FORTY-FIFTH ANNUAL REPORT

OF THE

ONTARIO DEPARTMENT OF MINES

1936

PART I

LETTER OF TRANSMISSION

To the Honourable Herbert Alexander Bruce,
Lieutenant-Governor of the Province of Ontario.

May it please Your Honour:—

The undersigned has the honour to transmit to you herewith, for presentation to the Legislative Assembly of the Province of Ontario, the Forty-fifth Annual Report, 1935, of the Department over which I have the honour to preside.

Respectfully submitted,

Paul Leduc,
Minister of Mines

Department of Mines,
Toronto, 1936.

INTRODUCTORY LETTER

To The Honourable Paul Leduc,
Minister of Mines.

Sir,—The undersigned has the honour to submit the Forty-fifth Annual Report of the Department of Mines, issued in seven parts, as follows:—

Part I

Statistical Review of the Mineral Industry of Ontario for 1935, by A. C. Young.
List of Mines, Quarries, and Works, 1935.
Mines of Ontario in 1935, by D. G. Sinclair, E. C. Keeley, D. F. Cooper, E. B. Weir, A. R. Webster.
Mining Accidents in 1935, by D. G. Sinclair, E. C. Keeley, D. F. Cooper, A. R. Webster.
Classes for Prospectors, 1935–36, by E. M. Burwash.

Part II

The Eastern Part of the Sturgeon River Area, with Map No. 45a, by E. L. Bruce.
The Western Part of the Sturgeon River Area, with Map No. 45a, by H. C. Laird.

Part III

Geology of the North Central Part of the Lake of the Woods, with Map No. 45b, by Jas. E. Thomson.
Gold Deposits on Shoal Lake (West), by Jas. E. Thomson.

Part IV

Geology of the Birch-Springpole Lakes Area, with Map No. 45c, by W. D. Harding.

Part V

Natural Gas in 1935, by R. B. Harkness.
Petroleum in 1935, by R. B. Harkness.

Part VI

Geology of the Ramore Area, with Map No. 45d, by E. S. Moore.
Geology of the Afton-Scholes Area, by E. S. Moore.
Geology of the Burntbush Area, with Map No. 45e, by Robert Thomson.

Part VII

Lake Iroquois, with Map No. 45f, by A. P. Coleman.
Geology of the North Shore of Lake Ontario, by A. P. Coleman.
Geology of Pelee and Adjacent Islands, by E. M. Kindle.

Only Part I is bound with the Sessional Papers of the Legislature. All parts, together with accompanying geological maps as indicated above by number and letter, are available on application to the Department.

Respectfully submitted,

T. F. Sutherland,
Deputy Minister of Mines.

Department of Mines,
Toronto, 1936.

PROVINCE OF ONTARIO

DEPARTMENT OF MINES

HON. PAUL LEDUC, *Minister of Mines* T. F. SUTHERLAND, *Deputy Minister*

FORTY-FIFTH ANNUAL REPORT

OF THE

ONTARIO DEPARTMENT OF MINES

BEING

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Vol. XLV, Part I

ILLUSTRATIONS

INSERT TABLES

View from the water tower of Lake Shore Mines showing construction of the steel deck for the new No. 5 shaft.

Statistical Review of the Mineral Industry of Ontario for 1935

By A. C. Young

GENERAL SUMMARY

Mineral Production

Mineral production for 1935 reached a new high of $159,580,955 and exceeded that of 1934, which was $145,854,173, by $13,726,782, a gain of 9.39 per cent.

Reference to the tables on pages 2 and 3 shows that each of the main groups, except structural materials, has improved its position. Metals rose from $129,273,033 to $142,888,565, an improvement of 10.5 per cent.; the non-metallic group, which has maintained its position between seven and eight millions of dollars during the past five years, showed a slight improvement of $213,086. Clay products have been very low in value since 1931, but with the gradual recovery of building this group is slowly regaining its former important position. Structural materials, which include cement, lime, stone, and sand and gravel, are dependent on heavy construction work, such as roads, foundations, and abutments. Cement showed rather a heavy drop due to a decline in consumption on highways, and stone also registered a drop. Conditions in this industry, although much below those obtaining during the prosperous years, are gradually recovering. The following excerpt from the *Monthly Review of Business Statistics* for December, 1935, describes the construction industry as follows:—

> The records of the construction industry are of great value for barometric purposes. During a time of depression, the existing plant and equipment, generally speaking, is more than sufficient to meet current demands for industrial products. Once the fixed capital equipment is again operated at a high percentage of capacity, corresponding to the state of affairs in the preceding period of maximum prosperity, the construction industry immediately acquires additional momentum. The awards in excess of $400,000,000 per year from 1926 to 1929 constitutes a fitting commentary upon the correlation of construction operations with economic progress. The decline in construction from 1930 to 1933 coincided with the recurrence of a major depression. While marked percentage gains were shown in the records of new business obtained by the construction industry in 1935, over the preceding year, the level was still low relative to the pre-depression years. The gain in contracts awarded in the 11-month period from $119,749,000 to $155,940,000 in 1935 was 30.2 per cent. Engineering projects took the lead in the main groups of construction, the total advancing from $47,610,000 to $64,325,000, a gain of no less than 35.1 per cent. The gains in residential and business contracts were 18.0 per cent. and 35.3 per cent., respectively, while the increase in industrial projects was 23.3 per cent.
>
> Employment in the building trades on the first of November, after seasonal adjustment, was only 60 per cent. of the average for the base year of 1926. The gain of about 16 per cent. over the same date of 1934 indicates, however, a betterment in building activity over the stagnant conditions of a short time ago.

The greatest prosperity, as may be seen in the tables, occurred in the metal-mining group, and the increases in the values of some of the items were important; for example, gold was up 5.4 per cent.; nickel, 9.9 per cent.; copper, 30.2 per cent.; and silver 56.5 per cent. A great improvement in employment was also apparent in this group. The number of wage-earners rose from 16,424 in 1934 to 18,869 in 1935, and wages paid from $24,973,938 to $29,381,598. More complete details are given in the sections that follow.

SUMMARY OF MINERAL STATISTICS, 1935

Product	Quantity[1]	Value	Employees	Wages
METALLIC				
Gold ..... oz.	2,220,336	$45,898,372	11,132	$17,839,318
Exchange equalization	.....	32,169,797	.....	.....
Silver ..... oz.	6,320,670	4,068,906	403	396,341
Copper in matte exported[2] ..... lbs.	12,544,439	627,222		
Copper, metallic and in concentrates, exported ..... lbs.	239,483,489	18,668,743		
Nickel in matte, in speiss, and in ore exported; metallic nickel; and nickel content of oxides and salts ..... lbs.	138,516,240	35,345,103	[3]7,194	[3]11,005,124
Platinum metals ..... oz.	190,107	5,407,392		
Selenium ..... lbs.	75,363	144,697		
Tellurium ..... lbs.	14,275	28,550		
Bismuth ..... lbs.	7,079	6,796		
Cobalt in metal, oxides, salts, ores, and residues ..... lbs.	681,419	512,705	[4]120	[4]121,253
Lead in concentrates exported ..... lbs.	22,532	706		
Chromite ..... tons	798	9,576	20	19,562
Total	.....	$142,888,565	18,869	$29,381,598
NON-METALLIC				
Arsenic, white ..... lbs.	2,558,789	$75,326	([5])	([5])
Diatomite ..... tons	100	4,600	12	$3,591
Feldspar, crude and ground ..... tons	8,656	75,003	40	20,337
Fluorspar ..... tons	75	900	2	800
Graphite, crude and refined ..... tons	.....	78,500	30	22,558
Gypsum ..... tons	38,247	164,807	77	99,137
Sulphur[6] ..... tons	13,292	132,920	.....	.....
Mica ..... lbs.	509,826	7,144	12	1,536
Mineral waters ..... Imp. gals.	19,900	1,477	.....	.....
Natural gas ..... M cu. ft.	8,157,256	4,894,353	1,273	1,219,520
Peat ..... tons	1,340	5,761	7	499
Petroleum, crude ..... bbls.	165,040	346,156	221	127,862
Phosphate ..... tons	70	60	.....	.....
Quartzite and quartz ..... tons	83,034	120,005	55	24,638
Silica brick ..... M	493	22,976	22	12,305
Salt ..... tons	320,003	1,698,508	274	309,354
Talc ..... tons	13,710	138,161	31	23,864
Total	.....	$7,766,657	2,056	$1,866,001
STRUCTURAL MATERIALS				
Cement, Portland ..... bbls.	1,243,836	$1,752,148	402	$334,833
Hydrated lime ..... tons	23,514	227,197	210	147,397
Quicklime ..... tons	198,338	1,478,106		
Sand and gravel ..... tons	8,154,618	2,095,610	230	134,751
Sand-lime products[7]	.....	138,555	51	31,758
Stone: limestone, trap, granite, sandstone . tons	2,122,941	1,863,892	792	407,042
Total	.....	$7,555,508	1,685	$1,055,781
CLAY PRODUCTS				
Brick, face ..... No.	28,064,195	$545,231		
Brick, common ..... No.	20,759,108	275,835		
Brick, fancy and ornamental ..... No.	12,935	728		
Brick, sewer ..... No.	60,295	970		
Tile, drain ..... No.	5,060,734	125,593	753	$397,799
Tile, structural, roofing, and floor	.....	168,128		
Sewer pipe, copings, flue-linings, etc	.....	196,647		
Pottery	.....	50,000		
Haydite and clay	.....	7,093		
Total	.....	$1,370,225	753	$397,799
TOTAL VALUE in Canadian funds	.....	**$159,580,955**	23,363	$32,701,179

[1]All tons in this table are 2,000 pounds.

[2]Copper in matte valued at 4½ cents per pound, and nickel at 18 cents.

[3]Employees and wages for nickel-copper mines, smelters, and refineries include statistics of the Ontario Refining Company.

[4]Employees and wages for silver-cobalt smelters and refineries.

[5]Employees and wages included with figures for silver-cobalt smelters and refineries ([4]).

[6]Tonnage given is sulphur content of sulphuric acid; no iron pyrites was sold in 1935.

[7]No deduction made for lime used in manufacturing.

COMPARATIVE VALUE OF MINERAL PRODUCTION, 1931–1935

Product	1931	1932	1933	1934	1935
METALLIC					
Gold (Canadian value)	$45,043,837	$53,418,449	$61,044,951	$72,808,688	$78,068,169
Silver	1,880,860	1,910,937	1,912,934	2,600,393	4,068,906
Platinum metals	2,812,834	1,998,911	1,501,233	6,187,992	5,407,392
Cobalt[1]	651,179	587,957	597,752	592,497	512,705
Nickel[2]	15,005,080	7,179,862	20,130,480	32,139,425	35,345,103
Copper, metallic and in matte	8,907,069	5,025,684	10,118,847	14,822,704	19,295,965
Selenium	32,108	.....	53,745	91,286	144,697
Tellurium	.....	.....	.....	25,599	28,550
Lead, pig and in ore	41,987	1,756	692	525	706
Bismuth	3,532	7,289	3,731	3,444	6,796
Molybdenite	280	.....	.....	.....	.....
Chromite	.....	.....	.....	480	9,576
Total	$74,378,766	$70,130,845	$95,364,365	$129,273,033	$142,888,565
NON-METALLIC					
Actinolite	$456	.....	.....	$365	.....
Arsenic, white	135,170	$98,914	$56,534	56,412	$75,326
Barite	.....	.....	60	.....	.....
Diatomite	840	309	1,298	1,920	4,600
Feldspar, crude and ground	103,008	42,920	45,350	61,665	75,003
Fluorspar	620	464	1,064	2,100	900
Graphite, crude and refined	32,149	18,483	16,145	64,998	78,500
Gypsum	374,469	186,176	112,319	141,389	164,807
Iron pyrites and sulphur[3]	65,080	33,320	81,960	145,980	132,920
Mica	23,465	2,752	9,371	9,059	7,144
Mineral waters	8,578	2,473	2,347	1,622	1,477
Natural gas	4,635,497	4,719,297	4,523,084	4,741,368	4,894,353
Peat fuel	1,096	10,107	900	7,343	5,761
Petroleum, crude	219,993	247,468	253,486	299,874	346,156
Phosphate	.....	.....	.....	.....	60
Quartzite and quartz	148,642	93,574	86,146	134,572	111,074
Silica brick	13,702	4,303	7,351	14,730	22,976
Salt	1,760,388	1,789,752	1,755,087	1,734,196	1,698,500
Talc and soapstone	122,044	111,585	142,134	135,978	138,161
Total	$7,642,308	$7,361,897	$7,094,636	$7,553,571	$7,766,657
STRUCTURAL MATERIALS					
Cement, Portland	$5,006,826	$2,288,975	$1,587,812	$2,403,590	$1,752,148
Lime, hydrated and quicklime	1,221,190	1,273,230	1,227,196	1,536,288	1,705,303
Sand and gravel	2,317,015	2,000,298	2,467,916	1,714,569	2,095,610
Sand-lime products[4]	253,228	78,398	69,785	146,009	138,555
Stone: limestone,trap,granite, etc.	3,197,297	1,655,016	983,268	1,965,507	1,863,892
Slate	.....	.....	.....	600	.....
Total	$11,995,556	$7,295,917	$6,335,977	$7,766,563	$7,555,508
CLAY PRODUCTS					
Brick, face	$1,278,954	$532,728	$351,292	$479,850	$545,231
Brick, common	622,777	286,928	163,338	227,276	275,835
Brick, fancy and ornamental	16,829	1,790	387	835	728
Brick, sewer	33,321	18,638	3,683	5,992	970
Tile, drain	244,368	144,579	179,015	137,699	125,593
Tile, structural, roofing, and floor	378,193	169,824	74,064	120,981	168,128
Sewer pipe, copings, flue-linings, etc.	696,964	451,786	185,138	226,005	196,647
Pottery	73,860	67,866	52,650	52,578	50,000
Haydite and clay	167,533	16,366	15,012	9,790	7,093
Total	$3,552,799	$1,690,505	$1,024,579	$1,261,006	$1,370,225
GRAND TOTAL	**$97,569,429**	**$86,479,164**	**$109,819,557**	**$145,854,173**	**$159,580,955**

[1]Cobalt in oxide, metallic cobalt, and cobalt content of residues marketed.
[2]Nickel in matte, oxide, and metallic nickel.
[3]Includes value of sulphuric acid produced.
[4]No deduction made for lime consumed in manufacturing. Note that the figures prior to 1934 refer to sand-lime brick only.

The table below shows the aggregate value of metals from the time production began in Ontario and of other minerals beginning with 1891. Since 1914 the statistics of annual production credit the province only with the value of the pig iron made from Ontario ore. This is but a small part of the total output, since the great bulk of the iron ore charged to the blast furnaces of the province is "lake" ore from the mines of Minnesota and Wisconsin. In the production tables, credit is taken only for the ore exported or shipped to points other than Ontario blast furnaces, since to include the value of the domestic ore converted into pig iron in Ontario would involve a duplication of this item.

TOTAL MINERAL PRODUCTION

Year	Exchange equalization or discount	Metallics	Non-metallics	Structural materials	Clay products	Total
Before 1891[1]		$9,520,269				$9,520,269
1891		388,715		$4,316,958		4,705,673
1892		864,382		4,509,757		5,374,139
1893		614,762		5,505,991		6,120,753
1894		842,750		5,244,008		6,086,758
1895		616,055		4,554,083		5,170,138
1896		963,288		4,271,715		5,235,003
1897		1,038,089		4,480,452		5,518,541
1898		1,689,002		5,546,875		7,235,877
1899		2,055,592		6,361,081		8,416,673
1900		2,565,286		6,733,338		9,298,624
1901		5,016,734		6,814,352		11,831,086
1902		6,257,499		7,134,135		13,391,634
1903		5,242,575		7,628,018		12,870,593
1904		4,906,677		6,665,970		11,572,647
1905		10,201,010		7,653,286		17,854,296
1906		13,353,080		9,035,303		22,388,383
1907		14,550,835	3,020,537	3,876,275	3,571,726	25,019,373
1908		16,754,986	2,629,749	3,396,406	2,856,476	25,637,617
1909		22,928,496	2,825,751	4,028,206	3,198,922	32,981,375
1910		28,161,678	3,141,658	4,380,000	3,630,559	39,313,895
1911		29,102,867	3,674,926	4,935,609	4,263,395	41,976,797
1912		34,799,734	4,009,643	4,701,170	4,831,056	48,341,603
1913		37,507,935	4,296,450	5,866,775	5,561,151	53,232,311
1914		33,345,291	4,339,703	4,505,368	4,105,597	46,295,959
1915		44,109,769	4,655,250	3,609,371	1,871,379	54,245,679
1916		55,002,918	4,982,140	3,734,065	1,584,699	65,303,822
1917		56,831,857	7,702,942	4,962,284	2,596,749	72,093,832
1918		66,178,059	7,815,062	4,297,401	2,018,450	80,308,972
1919		41,590,759	6,308,182	7,208,413	3,776,562	58,883,916
1920	$1,376,275	48,281,553	8,141,796	11,921,019	4,735,154	74,455,797
1921	1,359,636	28,777,581	6,636,217	13,967,386	5,183,125	55,923,945
1922	208,621	40,290,157	7,591,913	13,640,166	6,944,218	68,675,075
1923	279,446	44,076,660	8,511,786	13,139,757	6,269,140	72,276,789
1924	196,749	52,130,314	7,555,283	12,398,465	5,137,865	77,418,676
1925	—2,838	62,495,472	7,488,034	12,451,174	5,148,626	87,580,468
1926	—595	59,218,297	7,842,632	12,681,308	5,356,469	85,098,111
1927	—235	62,631,255	7,638,605	14,160,552	5,853,035	90,283,212
1928	2,811	71,267,003	7,822,641	14,815,814	6,177,664	100,085,933
1929	157,456	83,967,446	8,621,427	18,541,687	6,830,162	118,118,178
1930	36,702	83,356,365	8,492,263	16,571,626	5,221,214	113,678,170
1931	1,926,222	72,452,544	7,642,308	11,995,556	3,552,799	97,569,429
1932	6,133,828	63,997,017	7,361,897	7,295,917	1,690,505	86,479,164
1933	16,486,437	78,877,928	7,094,636	6,335,977	1,024,579	109,819,557
1934	29,287,439	99,985,594	7,553,571	7,766,563	1,261,006	145,854,173
1935	32,169,797	110,718,768	7,766,657	7,555,508	1,370,225	159,580,955
Total	$89,617,751	$1,609,524,813		$649,081,306		$2,349,123,870

[1]Prior to 1891, when the Ontario Bureau (now Department) of Mines was established, it is estimated that metals to the value of $9,520,269 were produced. No estimate has been made of the output of non-metallics up to 1891.

Metal Production

In the total production of metals in Ontario, noted hereunder, gold moved up from third to first place in 1927:—

METAL PRODUCTION TO DECEMBER 31, 1935

Metal or product	To December 31, 1934	1935	To December 31, 1935
Gold	$529,602,720	$45,898,372	$575,501,092
Exchange equalization	57,447,954	32,169,797	89,617,751
Nickel, including nickel oxides and salts	391,523,040	35,345,103	426,868,143
Silver	260,287,016	4,068,906	264,355,922
Copper[1]	160,048,576	19,295,965	179,344,541
Pig iron from domestic ore	84,775,556	.....	84,775,556
Cobalt[2]	26,521,766	512,705	27,034,471
Platinum metals	30,994,184	5,407,392	36,401,576
Iron ore[3]	9,463,516	.....	9,463,516
Lead	4,485,839	706	4,486,545
Zinc, in ore and concentrates	535,696	.....	535,696
Molybdenite	210,015	.....	210,015
Bismuth	154,903	6,796	161,699
Selenium	177,139	144,697	321,836
Tellurium	25,599	28,550	54,149
Chromite	480	9,576	10,056
Total	$1,556,253,999	$142,888,565	$1,699,142,564

[1]Includes small quantities of copper sulphate.
[2]Includes metal, oxide, salts, and cobalt contents of residues exported.
[3]Value of ore shipped out of the province.

Dividends.—During 1935 dividends were paid by 14 gold, 2 nickel-copper, and 3 silver-cobalt mining companies. Total payments by metal mines of the province are rated hereunder by groups:—

DIVIDENDS PAID BY METAL MINES TO DECEMBER 31, 1935

Industry	To end of 1934	1935	To end of 1935
Nickel-copper	$159,849,642	$13,865,195	$173,714,837
Gold	179,948,856	25,208,545	205,157,401
Silver-cobalt	97,983,781	367,000	98,350,781
Total	$437,782,279	$39,440,740	$477,223,019

Diamond-Drilling

During the past three years diamond-drilling in Ontario has been active. Twenty companies were operating in 1935, and the statistics which follow are complete. In 1934 there were 285 drills in use, and employment was given to 518 men, who received $759,285 in wages. The corresponding figures for 1935 are 171 drills, 608 men, and $891,644 in wages. Diamond-drilling operations afford an excellent yard-stick in appraising the general trend in mining development and prospecting. As these Ontario firms do considerable drilling in the neighbouring provinces, Quebec and Manitoba, and also much farther afield, statistics covering the work done in these outside areas are also shown. It should, however, be pointed out that the data for outside provinces may be incomplete.

DIAMOND-DRILLING OPERATIONS, 1934 AND 1935

Province	1934		1935	
	Holes	Core footage	Holes	Core footage
Ontario	3,891	672,011	5,156	883,840
Quebec	1,023	215,153	1,336	261,907
Manitoba	418	81,226	549	86,230
Saskatchewan and N.W.T.	31	5,791	31	10,525
Total	5,365	974,181 (184.5 miles)	7,072	1,242,502 (235.3 miles)

On the other hand consumption of diamonds used in drilling refers to footage drilled in all provinces in which work was reported, and is indicative of the trade available for diamond merchants as well as the amount of wear or wastage of these abrasives in our hard pre-Cambrian rocks. The total consumption of borts, ballas, and carbons was 43,680.69 carats, as shown below:—

CONSUMPTION OF DIAMONDS BY REPORTING FIRMS, 1935

Period	Borts	Ballas	Carbons
	carats	carats	carats
Diamonds on hand December 31, 1934	13,380.92	76.57	3,695.00
Purchased in 1935	47,743.73	79.98	2,878.95
	61,124.65	156.55	6,573.95
Diamonds on hand December 31, 1935 ..... deduct	19,507.38	71.30	4,695.78
Diamonds consumed (43,680.69) in 1935	41,617.27	85.25	1,978.17

Prospecting

An index of activity is afforded by the following table:—

MINING CLAIMS RECORDED, 1907-1935

Year	No.	Year	No.	Year	No.
1907	13,996	1917	1,936	1927	15,554
1908	4,634	1918	1,534	1928	15,046
1909	9,746	1919	2,918	1929	8,207
1910	5,792	1920	2,160	1930	3,886
1911	9,001	1921	2,459	1931	5,779
1912	3,104	1922	5,686	1932	4,945
1913	4,320	1923	6,092	1933	8,077
1914	1,913	1924	5,222	1934	16,888
1915	2,519	1925	4,751	1935	9,460
1916	2,470	1926	13,496		

It will be noted that 1934 was the most active year for claim-staking in the history of the province. In the Port Arthur mining division alone, 6,842 claims were recorded as a result of prospecting activity in the Little Long Lac and Sturgeon River gold areas, which lie east of Lake Nipigon close to the Canadian National railway.

METALLICS

Gold

General Summary

The production of gold from all sources in Ontario during 1935 totalled 2,220,336 fine ounces, valued at $78,068,169 in Canadian funds, as against 2,105,341

fine ounces, worth $72,808,688, during the corresponding period of the previous year. Of this year's output, 2,151,305 ounces were recovered by the auriferous quartz mines, and the balance, 69,024 ounces, from the refining of nickel-copper mattes.

The record of the gold mines alone, including the value of the silver recovered in the crude gold bullion, was $75,927,718 in 1935, as against $70,929,796 in 1934. Reference to the table for gold-mining will show that the Porcupine camp with eleven mines slightly improved its position. On the other hand the Kirkland Lake belt, also with eleven properties, was $765,394 below the high of 1934. This decline, however, was more than made up by increases in both Matachewan and Northwestern Ontario, where many new producers have appeared.

During 1935 important developments have taken place in all gold fields. Commencing with the eastern areas, the old Larder Lake camp has come to life after many years of inactivity. Omega Gold Mines, Limited, which was formed by Castle-Trethewey Mines, acquired the property of Canadian Reserve Mines, consisting of 22 mining claims formerly owned by the Crown Reserve Consolidated Mines, Canadian Associated Goldfields, and Kitchener Kirkland Gold Mines, and the mill, headframe, and underground layout have been completely overhauled or renewed. This one operation has stimulated interest in an area that was very prominently before the investing public during the past two decades.

The eastern Kirkland area (Gull Lake) has been active. At the Lake Shore a new shaft, now completed to the bed of the lake, will be sunk to depth. At the Wright-Hargreaves, a new internal shaft is under construction; and at the western edge of the camp the Macassa is developing to 3,000 feet in depth. Matachewan is now represented by three properties, Ashley, Young-Davidson, and Matachewan Consolidated. A deep shaft is being sunk on the Young-Davidson.

At Porcupine one of the most important developments has been the work undertaken by Noranda Mines in the eastern section of the area on the Pamour property, formerly owned by the Three Nations Mining Company, where a campaign of deep diamond-drilling carried on during the past summer has had favourable results. During the latter part of the season the Ontario Department of Mines made a special survey of this section of the area, using air service in preparing the map.

The most outstanding relative improvement, however, has taken place in the northwestern part of the province, including the Sudbury area. Twenty-eight mines throughout this area were active during the period, the production ranging from a few hundred dollars to almost a million.

Recently a new find of gold-bearing veins was made on the Sachigo river, located about 40 miles due east of the Manitoba boundary in about the same latitude as Gods lake. This area is roughly about 250 miles north of Superior Junction on the Canadian National railway.

Prospecting and development work have been carried on extensively throughout the province, and a pleasing feature is that interest is being maintained in the old established camps, in all of which extensions of the ore deposits have been found.

Production and Dividends

The following tables show the dividends paid by the various gold-mining companies, the production by areas in 1935, the total gold production from 1866 to 1935, and the annual production by mines in each area.

DIVIDENDS AND BONUSES PAID BY GOLD-MINING COMPANIES TO DECEMBER 31, 1935

Name of company	Date of incorporation	Authorized capital, $ or shares	Capital stock issued, $ or shares	Par value per share	Dividends and bonuses paid to end of 1934	Dividends and bonuses paid during 1935	Rate per cent., or per share 1935	Total dividends and bonuses paid to Dec. 31, 1935	Date when last dividend or bonus was paid
Anglo-Huronian, Ltd.	Oct. 16, 1933	2,000,000	1,252,605	No par	$501,042.00	$250,521.00	20c.	$751,563.00	Dec. 2, 1935
Buffalo Ankerite Gold Mines, Ltd.	Oct. 5, 1932	$1,000,000	577,007	$1.00	131,943.06	115,546.40	20c.	247,489.46	Nov. 15, 1935
Coniaurum Mines, Ltd.	July 4, 1929	6,000,000	2,717,447	No par	80,923.41	.....	.....	80,923.41	Aug. 15, 1932
Dome Mines, Ltd.[1]	Sept. 30, 1923	1,000,000	1,000,000	No par	21,557,847.15	3,813,336.00	$4.00	25,371,183.15	Oct. 21, 1935
Hollinger Consol. Gold Mines, Ltd.[2]	May 25, 1916	$25,000,000	$24,600,000	5.00	72,990,400.00	4,428,000.00	18%	77,418,400.00	Dec. 31, 1935
Howey Gold Mines, Ltd.	Mar. 12, 1926	5,000,000	5,000,000	1.00	500,000.00	250,000.00	5c.	750,000.00	Dec. 14, 1935
Kirkland Lake Gold Mining Co., Ltd.	Nov. 19, 1915	5,500,000	5,239,123	1.00	157,173.69	157,173.69	3c.	314,347.38	Nov. 1, 1935
Lake Shore Mines, Ltd.	Feb. 25, 1914	2,000,000	2,000,000	1.00	35,020,000.00	8,000,000.00	400%	43,020,000.00	Dec. 16, 1935
Macassa Mines, Ltd.	April 12, 1926	3,000,000	2,628,068	1.00	131,403.40	396,710.20	15c.	528,113.60	Nov. 1, 1935
McIntyre-Porcupine Mines, Ltd.[3]	Mar. 16, 1911	$4,000,000	$3,990,000	5.00	14,085,162.43	1,596,000.00	$2.00	15,681,162.43	Dec. 2, 1935
Northern Empire Mines Co., Ltd.	July 28, 1932	500,000	341,500	1.00	.....	170,500.00	50c.	170,500.00	Dec. 30, 1935
Porcupine Crown Mines, Ltd.	May 25, 1913	2,000,000	2,000,000	1.00	840,000.00	.....	.....	840,000.00	July 15, 1917
Rea Consolidated Gold Mines, Ltd.	April 5, 1911	$1,000,000	$200,000	5.00	12,000.00	.....	.....	12,000.00	1915
Schumacher Gold Mines, Ltd.[4]	Jan. 6, 1914	2,000,000	1,850,000	1.00	.....	.....	.....	.....	.....
Sylvanite Gold Mines, Ltd.[5]	June 13, 1913	3,300,000	3,299,500	1.00	1,352,795.00	659,900.00	20%	2,012,695.00	Dec. 31, 1935
Teck-Hughes Gold Mines, Ltd., The	Mar. 2, 1923	5,000,000	4,807,144	1.00	21,317,790.80	1,922,857.60	40c.	23,240,648.40	Oct. 1, 1935
Toburn Gold Mines, Ltd.[6]	Jan. 24, 1931	2,000,000	1,850,000	1.00	148,000.00	148,000.00	8c.	296,000.00	Nov. 21, 1935
Tough-Oakes Gold Mines, Ltd.	July 15, 1913	$3,000,000	$2,657,500	5.00	398,625.00	.....	.....	398,625.00	Dec. 27, 1916
Vipond Consolidated Mines, Ltd.	July 17, 1922	2,500,000	2,250,000	1.00	67,500.00	.....	.....	67,500.00	April 5, 1927
Wright-Hargreaves Mines, Ltd.[7]	June 16, 1916	5,500,000	5,500,000	No par	10,656,250.00	3,300,000.00	60c.	13,956,250.00	Oct. 1, 1935
Total	.....	.....	.....	.....	$179,948,855.94	$25,208,544.89	.....	$205,157,400.83	.....

[1]On April 22, 1922, the capital of Dome Mines Company, Limited, was reduced from $5,000,000 to $4,500,000, and $476,667 (repayment of capital not included in above table) distributed to shareholders in addition to dividends paid to September 30, 1923, when the new company, Dome Mines, Limited, issued 1,000,000 no par value shares at $7.00 per share. Of these 46,666 shares are transferred to a trustee and held in trust for the company.

[2]Hollinger Consolidated Gold Mines, Limited, is an amalgamation of the Acme Gold Mines, Limited; Millerton Gold Mines, Limited; and Hollinger Gold Mines, Limited. Dividends include $160,000 paid in 1915 by Acme, and $4,170,000 paid by Hollinger to May 25, 1916, the date of consolidation.

[3]The dividends are paid in United States funds.

[4]The Schumacher mine was sold to the Hollinger in 1922, and a total of $1,591,000, or 86 per cent. of the assets, distributed to shareholders, the final payment being made July 30, 1923.

[5]The rate of 25 per cent. includes 5 per cent. paid out of 1933 profits. The dividends are paid in United States funds.

[6]Formerly the Tough-Oakes Gold Mines, Limited.

[7]The authorized and issued capital was changed in May, 1927, from 2,750,000 shares of $1.00 par value to 5,500,000 shares of no par value.

