577	254,009
1944	1,314	180,866
1945	1,023	130,909
1946	373	38,264
1947	394	49,348

(*) Refined arsenic produced in Canada plus arsenic content of crude arsenic exported. Excluding arsenic in ores exported, but not paid for, from British Columbia.

Table 31 - PLATINUM METALS(*) PRODUCED IN CANADA, 1943-1947

Year	Platinum		Palladium and Other Platinum Metals	
	Ounces	\$	Ounces	\$
1943	219,706	8,458,681	126,000	5,235,069
1944	157,523	6,064,635	42,929	1,960,035
1945	208,234	8,017,010	458,674	18,871,074
1946	121,771	7,672,791	117,566	5,162,801
1947	94,570	5,582,467	23,218	2,296,884

(*) From 1945 the figures represent the metal content of concentrates produced from nickel-copper ores. For earlier years the figures refer to refined metals recovered and the contents of concentrates sold. 1945 includes an accumulated revision of previous years.

Table 32 - CAPACITIES OF CANADIAN COPPER SMELTING AND REFINING WORKS, 1947

Company	Blast Furnaces		Reverberatories		Converters
	Number	Annual capacity: tons of ore and concentrates	Number	Annual capacity: tons of ore and concentrates	
Falconbridge Nickel Mines, Ltd.	2	350,000	...	...	3
Hudson Bay Mining & Smelting Co. Ltd. ....	...	...	1	675,000	3
Noranda Mines, Ltd. ....	...	...	2	1,300,000	5
International Nickel Co. of Canada Ltd. -					
Copper Cliff	2	430,000	9	3,500,000	20
Coniston	4	950,000	...	...	5
Electrolytic Copper Refineries -			Annual Capacity—short tons		
Canadian Copper Refiners, Ltd.			1 9 4 7		
International Nickel Co. of Canada, Ltd.			112,000		
			168,000		

Table 33 - LEAD SMELTING CAPACITY OF CANADA, 1947

Company	Number of blast furnaces	Annual capacity tons of charge
Consolidated Mining & Smelting Company of Canada, Limited, Trail, British Columbia	5	711,100

Table 34 - CAPACITY OF ELECTROLYTIC ZINC PLANTS IN CANADA, 1947

Company	Estimated annual capacity for cathode zinc short tons
Consolidated Mining & Smelting Company of Canada, Ltd. ...	172,875
Hudson Bay Mining & Smelting Co., Ltd.	58,598

DIRECTORY OF FIRMS IN THE NON-FERROUS SMELTING AND REFINING INDUSTRY, 1947

Name of Firm	Head or Executive Office Address	Location of Plant
<u>Quebec -</u>		
Aluminum Company of Canada Ltd.	1700 Sun Life Bldg., Montreal	Arvida, La Tuque Shawinigan Falls Isle Maligne Beauharnois
Canadian Copper Refiners Ltd.	1600 Royal Bank Bldg., Toronto, Ontario	Montreal East
Noranda Mines Limited	1600 Royal Bank Bldg., Toronto, Ontario	Noranda
<u>Ontario -</u>		
Deloro Smelting & Refining Co. Limited	Deloro	Deloro
Dominion Magnesium Ltd.	67 Yonge St., Toronto	Halcy
Eldorado Mining and Refining		Port Hope
Falconbridge Nickel Mines Ltd.	304 Bay St., Toronto	Falconbridge
International Nickel Co. of Canada Limited	Copper Cliff	Copper Cliff Coniston Port Colborne
<u>Manitoba -</u>		
Hudson Bay Mining and Smelting Co. Limited	500 Royal Bank Bldg., Winnipeg	Flin Flon
<u>British Columbia -</u>		
Consolidated Mining & Smelting Co. of Canada Limited	Trail	Trail

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