PRODUCTION OF GOLD MINES, 1935

Area	Ore milled	Gold bullion shipped						Total value of bullion, Canadian funds
		Fine gold				Fine silver		
		Quantity	Value, standard[1]	Exchange equalization	Value, Canadian funds	Quantity	Value	
PORCUPINE BELT	tons	ounces				ounces		
Buffalo Ankerite	159,383	29,041.714	$600,345	$433,986	$1,034,331	2,618	$1,656	$1,035,987
Canusa	.....	27.504	569	405	974	4	2	976
Concordia (Jones-Porter)	230	16.083	332	241	573	14	7	580
Coniaurum	151,055	32,151.552	664,631	466,172	1,130,803	6,027	3,793	1,134,596
Dome	549,100	206,795.029	4,274,833	2,990,354	7,265,187	33,736	21,419	7,286,606
Gillies Lake–Porcupine	5,122	1,611.883	33,321	23,445	56,766	251	167	56,933
Hollinger	1,837,153	416,049.642	8,600,509	6,028,764	14,629,273	105,843	71,238	14,700,511
McIntyre-Porcupine	869,100	245,206.125	5,068,860	3,550,671	8,619,531	54,385	33,965	8,653,496
McLaren-Porcupine	600	108.791	2,249	1,579	3,828	18	12	3,840
Marbuan	59,380	8,145.135	168,375	121,721	290,096	711	446	290,542
Munro Croesus	1,237	724.460	14,976	10,503	25,479	48	34	25,513
Naybob (Hayden)	10,681	671.000	13,871	9,728	23,599	100	67	23,666
Paymaster Consolidated	79,845	16,028.371	331,336	232,541	563,877	5,008	3,199	567,076
Vipond (Anglo-Huronian)	106,393	11,864.500	245,261	172,008	417,269	2,628	1,693	418,962
Miscellaneous	.....	104.191	2,154	1,512	3,666	.....	.....	3,666
Total	3,829,279	968,545.980	$20,021,622	$14,043,630	$34,065,252	211,391	$137,698	$34,202,950
KIRKLAND LAKE BELT[2]								
Argonaut	24	27.686	$572	$401	$973	8	$5	$978
Barry-Hollinger	35,172	4,082.511	84,393	59,090	143,483	336	215	143,698
Bidgood	11,148	1,232.712	25,482	17,897	43,379	825	491	43,870
Kirkland Lake Gold	71,920	22,050.521	455,825	319,474	775,299	3,391	2,131	777,430
Lake Shore	836,322	461,018.700	9,530,102	6,658,528	16,188,630	112,678	71,090	16,259,720
Lucky Cross (S. Payne)	1	.296	6	4	10	.....	.....	10
Macassa	68,627	30,271.870	625,775	439,227	1,065,002	3,498	2,194	1,067,196
Miller Independence	31	101.805	2,105	1,472	3,577	21	13	3,590
Moffatt-Hall	7,912	2,243.351	46,374	32,569	78,943	806	555	79,498
Sylvanite	152,281	54,356.230	1,123,643	788,177	1,911,820	9,030	5,786	1,917,606
Teck-Hughes	[3]417,917	138,987.175	2,873,118	2,014,440	4,887,558	22,795	14,304	4,901,862
Toburn	35,360	20,199.895	417,569	293,171	710,740	5,630	3,521	714,261
Wright-Hargreaves	361,149	213,471.380	4,412,845	3,094,363	7,507,208	33,556	21,355	7,528,563
Total	1,997,864	948,044.132	$19,597,809	$13,718,813	$33,316,622	192,574	$121,660	$33,438,282

[1]The term "standard" here refers to gold at $20.671834 per fine ounce.
[2]Includes Larder Lake area.
[3]Includes 41,329 tons of tailings.

PRODUCTION OF GOLD MINES, 1935—*Continued*

Area	Ore milled	Gold bullion shipped						Total value of bullion Canadian funds
		Fine gold				Fine silver		
		Quantity	Value, standard[1]	Exchange equalization	Value, Canadian funds	Quantity	Value	
MATACHEWAN AREA	tons	ounces				ounces		
Ashley	47,366	12,486.139	$258,111	$181,171	$439,282	1,992	$1,249	$440,531
Matachewan Consolidated	48,362	10,113.568	209,066	146,704	355,770	1,650	1,048	356,818
Young-Davidson	229,793	20,150.169	416,541	292,302	708,843	7,150	4,537	713,380
Total	325,521	42,749.876	$883,718	$620,177	$1,503,895	10,792	$6,834	$1,510,729
SUDBURY DISTRICT								
Halcrow-Swayze	211	38.733	$810	$561	$1,362	15	$10	$1,372
Mac-Auer	45	8.248	171	119	290	5	3	293
McMillan	40,218	7,776.630	160,757	112,368	273,125	294	190	273,315
Total	40,474	7,823.611	$161,729	$113,048	$274,777	314	$203	$274,980
ALGOMA DISTRICT (Michipicoten and Goudreau areas)								
Algoma Summit	205	85.547	$1,768	$1,234	$3,002	8	$6	$3,008
Darwin	2,103	503.512	10,409	7,313	17,722	57	28	17,750
Jubilee	34,890	5,570.621	115,155	81,014	196,169	132	83	196,252
Parkhill	20,871	9,618.760	198,837	139,265	338,102	459	286	338,388
Van Sickle (S. B. Smith)	7,946	1,391.844	28,772	20,207	48,979	75	48	49,027
Total	66,015	17,170.284	$354,941	$249,033	$603,974	731	$451	$604,425
THUNDER BAY DISTRICT								
Ardeen (Moss)	5,884	849.143	$17,553	$12,264	$29,817	5,675	$2,714	$32,531
Caouette claims (Afton)	34	12.765	264	185	449	2	1	450
Dikdik (J. Bruce McMartin)	3,295	1,378.292	28,492	20,029	48,521	914	597	49,118
Harkness-Hays	17	63.382	1,310	922	2,232	31	20	2,252
Little Long Lac	62,073	31,454.131	650,215	456,365	1,106,580	2,710	1,689	1,108,269
North Shores	1,404	833.980	17,240	12,083	29,323	53	35	29,358
Northern Empire	45,736	18,278.242	377,845	265,765	643,610	2,638	1,686	645,296
St. Anthony	44,550	8,583.600	177,439	124,454	301,893	1,958	1,259	303,152
Tashota	12,827	2,157.526	44,600	31,355	75,955	1,071	672	76,627
Total	175,820	63,611.061	$1,314,958	$923,422	$2,238,380	15,052	$8,673	$2,247,053

KENORA AND RAINY RIVER DISTRICTS								
Cedar Island (Kenora Prospectors)	3,095	656.762	$13,576	$9,588	$23,164	531	$342	$23,506
Clark	87	35.634	737	511	1,248	4	2	1,250
Cone, Russell C.[5]	.....	19.172	396	273	669	3	2	671
Duport	475	2,097.666	43,363	30,454	73,817	232	151	73,968
Vermilion Lake	18	7.076	146	102	248	2	1	249
Total	3,675	2,816.310	$58,218	$40,928	$99,146	772	$498	$99,644
PATRICIA PORTION								
Central Patricia	35,192	22,061.260	$456,047	$320,069	$776,116	2,297	$1,454	$777,570
Howey	484,966	37,673.912	778,789	546,518	1,325,307	12,185	7,643	1,332,950
J-M Consolidated (first quarter)	1,381	361.091	7,464	5,225	12,689	287	162	12,851
McKenzie Red Lake	36,117	15,113.456	312,423	218,989	531,412	2,771	1,811	533,223
Pickle Crow	37,277	24,925.493	515,255	361,861	877,116	2,572	1,629	878,745
Red Crest (Rowan Discovery)	174	109.038	2,254	1,562	3,816	24	12	3,828
Sol-D'Or	119	40.768	843	599	1,442	4	2	1,444
Total	595,226	100,285.018	$2,073,075	$1,454,823	$3,527,898	20,140	$12,713	$3,540,611
Miscellaneous prospectors	.....	89.180	$1,802	$1,260	$3,062	15	$8	$3,070
Dominion Reduction Co., clean-up[6]	.....	169.766	3,509	2,465	5,974	.....	.....	5,974
Total	.....	258.946	$5,311	$3,725	$9,036	15	$8	$9,044
Total for gold mines	7,033,874	2,151,305.218	$44,471,381	$31,167,599	$75,638,980	451,781	$288,738	$75,927,718
Nickel-copper refining	.....	69,023.958	$1,426,852	$1,002,101	$2,428,953	.....	.....	.....
In Cobalt ores	.....	6.700	139	97	236	.....	.....	.....
Total	.....	69,030,658	$1,426,991	$1,002,198	$2,429,189	.....	.....	.....
Total gold output, 1935	.....	2,220,335.876	$45,898,372	$32,169,797	$78,068,169	.....	.....	.....
CALENDAR YEAR 1934								
Porcupine Belt	3,711,714	949,799.57	$19,634,097	$13,275,684	$32,909,781	196,084	$92,989	$33,002,770
Kirkland Lake Belt	1,957,058	988,045.65	20,424,716	13,694,400	34,119,116	181,291	84,560	34,203,676
Matachewan Area	100,054	17,738.98	366,697	246,491	613,188	3,522	1,721	614,909
Northwestern Ontario	644,184	89,381.93	1,847,688	1,235,995	3,083,683	52,008	24,758	3,108,441
Miscellaneous	.....	60,374.48	1,248,051	834,869	2,082,920	.....	.....	2,082,920
Total gold output, 1934	6,413,010	2,105,340.61	$43,521,249	$29,287,439	$72,808,688	432,905	$204,028	$73,012,716

[4]Includes 10,012 tons of tailings.
[5]This production was derived from the Foley, Lucky Coon, and two other unnamed mining claims.
[6]Derived from unidentified gold ores treated at Cobalt during past years.

GOLD PRODUCTION, 1866–1935

(On the standard basis of $20.671834 per ounce, or one dollar = 0.048375 ounces)

Year	Total production, value	Porcupine belt		Kirkland Lake belt		N.W. Ontario[1]	
		Value	Per cent.	Value	Per cent.	Value	Per cent.
1866–1891[2]	$190,258	.....	.....	.....	.....	.....	.....
1892–1909[3]	2,509,492	.....	.....	.....	.....	.....	.....
1910	68,498	$35,539	51.8	.....	.....	.....	.....
1911	42,637	15,437	36.2	.....	.....	.....	.....
1912	2,114,086	1,730,628	81.8	.....	.....	.....	.....
1913	4,558,518	4,294,113	94.1	$86,316	1.9	.....	.....
1914	5,544,979	5,206,006	93.8	114,154	2	.....	.....
1915	8,501,391	7,462,111	88.6	551,069	6.5	.....	.....
1916	10,339,259	9,391,408	90.8	702,761	6.8	.....	.....
1917	8,698,735	8,229,744	94.5	404,346	4.6	.....	.....
1918	8,502,480	7,767,907	91.4	632,007	7.4	.....	.....
1919	10,451,709	9,941,803	95.1	486,809	4.7	.....	.....
1920	11,686,043	10,597,572	90.7	1,033,478	8.8	.....	.....
1921	14,692,357	13,103,526	89.5	1,524,851	10.4	.....	.....
1922	20,579,569	18,374,658	89.3	2,159,581	10.5	.....	.....
1923	20,136,287	17,313,115	85.9	2,719,939	13.5	.....	.....
1924	25,669,303	22,135,534	86.2	3,446,632	13.4	.....	.....
1925	30,206,432	24,733,120	81.8	5,385,256	17.8	.....	.....
1926	30,950,753	23,680,670	76.5	7,174,083	23.2	.....	.....
1927	33,627,040	23,851,857	70.9	9,674,114	28.7	.....	.....
1928	32,629,111	20,246,319	62	12,233,524	37.5	.....	.....
1929	33,535,226	19,281,286	57.6	14,046,596	41.8	$22,988	0.07
1930	35,886,558	17,758,842	49.6	17,172,770	47.9	461,730	1.3
1931	43,117,615	19,891,521	46.2	21,734,729	50.4	1,007,756	2.3
1932	47,284,621	21,422,117	45.2	23,782,313	50.3	1,607,831	3.4
1933	44,558,514	21,624,617	48.5	20,817,277	46.7	1,352,017	3
1934	43,521,249	19,634,097	45	20,424,716	46.9	2,214,385	5
1935	45,898,372	20,021,622	43.6	19,597,809	42.7	4,851,950	1.5
Total	$575,501,092	$367,745,169	62.8	$185,905,130	32.3	.....	.....

[1]Recent production only. Gold output from 1866 to 1909, inclusive, came from Hastings county and Northwestern Ontario. No segregation of statistics can now be made.
[2]Estimated.
[3]Maximum yearly output was $424,568 in 1899.

Gold Mines of Southeastern Ontario (Peterborough, Hastings, and Frontenac Counties).—The earliest recorded discovery of gold in Ontario is referred to on page 27 of the Report of the Royal Commission (1890) on the Mineral Resources of Ontario, as follows:—

In the early part of August, 1866, gold was discovered by a man named Powell and a Dutch miner on the eastern part of lot 18, range 5, in the township of Madoc [Hastings county] belonging to Mr. J. Richardson, who, however, did not recognise it as the precious metal till informed of the fact by the late Mr. H. G. Vennor of the Geological Survey, who was then working in the neighbourhood. Mr. Vennor in his report for that year, addressed to Sir William Logan, described the gold as occurring in "a series of crevices or openings in a gold-bearing bed, formed of chloritic and epidotic gneiss (or schist) holding patches of dolomite and calcspar, the openings being nothing more than such as are so often met with in the dolomites and calc-schists of this region." The gold was found along with particles of black carbonaceous matter in a brown ferruginous earth filling the longitudinal crevices, parallel to the bedding, one of which had been struck at a depth of 4 and another at 15 feet from the surface at the time of Mr. Vennor's visit. Numerous small nuggets were also found enclosed in the adjacent dolomite and calcspar. The strata here dip nearly due north at an angle of 45°, and the gold-bearing bed is "overlaid by a siliceous ferruginous dolomite and underlaid by a band resembling an impure steatite." Its geological position is not far above the iron-bearing belt of that region. The Richardson mine has been worked at different times since the above date, and a good deal of gold extracted from it.

This discovery was followed by many others of the precious metal which have been made at different times in the townships of Marmora, Madoc, Elzevir, Kaladar, Lake and Tudor, and there is now a probability of gold-mining becoming an established industry in this region. One of the most notable of the attempts at gold mining in the district is that at the Gatling (since called the Canada Consolidated) mine in the township of Marmora. The gold here occurs in veins of quartz containing much mispickel and cutting a crushed syenite or a mixture of schist and syenite, close to a large area of the latter rock. Assays of twelve different samples of the ores of this mine gave an average of 1.9107 ounces or $39.47 to the ton of 2,000 pounds. In spite of this richness, the difficulty of separating the gold from the sulphide of arsenic is so great that only partial success has attended the working of the mine, after the expenditure of a large sum of money in buildings, machinery, working the mine and experimenting.

A considerable quantity of gold has been extracted from the Gladstone and Feigle mine, situated on the continuation of the same set of veins as the Canada Consolidated, at a distance of two or three miles to the northward of it. Another mine called the Dean and Williams on lot 8, range 9 of Marmora, about a mile and a half southward of the Canada Consolidated, was worked for a time with some success. At present it is reported that from six to eight dollars worth of gold per ton are being extracted at the Guinard mine, in Kaladar, from a set of small quartz veins cutting a rock which is described as a conglomerate with quartz pebbles in a matrix of micaceous schist.

Statistical records in the Department of Mines at Ottawa do not predate 1888, but according to Ottawa reports for 1866 an Inspector of Mines, a Mr. Campbell, in that year reported that the recovery from the Richardson property in Hastings county was valued at $1,500 or $2,000. Another statement, probably referring to the same year, was that 60 pounds of crude bullion, worth $15 to $20 per ounce, was exported to the United States and that the estimated value was $1,020. Other reports state that the Cook mine, on lot 7, concession IX, Marmora township, also in Hastings county, milled 1,000 tons prior to 1871, from which 500 ounces valued at $10,000 was recovered. The Feigle mine, lot 8, concession VIII, Marmora township, produced $4,000 prior to 1870. The property of the Canada Consolidated Gold Mining Company at Deloro, Marmora township, was credited with $9,926 prior to June 30, 1884, and the amount expended in development work approximated $350,000. The Gatling and the Thomas and Derry properties were active in 1871 and 1879, respectively.

The following excerpts from the Report of the Royal Commission, also give some indication of the extent of these early mining operations. D. E. K. Stewart stated that he commenced mining in Hastings county in 1878 and, under a lease on the Feigle, recovered about $20,000; the mill heads ranged from $3 to $50 per ton. The Gatling ore treated at Malone ran about $14 per ton. He also stated that some $30,000 to $40,000 worth of gold was recovered by a Mr. Osler, who operated a 20-stamp battery in the same area. Charles Taylor, at that time operating the Canada Consolidated, stated that the average ore ran about $15 to the ton. With two men he was treating 8 tons per day, and the recovery was from $100 to $150 per week. Deroche and Burrows, lot 25, concession VI, Kaladar township, in 1887 shipped 3 tons of rock to the mill at Malone, and the bar of gold recovered was valued at $65.

Statistics available to this Department do not contain any records of the above reports, and returns by gold producers were not obligatory until after the formation of the Bureau (now Department) of Mines in 1891. Partially complete individual statistics are available in this Department from 1897 on, but it was not until 1910, after the discovery of the rich fields at Porcupine and Kirkland Lake, that greater accuracy in ounces recovered and value was insisted upon. As a result the statistics covering gold-mining operations in this field and elsewhere in Ontario for the nineties and during the first decade of this century are more or less incomplete, and the table which follows does not represent all the gold recovered.

SOUTHEASTERN ONTARIO

PRODUCTION STATISTICS OF GOLD MINES, 1891–1922

(Value includes gold and silver, and exchange and equalization have been added since 1920)

Mine	Year	Quantity	Value
		tons	
Atlas Arsenic	1900, 1902, 1903	6,114	$44,667
Bannockburn	1895	.....	58
Belmont. *See* Cordova.			
Big Dipper	1907, 1909	52	340
Boerth	1900	.....	208
Canadian Goldfields. *See* Deloro.			
Cleveland	1908	239	5,475
Cobalt Frontenac	1919, 1922	.....	1,356
Cook Land	1901, 1902, 1904	1,483	6,989
Cordova (Belmont)	1892, 1893	560	5,450
	1898–1903	70,185	289,517
	1912–1917	16,194	45,426
Craig	1905, 1906	1,850	5,760
Crescent	1891, 1892	1,700	6,780
Deloro (Canadian Goldfields)	1897–1902	39,143	213,973
Gatling Pearce	1893	.....	1,918
Gilmour	1909, 1910	550	3,669
Golden Fleece. *See* Cobalt Frontenac.			
Ledyard	1893, 1894	55	236
Little Doris	1898	400	2,500
Sophia	1900	1,500	850
Sovereign	1900	262	861
Star of the East	1905, 1907	976	1,941
Total	.....	141,263	$637,974

Gold Mines of Algoma District.—The gold-mining region in Algoma district, which includes the Goudreau and Michipicoten areas as well as the areas bordering the northeast shore of Lake Superior, Sault Ste. Marie, and the North channel of Lake Huron, was the scene of some of the earliest mining ventures in Ontario. In 1770 the Jesuit Fathers experimented with native copper near Point Mamainse, and in 1848 copper was discovered near Bruce Mines, where the Montreal Mining Company successfully concentrated the ore and shipped the concentrates, which ran 15 per cent. copper, to England in 1853 and 1854. The property was closed down in 1865.

The first gold discovery in this district was made early in 1898 by an Indian, William Teddy, a member of the Michipicoten band of Indians, whose hunting grounds were in the area between Wawa and Bauldry lakes. The find was sold for $1,000. A staking rush then ensued, and most of the claims were located between Wawa lake and the Michipicoten river. The first inspector of the Michipicoten Mining Division, D. G. Boyd, opened a recording office in the old Hudson's Bay Post at Michipicoten River on April 29, 1898, which was one of the first recording offices in Ontario outside of Toronto. During this period, or until navigation closed that year, 152 miner's licenses were issued and 228 notices of mining claims registered and filed at Michipicoten River, and the fees totalled $2,316. The first machinery to be installed in this field was a stamp mill, which was built by Thomas Westcott, of Sault Ste. Marie. The stamps, which weighed 830 pounds each, were cast at Sault Ste. Marie as well as the frames. The vanner and the copper plates were bought from Fraser and Chalmers, of Chicago, and the crusher and ore feeder were supplied by A. K. Williams, Toronto. Power was provided by a second-hand plant purchased from a lumber company near by. The foundations of this plant were laid October 13, 1898, but no trace of it remains to-day.

The gold-producing mines of Algoma district are listed in the table on page 18. In the early years great difficulty was experienced in securing accurate and complete statistics, and the data shown do not by any means cover the entire production. The figures represent all the data available to this Department.

Gold Mines of Thunder Bay District.—An excerpt from the Report of the Royal Commission (1890) on the Mineral Resources of Ontario, page 25, regarding gold in Thunder Bay district runs as follows:—

The first discovery of gold in notable quantity was made in 1871 by Mr. Peter McKellar (following up a clue obtained from an Indian) near Jackfish lake, at what is now called the Huronian mine, situated on location H1 in the township of Moss. It here occurs in a true and persistent vein from 6 to 8 feet wide, of which from 2 to 5 feet are quartz, the rest being incorporated schist. The country-rock consists of interbedded talcoid, chloritic, dioritic and a little dolomitic schist, siliceous magnetite and massive diorite, all dipping north-west at angles of 65° to 80°. The vein runs north-eastward, cutting the strata at a small angle and underlying to the north-west side at an inclination of 15° from the perpendicular. Intrusive syenite appears about a mile to the north-east of the mine, and this may have had something to do with the enrichment of the vein. The gold occurs free and as sylvanite (or telluride of gold) associated with galena, iron and copper pyrites and blende, which, with the white quartz, constitute a beautiful looking ore. A 10-stamp mill was erected in 1883 at great expense, on account of the difficulties of transportation, and in 1884 some mining and milling were done. The gold secured is understood to have been equal to $21 to the ton, which was, however, far short of the whole amount contained in the ore. Work was resumed for three or four months in 1885, but, from the want of proper means of transportation to the mine, operations are for the present suspended. Openings have been made and similar ore obtained from a continuation of the same vein, called the Highland mine.

This property was later known as the Moss, and more recently as the Ardeen. The mine was reopened in 1932 and produced gold from that year to 1935, inclusive, operating a 200-ton mill.

The data shown in the table for Thunder Bay district on page 19 are all that are available to this Department and while covering the principal mines are known to be incomplete for the earlier years.

Gold Mines of Kenora and Rainy River Districts.—The earliest record of gold in Kenora and Rainy River is described on page 25 of the Report of the Royal Commission (1890) on the Mineral Resources of Ontario, as follows:—

Gold was discovered on Lake-of-the-Woods in 1878, or earlier. In the . . . Geological Survey report for 1881, page 15c, it is stated that "in 1879 I [A. R. C. Selwyn, the writer of the report] was presented by Mr. J. Dewe with a specimen from Hay island, of white quartz containing needle-like crystals of hornblende with a little calcspar, which showed distinct specks of gold. It was assayed by Mr. Hoffmann, chemist to the Survey, and found to contain 37.318 ounces of gold and 1.431 ounces of silver to the ton of 2,000 pounds." During the succeeding four or five years some mining was done at a few places around the northern part of this lake, and in some instances with the prospect of ultimate success, but owing to the impossibility of obtaining titles, on account of the dispute between the Dominion and the Ontario governments as to the ownership of the territory, it was impossible to obtain sufficient capital and no thorough test has yet been made to determine the real productiveness or otherwise of any of the mines. Trials have been made at several promising places, such as Sultana island, the Winnipeg Consolidated and the Pine Portage properties, and now that the matter of title is set at rest there is a probability that work will be prosecuted on a sufficient scale to determine the question whether gold is to be found in this region in paying quantities or not. It occurs both free and in combination with sulphides in veins of quartz more or less split up and interrupted, cutting green schists and not far from masses of syenite. These deposits would appear to lie towards the bottom of the series as developed at the Lake-of-the-Woods. Specimens of free gold in quartz have been shown to the writer as having been obtained not far from Taché, on the Canadian Pacific railway.

Statistics of production by the gold mines of Kenora and Rainy River districts were not collected during the eighties, and are incomplete for the nineties and also for the early years of this century (see tables on pages 22 and 23).

LARDER LAKE GOLD AREA

ANNUAL PRODUCTION STATISTICS BY MINES, 1911–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Barry-Hollinger		Argonaut[1]		Miller Independence		Canadian Associated Goldfields		Telluride (Smelters Corp.)		Gold Hill		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
1911							[2]125	314					125	314
1912														
1913			480	4,005				[3]10,000					480	14,005
1914				5,204										5,204
1915														
1916														
1917														
1918	[4]1,502	10,051				1,283							1,502	11,334
1919			735	2,631									735	2,631
1920			4,637	29,888									4,637	29,888
1921				549										549
1922														
1923			4,818	73,262									4,818	73,262
1924			24,178	152,072									24,178	152,072
1925	8,136	56,978	28,515	214,183									36,651	271,161
1926	13,680	86,263	35,081	143,387									48,761	229,650
1927	25,714	175,692	27,873	127,448			11,966	34,595			39	865	65,592	338,600
1928	23,060	111,767	5,219	32,430			10,619	17,700			4,377	12,784	43,275	174,681
1929	22,343	151,758		9,959									22,343	161,717
1930	31,725	217,835	13	1,891									31,738	219,726
1931	31,958	234,512							80	835			32,038	235,347
1932	34,977	181,585							24	468			35,001	182,053
1933	5,459	71,766											5,459	71,766
1934	33,445	152,076	12	1,872									33,457	153,948
1935	35,172	143,698	24	978	31	3,590							35,227	148,266
Total	267,171	1,593,981	131,585	799,759	31	4,873	22,710	62,609	104	1,303	4,416	13,649	426,017	2,476,174

[1]The production shown for 1913 and 1914 was from La Mine D'Or Huronia, which has been known as the Argonaut since 1919. The values shown are exclusive of copper.

[2]Reddick mine, which was bought by Associated Goldfields in 1917.

[3]Associated Goldfields, which was acquired by Canadian Associated Goldfields in 1921.

[4]Patricia mine, afterwards called Barry-Hollinger.

KIRKLAND LAKE GOLD AREA

ANNUAL PRODUCTION STATISTICS BY MINES, 1911–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Lake Shore		Teck-Hughes		Wright-Hargreaves		Sylvanite		Kirkland Lake Gold		Toburn (Tough-Oakes Burnside[1])		Macassa		Bidgood		Moffatt-Hall		Miscellaneous[2]		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
1911																			675	4,650	675	4,650
1912																						
1913					3	1,127					2,220	66,632							4,160	21,177	6,383	88,936
1914											3,734	117,644									3,734	117,644
1915											26,196	555,539									26,196	555,539
1916											39,865	711,626									39,865	711,626
1917			11,257	66,722							38,695	342,830									49,955	409,552
1918	16,749	416,414	14,774	80,570							22,000	139,683									53,523	636,667
1919	11,081	263,354	18,387	169,590					11,324	56,263											40,792	489,207
1920	19,779	545,311	30,646	277,878					40,812	322,533											91,237	1,145,722
1921	21,817	540,450	34,693	359,844	36,053	481,892			43,966	268,566											136,529	1,650,752
1922	24,279	476,461	41,194	604,006	66,181	767,445			37,489	226,527	16,108	107,617							6,496	10,082	191,747	2,192,138
1923	23,203	557,186	38,314	1,137,523	79,242	762,761			45,449	223,990	1,803	12,174									188,011	2,693,634
1924	56,168	1,104,550	44,209	1,035,338	84,487	1,094,462			8,091	46,513	8,438	47,548									201,393	3,328,411
1925	109,273	1,958,720	55,220	996,645	147,939	1,913,468					34,152	263,064									346,584	5,133,423
1926	171,197	2,775,000	87,074	1,600,613	153,392	2,150,844			10,829	126,999	43,871	309,709								1,526	466,363	6,963,165
1927	236,818	3,375,053	153,881	2,781,962	209,164	2,151,916	40,479	429,424	52,648	473,673	38,999	153,215									731,989	9,365,243
1928	279,661	4,073,965	317,213	4,951,707	256,331	1,838,510	69,791	738,146	57,883	414,596	14,396	82,316									995,275	12,099,240
1929	430,170	6,126,688	330,340	5,081,078	188,238	1,734,728	74,523	689,465	53,595	353,915										11,925	1,076,866	13,997,799
1930	550,501	7,847,508	338,555	5,403,030	220,430	2,432,888	81,213	794,459	52,106	534,154										32,805	1,242,806	17,044,844
1931	816,580	11,650,281	444,410	6,286,668	266,352	3,078,754	91,621	921,216	52,628	615,882									1	1,662	1,671,591	22,554,423
1932	818,698	14,317,113	475,700	6,631,755	295,525	3,984,125	96,891	930,305	56,492	592,451	14,689	227,956									1,757,995	26,683,705
1933	808,917	14,377,716	474,700	6,166,619	285,465	4,955,960	96,937	1,072,977	49,487	400,622	36,913	666,894	8,101	110,172							1,760,555	27,757,371
1934	836,023	16,305,819	442,745	5,801,691	354,418	7,572,292	111,767	1,740,384	64,952	703,300	36,230	708,119	66,557	1,111,098	2,433	6,804	8,476	87,071	35	6,411	1,923,601	34,049,728
1935	836,322	16,259,720	417,917	4,901,862	361,149	7,528,563	152,281	1,917,606	71,920	777,430	35,360	714,261	68,627	1,067,196	11,148	43,870	7,912	79,498	1	10	1,962,637	33,290,016
Total	6,067,236	102,971,309	3,771,229	54,335,101	3,004,369	42,449,735	815,503	9,233,982	709,671	6,137,414	413,669	5,226,827	143,285	2,288,466	13,581	50,674	16,388	166,569	11,368	103,398	14,966,301	222,963,435

[1]Acquired by Toburn Gold Mines, Limited, in 1931.
[2]See table of "Miscellaneous Production" to the right.

MISCELLANEOUS PRODUCTION, KIRKLAND LAKE AREA

Mine	Year	Quantity	Value
		tons	$
Gold Pyramid	1911	175	650
Lucky Cross (Kirkland Gateway[1])	1913, 1933, 1935	2,536	14,880
Ontario-Kirkland[2]	1922	6,496	10,082
Swastika	1911, 1913	12,60	11,172
Trout Creek	1931	1	1,662
Miscellaneous[3]	1925, 1929, 1933, 1934		64,952
Total		11,368	103,398

[1]Now owned by Golden Gate Mining Company, Limited.
[2]Now owned by Kirkland Gold Rand, Limited.
[3]This includes gold recovered from scrapped machinery, origin unknown, and high-grade.

MATACHEWAN GOLD AREA[1]

ANNUAL PRODUCTION STATISTICS BY MINES, 1922 AND 1932–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Ashley		Young-Davidson		Matachewan Consolidated		Atlas[2]		White Rock[2]		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
1922	.....	.....	.....	.....	.....	.....	.....	.....	.....	987	.....	987
1932	6,805	70,142	.....	.....	.....	.....	.....	.....	.....	.....	6,805	70,142
1933	37,975	495,364	.....	.....	.....	.....	12	201	17	419	38,004	495,984
1934	43,532	456,830	51,842	134,511	4,680	23,568	.....	.....	.....	.....	100,054	614,909
1935	47,366	440,531	229,793	713,380	48,362	356,818	.....	.....	.....	.....	325,521	1,510,729
Total	135,678	1,462,867	281,635	847,891	53,042	380,386	12	201	17	1,406	470,384	2,692,751

[1]Includes West Shiningtree area (Atlas and White Rock mines).
[2]Acquired by Bilmac Gold Mines, Limited, in 1934.

SUDBURY DISTRICT[1]

ANNUAL PRODUCTION STATISTICS OF GOLD MINES, 1897–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Crystal		Halcrow-Swayze		Lebel-Oro (Long Lake[2])		Mac-Auer		McMillan		Shakespeare		T.B. 69 (R. Downey)		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
1897	300	1,896	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300	1,896
1898	160	1,602	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	160	1,602
1905	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,550	37,963	.....	.....	4,550	37,963
1906	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,641	.....	.....	.....	8,641
1907	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,040	4,380	.....	.....	4,040	4,380
1908	270	1,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	270	1,500
1910	.....	.....	.....	.....	3,294	18,553	.....	.....	.....	.....	.....	.....	.....	.....	3,294	18,553
1911	.....	.....	.....	.....	1,750	9,828	.....	.....	.....	.....	.....	.....	.....	.....	1,750	9,828
1913	.....	.....	.....	.....	20,646	114,833	.....	.....	.....	.....	.....	.....	.....	.....	20,646	114,833
1914	.....	.....	.....	.....	45,458	217,103	.....	.....	.....	.....	.....	.....	.....	.....	45,458	217,103
1915	.....	.....	.....	.....	44,271	282,123	.....	.....	.....	.....	.....	.....	.....	.....	44,271	282,123
1916	.....	.....	.....	.....	26,846	187,103	.....	.....	.....	.....	.....	.....	.....	.....	26,846	187,103
1932	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12	2,993	12	2,993
1934	.....	.....	.....	.....	7	1,256	.....	.....	12,313	67,344	.....	.....	.....	.....	12,320	68,600
1935	.....	.....	211	1,372	.....	.....	45	293	40,218	273,315	.....	.....	.....	.....	40,474	274,980
Total	730	4,998	211	1,372	142,272	830,799	45	293	52,531	340,659	8,590	50,984	12	2,993	204,391	1,232,098

[1]Exclusive of West Shiningtree area (Atlas and White Rock mines), which is included in Matachewan gold area above.
[2]Acquired by Lebel Oro Mines, Limited, in 1920.

ALGOMA DISTRICT

Annual Production Statistics of Gold Mines, 1902–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Algoma Summit (McCarthy-Webb)		Darwin (Grace[1])		Minto and Jubilee[2]		New Goodreau[3]		Parkhill		Miscellaneous		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
Prior to 1925	.....	.....	10,357	72,096	.....	.....	.....	.....	.....	.....	4,112	[4]14,521	14,469	86,617
1925	.....	.....	.....	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	41
1926	.....	.....	.....	.....	.....	.....	415	1,847	.....	.....	.....	.....	415	1,847
1929	.....	.....	.....	.....	.....	.....	.....	.....	33	2,057	.....	.....	33	2,057
1930	.....	.....	750	588	1,074	2,559	.....	.....	.....	.....	.....	.....	1,824	3,147
1931	.....	.....	.....	.....	9,448	80,269	.....	.....	9,082	75,543	.....	.....	18,530	155,812
1932	.....	.....	.....	.....	18,765	185,171	117	474	16,822	166,009	.....	.....	35,704	351,654
1933	.....	.....	.....	.....	23,671	182,376	.....	.....	11,565	246,580	60	[5]282	35,296	429,238
1934	421	4,926	.....	.....	22,189	169,301	.....	.....	19,431	310,647	.....	.....	42,041	484,874
1935	205	3,008	2,103	17,750	34,890	196,252	.....	.....	20,871	338,388	7,946	[6]49,027	66,015	604,425
Total	626	7,934	13,210	90,475	110,037	815,928	532	2,321	77,804	1,139,224	12,118	63,830	214,327	2,119,712

[1]Acquired by Darwin Gold Mines, Limited, in 1934. Operated by the Algoma Commercial Company in 1902 and 1903, who produced 6,097 tons of ore, from which $48,708 was recovered; and by the Le Page Gold Mining Company from 1907 to 1910, who produced 4,260 tons, valued at $23,235.

[2]Production shown from 1930 to 1933 was from the Minto; in 1934, 11,946 tons came from the Jubilee; and in 1935 the whole production was from the Jubilee. Both mines are now owned by Minto Gold Mines, Limited.

[3]Acquired by Algold Mines, Limited, in 1934.

[4]The Havilah (Ophir), Galbraith township, $8,549 from 2,489 tons in 1893 and $4,435 from an estimated quantity of 800 tons in 1910 and 1911; the Norwalk (Manxman), $1,412 from 820 tons in 1904 and 1910; the Golden Reed, $125 from 3 tons in 1908.

[5]Soo Mining and Prospecting Syndicate.

[6]Van Sickle (S. B. Smith).

PORCUPINE GOLD BELT

ANNUAL PRODUCTION STATISTICS BY MINES, 1910–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Hollinger		Schumacher[1]		McIntyre-Porcupine		Dome		Vipond[2]		Porcupine Crown (Northcrown)[3]		Coniaurum (Newray[4])		Buffalo Ankerite (Ankerite[5])		Marbuan (March[6])		Paymaster Consolidated[7]		Paymaster[8]		Dome Lake and West Dome Lake[9]		Night Hawk Peninsular[10]		Munro Croesus[11]		Gillies Lake–Porcupine (Porcupine United[12])		Naybob (Hayden[13])		McLaren-Porcupine		Miscellaneous[14]		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
1910	.....	31,194	.....	.....	.....	.....	.....	4,355	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35,549
1911	.....	6,000	.....	.....	.....	.....	.....	4,277	432	5,160	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	432	15,437
1912	45,195	909,181	.....	.....	14,500	77,657	75,088	737,499	5,168	16,259	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	139,951	1,740,596
1913	138,291	2,488,022	.....	.....	29,669	236,299	131,149	1,242,625	.....	.....	19,715	326,803	2,456	18,858	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25	4,200	321,305	4,316,807
1914	208,936	2,719,355	.....	.....	62,284	549,166	221,390	1,059,238	9,700	73,628	40,857	685,135	11,607	125,255	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20,212	554,774	5,231,989
1915	334,750	4,206,015	9,240	48,236	101,955	750,812	317,740	1,530,287	35,899	246,053	46,419	602,436	.....	36,925	.....	.....	.....	.....	.....	.....	.....	.....	11,727	102,880	.....	.....	100	73,215	.....	.....	.....	.....	139	9,134	857,969	7,605,993
1916	601,854	5,073,401	46,463	225,301	136,489	1,218,073	440,900	2,153,820	43,041	176,686	51,273	578,322	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,542	16,814	.....	.....	477	51,722	.....	.....	.....	.....	.....	.....	1,327,039	9,494,139
1917	514,301	4,261,938	37,323	198,605	175,893	1,710,204	359,570	1,480,174	34,971	209,738	39,111	377,904	340	1,447	.....	.....	.....	.....	.....	.....	.....	.....	16,388	44,434	.....	.....	1,541	60,046	.....	.....	.....	.....	31	877	1,179,469	8,345,367
1918	578,755	5,752,371	19,098	92,842	176,976	1,578,444	.....	82,127	15,134	82,868	10,907	124,474	401	1,516	.....	.....	.....	.....	.....	.....	.....	.....	12,229	103,745	.....	.....	692	64,780	.....	.....	.....	.....	2,565	17,327	816,757	7,900,494
1919	711,882	6,722,266	.....	.....	185,018	1,978,014	187,580	1,290,301	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,433	23,910	.....	.....	.....	.....	.....	.....	.....	.....	3,831	27,089	1,092,744	10,041,580
1920	650,205	6,939,629	.....	.....	191,032	2,515,861	295,220	2,243,926	.....	.....	17,898	190,713	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4,707	52,531	.....	.....	.....	.....	.....	.....	.....	.....	3,003	11,246	1,162,065	11,953,906
1921	1,072,493	10,015,712	.....	.....	172,287	1,985,803	335,680	2,386,357	.....	.....	.....	7,943	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,580,460	14,395,815
1922	1,491,381	12,436,393	.....	.....	217,208	2,042,931	368,400	4,178,936	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,664	2,076,989	18,662,724
1923	1,366,352	10,622,262	.....	.....	291,428	2,583,336	399,800	4,405,199	2,623	24,532	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	518	27,375	.....	.....	.....	.....	.....	11,845	2,060,721	17,674,549
1924	1,659,776	13,574,776	.....	.....	390,459	3,625,493	493,400	4,307,624	52,427	603,234	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,114	60,765	38,326	268,518	.....	.....	.....	.....	.....	.....	.....	5,270	2,642,502	22,445,680
1925	1,929,528	15,746,668	.....	.....	419,640	3,721,499	530,200	4,365,923	61,203	565,213	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	35,235	[15]235,091	39,758	196,947	.....	.....	.....	.....	.....	.....	.....	3,453	3,015,607	24,834,794
1926	1,932,559	14,829,655	.....	.....	498,653	3,862,074	555,700	3,940,053	79,717	631,636	.....	.....	.....	.....	23,060	140,588	4,655	11,055	.....	.....	28,049	63,551	36,946	220,758	21,604	111,154	.....	.....	.....	.....	.....	.....	.....	780	3,180,943	23,811,304
1927	2,178,329	14,539,538	.....	.....	522,880	3,965,210	543,300	4,031,575	90,863	667,724	.....	.....	.....	.....	69,863	359,005	4,566	19,839	.....	.....	62,129	135,025	16,982	[15]87,919	.....	166	.....	.....	.....	.....	.....	.....	60	223,243	3,488,972	24,029,244
1928	1,778,470	10,706,235	.....	.....	524,695	4,201,808	548,000	3,915,051	88,896	694,426	.....	.....	52,005	220,534	66,606	289,960	32,627	133,879	.....	.....	94,050	183,271	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	255	39,739	3,185,604	20,384,903
1929	1,549,157	9,519,092	.....	.....	550,100	4,314,803	452,900	3,590,537	107,984	824,726	.....	.....	103,293	635,485	12,912	71,684	48,484	256,303	.....	.....	.....	.....	35,142	155,797	.....	.....	.....	.....	.....	.....	4,848	44,285	.....	.....	47,701	2,864,820	19,460,413
1930	1,625,868	10,276,546	.....	.....	565,510	4,700,726	67,600	774,943	114,667	910,581	.....	.....	122,972	738,941	.....	878	53,953	306,262	.....	.....	.....	.....	.....	15,662	.....	.....	.....	.....	.....	.....	7,815	56,913	.....	.....	61,940	2,558,385	17,843,392
1931	1,640,705	10,532,380	.....	.....	617,425	4,962,211	542,600	3,636,806	100,223	586,304	.....	.....	130,585	783,096	.....	.....	58,462	228,507	.....	.....	.....	.....	.....	.....	.....	.....	550	4,171	1,396	5,439	.....	.....	.....	.....	33,587	3,091,946	20,772,501
1932	1,754,863	11,685,512	.....	.....	723,285	6,155,757	536,450	4,581,131	107,197	513,504	.....	.....	144,654	977,007	55,267	247,536	26,812	89,566	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,520	.....	.....	.....	.....	2,580	1,497	155	31,944	3,351,263	24,289,974
1933	1,727,102	13,831,174	.....	.....	754,360	7,589,845	546,500	6,103,340	107,562	700,354	.....	.....	145,657	945,765	111,402	650,591	2,800	5,288	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,593	3,188	[16]26	326	5,630	98,978	3,402,632	29,928,849
1934	1,900,490	15,108,883	.....	.....	851,345	8,289,262	547,600	7,177,087	101,806	539,243	.....	.....	138,114	979,156	131,720	712,898	26,030	113,422	13,824	69,522	.....	.....	.....	.....	.....	.....	205	10,467	.....	.....	.....	.....	.....	.....	50	339	530	2,491	3,711,714	33,002,770
1935	1,837,153	14,700,511	.....	.....	869,100	8,653,496	549,100	7,286,606	106,393	418,962	.....	.....	151,055	1,134,596	159,383	1,035,987	59,380	290,542	79,845	567,076	.....	.....	.....	.....	.....	.....	1,237	25,513	5,122	56,933	10,681	23,666	600	3,840	230	5,222	3,829,279	34,202,950
Total	29,228,395	227,234,709	112,124	564,984	9,042,191	81,268,784	9,045,867	76,509,797	1,265,906	8,490,831	226,180	2,893,730	1,003,139	6,598,581	630,213	3,509,127	317,769	1,454,663	93,669	636,598	184,228	384,647	188,488	1,120,306	99,688	576,785	5,320	323,809	19,181	163,570	14,854	28,351	676	4,505	16,454	657,942	51,494,342	412,421,719

[1]Purchased by the Hollinger in 1922.

[2]Acquired by Anglo-Huronian, Limited, in 1933.

[3]The Porcupine Crown was acquired by Northcrown Porcupine Mines, Limited, on May 15, 1920, and by Vipond Consolidated Mines, Limited (now Anglo-Huronian, Limited) in 1926.

[4]The Rea mine (production of which is shown in the figures for 1913, 1914, and 1915) was operated by Newray Mines, Limited, in 1917 and 1918. In 1924 the Newray was taken over by Coniaurum Mines, Limited.

[5]Renamed Buffalo Ankerite in 1932.

[6]The March was taken over by Marbuan Gold Mines, Limited, in 1933; the Buffalo Ankerite operated the Marbuan mill in 1933, treating 2,800 tons from the dump of the New York Porcupine Gold Mines, Limited. The Marbuan was taken over by Buffalo Ankerite Gold Mines, Limited, in 1935.

[7]Paymaster Consolidated Mines, Limited, incorporated in 1930, is a merger of West Dome Lake Gold Mines, Limited, and United Mineral Lands Corporation (which owned the Paymaster mine). The production for 1934 and 1935 came from the old Dome Lake and West Dome Lake shafts.

[8]Now owned by Paymaster Consolidated Mines, Limited.

[9]From 1915 to 1920, the production shown was from the Dome Lake mine, except 300 tons with a value of $2,462 from the West Dome Lake in 1918. In 1922 the properties were amalgamated as Consolidated West Dome Lake Mines, Limited, and in 1930 acquired by Paymaster Consolidated Mines, Limited.

[10]Acquired by Porcupine Peninsular Gold Mines, Limited, in 1933.

[11]Optioned to Tellaurum Gold Mines, Limited, January, 1936.

[12]Renamed Gillies Lake–Porcupine in 1933.

[13]The Hayden mine was acquired by Naybob Gold Mines, Limited, in 1934.

[14]See table of "Miscellaneous Production" to the right.

[15]In 1927 it was discovered that an erroneous return had been made for the year 1925 and that figure should have been $235,091 instead of $287,758, as shown in previous tables. The figure for 1927 was altered to make allowance for this discrepancy of $52,667. The present table now shows the correction applied to the year 1925.

[16]Shipped to Noranda smelter by J. M. McLaren.

MISCELLANEOUS PRODUCTION, PORCUPINE BELT

Mine	Year	Quantity	Value
		tons	$
Blue Quartz (Amal. Goldfields)	1923, 1926, 1928	.....	1,303
	1934	500	663
Bourkes	1918	3	1,113
Canusa (Scottish-Ontario)	1927, 1928	315	12,688
	1933, 1935	.....	2,152
Clifton (Preston)	1914, 1922, 1923, 1924	.....	30,575
Concordia (Jones-Porter)	1935	230	580
Davidson Consolidated	1918, 1919, 1920	9,371	53,914
	1926	.....	146
De Santis	1933	5,630	18,386
Gold Reef	1915, 1917	128	2,135
Hill Gold (Beatty tp.)	1918	25	635
J. Huddlestone and P. Clyne	1923, 1925	.....	3,257
Hughes	1926	.....	30
Northern Turnbull	1934	30	172
Porcupine Pet	1914, 1915	.....	10,551
Porphyry Hill	1913, 1915	46	6,236
J. Spence (Triple Lake)	1932	155	2,738
Tommy Burns	1917	21	289
Miscellaneous[1]	1925, 1927-1935	.....	510,379
Total		16,454	657,942

[1]This is all high-grading, with the exception of the year 1933, when $76,737 was recovered from scrapped machinery.

THUNDER BAY DISTRICT

ANNUAL PRODUCTION STATISTICS OF GOLD MINES, 1905–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Ardeen (Moss[1])		Dikdik[2]		Harkness-Hays		Little Long Lac		North Shores (McKellar-Longworth[3])		Northern Empire		St. Anthony[4]		Tashota		Miscellaneous		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
Prior to 1932	.....	.....	.....	.....	[5]1	63	.....	.....	.....	1,707	.....	.....	35,331	160,502	34	315	[6]1,100	2,492	36,466	165,079
1932	25,363	196,473	.....	.....	32	1,474	.....	.....	179	15,480	.....	.....	.....	.....	.....	.....	.....	.....	25,574	213,427
1933	34,789	270,077	.....	.....	.....	.....	.....	.....	11	288	.....	.....	.....	.....	.....	.....	.....	.....	34,800	270,365
1934	38,143	216,094	230	37,638	.....	.....	5,485	85,480	.....	.....	22,507	195,647	21,618	123,198	.....	.....	.....	.....	87,983	658,057
1935	5,884	32,531	3,295	49,118	17	2,252	62,073	1,108,269	1,404	29,358	45,736	645,296	44,550	303,152	12,827	76,627	[7]34	450	175,820	2,247,053
Total	104,179	715,175	3,525	86,756	50	3,789	67,558	1,193,749	1,594	46,833	68,243	840,943	101,499	586,852	12,861	76,942	1,134	2,942	360,643	3,553,981

[1]Originally known as the Huronian; this mine produced in the seventies, but no records are available; acquired by Ardeen Gold Mines, Limited, in 1933.

[2]Acquired by J. Bruce McMartin in 1934, and by Sarmac Gold Mining Corporation in 1935.

[3]Acquired from Schreiber Gold Mines, Limited, by North Shores Gold Mines, Limited, in 1933.

[4]Records are incomplete; operations were reported 1905 to 1907, 1911 to 1913, 1917, 1918, 1921, 1929. This property was formerly called Northern Gold Reefs.

[5]W. S. Jackson claims; acquired by Harkness-Hays in 1925.

[6]Empress, 1,100 tons, $2,378 (no statistics available, data taken from report of J. H. Chewett, April 22, 1897); Mary J. Coveney, $114.

[7]Caouette claims (Afton).

PATRICIA PORTION OF KENORA DISTRICT

Annual Production Statistics of Gold Mines, 1911–1935

(Value includes gold and silver, and exchange premium and equalization have been added since 1920)

Year	Casey Summit[1]		Central Patricia		Howey		J-M Consolidated (Jackson Manion)		McKenzie Red Lake		Pickle Crow		Red Crest (Rowan Discovery)		Sol-D'Or[2]		Miscellaneous		Total	
	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$	tons	$
Prior to 1929																	30	[3]307	30	307
1929																		[4]14,631		14,631
1930					110,438	460,857													110,438	460,857
1931					211,552	914,291													211,552	914,291
1932					284,664	1,268,780													284,664	1,268,780
1933					344,135	1,161,436									175	3,700		[5]505	344,310	1,165,641
1934	4,094	30,673	11,536	219,562	481,757	1,594,223	3,443	35,389							130	2,551		([6])	500,960	1,882,398
1935			35,192	777,570	484,966	1,332,950	1,381	12,851	36,117	533,223	37,277	878,745	174	3,828	119	1,444			595,226	3,540,611
Total	4,094	30,673	46,728	997,132	1,917,512	6,732,537	4,824	48,240	36,117	533,223	37,277	878,745	174	3,828	424	7,695	30	15,443	2,047,180	9,247,516

[1]Bought by Argosy Gold Mines, Limited, in 1935.

[2]This property was operated in 1933 by the Highgrade Syndicate and in 1934 by J. Hendrick, when it was acquired by Sol-D'Or Gold Mines, Limited.

[3]1911, J. Tingley, 30 tons, $57; 1923, R. McDonald, $124; 1924, N. McDonald, $126.

[4]Bathurst (Woman Lake), $3,107 (high-grade); Bobjo, $11,510 (high-grade); P. Edwards, $14.

[5]Geo. Singleton, $137; G. A. Rowan, $368.

[6]W. D. Cooper and P. A. Barry produced gold from the McIntyre Birch Lake property in 1934, statistics not available.

KENORA DISTRICT

PRODUCTION STATISTICS OF GOLD MINES, 1885–1935[1]

(Value includes gold and silver, and exchange and equalization have been added since 1920)

Mine	Year	Quantity	Value
		tons	
Baden-Powell[2]	1902, 1905	104	$1,273
Big Master	1902, 1903, 1905	5,027	39,261
Black Jack	1893	50	300
Britannia	1899	20	110
Cameron Island (Damascus)[3]	1898, 1906, 1934, 1935	572	76,790
Camp Bay	1904–1906	7,717	7,531
Cedar Island (Cornucopia)[4]	1896, 1932, 1935	3,168	29,019
Champion (Bad)	1900	[5]100	.....
Clark	1935	87	1,250
Combined	1904	37	220
Cornucopia. *See* Cedar Island.			
Crown Point	1900	150	900
Duport. *See* Cameron Island.			
Empire	1908	300	1,800
Glass Reef	1900	.....	171
Gold Hill	1886, 1893	220	19,610
Gold Panner	1900	100	900
Grace	1902, 1907, 1908	415	865
Kenora Prospectors and Miners. *See* Cedar Island and Mikado.			
Laurentian[6]	1906–1909	19,950	141,140
Mikado[7]	1896–1902, 1910, 1911, 1931	57,813	421,070
Minerva	1885	28	1,372
Olympia	1906, 1911, 1912	1,148	3,564
Ophir	1893, 1894, 1900, 1910	6,089	22,677
Quarry Island	1899	176	1,063
Regina[8]	1895–1899, 1902, 1904, 1905	24,597	133,799
Royal Sovereign	1902	.....	122
Rush Bay (Golden Horn)	1906, 1907	350	560
Sakoose (Golden Whale)	1899–1901	8,028	58,758
Sultana	1894–1902, 1904–1906	77,436	428,638
Sunbeam	1904	650	4,875
Treasure	1898	34	529
Twentieth Century	1902, 1903	8,688	43,586
Vermilion Lake (Botham)	1930, 1935	43	575
Wabigoon–Contact Bay[9]	1905,[10] 1916,[11] 1917,[11] 1918,[12] 1920,[13] 1923,[13] 1929	1,839	7,936
Wendigo	1900	[14]1,200	.....
Total	.....	226,136	$1,450,264

[1]In addition to the figures given and duplicating them in part, the following reduction plants carried on operations in Kenora, then called Rat Portage, and reported as follows: (1) Dominion Reduction Company (1895, 1897, 1900), 666 tons, $5,298; (2) Ottawa Gold Milling and Mining Company (1898–1900), 5,153 tons, $26,181; (3) Rat Portage Reduction Works (1900) milled 200 tons of Wendigo ore; no data of recovery made are available; (4) Keewatin Reduction Works (1900) milled 100 tons ore from Champion and 1,000 tons from Wendigo; no data of recovery made are available.

[2]Northern Lights Mines Company.

[3]Acquired by Duport Mining Company, Limited, in 1929.

[4]Acquired by Kenora Prospectors and Miners, Limited, in 1928. The mine was called Cornucopia prior to 1932.

[5]Reported milled in custom mill, no data.

[6]Operated by Imperial Gold Mines, Limited.

[7]Acquired by Kenora Prospectors and Miners, Limited, in 1928.

[8]Or Black Eagle; now owned by Horseshoe Mines, Limited.

[9]Contact Bay Mines, Limited, was incorporated in 1918 and acquired the Rognon, Redeemer, and Bonanza claims; the name was changed to Wabigoon–Contact Bay Mines, Limited, in 1923; and in 1935 the property was acquired by Northern Mines, Incorporated.

[10]Redeemer.

[11]Rognon.

[12]Redeemer (with exception of 8 tons, valued at $46, from Rognon).

[13]Bonanza.

[14]Milled in custom mill.

RAINY RIVER DISTRICT

PRODUCTION STATISTICS OF GOLD MINES, 1895–1935

(Value includes gold and silver, and exchange and equalization have been added since 1920)

Mine	Year	Quantity	Value
		tons	
Barker	1898	70	$490
Central Canada[1]	1934	350	742
Elizabeth	1912	50	400
Foley	1897, 1898, 1933–1935	5,553	51,403
	1934 (in concentrates)	15	1,255
Gold Winner	1900	15	70
Golden Crescent (A.D. 2)	1897	192	1,543
Golden Star	1898–1901, 1934	15,262	168,768
Hammond Reef	1897	977	3,857
Harold Lake	1895, 1896	1,131	11,236
Independence (Bennett tp.)	1898	125	1,906
Lucky Coon	1899, 1935	10	144
Manitou	1896	12	413
Olive	1897–1900	6,925	47,166
Saundary[2]	1934	13	435
Sawbill	1897–1899	2,416	8,982
W. E. Stone	1919, 1920	2	319
Total		33,118	$299,129

[1]Formerly the Walsh.
[2]Formerly the Headlight or Swede Boy.

Labour Statistics

The following figures summarize labour statistics for the gold-mining industry, as reported to the Ontario Department of Mines:—

AVERAGE YEARLY WAGE, GOLD-MINING INDUSTRY, 1934 AND 1935

Area	1934			1935		
	No. of wage-earners	Wages paid	Average wage per annum	No. of wage-earners	Wages paid	Average wage per annum
Porcupine	5,295	$8,541,490	$1,613	5,781	$9,433,723	$1,632
Kirkland Lake	3,525	5,706,528	1,619	3,589	5,687,611	1,306
Matachewan and West Shiningtree	1,373	1,672,151	1,217	297	507,430	1,709
Sudbury district[1]				82	115,929	1,414
Algoma district				233	325,108	1,395
Thunder Bay district				528	722,379	1,368
Patricia portion				533	933,542	1,751
Kenora and Rainy River districts				89	113,596	1,276
Operating but non-producing	1,195	1,059,506	886	997	1,072,443	1,076
Total	11,388	$16,979,675	$1,491	12,129	$18,911,761	$1,559

[1]Exclusive of West Shiningtree.

Gold-Milling Plants

The milling capacity in tons per day of plants operating, under construction, and idle at the end of 1935, and that of projected plants and proposed expansion of existing plants for 1936, are summarized as follows:—

DAILY TONNAGE OF GOLD-MILLING PLANTS AT ONTARIO MINES, 1935

Area and mine	Operating	Under construction	Idle	Proposed
PORCUPINE BELT:				
Buffalo Ankerite	500			
Canusa			25	
Concordia (Jones-Porter)	10			
Coniaurum	500			
Dome	1,500			
Gillies Lake–Porcupine	50			
Hollinger	5,000			
McIntyre-Porcupine	2,500			
McLaren-Porcupine	15			
Marbuan	175			
Munro Croesus	25			
Naybob (Hayden)	50			
Northern Turnbull			15	
Pamour		500		
Paymaster Consolidated	300			
Porcupine Peninsular			200	
Ross (Hollinger), Hislop township		100		
Vimy		25		
Vipond (Anglo-Huronian)	300			
KIRKLAND LAKE BELT:				
Barry-Hollinger	100			
Bidgood	65			
Golden Summit		25		
Kirkland Lake Gold	225			
Lake Shore	2,350			
Lucky Cross (Golden Gate)			20	
Macassa	200			
Miller Independence	25			
Morris Kirkland				100
Omega (formerly Canadian Reserve)		500		
Swastika (Teck-Otto Gold Mines, Ltd.)			50	
Sylvanite	350			
Teck-Hughes	1,300			
Toburn	105			
Wright-Hargreaves	1,100			
MATACHEWAN AND WEST SHININGTREE AREAS:				
Ashley	150			
Churchill			10	
Matachewan Consolidated	150			
Young-Davidson	700			
SUDBURY DISTRICT:				
Bousquet		50		
Gomak		35		
Halcrow-Swayze			25	
Lebel Oro (Long Lake)	200			
McMillan	150			
ALGOMA DISTRICT (Michipicoten and Goudreau)				
Algold (New Goudreau)	50			
Algoma Summit	20			
Darwin	60			
Minto	100			
Parkhill	100			
Shenango		50		
Stanley		50		
Van Sickle (S. B. Smith)	50			
THUNDER BAY DISTRICT:				
Ardeen (Moss)	200			
Centennial (L. B. United Mines)	50			

DAILY TONNAGE OF GOLD-MILLING PLANTS AT ONTARIO MINES, 1935—*Continued*

Area and mine	Operating	Under construction	Idle	Proposed
THUNDER BAY DISTRICT—*Continued*				
Dikdik (J. Bruce McMartin)	20			
Harkness-Hayes	25			
Little Long Lac	200			
North Shores	25			
Northern Empire	200			
St. Anthony	125			
Schreiber Pyramid		50		
Sturgeon River				50
Tashota	75			
KENORA AND RAINY RIVER DISTRICTS:				
Cedar Island (Kenora Prospectors)	50			
Duport				50
Golden Star			5	
Horseshoe				100
Saundary			5	
Wendigo		50		
PATRICIA PORTION:				
Argosy (Casey Summit)			50	
Central Patricia	125			
Howey	1,500			
Hudson-Patricia				50
J-M Consolidated	30			
McKenzie Red Lake	150			
Pickle Crow	200			
Red Crest	5			
Red Lake Gold Shore				125
Sol-D'Or	10	50		
EASTERN ONTARIO:				
Craig				100
Gilmour	100			
Total	21,575	1,485	405	575

Mint Receipts from Ontario Mines

The table below shows the record over a five-year period of receipts of crude gold bullion from Ontario mines at the Royal Canadian Mint.

RECEIPTS OF CRUDE GOLD BULLION FROM ONTARIO MINES AT THE ROYAL CANADIAN MINT, OTTAWA, 1931–1935

Year	Quantity	Precious metals		Total value (standard)	Buying rate in Canada for New York funds[1]
		Gold	Silver		
	crude ounces	fine ounces	fine ounces		cents
1931	1,762,481	1,441,602	171,408	$29,850,774	104.272
1932	2,865,271	2,248,106	300,927	46,554,898	113.580
1933	2,441,467	1,879,659	270,377	38,945,178	109.472
1934	2,668,456	2,031,719	292,445	42,134,234	.990
1935	2,798,831	2,195,386	310,104	45,578,512	100.54

[1]The average rate of premium on New York funds is based on the day to day record of current quotations. The Federal Department of Finance pays for gold in Canadian funds and reimburses producers by an amount equivalent to the exchange premium on New York funds. Export of gold is prohibited except under license. After April 19, 1933, when the United States forsook the gold standard, Canadian output was marketed in London.

The average monthly value of gold in Canadian funds in 1935 ranged from $34.948 in January to $35.493 in October, and dropped to $35.324 per ounce in December. The average for the twelve months was $35.19.

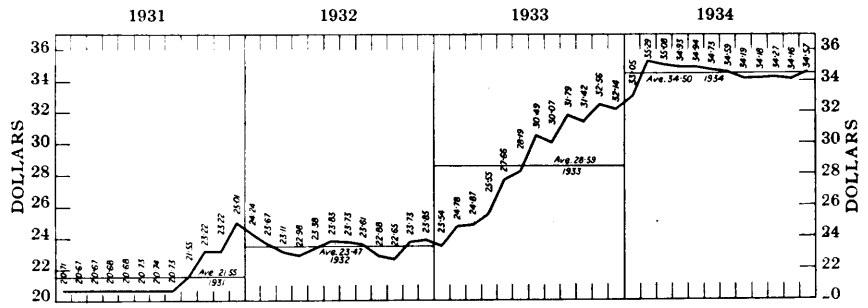


Chart of average monthly and yearly prices of gold in Canadian funds from 1931 to 1934, inclusive. No change in 1935.

Exchange Equalization

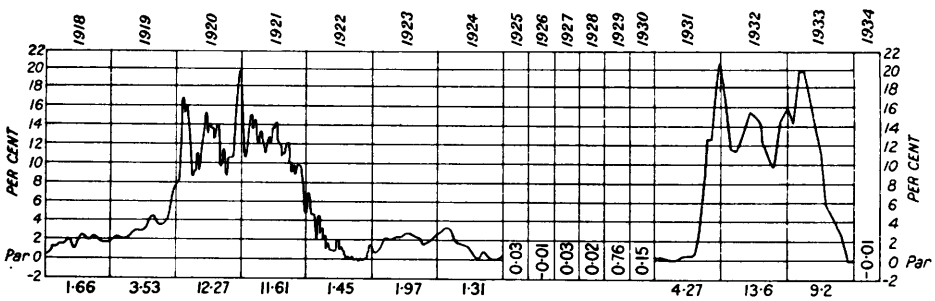
The figure for exchange equalization published for 1933, namely $16,486,437, refers to the actual quantity of gold marketed during that period. Owing to the fact that in former years some mines reported only the exchange received during the calendar year and not exchange actually due on the year's gold shipments, some small corrections have been made on the following table for the years 1931 and 1932, as follows: $81,728.42 received in 1933 should be credited to 1932, and $113,088.91 should be deducted from 1932 and credited to 1931. In 1930, the exchange did not overlap with 1931.

EXCHANGE EQUALIZATION RECEIVED ON GOLD MARKETED BY ONTARIO PRODUCERS, 1920–1935

Year	Porcupine	Kirkland Lake	Matachewan	N. W. Ontario	Other areas	Total
1920	$1,265,644	$110,354	.....	$257	.....	$1,376,275
1921	1,238,211	121,425	.....	.....	.....	1,359,636
1922	189,022	19,591	.....	.....	$8	208,621
1923	241,602	38,565	.....	29	.....	280,196
1924	172,722	24,028	.....	.....	.....	196,750
1925[1]	−2,607	−231	.....	.....	.....	−2,838
1926[1]	.....	−595	.....	.....	.....	−595
1927[1]	.....	.....	.....	.....	.....	.....
1928	.....	2,811	.....	.....	.....	2,811
1929	87,173	70,283	.....	.....	.....	157,456
1930	20,912	15,791	.....	.....	.....	36,703
1931	830,799	1,006,607	.....	61,857	26,958	1,926,221
1932	2,815,381	3,106,487	.....	211,959	330	6,134,157
1933	8,249,321	7,305,041	$143,866	[2]495,335	292,874	16,486,437
1934	13,275,684	13,694,400	246,491	1,235,995	834,869	29,287,439
1935	14,043,630	13,718,813	620,177	2,784,979	2,429,189	33,596,788
Total	$42,427,514	$39,233,370	$1,010,534	$4,790,411	$3,584,228	$91,046,057

[1]Discounts paid during years when Canadian funds were at a premium. Figures for the three years have been deducted to arrive at the net totals.

[2]Includes $26 from West Shiningtree.



Graph showing fluctuations of the buying rate in Canada for New York funds from 1918 to 1934, inclusive. The average yearly premium or discount rate is noted in percentage figures at the base of the chart. The exchange was practically at par throughout the whole of 1935.

World Output

The figures for the output by the leading gold-producing countries from 1931 to 1935, inclusive, in the following table are those published by the American Bureau of Metal Statistics.

OUTPUT BY THE LEADING GOLD-PRODUCING COUNTRIES, 1931–1935[1]

(One dollar = 0.048375 ounces)

	1931	1932	1933	1934	[2]1935
NORTH AMERICA:	fine ounces	fine ounces	fine ounces	fine ounces	fine ounces
United States[3]	2,395,878	2,449,032	2,536,913	2,916,373	3,618,843
Canada	2,693,892	3,044,387	2,949,309	2,972,074	3,283,121
Mexico	628,468	584,487	637,727	661,390	682,319
Newfoundland	12,221	17,661	15,689	12,000	15,000
Total North America	5,730,459	6,095,567	6,139,638	6,561,837	7,599,283
CENTRAL AMERICA AND WEST INDIES	67,730	82,238	87,075	130,000	*150,000
SOUTH AMERICA:					
Chile	21,381	37,778	147,392	237,656	264,398
Brazil	119,500	119,868	122,534	113,621	125,000
Colombia	194,274	248,249	298,242	344,140	328,991
Ecuador	59,616	65,629	60,667	66,427	70,000
Peru	80,182	86,101	96,781	98,861	*110,000
Guiana—British	10,183	13,926	23,352	27,510	*30,000
—Dutch	3,800	7,200	10,000	9,600	*10,000
—French	47,500	45,010	42,456	47,454	*50,000
Venezuela	42,310	77,087	95,720	109,053	115,000
Other South America	18,328	13,245	33,871	65,501	*65,000
Total South America	597,074	714,093	931,015	1,119,823	1,168,389
EUROPE:					
Czechoslovakia	1,055	2,283	3,803	7,587	*8,000
France	60,800	92,013	94,521	100,597	*100,000
Jugoslavia	(4)	(4)	70,344	71,342	76,485
Rumania	88,123	102,591	142,585	111,496	145,000
Russia and Siberia	1,700,000	1,990,000	2,667,100	4,262,770	5,500,000
Sweden	61,632	132,458	288,643	246,687	230,000
Other Europe	31,000	55,530	19,186	31,558	30,000
Total Europe	1,942,610	2,374,875	3,286,182	4,832,037	6,089,485

OUTPUT BY THE LEADING GOLD-PRODUCING COUNTRIES, 1931-1935—*Continued*
(One dollar = 0.048375 ounces)

	1931	1932	1933	1934	1935
OCEANIA:					
New South Wales	19,673	27,941	29,252	36,123	50,000
Queensland	13,147	23,263	91,997	115,471	102,990
Victoria	43,637	47,745	58,183	70,275	87,600
Western Australia	510,570	605,561	637,207	651,338	649,049
Tasmania	4,759	5,937	6,673	5,622	8,343
New Guinea	(5)	(5)	150,000	200,000	280,000
New Zealand	129,861	166,354	161,755	160,248	158,000
Other Oceania	62,455	121,071	18,800	22,500	30,000
Total Oceania	784,102	997,872	1,153,867	1,261,577	1,365,982
ASIA:					
British India	330,489	329,682	336,108	322,143	325,000
China	96,750	96,750	150,000	150,000	*150,000
Chosen (Korea)	274,754	276,002	328,040	350,000	400,000
Netherlands India	100,083	78,186	78,829	71,765	70,000
Formosa	18,133	25,045	72,242	121,518	*100,000
Japan	429,620	401,779	441,387	471,394	572,000
Other Asia	34,047	36,526	50,000	86,700	77,000
Total Asia	1,283,876	1,243,970	1,456,606	1,573,520	1,694,000
AFRICA:					
Belgian Congo	211,758	242,691	283,144	337,382	370,000
French West Africa	(6)	(6)	68,737	97,706	115,000
Madagascar	8,585	11,338	13,374	15,979	*20,000
Rhodesia	541,447	580,503	645,087	693,265	727,927
British West Africa[7]	267,300	292,510	338,110	384,268	425,000
Tanganyika	(6)	(6)	32,516	42,606	51,300
Transvaal, Cape Colony, and Natal	10,877,777	11,558,532	11,013,713	10,479,857	10,773,991
Other Africa	58,000	111,494	53,700	100,000	110,000
Total Africa	11,964,867	12,797,068	12,448,381	12,151,063	12,593,218
TOTAL FOR WORLD	22,370,713	24,305,683	25,502,764	27,629,857	30,660,357

[1]From the Year Book of the American Bureau of Metal Statistics, 1935.
[2]The 1935 compilation contains some preliminary data and conjectural figures (*) have been inserted where necessary.
[3]Production of the Philippine Islands is included with the United States.
[4]Included in "Other Europe."
[5]Included in "Other Oceania."
[6]Included in "Other Africa."
[7]Including Gold Coast.

Maximum Canadian production	3,283,121 ounces in 1935
Maximum Russian production	5,500,000 ounces in 1935
Maximum U.S. production	4,887,604 ounces in 1915
Maximum Transvaal, Cape Colony, and Natal production	11,558,532 ounces in 1932
Maximum World production	30,660,357 ounces in 1935

Nickel-Copper and Platinum Metals

The nickel-copper industry during 1935 eclipsed all records. As may be observed in the accompanying table, the tonnage of ore and concentrate treated has topped that of 1934 by more than 24 per cent. in quantity. Refined nickel and blister copper produced have shown corresponding increases in quantity. On the other hand, matte exported was slightly lower than in 1934 but considerably above the figures for 1933. Increases may also be observed in the quantity of gold and silver recovered, which are now important acquisitions to the pro-

duction of those metals. The production of metals of the platinum group has increased to such an extent that the Sudbury nickel-copper mines have become one of the world's most important sources of these precious metals. Since the year 1930, the entire Ontario production has been derived from the Sudbury area; it rose from 68,040 ounces in that year to a total of 200,109 in 1934. The 1935 output was slightly lower.

PRECIOUS METALS RECOVERED, 1931–1935

	1931	1932	1933	1934	1935
	ounces	ounces	ounces	ounces	ounces
Platinum metals:					
Platinum	44,725	27,284	24,746	116,177	105,335.28
Palladium	39,313	37,613	31,009	83,932	81,902.61
Rhodium, ruthenium, osmium, and iridium	7,605				2,869.00
Total ounces	91,643	64,897	55,755	200,109	190,106.89
Value	$2,812,834	$1,998,911	$1,501,233	$6,187,992	$5,407,392
Gold ounces	23,381	22,675	36,983	60,370	69,023.96
Silver ounces	822,971	663,795	1,026,370	1,882,293	2,243,746.00

The producing mines at Sudbury were operated at the following rates: the Frood, 10,500 tons of ore hoisted per day; the Creighton, 1,000 tons; and the Falconbridge, 1,000 tons per day.

A new shaft, No. 5, is now being sunk at the Creighton and has reached a depth of 2,100 feet. The final objective is 4,250 feet. At the Falconbridge a new shaft, which is to be 1,450 feet in depth, has been sunk to 1,350 feet.

NICKEL-COPPER MINING AND SMELTING, 1931–1935

Item	1931	1932	1933	1934	1935
	tons	tons	tons	tons	tons
1. Ore and concentrate shipped	1,690,192	790,614	1,533,887	2,903,310	3,608,437
2. Ore and concentrate treated	1,884,959	793,552	1,523,814	2,896,959	3,616,223
3. Blister copper produced in Ontario	49,786	29,682	60,398	95,826	119,720
4. Nickel produced in Ontario	15,939	7,063	20,748	35,487	40,191
5. Matte exported[1]	30,294	21,778	43,315	46,755	46,371
6. Nickel content of matte exported[2]	16,847	8,068	25,811	28,771	28,949
7. Copper content of matte exported[2]	6,620	8,825	12,323	6,692	6,272

[1]All matte was exported prior to 1918, when refining in Canada began at Port Colborne, Ont. The British America Nickel Corporation commenced refining operations at Deschênes, Que., in 1920, and closed down finally in July, 1924. In 1934 and 1935, a few thousand tons were brought back to Canada for treatment. These have been deducted.

[2]In 1932, after the reorganization of the metallurgical practice, the Orford process, i.e. the separation of the matte into copper tops and nickel bottoms, was carried out at Copper Cliff.

Dividends

Total dividends paid to the end of 1933 and payments in 1935 are given in the following table. For convenience of comparison Mond figures have been converted to dollars on the basis £1 = $4.8665. The Falconbridge Nickel Mines paid its first dividend in 1933.

STATISTICAL SYNOPSIS OF THE NICKEL-COPPER INDUSTRY IN ONTARIO, 1933, 1934, AND 1935

Year	No. of producing companies	No. of plants in Ontario	Capital invested[1]	Dividends paid	Salaried employees		Wage-earners		Selling value of products[2]	
					No.	Salaries	No.	Wages	Kind	Value
1933	2	4 mines	$91,785,900	$2,746,330	46	$157,795	1,459	$2,238,271	Matte (exported)	$21,197,469
		3 smelters			71	287,817	1,413	2,040,548	Metallic nickel	
		2 refineries[3]			98	251,895	751	971,614	Nickel oxide	
									Converter copper	9,005,195
									Gold (standard)	764,508
									Silver	388,303
									Platinum metals	1,501,233
									Selenium	53,745
Total			$91,785,900	$2,746,330	215	$697,507	3,623	$5,250,433		$32,910,453
1934	2	4 mines[4]	$102,801,859	$10,126,014	45	$149,890	2,505	$4,037,707	Matte (exported)	$32,092,032
		3 smelters			107	444,873	2,210	3,185,306	Metallic nickel	
		2 refineries[3]			121	329,101	1,078	1,380,448	Nickel oxide	
									Converter copper	14,218,611
									Gold (standard)	1,247,957
									Exchange	834,526
									Silver	864,646
									Platinum metals	6,187,992
									Selenium and tellurium	116,885
Total			$102,801,859	$10,126,014	273	$923,864	5,793	$8,603,461		$55,562,649
1935	2	4 mines[4]	$107,648,331	$13,865,196	43	$143,776	3,449	$5,789,096	Matte (exported)	$35,906,541
		3 smelters			119	439,726	2,548	3,633,678	Metallic nickel	
		2 refineries			141	352,876	1,197	1,582,350	Nickle oxide	
									Converter copper	18,665,345
									Gold (standard)	1,426,852
									Exchange	1,002,101
									Silver	1,453,721
									Platinum metals	5,407,392
									Selenium and tellurium	173,247
Total			$107,648,331	$13,865,196	303	$936,378	7.194	$11,005,124		$64,035,199

[1]The capital invested is exclusive of value of mineral lands. In the report for 1929, Volume XXXIX, Part I, the capital shown includes the book value for mineral lands, or a total of $74,077,808 for the lands.

[2]Figures do not include the output of the Ontario Refining Company.

[3]Plants Port Colborne and Copper Cliff.

[4]Includes Cuniptau.

DIVIDENDS PAID BY NICKEL COMPANIES TO END OF 1935

Company		Period (inclusive)	To end of 1934	1935
Canadian Copper Company		1894–1901	$1,975,000.00	.....
International Nickel Company[1]	preferred	1906–1928	12,299,273.00	.....
	common	1909–1928	65,811,694.00	.....
International Nickel Company of Canada, Limited[2]	preferred	1929–1932	11,382,710.28	$1,933,898.75
	common	1929–1932	40,374,198.06	10,933,626.75
Falconbridge Nickel Mines, Limited		1928–1933	1,715,640.76	997,669.77
Total		.....	$133,558,516.10	$13,865,195.27
Mond Nickel Company[3]	deferred	1906–1914	£264,043	.....
	preferred	1904–1929	2,556,359	.....
	ordinary	1905–1929	2,581,984	.....
Total		.....	£5,402,386 or $28,291,126	.....
GRAND TOTAL		.....	$159,849,642.10	$13,865,195.27

[1]Successors to the Canadian Copper Company. The International Nickel Company paid dividends on the common stock from 1909 to 1919, inclusive, and again from 1925 to 1928, inclusive. Common stock outstanding was $41,834,600, and preferred stock $8,912,600, or a total of $50,747,200 at the beginning of 1928. On December 19, 1928, the authorized capital stock of $62,000,000 of the New Jersey company was reduced by changing the par value of the shares from $25 to $1 each, and at the same time the name of the company was changed to Nickel Holdings Corporation. On December 31, 1928, the authorized capital was further reduced to $993,425 fully issued or subscribed-for stock, consisting of $843,700 preferred stock and $149,725 common stock, par value in each case.

[2]Dividends paid by the International Nickel Company of Canada, Limited, on the common stock in 1929 were 90 cents per share, and $1.00 per share in 1930. Common stock was increased to 15,000,000 shares of no par value on July 25, 1930; as a result shares issued were increased from 13,758,208 to 14,584,025. Seven per cent. preferred stock (cumulative) now stands at $27,627,825. Dividends on common stock aggregated 45 cents a share in 1931.

[3]Upon completion of the exchange of stock under the amalgamation of the Mond and International companies, effective December 31, 1928, stock issued or issuable was as follows: $27,627,825 of 7 per cent. cumulative preferred, and 13,758,208 common shares without par value. Dividends paid on February 16, 1929, by the Mond company cover the 8 months' period ending December 31, 1928.

Demand for Palladium

Platinum and metals of the platinum group have heretofore been recovered mainly from placer workings, as in Russia, but of late years the recoveries in the refining of nickel-copper mattes from Sudbury have placed Ontario in the forefront of world producers. The Russian output has been estimated at 100,000 ounces, reliable statistics not being available. The state of Colombia was formerly a prominent producer of these metals, but production has fallen off. In 1935, according to *Mineral Trade Notes* of the United States Bureau of Mines[1] most of the crude platinum of Colombia was saved on dredges working in the Interdencia of Chaco near Andagoya. Production in 1935 totalled 38,628 ounces, which, with the exception of 24 ounces, was exported. The output was about 16,000 ounces less than in the previous year.

A note from a German publication *Metallwirtschaft* regarding palladium runs as follows:—

In the last three years leaf palladium has been on the market. It is made and used in the same way as leaf silver and gold. Palladium leaf has a platinum-white colour and has no tendency to tarnish or spot. The leaf is made of 99.8 per cent. pure metal. Palladium is easily worked, and alloys with other metals quite freely. It has a melting point of 1554° C., and its specific gravity is 12.16; this is 20 per cent. lighter than 18-carat gold. The tensile strength of the pure metal is very good, and its alloys have high tensile strength values. The chief sources of palladium to-day are the nickel-copper ores of Sudbury, Ont. It occurs in smaller quantities

[1]Vol. 2, No. 6, p. 11.

in South Africa, Russia, and South America. In recent years, leaf palladium has found many uses, and among others, for the gilding of the surface of wooden sculpture. It is also used extensively in the bookbinding industry for book titles and for ornamentation of the book covers. It can be printed not only on leather but on wood.

Palladium is used extensively as a dental metal, and in electro-technique. In dentistry, it often replaces gold, either alone or alloyed. It greatly improves dental alloys to which it is added, especially the alloys with platinum, gold, and silver. For the most part, the alloys are white, and in the jewellery trade it replaces "white gold" because it is much more easily worked. For such purposes it is often alloyed with chodium, or ruthenium, which produces a very strong alloy. In the electric industry, palladium is used for contacts, especially for telephone relays, because of its cleanliness and good conductivity. The use of palladium in future is likely to increase considerably because of its special properties, including its value as a catalyst.

The two operating nickel companies have both announced important additions to their plants at Sudbury for 1936. The International Nickel Company will add 40 per cent. to its smelting capacity. This enlargment has been necessitated mainly by the increased peace-time uses to which nickel is now being put and will permit the keeping of supplies of the refined metal on hand. It is understood that two reverberatory furnaces and eight converters are to be installed in a new addition to the smelter, which will be served by a new high stack. Employment in the nickel-copper industry during the year was at its highest level. This activity has an important bearing on other industries, such as lumbering and transportation.

Copper-refining was also active in 1935. The plant of the Ontario Refining Company at Copper Cliff, which has an annual capacity of 120,000 tons and is the largest copper refinery in Canada, treated 118,681 tons of blister copper and produced 109,765 tons of refined copper, 58,364 ounces of gold, 2,077,572 ounces of silver, 75,363 pounds of selenium, and 14,275 pounds of tellurium. Copper was produced in the form of wire bars, ingot bars, small ingots, cakes, billets, and cathodes.

A new development of great importance to Canada is the organization of companies to produce stainless steel and a large list of monel metal products.

The International Nickel Company of Canada, Limited, which has formed the Whitehead Metal Products Company of Canada, Limited, with a plant at Port Colborne, will manufacture monel metal products, range boilers, water-heating tanks, and gas heaters. The plant commenced operations in March, 1936.

The Fahralloy Canada, Limited, backed by Ventures, Limited, and Falconbridge, has taken over a plant at Orillia, which is now undergoing extensive alteration, with equipment being installed to manufacture nickel-steels now so widely in demand.

Silver-Cobalt

The silver-mining industry has brightened considerably in Ontario recently, owing to the improved price of the metal and more stable industrial conditions, with a consequent better market for the metal cobalt, which is associated with the silver. Refining of nickel-copper mattes has supplied important quantities of silver, and with that recovered from an expanding gold industry the production of this metal has improved.

The production was 6,320,670 ounces, valued at $4,068,906, during 1935, as against 5,523,938 ounces, worth $2,600,393, in 1934. The increase in quantity was due entirely to heavier shipments of silver concentrates and a much larger recovery in the refining operations of the nickel-copper industry.

During the year twenty-eight properties shipped silver-cobalt and cobalt ore. Eighteen of these are located at Cobalt, namely Cobalt Properties, Temiskaming, Cross Lake (O'Brien), Foster, Crown Reserve, Drummond, Beaver, Right-of-Way, Colonial, Nipissing, Cobalt Comet, Buffalo, Cobnor, Hudson Bay;

Yorkshire Cobalt, Dominion Reduction Company, Silver Queen, and Silver Cliff, and seven in South Lorrain, as follows, Wettlaufer, Bellellen, Canadian Lorrain, Frontier, Keeley, and Nipissing Lorrain; and three at Gowganda, Miller Lake O'Brien, Silverado, and Morrison. In most cases these operations were carried on by lessees and the shipments ranged from one ton, a carload lot, or several carloads to more than 4,000 tons from the Nipissing. The active demand for cobalt and for nickel-bearing ores has been the cause of this revival in operations.

The price of silver on the New York market for 1935 averaged 64.273 cents per fine ounce, as compared with 46.973 in 1934. World silver markets were demoralized early in December with offers flooding the market and no buyers, as the United States Treasury refused to bid for metal in the face of Far Eastern selling orders. The low of 49.75 cents was reached in December, at which point it finished the year.

The following table shows the total silver production for the years 1934 and 1935:—

SILVER PRODUCTION, 1934 AND 1935

Source	1934		1935	
	Fine ounces	Value	Fine ounces	Value
Sales of bullion by the reduction companies, smelters, and mines	2,681,104	$1,244,081	3,181,282	$2,051,089
Contained in silver-cobalt concentrates and residues exported	288,552	141,544	144,229	94,177
Estimated as recovered from concentrates treated outside of Ontario	299,084	146,094	299,632	181,181
In crude gold bullion	432,905	204,028	451,781	288,738
Recovered by nickel-copper refineries	1,822,293	864,646	2,243,746	1,453,721
Total	5,523,938	$2,600,393	6,320,670	$4,068,906

The following shipments of silver-cobalt ore in 1935 are taken from data compiled and supplied by A. A. Cole, mining engineer for the T. & N. O. railway: silver ore from Cobalt 1,902.49 tons, from South Lorrain 23.37 tons, and from Gowganda 229.02 tons, a total of 2,154.88 tons; cobalt ore from Cobalt 2,845.48 tons, and from South Lorrain 36.15 tons, a total of 2,881.63 tons. The total shipments by railway, therefore, were 5,036.51 tons, of which silver ores totalling 885.19 tons were shipped to Deloro, Ont., 895.19 tons to Noranda, Que., and 374.50 tons to Tadanac, B.C. The cobalt ores were largely exported, only 183.18 tons going to Deloro, while 2,386.36 tons were exported to Europe and 312.09 tons to the United States.

Shipments of silver mines by camps during 1934 and 1935 were as follows:—

SILVER SHIPMENTS BY CAMPS, 1934 AND 1935

Camp	1934			1935		
	Silver	Cobalt[1]		Silver	Cobalt [1]	
	fine ounces	lbs.		fine ounces	lbs.	
Cobalt	1,990,073	201,025	$59,867	2,737,592	437,728	$130,239
Gowganda	1,039,565	32,273	.....	829,195	20,818	No,pay
South Lorrain	.....	.....	.....	36,585	9,326	3,867
Total	3,029,638	233,298	$59,867	3,603,372	447,054	$134,106

[1]Figures represent the quantities paid for by the smelter and values received by the mines.

SHIPMENTS FROM SILVER MINES, SMELTERS AND REFINERIES, 1904–1935

Year	Bismuth		Copper[1]		Lead[1]		Nickel[2]		Cobalt[3]		Arsenic		Silver		Total
	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Tons	Value	Ounces	Value	Value
1904	.....	.....	.....	.....	.....	.....	14	$3,467	16	$19,960	72	$903	206,875	$111,887	$136,217
1905	.....	.....	.....	.....	.....	.....	75	10,000	118	100,000	549	2,693	2,451,356	1,360,503	1,473,196
1906	.....	.....	.....	.....	.....	.....	160	.....	321	80,704	1,440	15,858	5,401,766	3,667,551	3,764,113
1907	.....	.....	.....	.....	.....	.....	370	1,174	739	104,426	2,958	40,104	10,023,311	6,155,391	6,301,095
1908	.....	.....	.....	.....	.....	.....	612	.....	1,224	111,118	3,672	40,373	19,437,875	9,133,378	9,284,869
1909	.....	.....	.....	.....	.....	.....	766	.....	1,533	94,965	4,294	61,039	25,897,825	12,461,576	12,617,580
1910	.....	.....	.....	.....	.....	.....	504	.....	1,098	54,699	4,897	70,709	30,645,181	15,478,047	15,603,455
1911	.....	.....	.....	.....	.....	.....	392	.....	852	170,890	3,806	74,609	31,507,791	15,953,847	16,199,346
1912	.....	.....	.....	.....	.....	.....	429	14,220	934	314,381	4,166	80,546	30,243,859	17,408,935	17,818,082
1913	.....	.....	.....	.....	.....	.....	377	13,326	821	420,386	3,663	64,146	29,681,975	16,553,981	17,051,839
1914[4]	.....	.....	.....	.....	.....	.....	90	28,978	351	590,406	2,030	116,624	25,162,841	12,765,461	13,501,469
1915	.....	.....	.....	.....	.....	.....	35	28,353	206	383,261	2,490	148,379	24,746,534	12,135,816	12,695,809
1916	.....	.....	.....	.....	.....	.....	79	59,380	400	805,014	2,160	200,103	19,915,090	12,643,175	13,707,672
1917	.....	.....	53	$28,840	.....	.....	155	125,071	337	1,138,190	2,592	608,483	19,401,893	16,121,013	18,021,597
1918	.....	.....	72	35,712	3	$453	186	156,893	380	1,640,310	2,545	566,332	17,661,694	17,341,790	19,741,490
1919	.....	.....	110	40,976	12	1,296	276	188,418	298	1,019,479	2,834	485,360	11,214,317	12,738,994	14,474,523
1920	.....	.....	50	17,494	5	792	127	93,233	283	1,605,365	1,883	431,527	10,846,321	10,654,471	12,802,882
1921	.....	.....	103	34,504	3	270	10	7,665	126	616,235	1,491	233,763	8,261,931	5,564,594	6,457,031
1922	.....	.....	93	26,346	16	1,891	61	34,987	[5]776	1,333,676	2,059	299,940	10,711,127	7,658,802	9,355,642
1923[6]	9	$48,139	56	16,214	26	3,738	42	19,321	380	1,803,872	2,579	582,794	10,377,846	6,677,367	9,151,445
1924	6	16,079	55	14,290	45	7,295	130	26,862	476	1,662,526	1,915	323,186	10,361,945	7,009,984	9,060,222
1925	10	18,578	77	17,007	31	1,888	290	116,347	558	2,328,517	1,078	113,325	9,614,881	6,700,129	9,295,791
1926	3	6,440	35	5,394	11	1,463	83	30,051	332	1,136,014	2,025	135,549	8,981,557	5,541,009	6,855,920
1927	1	1,003	20	2,940	3	312	100	52,829	440	1,764,534	2,481	197,668	8,883,829	4,970,194	6,989,480
1928	7	5,067	38	15,764	27	2,169	111	57,039	477	1,671,900	2,049	178,149	6,688,454	3,882,570	5,812,658
1929	13	23,413	13	3,098	3	267	115	63,167	464	1,801,915	1,871	154,887	7,970,540	4,239,980	6,286,727
1930	6	6,366	23	5,070	22	1,748	53	27,455	347	1,143,631	1,375	109,928	9,109,885	3,460,247	4,754,445
1931	4	3,532	29	5,438	40	2,529	47	31,650	261	651,179	1,788	135,170	5,415,655	1,546,888	2,376,386
1932	8	7,289	18	2,152	43	1,756	33	17,772	245	587,957	1,212	98,914	5,106,888	1,592,893	2,308,733
1933	4	3,731	19	2,802	20	692	71	41,730	200	576,465	734	56,534	3,939,990	1,387,749	2,069,703
1934	4	3,444	12	.....	10	525	85	47,393	297	592,497	824	56,412	3,268,740	1,531,719	2,231,990
1935	3	6,796	18	2,804	11	706	118	65,784	341	512,705	1,279	75,326	3,625,143	2,326,447	2,990,568
Total	75	$149,877	894	$276,845	331	$29,790	5,996	$1,362,565	15,631	$26,837,177	70,811	$5,759,333	426,764,915	$256,776,388	$291,155,975

[1]Copper and lead are recovered from certain silver ores and concentrates shipped to United States refineries.

[2]Nickel metal and metallic contents of all nickel compounds.

[3]Cobalt metal and metallic contents of all cobalt compounds, and cobalt contained in ores and speiss residues exported. In 1932, it includes 22,258 pounds worth $10,024 from northwestern Ontario.

[4]Prior to 1914 an estimate based on assays was made of the nickel, cobalt, and arsenic in the ores. Since that date recoveries have been reported.

[5]Includes 460 tons of speiss residues, worth $153,116.

[6]Recoveries of bismuth from base bullion were not reported prior to 1923.

DIVIDENDS AND BONUSES PAID BY SILVER-MINING COMPANIES TO DECEMBER 31, 1935

Name of company	Date of incorporation	Authorized capital	Capital stock issued	Par value per share	Dividends and bonuses paid to end of 1934	Dividends and bonuses paid during 1935	Total dividends and bonuses paid to Dec. 31, 1935	Date when last dividend was paid
Aladdin Cobalt Company, Ltd.	Aug. 23, 1912	$500,000	$500,000	$5.00	$75,000.00	.....	$75,000.00	April 30, 1917
Beaver Consolidated Mines, Ltd.	Mar. 1, 1907	2,000,000	2,000,000	1.00	710,000.00	.....	710,000.00	May 31, 1920
Casey Cobalt Silver Mining Co., Ltd.	Dec. 19, 1906	100,000	100,000	1.00	203,249.33	.....	203,249.33	April 22, 1914
Castle-Trethewey Mines, Ltd.	Jan. 20, 1922	2,000,000	[1]2,000,000	1.00	18,027.00	.....	18,027.00	April 15, 1925
Cobalt Central Mines Co., Ltd.	Dec. 13, 1905	5,000,000	5,000,000	1.00	192,845.00	.....	192,845.00	Aug. 25, 1909
Cobalt Comet Mines, Ltd.[2]	April 16, 1913	1,000,000	1,000,000	1.00	230,000.00	.....	230,000.00	April 1, 1915
Cobalt Properties, Ltd.	Aug. 24, 1931	25,000	25,000	1.00	32,500.00	97,000.00	129,500.00	Oct. 31, 1935
Coniagas Mines, Ltd., The[3]	Nov. 24, 1906	4,000,000	4,000,000	5.00	11,640,000.00	100,000.00	11,740,000.00	Jan. 10, 1935
McKinley-Darragh-Savage Mines of Cobalt, Ltd.[3]	April 27, 1906	2,500,000	2,247,692	1.00	5,955,391.86	.....	5,955,391.86	Oct. 1, 1920
Mining Corporation of Canada, Ltd.[3]	Nov. 23, 1916	8,300,250	8,300,250	5.00	7,573,937.47	.....	7,573,937.47	Dec. 19, 1929
Buffalo Mines, Ltd., The[4]	April 27, 1906	500,000	150,000	.50	2,787,000.00	.....	2,787,000.00	May 28, 1924
City of Cobalt Mining Co., Ltd.[5]	Jan. 7, 1909	1,500,000	1,500,000	1.00	145,000.00	.....	145,000.00	April 15, 1920
Cobalt Lake Mining Co., Ltd.[5]	Dec. 22, 1906	3,000,000	3,000,000	1.00	465,000.00	.....	465,000.00	May 29, 1914
Cobalt Townsite Mining Co., Ltd.[5]	May 8, 1906	100,000	45,011	1.00	1,042,259.61	.....	1,042,259.61	Nov. 11, 1914
Right of Way Mines, Ltd.[3]	Sept. 11, 1909	2,000,000	1,685,500	1.00	252,825.00	.....	252,825.00	Mar. 17, 1917
Cobalt Silver Queen, Ltd.	April 1, 1906	1,500,000	1,500,000	1.00	315,000.00	.....	315,000.00	Dec. 31, 1908
Crown Reserve Mining Co., Ltd.	Jan. 16, 1907	2,000,000	1,999,957	1.00	6,190,849.00	.....	6,190,849.00	Dec. 28, 1916
Foster Cobalt Mining Co., Ltd.	Feb. 14, 1906	1,000,000	915,588	1.00	45,000.00	.....	45,000.00	Jan. 1, 1907

Hudson Bay Mines, Ltd.[7]	July 16, 1909	3,500,000	3,200,050	5.00	778,909.42	.....	778,909.42	Aug. 31, 1913
Keeley Silver Mines, Ltd.	June 22, 1922	2,000,000	2,000,000	1.00	2,240,000.00	.....	2,240,000.00	Mar. 15, 1928
Kerr Lake Mining Co., Ltd.	Aug. 9, 1905	40,000	40,000	100.00	[8]10,521,000.00	.....	10,521,000.00	Oct. 13, 1927
La Rose Mines, Ltd.	May 31, 1908	1,500,000	1,500,000	1.00	6,600,546.84	.....	6,600,546.84	Mar. 24, 1923
Lorrain Trout Lake Mines, Ltd.	Mar. 20, 1923	1,500,000	1,500,000	1.00	150,000.00	.....	150,000.00	July 15, 1925
Nipissing Mining Co., Ltd.	Dec. 16, 1904	250,000	250,000	100.00	[9]31,328,297.25	170,000.00	31,498,297.25	Dec. 24, 1935
Penn-Canadian Mines, Ltd.	April 24, 1912	1,500,000	1,349,705	1.00	[10]175,461.65	.....	175,461.65	Sept. 10, 1917
Peterson Lake Silver-Cobalt Mining Co., Ltd.	April 11, 1906	3,000,000	2,469,802	1.00	462,350.35	.....	462,350.35	Jan. 2, 1917
Right of Way Mining Co., Ltd.[11]	July 13, 1906	500,000	499,518	1.00	324,643.93	.....	324,643.93	Oct. 1, 1909
Seneca-Superior Silver Mines, Ltd.	Sept. 29, 1911	500,000	478,884	1.00	1,579,817.20	.....	1,579,817.20	Dec. 15, 1916
Temiskaming Mining Co., Ltd.	Nov. 5, 1906	2,500,000	2,500,000	1.00	2,159,156.25	.....	2,159,156.25	Jan. 31, 1920
Temiskaming and Hudson Bay Mining Co., Ltd.	July 10, 1903	25,000	7,761	1.00	1,940,250.00	.....	1,940,250.00	Nov. 10, 1914
Trethewey Silver Cobalt Mines, Ltd.	May 30, 1906 June 1, 1911	2,000,000	1,000,000	1.00	1,211,998.50	.....	1,211,998.50	Jan. 2, 1919
Wettlaufer Lorrain Silver Mines, Ltd.	Nov. 30, 1908	1,500,000	1,416,590	1.00	637,465.50	.....	637,465.50	Sept. 22, 1913
Total [10]	.....	.....	.....	.....	$97,983,781.16	$367,000.00	$98,350,781.16	.....

[1]200,000 preferred shares, par $1.00, redeemed April, 1925, and capital reduced from $2,200,000 to $2,000,000.
[2]Cash assets amounting to $50,000 paid on April 27, 1917.
[3]Now owned by Cobalt Properties, Limited.
[4]In 1917 the capital stock of the company was reduced from $1,000,000 to $750,000; in 1918, from $750,000 to $500,000; and on December 21, 1919, from $500,000 to $150,000, but returning to shareholders amounts equal to the reduction in capital, leaving 300,000 shares issued of 50 cents each. The mine was sold to the Mining Corporation of Canada and operated by it in 1920 and subsequently; it is now owned by Cobalt Properties, Limited.
[5]Formerly owned and operated by Mining Corporation of Canada, Limited; sold to Cobalt Properties, Limited, in 1935.
[6]Succeeded Right of Way Mining Co., Ltd.; now owned by Cobalt Properties, Ltd.
[7]Name of company changed from Temiskaming and Hudson Bay in 1909.
[8]In addition a return of capital amounting to $600,000 was made on July 3, 1919, to stockholders of the Kerr Lake Mines, Limited.
[9]Includes $16,288,297.25 paid in dividends by the Nipissing Mines Company (the holding company) to the end of 1916
[10]Paid out of capital $40,491.15 on September 10, 1917, and an equal amount on April 24, 1918.
[11]Succeeded by Right of Way Mines, Ltd.
[12]Does not include dividends by private companies such as M. J. O'Brien, Limited.

Since 1904, silver shipments as reported by operators were as follows:—

SILVER SHIPMENTS BY CAMPS, 1904–1935

Year	Cobalt	Casey township	South Lorrain	Gow-ganda	Montreal R., Maple Mountain, etc.	Total	Average price per ounce (New York)
	fine ounces	fine ounces	fine ounces	fine ounces	fine ounces	fine ounces	cents
1904	206,875	.....	.....	.....	.....	206,875	57.221
1905	2,451,356	.....	.....	.....	.....	2,451,356	60.352
1906	5,401,766	.....	.....	.....	.....	5,401,766	66.791
1907	10,023,311	.....	.....	.....	.....	10,023,311	65.237
1908	19,424,251	500	13,124	.....	.....	19,437,875	52.864
1909	25,658,683	26,185	194,955	.....	18,002	25,897,825	51.502
1910	29,849,981	92,544	221,133	471,688	9,835	30,645,181	53.486
1911	29,989,893	114,789	933,912	468,687	510	31,507,791	53.340
1912	28,605,940	253,824	834,119	549,976	.....	30,243,859	60.835
1913	28,105,505	825,108	248,992	502,370	.....	29,681,975	57.791
1914	24,155,699	499,643	108,199	399,300	.....	25,162,841	54.811
1915	24,280,366	223,939	.....	242,229	.....	24,746,534	49.684
1916	19,008,517	445,900	77,280	383,393	.....	19,915,090	65.661
1917	18,327,258	.....	10,000	1,064,635	.....	19,401,893	81.417
1918	16,807,407	143,901	72,188	638,198	.....	17,661,694	96.772
1919	10,314,689	171,278	4,586	723,764	.....	11,214,317	111.122
1920	10,402,249	.....	8,253	433,352	[1]2,467	10,846,321	100.900
1921	7,673,535	1,101	328,886	258,292	117	8,261,931	62.654
1922	9,239,147	1,028	1,284,307	170,651	[2]15,994	10,711,127	67.528
1923	7,259,858	.....	2,955,646	160,761	1,581	10,377,846	64.873
1924	6,704,787	.....	2,633,058	598,057	.....	9,935,902	66.781
1925	6,252,115	.....	3,099,964	1,355,156	.....	10,707,235	69.065
1926	6,262,249	.....	3,044,584	1,236,640	.....	10,543,473	62.107
1927	4,482,543	.....	2,319,356	1,741,614	.....	8,543,513	56.370
1928	3,934,020	.....	1,133,952	1,677,429	.....	6,745,401	58.176
1929	4,823,529	.....	876,006	2,081,894	.....	7,781,429	52.993
1930	5,329,335	.....	1,754,989	2,141,234	[3]52	9,225,610	38.154
1931	3,706,880	.....	594,360	1,697,242	.....	5,998,482	28.700
1932	3,262,380	.....	22,144	1,374,780	.....	4,659,304	27.892
1933	2,397,118	.....	.....	1,244,812	.....	3,641,930	34.727
1934	1,990,073	.....	.....	1,039,565	.....	3,029,638	47.973
1935	2,737.592	.....	36,585	829,195	.....	3,603,372	64.273
Total	379,068,907	2,799,740	22,810,578	23,484,914	48,558	428,212,697	.....

[1]Includes 885 ounces from Silver Islet, Lake Superior.
[2]Silver Islet, Lake Superior.
[3]Nickel Hill Syndicate in the Sudbury area shipped silver-cobalt ore.

Iron Ore, Pig Iron, Steel, and Coke

As shown in the following table, foreign ore charges amounted to 931,569 long tons, the average price of which was $4.65 (American funds, sales tax extra) at lower lake ports. From this ore, 554,977 long tons of pig iron was produced, including 371,344 long tons of basic, 93,921 of foundry, and 89,712 of malleable.

IRON AND STEEL STATISTICS, 1931–1935

Year	Foreign ore smelted	Limestone for flux	Coke	Pig iron produced		Steel made	
				Quantity	Value	Quantity	Value
	long tons	short tons	short tons	long tons		long tons	
1931	568,886	149,454	320,133	318,645	$6.363.101	444,107	$15,099,638
1932	198,063	56,880	119,064	113,665	2,558,799	244,693	8,319,562
1933	182,060	46,944	113,102	110,562	2,066,049	258,841	8,800,594
1934	462,705	118,350	253,532	271,725	6,249,675	476,699	16,207,766
1935	647,597	172,609	339,551	391,792	9,011,256	584,239	19,864,126

At Montreal No. 1 pig iron (2.25 to 2.75 per cent. silicon) was quoted at $23.00, and malleable the same. No quotations were available for basic pig iron. Steel billets were quoted at $34.00 per long or gross ton at Hamilton.

PIG IRON, STEEL, AND FERRO- AND OTHER ALLOY PRODUCERS, 1935

Company	Location
Abrasive Company of Canada, Ltd.[1 2]	Hamilton.
Algoma Steel Corporation, Ltd.[2 3 4]	Sault Ste. Marie.
Canadian Atlas Steels, Ltd.[4]	Welland.
Canadian Carborundum Co., Ltd.[1 2]	Niagara Falls.
Canadian Electro Castings, Ltd.[4]	Orillia.
Canadian Furnace Co., Ltd.[2 3]	Niagara Falls.
Chromium Mining & Smelting Corporation, Ltd.[2]	Hamilton.
Dominion Foundries and Steel, Ltd.[4]	Hamilton.
Electro-Metallurgical Co. of Canada, Ltd.[2]	Welland.
Exolon Company, Ltd.[1 2]	Thorold.
Ford Motor Co.[4]	Ford.
Kennedy, Wm., and Sons, Ltd.[4]	Owen Sound.
Lionite Abrasives, Ltd.[1 2]	Stamford.
Steel Company of Canada, Ltd.[3 4]	Hamilton.
Superior Alloys, Ltd.[5]	Sault Ste. Marie.
Welland Electric Steel Foundry[4]	Welland.

[1]These firms produce ferro-silicon as a by-product in the manufacture of ferro-alumina.
[2]Ferro-alloys. [3]Pig iron. [4]Steel. [5]Calcium molybdate.

During 1935 the output of pig iron increased from 271,725 to 554,977 long tons, and although the increase amounts to 104.2 per cent. in quantity this figure remains considerably below the 769,359 tons produced in 1929, the peak year. The Algoma Steel Corporation at Sault Ste. Marie had a 450-ton furnace in operation during the year. The Steel Company of Canada at Hamilton also operated a 550-ton unit throughout the year, and the Canadian Furnace Company at Niagara Falls operated its 350-ton furnace for nine months, reporting no production during March, April, and May.

IRON BLAST FURNACES IN OPERATION, 1935

Company	Stacks operating	Furnaces		Location
		No. of stacks	Daily capacity	
			long tons	
Algoma Steel Corporation, Ltd....	1	4	1,600	Sault Ste. Marie.
Canadian Furnace Company, Ltd..	1	1	350	Port Colborne.
Steel Company of Canada, Ltd....	1	2	825	Hamilton.

Ferro-Alloys

Of the fourteen plants listed in the 1931 report only seven reported production, which with an additional plant, the Canadian Carborundum Company, Limited, not listed in 1931, produced a total of 57,424 long tons of various kinds of ferro-alloys in 1935, as against 32,932 tons in the previous year.

STATISTICS OF FERRO-ALLOYS PRODUCTION IN ONTARIO, 1931–1935

Year	No. of producing companies	Quantity produced	Kind of material
		long tons	
1931	8	46,440	Ferro-silicon, ferro-manganese,
1932	5	15,595	silicon spiegel, spiegeleisen,
1933	6	30,569	calcium manganese silicon,
1934	7	32,932	zirconium manganese silicon,
1935	7	57,424	calcium molybdate.

Coke

The coking industry in Ontario is carried on by the large iron and steel metallurgical works and by chartered companies operating in the cities supplying artificial gas to householders and industries.

The statistics shown in the following table are combined and show raw materials used and products made. These figures were supplied by the Dominion Bureau of Statistics.

COKING INDUSTRY, 1935

	Quantity	Cost at works
MATERIALS USED:		
Coal ..... tons	1,821,448	$8,038,691
Coke ..... tons	38,899	275,477
Oil ..... Imp. gals.	3,610,628	272,767
Absorbing and wash oil ..... Imp. gals.	107,114	13,746
Caustic soda ..... lbs.	472,142	14,805
Lime ..... tons	732	6,663
Oxide for purification ..... tons	3,153	35,233
Sulphuric acid 66° Be. purchased ..... lbs.	25,680,321	181,087
All other materials	.....	18,843
Total	.....	$8,857,312
GAS MADE:	M cu. ft.	
Retort coal gas	5,079,584	.....
Coke oven gas	14,412,246	.....
Carburetted water gas	2,068,114	.....
Oil gas and acetylene gas	12,287	.....
Total	21,572,231	.....
GAS CONSUMED:	M cu. ft.	
Sold	8,555,654	$7,381,526
Used in producing plants	6,227,591	939,036
Used in associated metallurgical works	5,824,168	871,318
Otherwise accounted for	361,342	97,985
Not accounted for	720,498	611,316
Total	21,689,253	$9,901,181
COKE AND BY-PRODUCTS MADE:		
Coke, including breeze ..... tons	1,334,081	$9,868,953
Tar ..... Imp. gals.	16,037,490	845,930
Ammonia liquor ..... lbs. NH_3	1,808,291	18,083
Ammonium sulphate ..... lbs.	30,388,313	310,327
Benzol ..... Imp. gals.	2,148,017	471,304
Other light oils	1,176,401	127,681
All other products	.....	392
Total	.....	$11,642,670
COKE SOLD AND USED, AND STOCKS:	COKE tons	BREEZE tons
Used by reporting companies	431,853	75,178
Sold for domestic use	710,525	13,353
Other uses	175,746	1,862
On hand, December 31, 1932	189,145	3,337

Coke statistics for the past five years, as collected by the Dominion Bureau of Statistics, are shown in the following table:—

COKE STATISTICS, 1931-1935

	1931	1932	1933	1934	1935
	short tons	short tons	short tons	short tons	short tons
Production	1,113,509	1,087,122	1,153,509	1,388,709	1,361,553
Imports	694,982	605,307	615,818	881,235	489,439
Total	1,808,491	1,692,429	1,769,327	2,239,944	1,850,992
Deduct exports	106	.....	.....	54	.....
Apparent consumption	1,808,385	1,692,429	1,769,327	2,239,890	1,850,992

Chromite

The smelting of chromite has been commenced in Ontario at Sault Ste. Marie, the first unit of Chromium Mining and Smelting Corporation, Limited, having been started on August 23, 1935. The ore comes from the company mine east of Obonga lake. Demand for chromium and its alloys has greatly increased during the past few years. Recent world conditions for this mineral, as outlined in *Metal and Mineral Markets*, November 21, 1935, were as follows:—

The continued improvement in general industrial conditions in 1934 was reflected in increased demand for chromite in the United States. Requirements of the domestic chromite industry are met principally by imports of ore. Imports of ore in 1934, largely from Southern Rhodesia, Cuba, Turkey, and Greece, were 65 per cent. greater than those in 1933 but were 14 per cent. less than the average annual amount imported in the period 1925 to 1929. Domestic chromite production in 1934 was insignificant in relation to the needs of consumers. Chromite statistics, in long tons, follow:—

	1925-29 average	1930	1931	1932	1933	1934
Production	262	310	762	200	966	341
Consumption:						
Imports	224,357	362,617	212,528	89,143	116,511	[1]192,297
Domestic shipments	276	80	268	155	843	369
Apparent available supply	224,633	326,697	212,796	89,298	117,354	192,666
Prices per ton at New York, approximate average of all grades	$22.46	$21.50	$18.50	$18.00	$17.00	$19.00
Origin of imports, per cent. of total:						
Southern Rhodesia	52	45	32	17	10	25
New Caledonia	6	10	19	13	13	10
Turkey	.....	1	1	20	24	15
Greece (largely trans-shipments from Jugoslavia)	9	14	14	18	10	12
U.S.S.R. (Russia)	.....	4	8	5	11	10
Cuba	15	13	7	.....	20	26
Others	18	13	19	27	12	2
World production	428,000	551,000	407,000	291,000	384,000	[2]

[1]Imports for consumption; general imports not available.
[2]Data not available.

Preliminary work on the ore of the Obonga Lake deposits has been carried on at Niagara Falls, N.Y., and the operating company announced that the diamond-drilling campaign indicated some 225,000 tons of 17 per cent. chromite ore available. A mill of 100 tons daily capacity is now being completed. The concentrate will be shipped to the furnaces at Sault Ste. Marie, Ont.

In 1935 some 798 tons of crude ore were shipped. For purposes of compilation a value of $12.00 per ton was placed on this material.

Molybdenite

There was considerable interest observed during the past year in molybdenite, perhaps because the European demand was more pressing than formerly. This foreign market is the only one available to Ontario producers, as the United States tariff of 35 cents per pound on the metallic molybdenum content does not permit competition.

No shipments of concentrate were reported in 1935. The best known ore deposit, that of the Phoenix Molybdenite Corporation, Limited, situated on the west half of lots 27 and 28 in concession IV, Bagot township, Renfrew county, was actively developed from April to December. As many as 23 men were employed on the surface and underground, and 976 tons of ore were raised during the period, none of which was concentrated. Molybdenite occurs widely in Ontario in the southeastern section, Hastings, Lanark, and Renfrew counties, and also north of Sault Ste. Marie. During the war when prices were high many Ontario molybdenite properties were in operation. Molybdenum is used in the production of alloy steel.

Radium and Uranium

Although pitchblende, which is the source of radium and uranium, has not been produced in commercial quantities from Ontario ores, there is now a well-equipped extraction plant in successful operation at Port Hope, Ont., owned by the Eldorado Gold Mines, Limited, for the treatment of pitchblende concentrates from Great Bear lake, some 4,000 miles distant. The refinery, which commenced operating in 1933, was considerably enlarged in 1934, and in January, 1935, the concentrator at Labine Point was placed in commission.

In 1935 a total of 232,114 pounds of pitchblende and silver concentrates was treated chemically at Port Hope, from which radium and uranium products worth $420,000 were recovered. In addition, 116,902 ounces of silver were produced, having a value of $68,840. Of this silver, 89,041 ounces were contained in 16,840 pounds of silver-lead bars and 47,861 ounces in 4,746 pounds of silver sulphide.

NON-METALLICS

With the exception of sulphur, mica, mineral waters, quartz, and salt, every item in the non-metallic group showed an improvement in 1935; and in the case of salt, while the selling value was lower, the quantity production showed a considerable increase. This group though relatively small in production value is important and is closely related to the chemical and building industries and supplies much of the raw materials consumed by them. The total value of the non-metallic group in 1935 was $7,766,657, as against $7,553,571 in 1934, a slight increase. The details of quantities and values marketed are set out in the table "Summary of Mineral Statistics, 1935" on page 2.

Actinolite and Asbestos

Actinolite and asbestos do not appear in the statistics of Ontario's mineral production in 1935. With the exception of a small sample lot of 100 pounds, worth $1, no actinolite was sold. Development work was carried on at the asbestos property of Rahn Lake Mines Corporation in Bannockburn township during the year. About 400 tons of mill rock asbestos ore was placed on the stock pile and was expected to average about $8 to $10 per ton. No sales were reported however. An average of 5 men was employed throughout the greater part of the year.

Arsenic

Ontario production of white arsenic (As_2O_3) comes from the smelting of the silver-cobalt arsenides of Northern Ontario by the Deloro Smelting and Refining Company. The output in 1935 was 2,558,789 pounds, valued at $75,326, as against 1,647,513 pounds, worth $56,412, in 1934.

Barite

A small output of barite was reported in 1933 for the first time since 1923. Several deposits of this mineral are known to exist in the province. Although considerable investigation into markets has been undertaken, and several enquiries have been received from outside sources, no steady development work was under way at any of the Ontario deposits. Canada Night Hawk Mines, which is equipped for milling, did not report any work. The deposits in Yarrow township and at Tionaga were idle, and no shipments were reported.

Diatomite

Several deposits of diatomite have been under development for a number of years in Muskoka, but the production to date has been small. In 1935 some 100 tons, valued at $4,600, was reported as shipped from Martin's Siding by the Canadian Multi-Cell Company, as against 46 tons, worth $1,920, in 1934.

Feldspar and Nepheline Syenite

The feldspar industry is gradually gaining in production in Ontario, owing entirely to a slowly increasing domestic consumption. The United States duty, which formerly was $1.00 per ton, later reduced to 50 cents, is now fixed at 35 cents per ton under the new trade agreement. This reduction, however, is not expected to stimulate exports to any appreciable extent. With a free entry to the United States it is questionable whether Ontario spar could compete in any except the border states. The prevailing price of spar in Ontario is around $5.00 per short ton f.o.b. mines. In 1935, shipments from the mines of Ontario totalled 8,656 tons of crude material, valued at $75,003, of which $29,511 was the increase due to grinding. In 1934 the output was 7,302 tons, worth $61,665, of which $21,944 was the added value due to grinding operations.

Canadian Nepheline, Limited, which operates a nepheline deposit in Methuen township, Peterborough county, constructed a grinding plant of 24 tons capacity at Lakefield during 1935. No shipments, however, were reported. Mention of this deposit was made in Bulletin No. 98 (1934).

Fluorspar

Fluorspar is consumed as a flux in smelters and also in the chemical industries. The domestic consumption is not large and is confined mostly to Ontario. In 1935 a total of 75 tons, worth $900, was reported as shipped. In 1934 the ouput was 150 tons, valued at $2,100.

Graphite

Only one producer of graphite was active in 1935, the Black Donald Graphite Company, Limited, at its property on lots 16, 17, and 18 in concession III, Brougham township, Renfrew county, near the village of Calabogie. This deposit is the largest amorphous graphite mine on the American continent. In 1935 production to the value of $78,500 was reported, as against $64,998 in 1934.

Gypsum

The output of gypsum in Ontario rose from 33,234 tons in 1934 to 38,247 in 1935, and came from two companies: Gypsum, Lime and Alabastine, Canada, Limited, with a plant at Caledonia, and the Canadian Gypsum Company at Hagersville. The increase is indicative of the general revival in the building industry in Ontario. While the improvement in 1935 was important, the output figures still remain far below those of good times:—

GYPSUM SALES, 1931–1935

Grade	1931	1932	1933	1934	1935
	tons	tons	tons	tons	tons
Crushed	10,263	5,656	2,753	5,636	5,381
Fine-ground	451	364	795	376	187
Calcined, sold	1,606	217	165	226	121
Calcined, used in products	41,038	29,418	20,747	26,996	32,558
Total sold or used	53,358	35,655	24,460	33,234	38,247
Total value	$374,469	$186,176	$112,319	$141,389	$164,807
No. of workers	155	[1]98	[1]79	[1]69	77
Wages paid	$87,263	$85,036	$46,782	$53,718	$99,137

[1]Exclusive of wage-earners employed in the manufacturing division of the Caledonia plant.

Iron Pyrites and Sulphuric Acid

The sulphur content of the acid manufactured at Copper Cliff by Canadian Industries, Limited, from sulphur fumes derived from the smelting operations, was 13,292 tons, worth $132,920, as against 14,598 tons, valued at $145,980, in 1934. No pyrite ore was shipped.

Mica

Despite a general pick-up in the mica trade of the United States, there was a decrease in the total production from Ontario mines. The position of higher grades, however, was improved, and the decline was due to the lower exports of scrap material to the United States.

In Ontario there were only five active producers during 1935, who reported shipments of 509,826 pounds, worth $7,144, as against 1,236,302 pounds, valued at $9,059, in the previous year. Prices have generally improved in the United States, where operations were being carried on to capacity. Scrap and by-product mica are bringing twice the price of the depression lows. Conditions in Ontario tend to reflect those in the United States.

The major portion of the provincial output is made by direct mining, in which large crystals are recovered and treated. There is little or no by-product mica such as is recovered in North Carolina from kaolin and feldspar deposits.

SHIPMENTS OF MICA, 1933, 1934, AND 1935

Grade	1933		1934		1935	
	Quantity	Value	Quantity	Value	Quantity	Value
	pounds		pounds		pounds	
Ground and rough	19,000	$239	2,459	$514	.....	.....
Thumb-trimmed	44,219	3,287	30,315	3,094	10,852	$3,223
Splittings and knife-trimmed	11	19	303	110	2,734	1,738
Scrap	1,268,200	5,820	1,203,225	5,341	496,240	2,183
Total	1,331,430	$9,371	1,236,302	$9,059	509,826	$7,144

The prices for the various sizes and grades of thumb-trimmed mica did not vary greatly from those reported by the producers in 1934:—

Size	Price per lb.	Size	Price per lb.
1 by 1 inch	$0.07	2 by 4 inches	$0.45
1 by 2 inches	.15	3 by 3 inches	.60
2 by 2 inches	.20	3 by 4 inches	.91
2¼ by 2½ inches	.40	3 by 5 inches	.95
2 by 3 inches	.30–.50	4 by 6 inches	1.35–1.75

Scrap mica, $9.00 per ton (net).
Rough-cobbed, 20 cents per pound.

Mineral Waters

Only three producers reported production of mineral water from Ontario wells in 1935, which amounted to 19,900 Imperial gallons, worth $1,477, as compared with 21,775 gallons, valued at $1,622, in the previous year. The production has gradually declined in Ontario to a fraction of the former output.

Natural Gas and Petroleum

The Natural Gas Commissioner of Ontario has supplied the following notes:—

Natural Gas

The production of natural gas in 1935 surpassed that of the year 1934 by approximately 500,000 M cubic feet, and in value by $150,000, the total produced being 8,158,825 M cubic feet and the value $4,938,084. The average retail price is down somewhat owing to discounts in certain areas. The increase in production is mainly due to a more active sales campaign by the larger gas companies aided by weather conditions. Several thousand new customers have been added during the year, notably in the city of London, where manufactured gas has been used heretofore. Natural gas was turned into the mains in October, 1935. The gas comes from the Dawn field through a 10-inch pipe line 55 miles long. No new fields were discovered, but the Dover and Eden fields were considerably extended and each has promise of further development.

Petroleum

Petroleum produced in 1935 shows a considerable increase, 25,000 barrels, over the previous year. The increase was common to all our larger fields excepting Mosa township. The Dover field leads in new development, followed by the Dawn field. Both these fields show considerable promise. By renovating wells from 40 to 60 years old in the eastern end of the Bothwell field and drilling a very few new wells, the production has almost doubled since 1931. Similar treatment in Oil Springs and Petrolia has caused an increase. Bothwell production now equals that of 1912; this field, of course, cannot be expected to be as stable as a newly discovered field; its decline will no doubt be rapid.

CRUDE PETROLEUM PRODUCTION, 1931–1935[1]

Field	1931	1932	1933	1934	1935
	barrels	barrels	barrels	barrels	barrels
Petrolia and Enniskillen township	57,515	58,871	57,298	57,938	59,282
Oil Springs	30,792	31,438	31,343	29,863	31,646
Moore township	3,739	3,272	2,192	2,963	3,263
Sarnia township	1,466	1,227	2,181	825	870
Plympton township	296	274	211	202	237
Bothwell	18,084	19,460	22,935	32,133	34,715
Thamesville	462	534	847	614	428
Dover township	891	453	763	558	13,117
Dawn township	.....	5,061	8,589	4,169	11,538
Onondaga township	34	543	946	601	431
Mosa township	8,517	8,429	8,168	9,031	8,788
Dunwich township (Dutton and Iona)	628	781	346	283	408
Tilbury East township	.....	.....	.....	.....	.....
Raleigh township	.....	.....	239	264	195
Brooke	.....	.....	.....	1,941	122
Total quantity	122,364	130,343	136,058	141,385	165,040
Value	$219,993	$247,468	$253,486	$299,874	$346,156
Average price per barrel	$1.80	$1.89	$1.87	$2.12	$2.10

[1]Information furnished by the Imperial Oil Refiners, Limited, of Sarnia, and others.

Peat

During the past year or two considerable interest has been exhibited in the peat bogs of Ontario. The names of operators and locations are given on page 69. The production by 4 operators during 1935 was 1,340 tons, valued at $5,761.

Quartz, Quartzite, and Silica Products

The output of quartz, quartzite, and silica products, which gained slightly in 1934, showed a decline in 1935, falling from 89,838 to 83,034 tons. On the other hand, silica products, reflecting improved building activity, showed a slight gain in quantity. Production figures for the past five years follow:—

QUARTZ, QUARTZITE, AND SILICA BRICK, 1931–1935

Year	Rock sold or used		Silica brick sold or used		Total value
	Quantity	Value	Quantity	Value	
	tons		M		
1931	97,888	$148,642	279	$13,702	$162,344
1932	66,135	93,574	93	4,303	97,877
1933	66,562	86,146	183	7,351	93,497
1934	89,838	134,572	369	14,730	149,302
1935	83,034	120,005	493	22,976	142,981

Salt

During 1935, seven companies produced salt or brine. This industry in part supplies the raw materials for two large chemical manufacturing companies: Canadian Industries, Limited, and Brunner Mond, Canada, Limited. While the quantity output rose from 276,751 to 320,003 tons in 1935, the value was slightly lower. Production figures covering a 5-year period follow:—

SALT SOLD OR USED, 1931–1935

Schedule	1931	1932	1933	1934	1935
	tons	tons	tons	tons	tons
Table and dairy	115,180	59,620	61,231	69,779	73,704
Fine		59,036	63,786	67,777	82,608
Coarse	17,678	15,673	14,086	14,730	17,997
Land	513	557	283	347	261
Total	133,371	134,896	139,386	152,633	174,570
Brine (salt equivalent)	97,928	96,242	104,721	124,118	145,433
Total sold or used	231,299	231,138	244,107	276,751	320,003
Value	$1,760,388	$1,789,752	$1,755,087	$1,734,196	$1,698,508
Wage-earners[1] ..... No.	233	215	242	252	274
Wages	$259,646	$253,579	$261,214	$296,116	$309,354

[1]Workers at the Sandwich salt and chemical works are included.

Talc

Statistics covering a 5-year period show that the talc industry serves a fairly stable and assured market. Two companies were active at Madoc in Hastings county, where the industry is centred, both of them mining a high-grade product, which is milled and refined at the mines. The Geo. H. Gillespie Company, Limited, operates the Henderson mine, and the Canada Talc Company, Limited, the Conley mine.

TALC STATISTICS, 1931–1935

Year	Sales		Wage-earners, mine and mill	Wages paid
	Quantity	Value		
	tons		No.	
1931	11,806	$122,044	36	$29,419
1932	12,064	111,585	38	30,587
1933	15,114	142,134	43	31,813
1934	13,934	135,978	47	33,796
1935	13,710	138,161	31	23,864

STRUCTURAL MATERIALS

Building Permits

In 58 Canadian cities building permits in 1935 were valued at $46,236,702. Of this total 30 Ontario cities accounted for $23,704,388, as noted in the following table abstracted from the *Annual Review of Building Permits in Canada in 1935*, issued by the Dominion Bureau of Statistics, Department of Trade and Commerce, Ottawa:—

BUILDING PERMITS, 1920–1935

Year	30 Ontario cities, value	Wholesale prices index[1]	Toronto metropolitan area,[2] value	Wages index 1913=100[3]
1920	$58,636,365	[4]144	$30,049,413	180.9
1921	59,315,845	122.8	31,979,346	170.5
1922	81,396,259	108.7	36,405,625	162.5
1923	74,673,080	111.9	39,530,877	166.4
1924	57,330,141	106.6	29,636,428	169.1
1925	59,888,867	102.9	32,408,636	170.4
1926	65,373,757	100	31,588,124	172.1
1927	79,883,344	96.1	37,316,511	179.3
1928	104,777,566	97.4	59,817,568	185.6
1929	95,055,827	99	57,522,927	197.5
1930	69,042,946	90.8	38,371,587	203.2
1931	44,371,578	81.9	27,950,136	195.7
1932	16,887,761	77.2	9,461,050	178.2
1933	9,116,743	78.3	5,114,351	158
1934	14,351,380	82.6	8,396,775	154.8
1935	23,704,388	82.2	9,905,455	159.8

[1]Applies to average index numbers for Canadian wholesale prices of building materials on the basis of 1926=100, as compiled by the Dominion Bureau of Statistics. In 1913 the index was 67, dropping to a low of 60.5 in 1915.

[2]Includes York and East York municipalities.

[3]Average index numbers of wages in Canadian building trades as compiled by the Federal Department of Labour on the basis of 1913=100

[4]Peak year.

Construction Contracts

The value of Canadian construction contracts awarded for 1935, reported by the *McLean Building Review*, was $160,305,000, as compared with $125,811,500 in 1934. Ontario contracts in 1935 amounted to $70,872,800, or 44.2 per cent. of the total. Prices of materials were considerably below the peak of 1920, and decided drops were recorded in 1930, 1931, and 1932, but a perceptible recovery was recorded in 1934, which fell off slightly in 1935. Canadian construction contracts in 1933 were on a par with the war years, 1916–18, dropping below the $10,000,000 mark. Figures by classes of construction for a 5-year period follow:—

VALUE OF CONSTRUCTION CONTRACTS, 1931–1935

Classification	1931	1932	1933	1934	1935
Residential	$39,274,300	$14,143,200	$12,653,800	$17,578,600	$20,646,500
Business	28,819,400	16,925,600	9,716,100	15,795,600	20,340,800
Industrial	6,836,300	1,871,000	4,699,700	4,305,200	3,645,000
Engineering	50,522,300	16,352,000	15,503,800	25,678,900	26,240,500
Total	$125,452,300	$49,291,800	$42,573,400	$63,358,300	$70,872,800

Cement

Ontario's production of cement came from the two companies: the Canada Cement Company, with plants at Lakefield, Belleville, and Port Colborne, the first two being idle, although shipments were made from the Belleville plant; and the St. Marys Cement Company, with a plant at St. Marys, which was in operation throughout the year.

PORTLAND CEMENT STATISTICS, 1925–1935

Year	Operating plants	Sales		
		Quantity	Value	Average price per barrel
	No.	barrels[1]		
1925	4	3,462,358	$5,253,911	$1.52
1926	3	3,398,860	4,792,857	1.41
1927	4	3,751,786	5,144,326	1.34
1928	4	3,911,795	5,520,897	1.41
1929	4	4,624,712	6,608,246	1.43
1930	4	3,942,690	5,779,404	1.47
1931	4	3,470,056	5,006,826	1.44
1932	4	1,599,342	2,288,975	1.44
1933	3	1,095,845	1,587,812	1.45
1934	4	1,702,128	2,403,590	1.41
1935	2	1,243,836	1,752,148	1.41

[1]350 pounds.

Cement Products

In recent years the cement products industry in Ontario has assumed considerable importance. Since 1924 no data have been included in the tables of mineral production, as the raw materials entering into the manufacture of these products have all been accounted for. Cement products being so closely allied to the building industry, statistics are included so that complete information covering all structural materials is available under one cover. Monolithic construction is not included.

PRINCIPAL STATISTICS OF THE CEMENT PRODUCTS INDUSTRY, 1931–1935[1]

Year	No. of plants	Wage-earners, average No.	Salaries and wages	Cost of fuel and electricity	Capital invested	Value of products at works
1931	92	562	$599,640	$43,429	$2,995,610	$1,782,400
1932	69	352	308,898	27,692	2,286,460	737,326
1933	48	245	199,056	19,008	1,642,244	550,185
1934	54	251	274,045	24,394	1,784,166	687,176
1935	57	268	299,170	21,090	1,635,243	774,589

[1]Supplied by Dominion Bureau of Statistics, Ottawa.

CEMENT PRODUCTS MANUFACTURE, 1934 AND 1935[1]

Materials used	1934		1935	
	Quantity	Cost at works	Quantity	Cost at works
Portland cement ..... bbls.	64,755	$154,039	68,032	$156,937
Quicklime ..... bu.	8	8	4	4
Sand ..... cu. yds.	21,985	23,233	21,264	23,133
Gravel ..... cu. yds.	10,621	14,078	29,451	22,593
Crushed stone ..... cu. yds.	4,298	5,958	5,765	7,230
Cinders ..... cu. yds.	2,867	6,159	.....	6,875
Boxes, crates, lumber, etc.	.....	7,340	.....	9,629
Reinforcing ..... tons	145	9,741	159	10,022
Haydite ..... cu. yds.	9,120	31,921	4,318	8,638
Brass	.....	11,350	.....	.....
Other materials	.....	57,258	.....	93,811
Total	.....	$321,085	.....	$338,872
Products made	**Quantity**	**Selling value**	**Quantity**	**Selling value**
Artificial stone	.....	$32,314	.....	$43,307
Cinder blocks ..... M	617	72,509	700	94,480
Cement bricks ..... M	372	7,645	374	6,616
Cement hollow building blocks ..... M	1,251	179,814	1,796	228,832
Cement laundry tubs ..... No.	2,204	17,115	3,873	29,374
Cement posts, poles, etc.	.....	6,610	.....	.....
Cement sewer, culvert, and drain pipe	.....	119,086	.....	148,353
Cement stucco	.....	8,215	.....	7,323
Burial vaults	.....	9,805	125	2,790
Haydite blocks ..... tons	5,019	40,248	2,562	22,348
Haydite roof slabs ..... tons	2,084	55,517	1,184	38,320
Other products	.....	137,647	.....	152,596
Custom work and repairs	.....	651	.....	250
Total	.....	$687,176	.....	$774,589

[1]Supplied by Dominion Bureau of Statistics, Ottawa.

Lime

Lime is used quite extensively for chemical purposes in addition to being an ingredient of mortar and sand-lime brick. During 1935, 17 companies and individuals, operating 20 plants, reported sales that totalled 221,852 tons, valued at $1,705,303, as against 191,041 tons, worth $1,536,288, in 1934. Statistics for the past five years follow:—

LIME STATISTICS, 1931–1935

Year	Lime marketed or used						Fuel costs	Wage-earners	Wages
	Hydrated			Quicklime					
	Quantity	Total value	Per ton	Quantity	Total value	Per ton			
	tons			tons				No.	
1931...	34,284	$379,996	$11.08	113,267	$841,194	$7.43	$177,310	287	$216,337
1932...	23,518	255,223	10.85	143,185	1,018,007	7.11	204,546	203	154,361
1933...	19,733	220,291	11.16	126,460	1,006,905	7.96	188,317	210	111,637
1934...	22,281	249,038	11.18	168,760	1,287,250	7.63	173,951	187	116,020
1935...	23,514	227,197	9.66	198,338	1,478,106	7.45	324,295	210	147,397

Distribution of the quicklime and hydrated lime sold in 1935, as reported by the producing companies, was as follows:—

Industrial consumption	Quicklime		Hydrated lime	
	Quantity	Value	Quantity	Value
	tons		tons	
Building trades: finishing and masons	10,857	$67,145	20,650	$200,793
Sand-lime brick	5,041	30,558	583	5,404
Agriculture	76,166	569,402	.....	.....
Chemical and metallurgical industries:				
Smelters	4,725	25,420	75	694
Iron and steel	8,512	59,735	23	216
Gold-milling	24,087	173,686	3	28
Pulp and paper	3,827	21,399	668	6,010
Glass	5,003	34,558	.....	.....
Sugar	7,032	57,021	.....	.....
Tanneries	2,891	18,639	180	1,618
Fertilizers and insecticides	600	4,202	291	2,691
Dealers and others	2,251	16,647	260	2,561
Other chemicals[1]	47,346	399,614	781	7,182
Total	198,338	$1,478,106	23,514	$227,197

[1]Uses for lime under this heading include the manufacture of alkali, acetate of lime, and calcium carbide, the last-mentioned being used largely for making cyanamid.

Sand and Gravel

A marked rise in the production of sand and gravel was noted in the dredging operations during 1935. Much of this increase was due to work done in Toronto harbour. Output from the pits of private operators was about the same as in the previous year.

OUTPUT OF SAND AND GRAVEL, 1934 AND 1935

Source	1934		1935	
	Quantity	Value	Quantity	Value
	tons		tons	
Private pit operators	551,145	$249,980	554,032	$238,878
Dredged from Great Lakes and rivers	464,507	292,467	1,764,645	426,430
Department of Northern Development	4,345,694	225,332	3,393,750	251,389
Department of Highways	620,000	310,000	383,096	149,366
Miscellaneous counties and townships	1,273,580	636,790	1,959,095	979,547
Estimate for other producers	.....	.....	100,000	50,000
Total	7,254,926	$1,714,569	8,154,618	$2,095,610

Sand-Lime Products

The past three or four years have been dull for marketing sand-lime brick. This is, in part, owing to a depressed construction industry, but competition of other products, such as cinder blocks and kindred materials has cut into this trade considerably. Four companies were active in the Toronto metropolitan area, and in addition to brick produced sand-lime building blocks, ready mixed mortar, and plaster. These items have been included in the table "Summary of Mineral Statistics, 1935," on page 2, under the title "Sand-lime products." It should be pointed out that in the table on page 3 the figures prior to 1934 refer to sand-lime brick only. The selling value in 1935 was $138,555, as against $146,009 in the previous year.

Stone

A new feature in the stone-production industry in 1934 was the inclusion of slate, which has been absent from the list of building materials for several decades. A slate quarry situated in the northwest corner of lot 5, concession VI, Madoc township, was worked fifty years ago and supplied roofing slates for a few buildings in various towns of Eastern Ontario. There is a potential market for roofing shingles, blackboards, granules, and slate flour. The new operator is Ontario Slate Mines, Limited, which later became Canadian Slate Products, Limited. This company carried on development work in 1935. An initial shipment of 120 tons of granules was made during 1934. The Crespay Slate Products, Limited, also commenced development work near Madoc. No shipments were reported by either company in 1935.

OUTPUT OF STONE, 1933, 1934, AND 1935

Variety	1933		1934		1935	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons		tons		tons	
Limestone and marble...	1,225,754	$931,501	2,374,671	$1,808,663	2,065,932	$1,716,020
Trap	17,201	26,629	48,298	96,314	44,351	91,979
Granite	2,449	12,804	27,227	32,072	122	1,486
Sandstone	8,889	12,334	10,105	28,458	12,536	54,407
Slate	.....	.....	120	600	.....	.....
Total	1,253,907	$983,268	2,460,421	$1,966,107	2,122,941	$1,863,892

CLAY PRODUCTS

The following table shows in detail the quantities and values of the several kinds of clay products made and sold by Ontario producers:—

HEAVY CLAY PRODUCTS MARKETED, 1935

Kind	Quantity	Value
Brick:		
Soft-mud process (face)	No. 5,552,987	$104,271
Soft-mud process (common)	No. 10,025,774	128,205
Stiff-mud (wire cut) process (face)	No. 16,557,729	321,581
Stiff-mud (wire cut) process (common)	No. 9,170,057	125,559
Dry-press (face)	No. 5,953,479	119,379
Dry-press (common)	No. 1,563,277	22,071
Fancy or ornamental brick (including special shapes, embossed and enamelled brick)	No. 12,935	728
Sewer	No. 60,295	970
Tile:		
Structural (hollow blocks, including fireproofing and load-bearing tile)	tons 22,983	156,702
Roofing tile	No. 82,015	3,669
Floor tile (quarries)	sq. ft. 48,923	7,142
Drain	No. 5,060,734	125,593
Sewer pipe (including copings, flue linings, etc.)	.....	196,647
Pottery (flower pots), from domestic clay	.....	50,000
Haydite and other products	.....	7,093
Total value	.....	$1,369,610

The value of clay products marketed for the last pre-war year, 1913, for the year of maximum output, 1922, and for the past five years is given below:—

VALUE OF CLAY PRODUCTS SOLD OR USED, 1913, 1922, AND 1931–35

Product	1913	1922	1931	1932	1933	1934	1935
Brick:							
Common	$3,283,894	$2,614,120	$662,777	$305,566	$167,021	$227,276	$275,835
Pressed, fancy, building tile, etc.	1,162,860	2,899,205	1,707,297	704,342	425,743	607,658	714,442
Pottery	52,875	88,889	73,860	67,866	52,740	[1]52,578	50,000
Drain tile	292,767	368,180	244,368	144,579	179,015	137,699	125,593
Sewer pipe	600,297	973,824	696,694	451,786	185,048	226,005	196,647
Haydite and other products	.....	.....	167,533	16,366	15,012	9,790	7,093
Total	$5,392,693	$6,944,218	$3,552,799	$1,690,505	$1,024,579	$1,261,006	$1,369,610

[1]Includes fire-clay blocks and shapes worth $90.

MISCELLANEOUS STATISTICS

Mining Company Incorporations

A summary of mining companes incorporated and licensed in Ontario from 1913 to 1935, inclusive, is given hereunder:—

MINING COMPANIES INCORPORATED AND LICENSED, 1913–1935

Year	Incorporated				Extra-provincial and mortmain companies licensed	
	No.	Nominal capital	"No par" companies		No.	Capital for use in Ontario
			No.	Shares		
1913	119	$78,000,000	.....	.....	12	$21,735,000
1914	80	39,030,000	.....	.....	13	5,445,000
1915	59	42,005,000	.....	.....	2	10,200,000
1916	83	109,079,500	.....	.....	8	7,011,650
1917	100	117,183,000	.....	.....	7	7,302,000
1918	59	49,800,000	.....	.....	7	15,000,000
1919	149	223,600,000	.....	.....	10	9,554,197
1920	119	146,094,000	.....	.....	12	9,435,000
1921	67	105,715,000	.....	.....	6	1,030,500
1922	91	181,040,000	.....	.....	6	830,000
1923	88	179,295,500	.....	.....	6	1,775,000
1924	85	156,485,000	.....	.....	2	200,000
1925	70	107,400,000	4	9,010,000	3	162,510
1926	145	165,655,750	28	22,386,500	6	4,850,000
1927	199	344,145,000	30	40,034,000	10	3,260,000
1928	211	495,575,000	28	30,778,400	17	7,208,500
1929	97	142,390,000	27	32,557,200	13	1,540,000
1930	37	23,234,600	20	16,808,909	6	5,525,000
1931	44	60,670,000	15	5,909,000	1	400,000
1932	43	58,766,000	12	5,844,000	0	.....
1933	95	158,365,000	21	23,165,000	8	1,290,000
1934	212	488,335,000	82	86,183,000	9	925,000
1935	116	205,320,000	24	18,054,500	1	40,000

Of the 140 companies incorporated in 1935, 116 had specified capital only, 24 were companies having shares without nominal or par value exclusively, and 5 companies had shares of both kinds.

EXTRA-PROVINCIAL COMPANIES LICENSED BY ORDER-IN-COUNCIL IN 1935

Name of company	Place of incorporation	Date of license (O.C.)	Value of land holdings in Ontario
Parry Sound Mining and Developing Company..	Massachusetts[1]	Jan. 25	$40,000

[1]Where a company is of foreign incorporation, or is incorporated in a province of Canada other than Quebec with which a reciprocity agreement exists, it is necessary for it to take out an Extra-Provincial License to do business in Ontario and to declare the amount of capital for use in Ontario.

MINING COMPANIES INCORPORATED IN ONTARIO IN 1935 HAVING SHARES WITHOUT NOMINAL OR PAR VALUE

Name of company	Head office	Date of incorporation	No. of shares
Avocalon Extension Syndicate, Limited	Toronto	Jan. 22	2,500
Blackburn Pattison Mines, Limited	Toronto	June 28	3,000,000
Brimac Exploration and Development, Limited	Toronto	April 1	40,000
Canadian Multi-Cell, Limited	Toronto	April 23	250,000
Corinth Mines, Limited	Toronto	Jan. 17	40,000
Crespay Slate Products, Limited[1]	Toronto	Oct. 14	250,000
Deseronto Refineries, Limited[1]	Deseronto	Sept. 4	50,000
Forty Five Mile Post Syndicate, Limited	Toronto	Jan. 9	25,000
Gachin Gold, Limited	Toronto	Aug. 29	550,000
Hanna Fuels, Canada, Limited	Toronto	Jan. 16	1,000
Hisbert Mines, Limited	Toronto	Jan. 16	3,000,000
Ingram Radium, Limited	Toronto	Aug. 26	4,000
Kir-Vit Gold Mines, Limited	Toronto	Dec. 3	10,000
Leacroft Mining Service, Limited[1] (private)	Toronto	Sept. 6	90,000
M. and R. Airways, Limited[1]	Toronto	May 17	10,000
Mac-Ryan Enterprises, Limited	Toronto	July 24	10,000
Minaura Mines, Limited	Toronto	Nov. 22	200,000
Mining Projects of Canada, Limited	Toronto	Dec. 13	1,000,000
North American Land and Minerals, Limited	Toronto	Nov. 4	3,500,000
O'Neill Thompson Gold Mines, Limited	Ottawa	Aug. 26	3,000,000
Peers Placer Gold, Limited	Toronto	July 8	1,000,000
Rush Bay Holding Company, Limited, The	North Bay	Jan. 26	12,000
Soo Diamond Drilling Company, Limited[1]	Sault Ste. Marie..	Jan. 12	10,000
Wineva Gold Mines, Limited	Toronto	Dec. 27	2,000,000
Total (24 companies)			18,054,500

[1]See also list with specified capital. Five companies having both specified capital and "no par" shares are included in both lists.

ONTARIO COMPANIES WITH SPECIFIED CAPITAL INCORPORATED IN 1935

Name of company	Head office	Date of incorporation	Capital
Adelaide Gold Mines, Limited	Toronto	Sept. 27	$3,000,000
Aerial Prospectors, Limited	Toronto	Feb. 26	100,000
Amorada Gold Mines, Limited	Toronto	April 3	3,000,000
Ardmore Properties, Limited	Toronto	May 17	40,000
Argosy Gold Mines, Limited	Toronto	May 2	3,000,000
Avon Exploration Company, Limited	Stratford	April 4	100,000
Ascot Gold Mines, Limited	Toronto	April 1	3,000,000
Athabaska Beaverlodge Gold Mines, Limited	Toronto	Mar. 15	3,000,000
Athabaska Grant Mines, Limited	Toronto	Mar. 28	25,000
Athabaska Portal Gold Mines, Limited	Toronto	April 6	3,000,000
Axis Gold Exploration, Limited	Toronto	April 1	40,0000

ONTARIO COMPANIES WITH SPECIFIED CAPITAL INCORPORATED IN 1935—*Continued*

Name of company	Head office	Date of incorporation	Capital
Baden Gold Mines, Limited	Elk Lake	Jan. 24	2,000,000
Beaverhouse Lake Gold Mines, Limited	Haileybury	June 8	3,000,000
Benneweiss Gold Mines, Limited	Toronto	Feb. 1	40,000
Big Master Consolidated Gold Mines, Limited	Toronto	April 2	3,000,000
Big Seven Gold Mines, Limited	Windsor	Oct. 5	40,000
Bluenose Gold Mines, Limited	Toronto	Jan. 21	3,000,000
Brazilian Gold Syndicate, Limited	Toronto	May 13	150,000
Buffalo Beardmore Gold Mines, Limited	Toronto	Jan. 18	3,000,000
Bullion Basin Mines, Limited	Toronto	Dec. 4	1,000,000
Canadian Nepheline, Limited	Toronto	Aug. 19	30,000
Canyon Creek Gold Mines, Limited	Toronto	Mar. 27	3,000,000
Capps Gold Mines, Limited	Toronto	July 9	3,000,000
Ceres Explorations, Limited	Ottawa	Feb. 2	250,000
Champion Long Lac Gold Mines, Limited	Toronto	May 10	5,000,000
Cincinnati-Porcupine Mines, Limited	Toronto	July 5	2,500,000
Corless Patricia Gold Mines, Limited	Toronto	Jan. 7	3,000,000
Crespay Slate Products, Limited	Toronto	Oct. 14	250,000
Dan Cushing, Limited	Toronto	Mar. 2	40,000
Darkwater Mines, Limited	Toronto	Oct. 22	1,500,000
Deseronto Refineries, Limited	Deseronto	Sept. 4	150,000
Duquesne Mines, Limited	Toronto	April 12	5,000,000
Elora Gold Mines, Limited	Toronto	Aug. 20	3,000,000
Emperor Gold Syndicate, Limited	Toronto	Dec. 2	100,000
Excelsior Gold Mines, Limited	Toronto	Feb. 19	100,000
Fairmac Silver Mines, Limited	Toronto	June 14	3,000,000
Falcon Gold Mines, Limited	Toronto	Sept. 10	2,500,000
Florence River (Quebec) Gold Mines, Limited	Toronto	Oct. 11	3,000,000
Fox Lake Gold Mines, Limited	London	May 13	1,000,000
Garth Chiboug Gold Syndicate, Limited	Toronto	May 21	100,000
Geraldton Long Lac Gold Mines, Limited	Toronto	Aug. 14	2,500,000
Gilmour Gold Mines, Limited	Toronto	Aug. 2	3,000,000
Gold Creek Mines, Limited	Toronto	Jan. 8	1,000,000
Gold Fern Mines, Limited	Toronto	April 1	2,000,000
Gold Quartz Mining Corporation, Limited	Toronto	Feb. 12	2,000,000
Goward Gold Mines, Limited	Toronto	Feb. 13	3,000,000
Gunter Galena Mines, Limited	Toronto	April 18	100,000
Harrison-Hibbert Mines, Limited	Toronto	May 30	1,000,000
Hottah Lake Gold and Radium Mines, Limited	Toronto	May 7	3,000,000
Hutchinson Lake Gold Mines, Limited	Toronto	June 27	3,000,000
Industrial Metal Recovery Corporation, Limited	Toronto	July 26	1,000,000
Joannes Gold Mines, Limited	New Liskeard	Aug. 29	3,000,000
Jowsey Denton Gold Mines, Limited	Toronto	Jan. 16	3,000,000
Jubilee Long Lac Gold Mines, Limited	Toronto	Feb. 9	3,000,000
Killeon Gold Syndicate, Limited	Toronto	April 26	35,000
Kittson Hazelton Gold Mines, Limited	Toronto	Jan. 2	3,500,000
Kotter Gold, Limited	Toronto	July 24	40,000
Lacoma Gold Mine, Limited	Toronto	May 11	3,000,000
Lake Expanse Gold Mines, Limited	Toronto	July 8	3,000,000
La Sarre Gold Mines, Limited	Toronto	June 11	3,000,000
Leacroft Mining Service, Limited[1] (private)	Toronto	Sept. 6	10,000
Legren Gold Mines, Limited	Kirkland Lake	June 26	250,000
Leitch Gold Mines, Limited	Toronto	July 23	3,000,000
Liberty-Lorne Gold Mines, Limited	Toronto	Mar. 9	2,500,000
Lost River Gold Mining Company, Limited, The	Kapuskasing	July 13	40,000
M. and R. Airways, Limited[1]	Toronto	May 17	40,000
Macaboug Exploration Company, Limited	Toronto	Sept. 11	75,000
Madsen Red Lake Gold Mines, Limited	Toronto	Mar. 8	3,000,000
Mann Consolidated Silver Mines, Limited	Toronto	July 3	3,000,000
Marten Rapids Gold Syndicate, Limited	Toronto	April 13	125,000
Mines Purchasing Corporation, Limited	Toronto	April 11	100,000
Morris Kirkland Gold Mines, Limited	Toronto	Jan. 11	2,500,000
Mud Lake Gold Mines, Limited	Toronto	Aug. 7	3,000,000

ONTARIO COMPANIES WITH SPECIFIED CAPITAL INCORPORATED IN 1935—*Continued*

Name of company	Head office	Date of incorporation	Capital
Murmac Lake Athabaska Mines, Limited	Toronto	April 5	3,000,000
New Golden Rose Mines, Limited	Toronto	April 4	3,000,000
Norcastle Gold Mines, Limited	Toronto	Aug. 7	1,500,000
Olive Gold Mines, Limited	Toronto	Jan. 4	3,000,000
Omega Gold Mines, Limited	McVittie	May 16	5,000,000
Orphan Gold Mines, Limited	Jellicoe	May 4	2,000,000
Parmoray Development and Mining Co., Ltd.	Toronto	Mar. 12	40,000
Perseverance Mining and Development Co., Ltd.	Toronto	May 17	100,000
Polaris Gold Mines (Canada), Limited	Toronto	April 12	3,000,000
Porcupine Reef Gold Mines, Limited	Toronto	Oct. 1	3,000,000
Porquin Gold Mines, Limited	Toronto	Aug. 27	3,000,000
Primrose Exploration Company, Limited	Ottawa	July 19	250,000
Producer Mines, Limited	Toronto	May 9	200,000
Prospectors' Interests, Limited	Toronto	April 9	100,000
Quebec Maidens Silver Prospectors, Limited	Toronto	May 29	25,000
Rhodes Exploration and Finance of Canada, Limited	Toronto	April 17	250,000
Rosedale Gold Mines, Limited	Toronto	May 3	3,000,000
Sagamore Mines, Limited	Toronto	Aug. 29	3,000,000
Sagawitchewan Gold Mines, Limited	Toronto	Mar. 1	3,000,000
Sand River Gold Mining Company, Limited	Toronto	Feb. 8	3,000,000
Shenango Gold Mines, Limited	Toronto	Mar. 14	3,000,000
Shinintree Gold Mines, Limited	Toronto	Mar. 19	1,000,000
Silverado Gowganda Mines, Limited	Toronto	April 27	2,000,000
Skookum Gold Mines, Limited	Toronto	Dec. 19	4,000,000
Soo Diamond Drilling Company, Limited[1]	Sault Ste. Marie	Jan. 12	30,000
South Tiblemont Gold Mines, Limited	Toronto	Feb. 7	2,500,000
Spooner Gold Mines, Limited	Toronto	Jan. 5	3,000,000
St. Albans Canadian Gold Holdings, Limited	Ottawa	June 18	100,000
States-Canadian Gold Mine, Limited	Toronto	June 6	60,000
Sycee Cobalt Silver Mines, Limited	Toronto	July 30	1,000,000
Tecumseh Gold Mines, Limited	Toronto	April 18	2,000,000
Tombill Gold Mines, Limited	Empire	Oct. 17	1,000,000
Transcanada Share Corporation, Limited	Toronto	Jan. 7	500,000
Trinova Cobalt Silver Mines, Limited	Toronto	July 11	1,500,000
Tyranite Mines, Limited	Kirkland Lake	Sept. 23	3,000,000
Universal Gold Investments, Limited	Toronto	Mar. 26	505,000
Val D'Or Mineral Holdings, Limited	Toronto	Sept. 5	750,000
Vanderbilt Gold Mines, Limited	Toronto	Sept. 12	500,000
Vortex Deloro Mines, Limited	Toronto	May 10	40,000
Wendigo Mines, Limited	Toronto	Jan. 4	2,000,000
Wesley Gold Mines, Limited	Toronto	Feb. 6	3,000,000
White Otter Mines, Limited	Hamilton	June 10	500,000
Wilport Gold Mines, Limited	Toronto	Nov. 14	3,000,000
Total (116 companies)			$205,320,000

[1]"No par" shares issued in addition. See list of companies having shares without nominal or par value.

Mining Revenue and Expenditures

The revenue of the Department of Mines for the fiscal year ending October 31, 1934, was $1,487,886.94, as compared with $942,721.62 in the previous year. Expenditures were $298,520.74. In February, 1935, the end of the fiscal year for provincial revenue accounts was changed by the Legislature from October 31 to March 31. The first table below covers a five months' period, November 1, 1934, to March 31, 1935, and the second, the fiscal year ending March 31, 1936.

REVENUE, DEPARTMENT OF MINES, NOV. 1, 1934, TO MAR. 31, 1935

ORDINARY:		
Sand and gravel—		
Royalties	$12,225.21	
Licenses	200.00	$12,425.21
Casual fees	$501.40	
Sale of record books, Unwrought Metal Sales Act	26.00	
Gas leases	400.00	927.40
Inspection—cable-testing fees		2,243.01
Assessment—		
Acreage tax	$10,725.56	
Gas tax	819.72	11,545.28
Chemical and assay—fees		878.10
Mine rentals—		
Mining leases	$3,002.87	
Licenses of occupation	4,534.14	7,537.01
Miners' licenses		16,6059.2
Fees—		
Recording	$34,785.93	
Miscellaneous	1,750.50	
Maps—sales	916.52	37,452.95
Natural Gas Commissioner—permits	$1,270.81	
Sulphur Fumes Arbitrator—damages	2,248.98	
Temiskaming Testing Laboratories—fees	4,766.71	
Salaries, expenses, etc	30.00	8,316.50
		$97,934.71
CAPITAL:		
Mining recorders—mining land sales		32.403.47
Total revenue		$130,338.18

REVENUE, DEPARTMENT OF MINES, APRIL 1, 1935, TO MAR. 31, 1936

ORDINARY:		
Sand and gravel—		
Royalties	$24,333.57	
Licenses	1,550.00	$25,883.57
Casual fees	$1,432.26	
Sale of record books, Unwrought Metal Sales Act	41.15	
Gas leases	5,770.00	
Expenses re lignite	12.00	
Dredging leases	112.00	7,367.41
Inspection—cable-testing fees		5,030.57
Assessment—		
Acreage tax	$42,554.20	
Profit tax	1,400,656.14	
Gas tax	33,626.14	1,476,836.48
Chemical and assay—fees		1,854.63
Mine rentals—		
Mining leases	$8,986.04	
Licenses of occupation	5,261.62	14,247.66
Miners' licenses		70,328.79
Fees—		
Recording	$106,125.29	
Miscellaneous	4,870.23	
Maps—sales	2,680.26	
Sale of machinery	150.00	113,825.78
Natural Gas Commissioner—permits	$1,487.51	
Sulphur Fumes Arbitrator—damages	4,284.37	
Temiskaming Testing Laboratories—fees	17,291.71	
Salaries, expenses, etc	102.00	23,165.59
		$1,738,540.48
CAPITAL:		
Mining recorders—mining land sales		49,103.27
Total revenue		$1,787,643.75

SUMMARY OF BUSINESS TRANSACTED IN THE SEVERAL MINING DIVISIONS DURING 1935

Schedule item	Fort Frances	Sudbury	Porcupine	Larder Lake	Sault Ste. Marie	Port Arthur	Kowkash	Timiskaming	Gowganda	Montreal River	Kenora	Red Lake	Total
1. Letters received	1,007	3,947	2,917	4,191	2,107	3,077	842	1,325	788	1,036	2,860	2,262	26,359
2. Letters written	1,194	3,549	2,891	4,063	2,014	2,887	861	1,090	665	1,144	2,662	2,109	25,129
3. Miner's Licenses issued	71	675	350	430	170	631	88	188	.....	91	278	363	3,335
4. Miner's Licenses renewed	142	694	450	1,018	269	1,126	69	425	69	241	209	401	5,113
5. Mining claims recorded[1]	207	2,013	729	1,258	429	1,815	84	290	205	276	874	754	8,934
6. Mining claims cancelled	223	2,227	484	2,010	144	2,310	35	313	129	523	426	416	9,240
7. Agreements, transfers, etc., recorded	96	1,169	351	664	406	2,262	49	91	136	236	525	411	6,396
8. Receipts for Miner's Licenses, Permits, Recording Fees, etc	$3,139.00	$25,808.25	$11,471.85	$19,747.00	$6,737.05	$33,290.65	$1,681.75	$5,529.00	$2,094.25	$4,798.25	$11,936.60	$13,526.50	$139,760.15
9. Receipts as Purchase Money or Rental	$1,420.73	$13,972.12	$6,671.30	$4,359.91	$2,663.98	$12,760.43	$635.02	$208.60	$404.45	$1,061.42	$1,431.69	$11,142.29	$56,731.94
10. Total remitted to Department	$4,559.73	$39,780.37	$18,143.15	$24,106.91	$9,401.03	$46,051.08	$2,316.77	$5,737.60	$2,498.70	$5,859.67	$13,368.29	$24,668.79	$196,492.09
11. Claims of which surveyors' plans were filed	.....	8	.....	20	32	157	12	7	16	9	7	86	354
12. Disputes entered	.....	8	2	12	3	36	.....	.....	.....	.....	10	12	83
13. Disputed cases decided by Recorders	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14. Appeals to Mining Court	.....	8	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	20
15. Extensions of time granted	144	821	399	890	227	1,531	59	33	64	238	495	981	5,882
16. Certificates of Record granted	13	35	60	61	29	127	5	6	12	22	19	126	515
17. Certificates of Performance of Work granted	13	39	63	48	33	132	5	14	11	22	19	124	523
18. Claims for which papers were forwarded to the Department for issue of title	13	118	62	56	22	130	5	3	11	22	19	123	584
19. Forest Reserve Permits issued	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20. Substitute Miner's Licenses issued	3	7	4	9	1	14	2	.....	.....	4	1	4	49
21. Abstracts issued	286	1,717	932	1,464	497	3,939	182	169	377	552	1,088	1,268	12,471
22. Blue-prints sold	124	1,000	1,000	1,848	293	749	59	361	.....	501	249	233	6,412

[1]In addition, the claims recorded at the Department of Mines at Toronto were 829, making a total of 9,763 for the province, as compared with 3,886 in 1930; 5,779 in 1931; 4,945 in 1932; 8,077 in 1933; and 16,888 in 1934. The previous peak year was 1927, when 15,564 claims were recorded.

STATEMENT OF MONIES REMITTED BY MINING RECORDERS, NOV. 1, 1934, TO MAR. 31, 1935

Mining division	Name of recorder	Address	Purchase price	Maps	Miscellaneous fees	Miner's licenses	Recording fees	Total
Fort Frances	Alexander, J. A	Fort Frances	$1,059.00	$23.00	$196.00	$148.00	$640.00	$2,066.00
Kowkash	Bolduc, J. P	Tashota		5.25	12.50	89.00	628.00	734.75
Montreal River	Coghill, J. M	Elk Lake	923.83	20.25	81.75	165.00	1,151.00	2,341.83
Gowganda	Coghill, J. M	Elk Lake			15.50	42.00	228.00	285.50
Porcupine	O'Rourke, M. F	South Porcupine	4,679.56	66.25	159.25	459,00	2,002.56	7,366.62
Larder Lake	Ginn, H. G	Swastika	3,091.53	173.00	165.25	989.00	6,523.00	10,941.78
Red Lake	Holland, H. E	Goldpines	1,665.15	32.00	229.50	376.00	2,666.00	4,968.65
Sudbury	McArthur, T. A	Sudbury	13,768.71	56.50	203.25	704.00	3,062.00	17,794.46
Timiskaming	McAulay, N. J	Haileybury	49.00	19.25	24.00	383.00	841.00	1,316.25
Port Arthur	McGregor, C. F	Port Arthur	7,576.00	141.50	525.65	1,326.00	10,090.00	19,659.15
Sault Ste. Marie	Miller, W. N	Sault Ste. Marie	197.50	39.25	76.75	310.00	2,126.00	2,749.50
Kenora	Smith, J. D. C	Kenora	727.75	29.00	61.10	299.00	3,503.00	
Total			$33,738.03	$605.25	$1,750.50	$5,290.00	$33,460.56	$74,844.34

STATEMENT OF MONIES REMITTED BY MINING RECORDERS FOR THE FISCAL YEAR ENDING MARCH 31, 1936

Mining division	Name of recorder	Address	Purchase price	Maps	Miscellaneous fees	Miner's licenses	Recording fees	Sale of machinery	Total
Fort Frances	Alexander, J. A	Fort Frances	$998.63	$68.00	$666.50	$1,378.00	$1,365.00		$4,476.13
Kowkash	Story, M. A	Tashota	522.26	17.00	54.75	959.25	1,000.00		2,553.76
Montreal River	Bolduc, J. P	Elk Lake	378.55	133.80	186.45	2,294.00	3,103.65		6,096.45
Gowganda	Bolduc, J. P	Elk Lake	404.45		94.00	315.00	1,586.00		2,399.45
Porcupine	O'Rourke, M. F	South Porcupine	3,281.27	305.50	346.75	5,348.00	11,547.10		20,828.62
Larder Lake	Ginn, H. G	Swastika	4,330.97	508.25	473.75	9,236.00	12,630.70		27,179.67
Red Lake	Holland, H. E	Goldpines	12,607.52	118.25	593.25	5,087.00	8,946.00		27,352.02
Sudbury	McArthur, T. A	Sudbury	4,300.64	271.00	721.75	7,923.00	20,317.60		33,533.99
Timiskaming	McAulay, N. J	Haileybury	211.80	115.00	120.25	4,123.00	4,022.00		8,592.05
Port Arthur	McGregor, C. F	Port Arthur	5,907.30	294.00	1,122.43	9,899.00	21,783.00		39,005.73
Sault Ste. Marie	Miller, W. N	Sault Ste. Marie	3,025.98	70.00	197.25	2,566.00	4,546.30		10,405.53
Kenora	Smith, J. D. C	Kenora	599.05	134.25	293.10	3,006.00	10,016.00	$150.00	14,198.40
Total			$36,568.42	$2,035.05	$4,870.23	$52,134.25	$100,863.85	$150.00	$196,621.80

MINING CLAIMS RECORDED IN THE SEVERAL MINING DIVISIONS, 1907 AND 1916–1935

Mining division	1907	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
Coleman[1]	291	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fort Frances	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70	75	175	98	137	313	237
Gowganda	.....	51	113	52	145	215	101	55	33	444	220	96	24	40	34	244	377	114	122	207	205
Kenora	.....	45	32	48	31	25	53	168	150	77	229	935	140	520	348	194	109	203	329	933	874
Kowkash	.....	160	135	2	9	31	3	148	206	438	150	28	250	368	319	12	56	40	84	231	84
Larder Lake	3,813	783	160	423	1,015	712	918	2,344	1,736	1,219	890	1,532	3,141	1,781	891	424	628	790	1,730	2,611	1,258
Montreal River	866	56	294	293	134	81	143	174	400	471	471	290	126	156	48	661	1,127	156	444	627	276
Parry Sound[2]	102	10	25	12	39	33	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	754
Porcupine	.....	401	236	48	136	192	273	760	1,424	556	620	1,297	3,127	611	650	135	307	387	613	785	729
Port Arthur	317	172	180	66	171	108	120	296	222	300	494	1,278	982	1,269	691	338	609	475	900	6,842	1,815
Red Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5,827	2,018	1,100	973	305	298	185	343	1,036	754
Sault Ste. Marie	291	44	135	199	90	90	216	541	498	284	451	395	735	702	487	318	276	92	450	532	429
Sudbury	456	464	262	168	673	267	319	701	436	559	546	1,367	3,351	6,424	2,164	807	1,597	1,986	2,362	1,549	2,013
Timiskaming	7,860	156	269	184	244	329	159	328	971	735	634	438	875	499	346	202	78	63	256	688	290
At Toronto	.....	128	95	39	231	87	145	171	116	139	226	203	795	1,576	1,186	171	142	356	307	534	476
Total	13,996	2,470	1,936	1,534	2,918	2,160	2,459	5,686	6,092	5,222	4,751	13,496	15,564	15,046	8,207	3,886	5,779	4,945	8,077	16,888	9,440

[1]Joined with Timiskaming since 1911. [2]Office at Parry Sound was closed in 1921, and records are now kept at the Department of Mines, Toronto.

Under *The Mining Tax Act*, a graduated tax is levied on the net profits of mining companies in excess of $10,000 per annum. The basic rate is 3 per cent. on profits up to $1,000,000. On profits over $1,000,000 and up to $5,000,000, the tax is 5 per cent.; and on profits in excess of the latter amount, the rate is 6 per cent. A part of this money is returned to organized municipalities.

The following statement, prepared by the Accounts Branch of the Department, gives details of the profit tax collected under the supervision of G. R. Mickle, Mine Assessor, for the year 1935:—

DETAILS OF PROFIT TAX

GOLD:		
Anglo-Huronian, Limited	$662.00	
Ashley Gold Mining Corporation, Limited	420.81	
Dome Mines, Limited	129,237.49	
Hollinger Consolidated Gold Mines, Limited	157,056.15	
Howey Gold Mines, Limited	8,649.85	
Kirkland Lake Gold Mining Company, Limited	983.35	
Lake Shore Mines, Limited	404,738.42	
Macassa Mines, Limited	8,289.39	
McIntyre-Porcupine Mines, Limited	116,233.75	
Minto Gold Mines, Limited	345.23	
Parkhill Gold Mines, Limited	976.19	
Sylvanite Gold Mines, Limited	11,461.13	
Teck-Hughes Gold Mines, Limited	77,127.63	
Toburn Gold Mines, Limited	3,995.74	
Wright-Hargreaves Mines, Limited	128,407.25	
		$1,048,584.38
SILVER:		
Beaver mine	$47.28	
Cobalt Properties, Limited	454.28	
Nipissing Mining Company, Limited	1,207.35	
O'Brien, M. J., Limited (O'Brien mine, $2,798.53; Miller Lake O'Brien mine, $5,114.42)	7,912.95	
		9,621.86
NICKEL-COPPER:		
Falconbridge Nickel Mines, Limited	$16,917.12	
International Nickel Company of Canada, Limited	325,532.78	
		342,449.90
Total		$1,400,656.14

The figures of monies derived from sales and leases, divided according to district, do not agree with corresponding items of the preceding revenue statements, which record collections of monies actually received during the periods. Details are given in the following tables, the first of which covers the five months, November 1, 1934, to March 31, 1935, and the second, the fiscal year ending March 31, 1936.

MINING LANDS SOLD AND LEASED, NOV. 1, 1934, TO MAR. 31, 1935

District	Sales			Leases			Total sales and leases		
	No.	Acres	Amount	No.	Acres	Amount	No.	Acres	Amount
Algoma	15	643.07	$1,785.37				15	643.07	$1,785.37
Cochrane	55	2,019.13	5,333.39				55	2,019.13	5,333.39
Kenora	24	659.77	1,655.21				24	659.77	1,655.21
Nipissing									
Patricia	28	1,097.75	3,191.52				28	1,097.75	3,191.52
Rainy River	9	303.60	759.00				9	303.60	759.00
Sudbury	117	4,498.37	17,816.63				117	4,498.37	17,816.63
Thunder Bay	41	1,599.81	4,188.30	7	298.32	$298.32	48	1,898.13	4,486.62
Timiskaming	25	853.41	2,229.62	9	391.71	416.73	34	1,245.12	2,646.35
Elsewhere	4	182.17	49.29				4	182.17	49.29
Total	318	11,857.08	$37,008.33	16	690.03	$715.05	334	12,547.11	$37,723.38

MINING LANDS SOLD AND LEASED FOR FISCAL YEAR ENDING MARCH 31, 1936

District	Sales			Leases			Total sales and leases		
	No.	Acres	Amount	No.	Acres	Amount	No.	Acres	Amount
Algoma	31	1,039.85	$2,878.48	10	394.60	$394.60	41	1,434.45	$3,273.08
Cochrane	45	1,697.70	4,988.88	....	.....	.....	45	1,697.70	4,988.88
Kenora	60	2,246.75	5,695.95	....	.....	.....	60	2,246.75	5,695.95
Nipissing	3	114.75	344.25	2	63.22	6.33	5	177.97	350.58
Patricia	168	6,755.09	17,316.96	....	.....	.....	168	6,755.09	17,316.96
Rainy River	12	504.85	1,406.13	....	.....	.....	12	504.85	1,406.13
Sudbury	45	1,621.44	5,405.26	16	678.95	80.60	61	2,300.39	5,485.86
Thunder Bay	87	3,230.88	8,762.78	5	226.22	235.04	92	3,457.10	8,997.82
Timiskaming	43	1,627.45	4,262.66	74	2,734.71	1,659.11	117	4,362.16	5,921.77
Elsewhere	1	200.00	50.00	....	.....	.....	1	200.00	50.00
Total	495	19,038.76	$51,111.35	107	4,097.70	$2,375.68	602	23,136.46	$53,487.03

The following is a comparative statement of mining licenses and renewals issued, claims recorded, profit tax, and total revenue during the past ten years:—

PROSPECTING ACTIVITY, PROFIT TAX, AND TOTAL REVENUE, 1926–1935

Year	Calendar year					Fiscal year[1]
	New miner's licenses issued	Miner's licenses renewed	Total licenses and renewals	Mining claims recorded	Profit tax	Total mining revenue
1926	6,631	5,521	12,152	13,486	$410,974.17	$838,415.81
1927	6,923	7,221	14,144	15,564	340,890.08	839,793.43
1928	6,059	8,688	14,747	15,046	356,033.83	968,243.84
1929	3,271	8,049	11,320	8,207	397,004.41	882,026.05
1930	1,554	5,885	7,439	3,886	502,525.38	1,017,030.67
1931	2,174	4,808	6,982	5,779	480,300.69	799,240.06
1932	2,035	3,670	5,705	4,945	515,153.59	793,759.20
1933	3,365	3,911	7,276	8,077	679,731.07	942,721.62
1934	7,409	4,757	12,166	16,888	1,073,824.46	1,487,886.94
1935	3,335	5,113	8,448	9,763	1,400,656.14	[2]1,917,981.93

[1]Up to and including 1934, the fiscal year was from November 1 of the previous year to October 31 of the year shown. The fiscal year now ends on March 31.

[2]Includes $130,338.18 for the five months' period November 1, 1934, to March 31, 1935, and $1,787,643.75 for the new fiscal year ending March 31, 1936.

Temiskaming Testing Laboratories

This plant, located at Cobalt and equipped for sampling and assaying, has been operated by the Department since July, 1921, under the management of A. A. Cole, mining engineer, of the T. & N. O. Railway Commission.

COMPARATIVE FINANCIAL STATEMENT OF THE TEMISKAMING TESTING LABORATORIES, 1922–1935

Year	Cash receipts	Earnings	Expenditures	Operating profit	Operating loss
1922	$18,096.19	$17,749.51	$19,173.19	.....	$1,424.68
1923	18,699.22	20,117.81	19,781.25	$336.56	.....
1924	26,032.20	25,417.61	23,206.66	2,200.95	.....
1925	19,922.37	20,041.08	20,043.31	.....	2.23
1926	20,302.51	21,119.98	20,658.19	461.79	.....
1927	19,387.66	19,400.55	20,012.09	.....	611.54
1928	14,875.58	14,369.66	18,181.68	.....	3,812.02
1929	19,604.70	21,690.60	18,088.41	3,602.19	.....
1930	25,070.27	24,316.82	24,153.03	163.79	.....
1931	18,522.88	20,770.06	23,553.61	.....	2,783.55
1932	13,323.28	11,150.42	15,219.64	.....	4,069.22
1933	6,206.68	6,508.49	13,318.18	.....	6,809.69
1934	9,816.20	11,359.81	12,762.68	.....	1,402.87
1935	15,149.00	15,405.80	15,212.83	192.97	.....

Provincial Assay Office

W. K. McNeill, Provincial Assayer and Chemist, reports as follows:—

The Provincial Assay Office, which was established in Belleville in 1898, as an aid in the development of the mineral resources of Ontario, is now situated in the East Block, Queen's Park, Toronto.

During the year 1935, a total of 5,407 samples were received at the office and reports on them issued. Of these, 3,548 were done free, as provided by R.S.O., Chap. 45, Sec. 69.

In addition complete analyses were made of 20 rocks for the geologists employed by the Department of Mines, and 218 samples were identified and reports on them issued. Several hundred samples were brought directly to the Laboratory; of these no records are kept.

Forty samples of peat were tested for the geologists of the Department and several samples of water for the Natural Gas Commissioner.

The work of the Branch was carried on with the assistance of T. E. Rothwell and W. F. Green, assayers and chemists, and Robert Stewart and William Ley, laboratory assistants.

The schedules of charges for the Provincial Assay Office and Chemical Laboratory may be obtained on application. Minerals and rocks not requiring chemical analysis are identified free of charge. Tests for radio-activity are free.

Draughting Office, North Bay

As mining claims are recorded in each mining division, sketches and recording notices are forwarded by the recorders to the Draughting Office, North Bay, and the same practice applies when surveys are filed. Tracings are prepared from the data furnished and blue-prints supplied to the recorders and to the general public at a nominal charge. North Bay is a convenient centre, and considerable time for Northern Ontario residents is saved through the mails compared with former practice when blue-prints were prepared at Toronto. The office was established in February, 1920. It is now in charge of A. D. Williams.

LIST OF MINES, QUARRIES, AND WORKS, 1935

METALLICS

Operator	Mine	Manager	Address
CHROMIUM			
Chromium Mining and Smelting Corp., Ltd.	Obonga Lake	A. R. Globe	Collins.
GOLD[1]			
Algold Mines, Ltd.	Algold	R. F. Mitchell	Goudreau.
*Algoma Summit Gold Mines, Ltd.	McCarthy-Webb (tp. 49, range 27)	F. A. Brant	Goudreau.
Alschbach Gold Mining Co., Ltd.	Alschbach	C. Alschbach	Goldthorpe.
*Anglo-Huronian, Ltd.	Vipond	W. R. Adam	Timmins.
Arbade Gold Mines, Ltd.	Arbade		10 Adelaide St. E., Toronto.
*Ardeen Gold Mines, Ltd.	Moss	W. R. Osborne	Tip Top Spur, via Port Arthur.
Argosy Gold Mines, Ltd.	Argosy	R. Massey Williams	Casummit Lake, via Sioux Lookout.
*Ashley Gold Mining Corporation, Ltd.	Ashley	J. W. Robertson	Elk Lake.
Atnel Mines, Ltd.	Atnel		Hawk Junction.
Bankfield Gold Mines, Ltd.	Bankfield	J. W. MacKenzie	Geraldton.
*Barry-Hollinger Mines, Ltd.	Barry-Hollinger		57 Bloor St. W., Toronto.
*Bidgood Kirkland Gold Mines, Ltd.	Bidgood	O. L. Knutson	Kirkland Lake.
Bilmac Gold Mines, Ltd.	Bilmac		33 Temperance St., Toronto.
Bob Tough Gold Mines, Ltd.	Bob Tough		207 Turner Bldg., Hamilton.
Bousquet Gold Mines, Ltd.	Bousquet	Lionel Brooke	171 Yonge St., Toronto.
Bramor Mining (Ontario), Ltd.	Bramor	G. F. Milne	Shiningtree.
*Buffalo Ankerite Gold Mines, Ltd.	Buffalo Ankerite Marbuan	Chas. L. Hershman	South Porcupine.
Buffalo Beardmore Gold Mines, Ltd.	Buffalo Beardmore	L. Bruce	Empire.
*Canusa Gold Mines, Ltd.	Canusa	Robt. Schram	South Porcupine.
Canyon Creek Gold Mines, Ltd.	Canyon Creek	E. B. James	Shiningtree.
*Caouette Claims (Afton)	Caouette claims		217 Bay St., Toronto.
Casey Contact Gold Mines, Ltd.	Brennan-Kenty	H. M. Parrington	Jellicoe.
Central Matachewan Mining Corp., Ltd.	Central Matachewan		330 Bay St., Toronto.
*Central Patricia Gold Mines, Ltd.	Central Patricia	A. J. Anderson	Pickle Crow.
Central Porcupine Mines, Ltd.	Central Porcupine	F. G. Stevens	Schumacher.
Churchill Mining and Milling Co., Ltd.	Churchill		45 Richmond St. W., Toronto.
*Clark Gold Mines, Ltd.	Clark	R. R. Clark	Dyment.

[1]The names of companies whose mines are producing are marked with an asterisk (*).

Operator	Mine	Manager	Address
	GOLD—*Continued*		
Cole Gold Mines, Ltd	Cole	John Y. Cole	Cole.
*Concordia Gold Mining Co., Ltd	Jones-Porter	C. L. Laederer	Timmins.
*Cone, Russell C. (under lease)	Lucky Coon	Russell Cone	Mine Centre.
*Coniaurum Mines, Ltd	Coniaurum	John Redington	Schumacher.
Consolidated Mining and Smelting Co. of Canada, Ltd.	Afton[1]	D. C. McKechnie	Sudbury.
	Cordova	C. A. Seaton	Cordova.
Consolidated Mining and Smelting Co. of Canada, Ltd. (under option).	Golden Horn.		
	McKenzie	A. S. Hudson	Matheson.
	Rich Rock	C. E. White	Flinton.
Cooper, W. D., and Barry, P. A. (under lease)	McIntyre Birch Lake.		
Corless Patricia Gold Mines, Ltd	Corless Patricia	W. M. Rice	Jackson Manion.
Coulson Consolidated Gold Mines, Ltd	Coulson		Painkiller Lake, via Matheson.
Craig Gold Mines, Ltd	Craig	E. B. E. de Camps	330 Bay St., Toronto.
*Darwin Gold Mines, Ltd	Darwin	M. H. Frohberg	Gold Park.
Delnite Mines, Ltd	Delnite	J. F. R. Akehurst	Timmins.
De Santis Porcupine Mines, Ltd	De Santis	Peter De Santis	Box 1299, Timmins.
*Dome Mines, Ltd	Dome	J. H. Stovel	South Porcupine.
Dumond Mining and Exploration Co., Ltd	Dumond	A. E. Dumond	New Liskeard.
*Duport Mining Co., Ltd	Duport	J. G. Cross	Kenora.
Edgelake Gold Mining Co., Ltd	Edgelake	J. M. Forbes	Box 128, Schumacher.
Edwards Gold Mines, Ltd	Edwards		302 Sterling Tower Bldg., Toronto.
Elizabeth Gold Syndicate	Elizabeth		9 Adelaide St. E., Toronto.
Falcon Gold Mines, Ltd	McConnell	Lionel Brooke	200 Bay St., Toronto.
*Fleming, P. M	Argonaut	P. M. Fleming	Haileybury.
Foley O'Brien Corporation, Ltd	Foley O'Brien		South Porcupine.
Fort Hope Consolidated Gold Mines, Ltd	Fort Hope		507 Confederation Life Bldg., Toronto.
Fox Lake Gold Mines, Ltd	Fox Lake	L. W. Adams	Espanola.
Franklin Gold Mining Co., Ltd	Ontario Champion		330 Bay St., Toronto.
*Gillies Lake–Porcupine Gold Mines, Ltd	Gillies Lake–Porcupine	G. C. Chase	Box 2048, Timmins.
Gilmour Gold Mines, Ltd	Gilmour	A. A. Kenniger	Gilmour.
Gold Eagle Gold Mines, Ltd	Gold Eagle	F. M. Passow	McKenzie Island.
Golden Arm Mines, Ltd	Golden Arm	W. S. Hall	Red Lake.
Golden Gate Mining Co., Ltd	Golden Gate	S. A. Pain	Swastika.
Golden Summit Mines, Ltd	Golden Summit	Wm. J. Simpson	Sesekinika.
Gomak Mines, Ltd	Gomak	R. D. Jones	Gogama.
Goward Gold Mines, Ltd	Goward	P. G. Ferguson	Haileybury.
*Halcrow-Swayze Mines, Ltd	Halcrow-Swayze		709 Excelsior Life Bldg., Toronto.

[1]The Afton property is now called the New Golden Rose.

Hard Rock Gold Mines, Ltd	Hard Rock	J. C. Dumbrille	Geraldton.
*Harkness-Hays Gold Mines, Ltd	Harkness-Hays	J. F. Anderson	Schreiber.
Hillside Gold Mines, Ltd	Hillside		645 Queen St. E., Sault Ste. Marie, Ont.
*Hollinger Consolidated Gold Mines, Ltd.[1]	Brennan David (Hislop)		Ramore.
	Hollinger	John Knox	Timmins.
Hollinger Consolidated Gold Mines, Ltd. (under option).	Horwood Lake (Smith-Thorne)	G. F. Gibbs	Tionaga.
Horseshoe Mines, Ltd	Horseshoe	Frank Williams	Box 811, Kenora.
*Howey Gold Mines, Ltd	Howey	Edward Futterer	Red Lake.
Hudson-Patricia Gold Mines, Ltd	Hudson-Patricia	J. M. Thompson	Narrow Lake, via Sioux Lookout.
Jellicoe Gold Mining Co., Ltd	Jellicoe		83 Richmond St. W., Toronto.
*J-M Consolidated Gold Mines, Ltd	J-M Consolidated	D. M. Thomson	Jackson Mansion.
*Kenora Prospectors and Miners, Ltd	Cedar Island	Hilding Johnson	Kenora.
Kirkland Consolidated Mines, Ltd	Kirkland Consolidated		702 Excelsior Life Bldg., Toronto.
Kirkland Gold Rand, Ltd	Kirkland Gold Rand	C. Spearman	360 St. James St. W., Montreal.
Kirkland–Hudson Bay Gold Mines, Ltd	Kirkland–Hudson Bay		Box 700, New Liskeard.
*Kirkland Lake Gold Mining Co., Ltd	Kirkland Lake Gold	P. J. Harris	Kirkland Lake.
Lafayette Long Lac Gold Mines, Ltd	Lafayette Long Lac	J. A. Brownlee	Geraldton.
La Fond Gold Mines, Ltd	La Fond		701 Excelsior Life Bldg., Toronto.
*Lake Shore Mines, Ltd	Lake Shore	E. W. Todd	Kirkland Lake.
L. B. United Mines, Ltd. (under option)	Centennial	L. K. Lytle	Gold Park.
Lebel Oro Mines, Ltd	Long Lake	Wm. D. M. Ross	Box 156, Sudbury.
Leitch Gold Mines, Ltd	Leitch	W. J. Hacker	Empire.
*Little Long Lac Gold Mines, Ltd	Little Long Lac	A. A. Barton	Oklend.
Longlac Lagoon Gold Mines, Ltd	Longlac Lagoon		85 Richmond St. W., Toronto.
*Macassa Mines, Ltd	Macassa	G. A. Howes	Kirkland Lake.
Macandrew Red Lake Gold Mines, Ltd	Macandrew	N. R. Morrison	Red Lake.
*Mac-Auer Gold Mines, Limited	Mac-Auer		University Tower, Montreal, Que.
McDonough Mining Syndicate, Ltd	McDonough		67 Yonge St., Toronto.
*McIntyre-Porcupine Mines, Ltd	McIntyre-Porcupine	R. J. Ennis	Schumacher.
Macjoe Sturgeon Gold Mines, Ltd	Macjoe	A. Rosenland	Jellicoe.
*McKenzie Red Lake Gold Mines, Ltd	McKenzie Red Lake	J. L. Ramsell	McKenzie Island.
*McLaren-Porcupine Gold Mines, Ltd	McLaren-Porcupine	J. M. McLaren	South Porcupine.
MacLeod-Cockshutt Gold Mines, Ltd	MacLeod-Cockshutt		85 Richmond St. W., Toronto.
*McMartin, J. Bruce	Dikdik	J. Bruce McMartin	941 Dominion Square Bldg., Montreal.
*McMillan Gold Mines, Ltd	McMillan	G. M. Miller	Sudbury.
Madsen Red Lake Gold Mines, Ltd	Madsen Red Lake	A. Honsberger	Red Lake.
Magnet Lake Gold Mines, Ltd	Magnet Lake		85 Richmond St. W., Toronto.
Manitoba and Eastern Mines, Ltd	Manitoba and Eastern	Jas. G. MacGregor	Timagami.
Martin Bird Syndicate	Martin Bird	John Campbell	Larder Lake.
*Matachewan Consolidated Mines, Ltd	Matachewan Consolidated	Thos. L. Wells	Elk Lake.
Matachewan Pioneer Syndicate	Matachewan Pioneer	H. A. Steven	Matachewan.
May-Spiers Gold Mines, Ltd	May-Spiers	Nelson Spiers	Red Lake.

[1]See also Young-Davidson Mines, Ltd.

Operator	Mine	Manager	Address
	GOLD—*Continued*		
*Miller Independence Mines (1924), Ltd	Miller Independence		39 New Bank of Toronto Bldg., London.
Milmac Mines, Ltd	Milmac		612 Queen St. E., Sault Ste. Marie.
*Minto Gold Mines, Ltd	Cooper	John Knox, Jr.	Wawa.
	Jubilee		
*Moffatt-Hall Mines, Ltd	Moffatt-Hall	C. F. Tuer	Haileybury.
Morris Kirkland Gold Mines, Ltd	Morris Kirkland	T. C. Fawcett	King Kirkland.
*Munro Croesus Mines, Ltd	Munro Croesus	J. E. Grant	Haileybury.
Murray-Algoma Mining Co., Ltd	Murray-Algoma	G. J. Lamb	Hawk Junction.
Murwood Gold Mines, Ltd. (under option)	Big Master	E. A. Boadway	Wabigoon.
*Naybob Gold Mines, Ltd	Hayden	Robt. J. Naylor	Timmins.
Neville Canadian Gold Mines, Ltd	Neville Canadian		347 Bay St., Toronto.
*North Shores Gold Mines, Ltd	North Shores	D. E. Graham	Schreiber.
*Northern Empire Mines Co. Ltd	Northern Empire	R. J. Hendricks	Empire.
Northern Mines, Incorporated	Wabigoon-Contact		516 Wallbridge Bldg., Buffalo, N.Y.
Olive Gold Mines, Ltd	Olive	F. G. Huycke	Mine Centre.
Omega Gold Mines, Ltd	Omega	A. D. Campbell	Larder Lake.
Oro Plata Mining Co., Ltd	Oro Plata		1005 Federal Bldg., Toronto.
Pamour Porcupine Mines, Ltd	Pamour	R. M. Macaulay	Pamour.
*Parkhill Gold Mines, Ltd	Parkhill	R. E. Barrett	Gold Park.
*Paymaster Consolidated Mines, Ltd	Paymaster Consolidated	Chas. E. Cook	South Porcupine.
*Pickle Crow Gold Mines, Ltd	Pickle Crow	Alex. G. Hattie	Pickle Crow.
Porcupine Lake Gold Mining Co., Ltd	Porcupine Lake (Hunter)		112 Yonge St., Toronto.
Porcupine Peninsular Gold Mines, Ltd	Porcupine Peninsular		80 King St. W., Toronto.
*Red Crest Gold Mines, Ltd	Rowan Discovery	J. M. Wilson	Golden Arm, Red Lake.
Red Lake Gold Shore Mines, Ltd	Red Lake Gold Shore	W. P. Mackle	Red Lake.
Richelieu Gold Mines, Ltd	Richelieu		330 Bay St., Toronto.
Rickard Ramore Gold Mines, Ltd	Raty	H. Hollands-Hurst	Iroquois Falls.
*St. Anthony Gold Mines, Ltd	St. Anthony	R. P. Teare	Savant Lake.
Sakoose Gold Mines, Ltd	Sakoose		231 St. James St., Montreal, Que.
Selected Canadian Golds, Ltd. (under option)	Sultana		Bank of Commerce Bldg., Toronto.
Selected International Mines, Ltd. (under lease)	Cheltonia-Swastika	C. J. Poole	Swastika.
Shenango Gold Mines, Ltd	Shenango	Jack Owens	Oba.
Shinintree Gold Mines, Ltd	Shinintree	Lionel Brooke	Shiningtree.
*Smith, S. B	Van Sickle	Dr. S. B. Smith	Cleveland, Ohio.
*Sol-D'Or Gold Mines, Ltd	Sol-D'Or	Dr. H. S. Hicks	Narrow Lake.
South Shore Gold Syndicate	South Shore	R. J. C. Godden	Box 542, South Porcupine.
South Vermillion Gold Mines, Ltd	South Vermillion	A. Pacitto	Mine Centre.
Stanley Gold Mines, Ltd	Stanley	S. MacDougall	Wawa.

Straw Lake Beach Gold Mines, Ltd.	Straw Lake Beach	Frank Carnegie	Emo.
Sturgeon River Gold Mines, Ltd.	Sturgeon River	C. M. Bowyer	Jellicoe.
Supreme Gold Mines, Ltd.	Supreme	Walter F. Stewart	Savant Lake.
Swain, Harris, and Cavano	Swain-Harris-Cavano		Narrow Lake.
*Sylvanite Gold Mines, Ltd.	Sylvanite	C. E. Rodgers	Kirkland Lake.
*Tashota Goldfields, Ltd.	Tashota	A. Robertson	Tashota.
*Teck-Hughes Gold Mines, Ltd.	Teck-Hughes	R. J. Henry	Kirkland Lake.
Teddy Bear Valley Mines, Ltd.	Teddy Bear Valley	Edward H. Orser	Lightning River.
Thesaurus Gold Mines, Ltd.	Thesaurus		320 Bay St., Toronto.
*Toburn Gold Mines, Ltd.	Toburn	M. W. Hotchkin	Kirkland Lake.
Tombill Gold Mines, Ltd.	Tombill	R. J. Hendricks	Empire.
*Vermilion Operating Co. (under lease)	Vermilion Lake		Sioux Lookout.
Vimy Gold Mines, Ltd.	Vimy	Joseph Berini	Ramore.
Wells Longlac Mines, Ltd.	Magnet Lake	W. L. Brown	Geraldton.
Wells Longlac Mines, Ltd. (under option)	Stagee.		
Wendigo Gold Mines, Ltd.	Wendigo	C. L. Spencer	Kenora.
West Red Lake Gold Mines, Ltd.	West Red Lake		11 King St. W., Toronto.
*Wright-Hargreaves Mines, Ltd.	Wright-Hargreaves	M. W. Summerhayes	Kirkland Lake.
*Young-Davidson Mines, Ltd. (under agreement with Hollinger Consol. Gold Mines).	Young-Davidson		Elk Lake.
Young-Shannon Gold Mines, Ltd.	Young-Shannon	C. T. Young	1 Toronto St., Toronto.
	Martin		

MOLYBDENITE

Phoenix Molybdenite Corporation, Ltd.	Phoenix	F. L. Stinson	Ashdad.

NICKEL AND COPPER

Cuniptau Mines, Ltd.	Cuniptau	Geo. M. Lee	Goward.
Falconbridge Nickle Mines, Ltd.	Falconbridge	Ernest Craig	Falconbridge.
International Nickel Co. of Canada, Ltd.	Creighton	S. J. Kidder	Creighton.
	Frood	F. J. Eager	Frood.
Van Nickel Mines, Ltd.	Delta	W. F. Taylor	Worthington.

RADIUM

Canada Radium Mines, Ltd.	Canada Radium	Frank Austin	Cheddar.

Operator	Mine or Works	Manager	Address
SILVER AND COBALT			
Bellorain Mines, Ltd	Bellellen	Max Kaplan	Kirkland Lake.
Cobalt Properties, Ltd	Cobalt Properties	Arthur Brocklebank	Cobalt.
Cobnor Silver Mines, Ltd	Cobnor	H. F. Fancy	Cobalt.
Comet Leasing Co. (under lease)	Drummond	Bruce Williams	Kirkland Lake.
Dean and Downey (under lease)	Wettlaufer	Ralph Downey	Cobalt.
Hudson Bay Mines, Ltd	Hudson Bay		Box 700, New Liskeard.
Martin, George (under lease)	Crown Reserve	George Martin	Cobalt.
Miller, H. G. (under lease)	Canadian Lorrain	H. G. Miller	Silver Centre.
	Keeley		
Morgenthalor, A. G.	Beaver	A. G. Morgenthalor	2108 South Second St., Philadelphia.
Morrison Mines, Ltd	Morrison		165 Sparks St., Ottawa.
Mosher, Richardson, and Lafrange (under lease)	Buffalo	I. E. Mosher	Cobalt.
Nipissing Mining Co., Ltd	Nipissing	Hugh Park	Cobalt.
O'Brien, Ltd., M. J.	Cross Lake	W. A. O'Flynn	Cobalt.
	Miller Lake O'Brien	H. G. Kennedy	O'Brien.
O'Donald, J. C. (under lease)	Silver Queen	J. C. O'Donald	Cobalt.
Price, C. W. (under lease)	Foster	C. W. Price	Cobalt.
Rowe and Stuckey (under lease)	Frontier	Alfred Rowe	Silver Centre.
Sandoe and Moyle (under lease)	Temiskaming	Richard Sandoe	Cobalt.
Silver Cliff Syndicate (under lease)	Silver Cliff		Cobalt.
Silverado Gowganda Mines, Ltd. (under lease)	Silverado	F. E. Forster	347 Bay St., Toronto.
Sirola, Donald E. (under lease)	Colonial	Donald E. Sirola	Kirkland Lake.
Smith Cobalt Mines, Ltd	Smith Cobalt	D. G. Russell	Cobalt.
Wood, A. (under lease)	Dominion Reduction Co. mill	A. Wood	Cobalt.
METALLURGICAL WORKS			
Algoma Steel Corporation, Ltd	Iron blast furnace	Jas. H. Bell	Sault Ste. Marie, Ont.
Canadian Furnace Co., Ltd	Iron blast furnace	W. J. Higgins	Port Colborne.
Canadian Industries, Ltd	Acid and chemical plant	E. Jordon	Copper Cliff.
Deloro Smelting and Refining Co., Ltd	Silver-cobalt refinery	S. B. Wright	Deloro.
Falconbridge Nickel Mines, Ltd	Nickel-copper smelter	M. J. Tamplin	Falconbridge.
International Nickel Co. of Canada, Ltd	Nickel-copper smelter	Peter Macdonald	Copper Cliff.
	Nickel-copper smelter	Peter Macdonald	Coniston.
	Nickel refinery	H. W. Walter	Port Colborne.
Ontario Refining Co., Ltd	Electrolytic copper refinery	F. Benard	Copper Cliff.
Steel Company of Canada, Ltd	Iron blast furnace	R. A. Gillies	Hamilton.

NON-METALLICS

ACTINOLITE

Building Services, Ltd	Actinolite, Elzevir tp., Hastings co	Kenneth E. Rea	1529 Macgregor St., Montreal, Que.

ARSENIC

Deloro Smelting and Refining Co., Ltd	Silver-cobalt refinery	S. B. Wright	Deloro.

BARITE

Barytes Products, Ltd	Bellew, N. Burgess tp., Lanark co. (idle in 1935).	H. C. Bellew	Box 282, Montreal, Que.
Canada Night Hawk Mines, Ltd	Canada Night Hawk		305 Sterling Tower Bldg., Toronto.
Glendinning, H	Yarrow tp., Timiskaming dist. (idle)		387 Bloor St. E., Toronto.
Weaver (Minerals), Ltd	Tionaga, Penhorwood tp., Sudbury dist.		34 King St. E., Toronto.

DIATOMITE

Diatomite Products, Ltd	Martin's Siding, Muskoka dist	C. Lindley Wood	409 Metropolitan Bldg., Toronto.
Dominion Diatomite, Ltd. (now F. P. Macklem).	Lot 3, con. I, Perry tp., Parry Sound dist.	F. P. Macklem	642 King St. W., Toronto.
Air-Lite Silica Co., Ltd	Muskoka Falls	A. J. P. Care	32 Lyall Ave., Toronto.

FELDSPAR

Barr, Walter J	Renfrew, N. ½ lot 24, con. XVI, Fraser tp., Renfrew co.	W. J. Barr	Indian, C.N.R.
Bathurst Feldspar Mines, Ltd. (shipped only)	Bathurst, Bathurst tp., Lanark co	T. H. Craig	10 Victoria St., Perth.
Charette and Son, S	Lot 1, con III, Burwash tp., Sudbury dist.	S. Charette	Estaire P.O.
Craig, T. H	W. ½ lot 12, con. IX, Bathurst tp., Lanark co.	T. H. Craig	10 Victoria St., Perth.
Frontenac Floor and Wall Tile Co., Ltd	Grinding plant, Kingston	A. M. Perryman	Box 178, Kingston.
Gunter, Judson A	Sabine tp., Nipissing dist.	J. A. Gunter	Princes Lake.
MacDonald, P	Hybla	P. MacDonald	Hybla.
Renfrew Minerals, Ltd	Quadeville	C. Lentz	Rockingham.

Operator	Mine, Quarry, or Works	Manager	Address
	FLUORSPAR		
Stoklosar, Chas. A	W. ½ lot 3, con. I, Madoc tp., Hastings co.	Chas. A. Stoklosar	Madoc.
	GRAPHITE		
Black-Donald Graphite Co., Ltd	Black Donald, Brougham tp., Renfrew co.	R. F. Bunting	Calabogie.
	GYPSUM		
Canadian Gypsum Co., Ltd	Hagersville	W. E. Allen	Hagersville.
Gypsum, Lime and Alabastine, Canada, Ltd.	Caledonia	L. V. Robinson	Caledonia.
	IRON PYRITES AND SULPHURIC ACID		
Canadian Industries, Ltd	Acid plants, Copper Cliff	G. G. Vincent	Copper Cliff.
Canadian Pyrites, Ltd	Caldwell mine, Flower station (idle in 1935)	O. M. Hook, Sec	1400 Guardian Bldg., Cleveland, Ohio.
	MICA		
Bennett, H. V		H. V. Bennett	6 Church St., Perth.
Kent Bros. (buyers)		W. C. Kent	114 Gore St., Kingston.
Lee and Son, W. W	Bob's Lake mine	A. J. Lee	Bedford Mills.
Loughborough Mining Co., Ltd	Various prospects	General Electric Co	Schenectady, N.Y.
Martin, A. G. (buyer)		A. G. Martin	236 Besserer St., Ottawa.
30 Island Lake Mica Co	Frontenac and Lanark counties	S. H. Orser	Verona.
	MINERAL WATERS		
Carlsbad, Ltd. (now T. R. Boyd)	Carlsbad Springs	T. R. Boyd	Carlsbad Springs.
Deneault, F	Bourget Springs	F. Deneault	Bourget.
Gurd and Co., Ltd., Chas	Caledonia tp., Prescott co		1016 Bleury St., Montreal, Que.

NEPHELINE SYENITE

Canadian Nepheline, Ltd	Lot 14, con. IX, Methuen tp., Peterborough co.	H. R. Deeth	Lakefield.

PEAT

Caledon Peat Co	Lot 27, con. I, Caledon tp., Peel co.	Burbidge and Pollock.	Box 445, Brampton.
Countryman, Gordon	Lot 22, con. IX, Winchester tp., Dundas co.	G. Countryman	Chesterville.
Fleming, John	E. ½ lot 20, W. ½ lot 21, Winchester tp., Dundas co.	J. Fleming	Morewood.
Hodgkins and Son, H. L	Con. IV, Wainfleet tp., Welland co		R. R. 2, St. Anns.
Hummel, Wm. L.	Lot 18, con. VII.Winchester tp., Dundas co. (idle in 1935).	W. L. Hummel	Chesterville.
Leasa, Wm	Lot 11, con. X, Ellice tp., Perth co	W. Leasa	Milverton.
Northern Peat Co	Lot 8, con. X, Ellice tp., Perth co	W. B. Brewer	Timmins.
Roe, Stephen	Lot 35, con. XIV, Elma tp., Perth co. (idle in 1935).	S. Roe	R.R 2, Milverton.
Runke and Sons, Geo	Lot 55, Waterloo tp., Waterloo co	A. Runke	115 Cameron St. N., Kitchener.

QUARTZ, QUARTZITE, AND SILICA BRICK

Algoma Steel Corporation, Ltd	Silica brick (quartz from Deroche tp.)		Sault Ste. Marie.
Dominion Mines and Quarries, Ltd	Killarney, north shore of Lake Huron, East Neebish island (idle).		340 University Ave., Toronto.
Falconbridge Nickel Mines, Ltd	Quarry on property	Ernest Craig	Falconbridge.
MacDonald, P	Hybla	P. MacDonald	Hybla.
Wright and Co	Quarry, Deroche tp., Algoma dist	Geo. S. Cowie	960 Queen St., Sault Ste. Marie.

SALT

Brunner Mond, Canada, Ltd	Amherstburg (brine for chemical use)	C. K. MacFetridge	Amherstburg.
Canadian Industries, Ltd	Sandwich (brine for chemical use and salt)		Box 1260, Montreal, Que.
Dominion Salt Co., Ltd., The	Sarnia	W. H. Spence, Sec.-Tr.	1610 Bank of Commerce Bldg., Toronto.
Goderich Salt Co., Ltd	Goderich	G. N. Dowker	Goderich.
Kincardine Salt, Ltd. (idle in 1935)	Kincardine (operated by Canadian Industries, Ltd.).		Box 1260, Montreal, Que.
Walker Salt Corporation, Limited[1]	Port Franks	G. C. Walker, Pres	London.
Warwick Pure Salt Co., Ltd	Highway No. 7, Warwick tp., Lambton co.	B. Witkon	R.R. 5, Watford.
Western Canada Flour Mills Co., Ltd	Goderich		287 MacPherson Ave., Toronto.

[1]Developing.

Operator	Mine, Plant, or Quarry	Manager	Address
TALC			
Canada Talc Co., Ltd	Connolly—mill at mine	Roy Taylor	Madoc.
Geo. H. Gillespie Co., Ltd	Henderson mine—mill at Madoc	L. Ashley	Madoc.
STRUCTURAL MATERIALS			
CEMENT			
Canada Cement Co., Ltd	Belleville, plant No. 5 (idle in 1935)		Box 290, Station B, Montreal, Que.
	Lakefield, plant No. 7 (idle in 1935)		
	Port Colborne, plant No. 8		
St. Marys Cement Co., Ltd	St. Marys		357 Bay St., Toronto.
LIME			
Bell, Harry	N. ½ lot 23, con. XII, Sullivan tp., Grey co.	Harry Bell	R.R. 4, Chesley.
Biederman, Albert G.	Wilberforce tp., Renfrew co.	Albert G. Biederman	R.R. 1, Golden Lake.
Brown's Lime Works	Owen Sound	Wm. Brown	491 9th Ave. E., Owen Sound.
Brunner Mond, Canada, Ltd.	Lots 6, 7, 8, con. I; lots 2, 3, con. II, Anderdon tp., Essex co.	C. K. MacFetridge	Amherstburg.
Cameron, W. M.	Ramsay tp., Lanark co.	W. M. Cameron	Carleton Place.
Canada Lime Co., Ltd.	Coboconk	Chas. R. Christie	114 Cluny Drive, Toronto.
Canada and Dominion Sugar Co., Ltd.	Wallaceburg		Wallaceburg.
	Chatham		Chatham.
Canadian Gypsum Co., Ltd.	Guelph	B. S. Bains	1221 Bay St., Toronto.
Chalmers Lime Works	Owen Sound (idle in 1935)	Miss M. Chalmers	689 7th Street W., Owen Sound.
Dominion Rock Products, Ltd.	Eganville		941 Dominion Square Bldg., Montreal.
Gallagher Lime and Stone Co., Ltd., The	Hamilton (idle in 1935)		Upper James St., Hamilton.
Gypsum, Lime and Alabastine, Canada, Ltd.	Beachville		Beachville.
	Elora (idle in 1935)		Elora.
	Hespeler		Hespeler.
	Milton		Milton.
	Limehouse (idle in 1935)		Limehouse.
Innerkip Lime and Stone Co., Ltd.	Beachville	C. E. Downing	Beachville.

Jamieson Lime Co.	Renfrew	J. A. Jamieson	Renfrew.
Laurentian Stone Co., Ltd.	Quarries	A. B. Robillard	82 Cremazie St., Hull, Que.
Morris, Stanley	Delta	S. Morris	Delta.
North American Cyanamid Co.	Quarry at Beachville, kilns at Niagara Falls.		Niagara Falls, Ont.
Rockwood Lime Co.	Lot 5, con. XI, Eramosa tp., Wellington co.	Geo. H. Dennis	Rockwood.
Shane Lime Co.	Eganville (idle in 1935)	Geo. R. Shane	Eganville.
Weppler, Henry	Lot 7, con. II, Glenelg tp., Grey co., (idle in 1935).	H. Weppler	R.R. 2, Priceville.

STONE (Limestone and Marble)

Billie and Son, Chas. V.	Perth	F. R. Billie	Smiths Falls.
Bolender Bros.	Haliburton	P. H. Bolender	Haliburton.
Bonter Marble and Calcium Co., Ltd., The	Marmora tp., Hastings co.	J. W. Bonter	Box 61, Marmora.
Bourgie, J. B.	Gregnon, con. VIII, Russell tp., Russell co.	J. B. Bourgie	Box 50, Embrun.
Brunner Mond, Canada, Ltd.	Lots 6, 7, 8, con. I; lots 2, 3, con. II, Anderdon tp., Essex co.	C. K. MacFetridge	Amherstburg.
Canada Cement Co., Ltd.	Thurlow tp., Hastings co.	J. H. Legate	Belleville.
Canada Crushed Stone Corp., Ltd.	Dundas, Town of	J. Stephens	R.R. 2, Dundas.
Hagersville Contracting Co., Ltd.	Walpole tp., Haldimand co.	Gordon Gilbertson	Hagersville.
Puslinch Quarry, Ltd.	Puslinch tp., Wellington co.		Dundas.
Queenston Quarries, Ltd.	Niagara tp., Lincoln co.	A. Michie	Box 148, Niagara Falls.
Coldwater Crushed Stone, Ltd.	Lots 19, 20, con. XIII, Medonte tp., Simcoe co.	A. E. Gooderham	49 Wellington St. E., Toronto.
Decewsville Crushed Stone, Ltd.	Decewsville (idle in 1935)		52 Elgin St., Hamilton.
Dibblee Construction Co., Ltd.	Stevens quarry, 2 miles south of Hawkesbury.	C. H. Covey	248 Albert St., Ottawa.
Dufferin Paving and Crushed Stone Co., Ltd.		H. H. Salmon	Fleet and Bathurst Streets, Toronto.
Hagersville Quarries, Ltd.	Walpole tp., Haldimand co.	W. L. McRae	Hagersville.
Kirkfield Crushed Stone, Ltd.	Eldon tp., Victoria co.	John Welch	Kirkfield.
St. Mary's Crushed Stone, Ltd. (idle)	St. Marys		St. Marys.
Fergus Quarry	Fergus	James Gow	Fergus.
Foster, R. R.	Merivale Road, Nepean tp., Carleton co., (idle in 1935).	R. R. Foster	86 Spadina Ave., Ottawa.
Grenon, Jas.	Casselman	B. Lesiault	Casselman.
Gypsum, Lime and Alabastine, Canada, Ltd.	Lot 18, con. III, N. Oxford tp., Oxford co.	T. F. Robinson	87 Wellington St. N., Woodstock.
	Lot 3, cons. VI, VII, Nassagaweya tp., Halton co.	R. S. Adams	Milton.
Hagersville Contracting Co., Ltd.	*See* Canada Crushed Stone Corporation.		
Hagersville Quarries, Ltd.	*See* Dufferin Paving and Crushed Stone Co.		
Haldimand Quarries and Construction, Ltd.	Hagersville	C. F. Anderson	Hagersville.
Halliday, Fred	Lot 23, Gloucester tp., Carleton co. (idle in 1935).		Cummings Bridge.

Operator	Quarry or Location	Manager	Address
STONE (Limestone and Marble)—*Continued*			
Henniger, M. G.	Kitley tp., Leeds co. (idle in 1935)	M. G. Henniger	Smiths Falls.
Highways, Department of	Various quarries	R. M. Smith	Parliament Bldgs., Toronto.
Innerkip Quarries, Ltd.	*See* Dufferin Paving and Crushed Stone Co		
Irvine Co., Ltd., The Edgar	Near Centreville (idle in 1935)	E. M. C. Goodwin	Alexandria.
Kingston Penitentiary	Portsmouth	Samuel Donaldson	Box 22, Kingston.
Kirby Co., Ltd., The T. Sidney	Gloucester tp., Carleton co.		215 Sussex St., Ottawa.
Kirkfield Crushed Stone, Ltd.	*See* Dufferin Paving and Crushed Stone Co.		
Lake St. John Quarry Co., Ltd.	Rama tp., Ontario co.	R. M. Craig	Longford Mills.
Lapierre, M.C.	Grey co.	M. C. Lapierre	1994 9th Ave. E., Owen Sound.
Law Construction Co., Ltd.	Owen Sound and Collingwood	B. J. Williams	19 Delevan Ave., Forest Hill.
Limestone Products, Ltd.	Con. V, Orillia tp., Simcoe co.	K. W. Peacock	1104 Hermant Bldg., Toronto.
McGinnis & O'Connor	Collins Bay, Frontenac co.	T. A. McGinnis	Kingston.
Middleton, J. N.	Ancaster village (idle in 1935)	J. N. Middleton	Ancaster.
Noranda Mines, Ltd.	Farr quarry, Haileybury		804 Royal Bank Bldg., Toronto.
North American Cyanamid Co.	Beachville		Niagara Falls, Ont.
Ornamental Stone Products	Portland tp., Frontenac co.	S. H. Orser	Verona.
Owen Sound, City of	City quarry, 8th Street West (idle in 1935)	Robt. Crannie	323 8th St. W., Owen Sound.
Pirson, John	Hydro dump, Stamford tp., Welland co.	John Pirson	Stevensville.
Puslinch Quarry, Ltd.	*See* Canada Crushed Stone Corp.		
Queenston Quarries, Ltd.	*See* Canada Crushed Stone Corp.		
Rayner Construction, Ltd.	Madoc	W. J. Smyth	29 Commercial St., Leaside.
Routly, H. T.	Rawdon tp., Hastings co.	H. T. Routly	21 Dundas Square, Toronto.
Silverstone Black Marble Quarries	Lots 8, 9, con. XII, Finch tp., Stormont co.	Carl Burd	St. Albert.
Walker Bros., Ltd.	Stamford tp., Welland co.	J. G. Walker	145 Geneva St., St. Catharines.
Wilford and Co., Ltd., R. F.	Victoria co.	C. Lindsay	Lindsay.
Windmill Point Crushed Stone Co., Ltd.	Ridgeway	R. E. Law	Ridgeway.
STONE (Granite)			
Appleby, Thos. A.	Leeds co. (idle in 1935)	T. A. Appleby	Garden St., Gananoque.
Billie, Chas. V.	Bathurst tp., Lanark co.	F. R. Billie	Smiths Falls.
Horne, Wm.	Butler	Wm. Horne	Butler, via Ignace.

STONE (SANDSTONE)

Campbell Sandstone Quarries, Ltd.	Carleton co.	M. N. Cummings	Westboro.
Corner, Austin A.	Peel co.	A. A. Corner	Terra Cotta.
Logan, Harry	Georgetown	H. Logan	Box 400, Georgetown.
Norton, A. W.	Halton co.	A. W. Norton	Limehouse.
Sykes, Thos.	Halton co.	Thos. Sykes	Georgetown.
Terra Cotta Quarries	Halton co.	J. L. Craine	Terra Cotta.

STONE (TRAP)

Building Products, Ltd.	Portland tp., Frontenac co.	A. de Wolfe	Verona, Ont.
Fort William, City of	Rifle range, City quarry	City Engineer	City Hall, Fort William.
Ontario Rock Co., Ltd.	Belmont and Methuen tps., Peterborough co.	H. L. Scott	R.R. 3, Havelock.

SAND-LIME BRICK

Harbour Brick Co., Ltd.	Fleet St. at Bathurst	K. M. Goodings	Fleet St., Toronto.
Hinde Bros.	134 Northland Ave., Toronto	Jas. H. Hinde	Mount Dennis.
Toronto Brick Co., Ltd.	Scarborough		897 Bay St., Toronto.
York Sandstone Brick Co., Ltd.	447 Victoria Park Ave., Toronto	W. A. Smyth	447 Victoria Park Ave., Toronto.

SAND AND GRAVEL (LICENSED DREDGING OPERATIONS)

Canadian Dredging Company	Lake Superior		Midland.
Cowley, Mrs. K.	Thames river		Chatham.
Gravel and Lake Services, Ltd.	Lake Superior		Box 148, Port Arthur.
Hadley's Chatham, Ltd.	Thames river		47 Wellington St., Chatham.
McLean and Sons, A. B.	Lake Superior		Brock St., Sault Ste. Marie.
McNamara Construction Co., Ltd.	Lake Simcoe		12 Industrial St., Leaside.
Montreal Trust Co., Ltd. (Trustee for Sin-Mac Lines, Ltd.).	Lake Superior		635 Common St., Montreal, Que.
National Sand and Material Co., Ltd.	Lake Erie		402 Harbour Bldg., Toronto.
Pyke Salvage Co.	St. Lawrence river		506 Princess St., Kingston.
Simpson and Sons, J. H.	St. Lawrence river		20 Thomas St., Brockville.
Tees Transit Co.	Niagara bar		16 New St., Hamilton.
Wallaceburg Sand and Gravel Co., Ltd.	St. Clair river		Wallaceburg.

Operator	Pit or Works	Manager	Address
SAND AND GRAVEL[1] (Pit Operations)			
Barnes Co., Ltd., Wm. R.	Spring Vale, Waterdown, Brantford		243 Cumberland Ave., Hamilton.
Consolidated Sand and Gravel, Ltd.	Paris		402 Harbour Bldg., Toronto.
Durham Stone and Sand Co., Ltd.	Durham.		
Fuller Gravel, Ltd.	Fuller.		
Waterford Sand and Gravel Co., Ltd.	Waterford.		
Foster, R. R.	Nepean and Gloucester tps., Carleton co.		86 Spadina Ave., Ottawa.
Hinde Bros.	Northlands Ave., York tp., York co.		134 Northlands Ave., Toronto.
Jupp Construction Co., Ltd., A. E.	Whitby tp., Ontario co.		170 Berkeley St., Toronto.
Newall, H.	Lot 35, con. VIII, Malahide tp., Elgin co.	H. Newall	R.R. 4, Aylmer.
Smythe Ltd., C.	Lambton Rd., Etobicoke tp., York co.		60 Carlton St., Toronto.
Woollatt Fuel and Supply Co., Ltd.	Essex co.		109 Ottawa St., Walkerville.

[1]Only operators producing 5,000 tons or over are listed.

CLAY PRODUCTS

Barnes Co., Ltd., Wm. R.	Hamilton	W. P. Barnes	243 Cumberland Ave., Hamilton.
Barnhard, W. H.	Lot 44, con. I, Hope tp., Durham co.	C. Barnhard	15 Park St., Stratford.
Belle River Brick and Tile Co.	Belle River	M. V. Pougnet	Belle River.
Brampton Pressed Brick Co.	Lot 9, Chinguacousy tp., Essex co.	C. H. Packham	Main St. N., Brampton.
Broadwell and Son, B.	Lot 12, con. IV, Gosfield S. tp., Essex co.	B. E. Broadwell	Box 137, Kingsville.
Canadian Pressed Brick Co.	Kenilworth Ave. S., Hamilton	J. C. Wright	195 Ottawa St. S., Hamilton.
Casemore and Son, R.	Keppel tp., Grey co.	H. O. Casemore	Shallow Lake.
Chapman Bros.	Lot 2, con. II, East York tp., York co.	H. W. Chapman	145 Dawes Road, Toronto.
Construction Materials, Ltd.	Horner Ave., Etobicoke, York co.	H. T. Harvay	Box 97, New Toronto.
Coultis and Son, Geo.	Lot 21, con. III, Bosanquet tp., Lambton co.	G. C. Henderson	Thetford.
Crang Booth, Ltd.	Wilson Ave., North York tp., York co.	H. T. Harvay	c/o Crang Booth, New Toronto.
Curtin, Frank	Lot 15, con. V, Ops tp., Victoria co.	John Curtin	R.R. 4, Lindsay.
Curtis Bros.	Lot 32, con. XII, Otonabee tp., Peterborough co.	Edwin Curtis	612 Stewart St., Peterborough.
Deller and Son, Albert	Brownsville	Albert Deller	Brownsville.
Deller, Wm. H.	Lot 5, con. V, Nissouri tp., Middlesex co.	Wm. H. Deller	R.R. 4, Thorndale.
Deller Bros.	Lots 11, 12, con. III, N. Norwich tp., Oxford co.	Alfred Deller	R.R. 2, Norwich.
Dochart Brick, Tile and Terra Cotta Works.	Arnprior	Geo. E. Baker	Arnprior.
Donaldson, G. A.	Lot 19, con. XIV, Culross tp., Bruce co.	T. G. Donaldson	R.R. 1, Greenock.
Douglas and Douglas	Lot 14, con. XII, Sombra tp., Lambton co.	J. P. Douglas	Wilkesport.

Dover Brick and Tile Works	Con. IX, Baldwin Rd., Dover tp., Kent co.	James McHardy	20 South St., Chatham.
Elliott, Jas. J	Korah tp., Algoma dist	Jas. Elliott, Jr	519 Wellington St. S., Sault Ste. Marie.
Elliott, Wm	Lot 11, con. I, Culross tp., Bruce co	Wm. Elliott	Glenannan.
Fort William Brick Co	Montreal St., Fort William	H. M. Piper	Fort William.
Foster Pottery Co	Hamilton	S. Foster	Main St. W., Hamilton.
Frid Bros., Ltd	Main and Macklin Sts., Hamilton	Arthur Frid	415 Dundurn St. S., Hamilton.
Godfrey and Co., Thos	Beckwith	Thos. Godfrey	Carleton Place.
Gomoll Brick and Tile Works	Lot 15, con. X, S. Himsworth tp., Parry Sound dist.	F. A. Gomoll	Powassan.
Grimsby Brick and Tile Works	Lot 23, Clinton tp., Lincoln co.	Robert Crawford	Box 415, Grimsby.
Hallett, B. E	Tilbury	B. E. Hallett	17 King George Rd., Toronto.
Hamilton Pressed Brick Co	Wentworth co	Robert W. New	220 Main St. W., Hamilton.
Harper Brick Works	Greenwood Ave., Toronto	Albert Harper	348 Greenwood Ave., Toronto.
Hill, A. W	Lot 15, con. IX, Tilbury E. tp., Kent co.	A. W. Hill	R.R. 1, Coatsworth.
Hill, Aaron	Essex co	Aaron Hill	Essex.
Hitch, D. A	Ridgetown, Kent co	D. A. Hitch	Box 236, Ridgetown.
Hitch, Thos	First Ave., Yarmouth	Donald Hitch	Box 254, St. Thomas.
Hodder and Sons	Lot 9, con. A, Dunwich tp., Elgin co	Mrs. J. H. Hodder	Dutton.
Howlett and Sons, Ltd., Fred. W	King St., Petrolia Sydenham Ave., Brigden		Box 3, Petrolia.
Huntsville Brick Works	Lot 8, con. I, Chaffey tp., Muskoka dist.	Chas. H. Stevens	Box 308, Huntsville.
Interprovincial Brick Co., Ltd	Cooksville Milton, lots 1-46, Nassagaweya tp., Halton co. Cheltenham, Chinguacousy tp	W. E. Secker	672 Dupont St., Toronto.
Jackson, W. B	Maitland St., Brantford	W. B. Jackson	290 Rawdon St., Brantford.
Jamieson Lime Co	Renfrew	J. A. Jamieson	Renfrew.
Janes, D. A	No. 2 Highway, Middlesex co	D. A. Janes	Mount Brydges.
Jervis, W. J	Lot 13, con. B, N. Dorchester tp., Middlesex co.	W. J. Jervis	R.R. 3, Dorchester.
Johnson, James, Estate of	Stafford tp., Renfrew co	Lorne J. Fraser	Pembroke.
Koebel Bros	Lot 2, con. VII, Wellesley tp., Waterloo co.	J. Z. Koebel	St. Clements.
Lindsay and Sons, Earl	Lot 24, con. II, Chatham gore, Kent co.	Geo. C. Lindsay	R.R. 2, Wallaceburg.
McComb, Chester	Lot 17, con. XVI, London tp., Middlesex co.	Chester McComb	R.R. 2, London.
McCormick Bros	Lot 7, con. IV, Warwick tp., Lambton co.	T. L. McCormick	R.R. 5, Watford.
McFarlane, W. J	Forest	W. J. McFarlane	Forest.
Milton Brick, Ltd	Milton	R. Wheeler	148 Jane St., Toronto.
Moulton, John	Lot 33, con. IV, Greenock tp., Bruce co.	John Moulton	R.R. 2, Holyrood.
Napanee Brick and Tile Works	Lot 13, con. VI, Richmond tp., Lennox and Addington co.	R. L. Chapman	R.R. 3, Napanee.
National Fire Proofing Co., Canada, Ltd	Aldershot	E. M. Campbell	96 Bloor St. W., Toronto.
National Sewer Pipe Co	Swansea, Etobicoke tp., York co Aldershot, lot 3, con. I, E Flamborough tp. Hamilton, Wentworth co	R. H. New	44 Victoria St., Toronto.

Operator	Works	Manager	Address
	CLAY PRODUCTS—*Continued*		
New Liskeard Brick Works	New Liskeard	David Dunn	Box 74, New Liskeard.
Ontario Brick and Tile Plant	Near Town of Mimico	Wm. L. McJannet	Inspector of Prisons, Parliament Bldgs., Toronto.
O'Reilly, T. E	Prescott Highway, Nepean tp., Carleton co.	Owen O'Reilly	320 Bay St., Toronto.
Ott Brick and Tile Mfg. Co., Ltd	Kitchener	Casper Braun	16 Andrew St., Kitchener.
Ottawa Brick and Terra Cotta Co., Ltd	Lot 19, Gloucester tp., Carleton co	A. N. G. Hellyer	32 Cameron St., Ottawa.
Owen Sound Brick Co., Ltd	Sixth St. E., Owen Sound	J. P. Leslie	Owen Sound.
Parks Tileyard, The H. W	Lot 7, con. V, Camden tp., Kent co	Geo. Parks	R.R. 2, Dresden.
Paxton, Fred R	St. Catharines	Fred R. Paxton	70 Herrick Ave., St. Catharines.
Phinn, Geo. A	Westminster and London tps., Middlesex co.	Geo. A. Phinn	St. James Park P.O., London.
Phippen and Sons	Dawes Rd., E. York tp., York co	H. W. Phippen	Box 11, Coleman P.O., Toronto.
Richardson and Son	Kerwood	J. Fred Richardson	Kerwood.
Rollins, D. W	Lot 11, con. I, Thurlow tp., Hastings co	D. W. Rollins	181 George St., Belleville.
Snelgrove, A	Beaverton	A. Snelgrove	Beaverton.
Sproat and Sproat	Lot 6, con. IV, Tuckersmith tp., Huron co.	W. M. Sproat	R.R. 4, Seaforth.
Standard Brick Co., Ltd	500 Greenwood Ave., Toronto.		
Sun Brick and Tile Co., Ltd	Don valley, York co	H. A. Bevens	33 Strathmore Blvd., Toronto.
Superior Brick and Tile Co., Ltd	Lots 11, 12, Paipoonge tp., Thunder Bay dist.	Wm. Baukey	426 Victoria St., Fort William.
Toronto Brick Co., Ltd	Don Valley, Todmorden 305 Greenwood Ave., Toronto		897 Bay St., Toronto.
Wagstaff, Chas., Estate of	Lot 14, con. V, Ops tp., Victoria co	L. N. Wagstaff	32 Simcoe St., Lindsay.
Wallace and Son, R	Lot 16, con. D, Widdifield tp., Nipissing dist.	Toronto General Trusts Corp.	253 Bay St., Toronto.
Wein, Aaron	Lots 1, 2, 3, con. V, Stephen tp., Huron co.	Aaron Wein	Crediton.
Weitzel, J. E	Lot 33, con. IV, E. Zorra tp., Oxford co	J. E. Weitzel	R.R. 1, Tavistock.
Wright and Sons, Geo	Lot 7, Tilbury W. tp., Essex co	F. M. Wright	Comber.

MINES OF ONTARIO IN 1935

By

Chief Inspector of Mines, D. G. Sinclair, Toronto; Inspectors, E. C. Keeley, Kirkland Lake; D. F. Cooper, Sudbury; E. B. Weir, Timmins; A. R. Webster, Toronto

CHROMIUM

Chromium Mining and Smelting Corporation, Limited

The Chromium Mining and Smelting Corporation, Limited, was incorporated in 1934, succeeding the Chromium Alloy Company, Limited. It has an authorized capitalization of 3,000,000 shares of no par value, of which 1,500,000 have been issued. The officers and directors of the company are: A. R. Globe, president and managing director; R. O. Denman, secretary-treasurer; F. J. Maw, R. S. Hart, and Scott Misener, directors.

The mine property is situated 26 miles south of Collins, a station on the main line of the Canadian National Railways, Thunder Bay district. The holdings include 12 patented claims and 35 unpatented claims, making a total area of about 1,900 acres.

Development work done on the property to date includes a large amount of surface-trenching, diamond-drilling, and underground development from a shaft 350 feet in depth. From the 100-foot level of this shaft 500 feet of crosscutting and 120 feet of drifting have been done. Stations have also been cut at the 225-foot and 325-foot levels. No underground work was done at the mine in 1935.

Several ore zones have been found on the property. The largest and most extensively developed is known as the "E" zone, in which the 350-foot shaft has been sunk. In 1934, 12 diamond-drill holes, with total footage of 3,146 feet, were drilled in this zone. Officials of the company have stated that work done in this zone has indicated 225,000 tons of ore, 17 per cent. Cr_2O_3, in a section 770 feet in length and 300 feet in depth. The total amount of diamond-drilling done on the property is 6,150 feet in 33 holes. Ten of these holes were drilled in 1929–30; the remainder in 1934. Work at the property in 1935 consisted chiefly of surface work and the making of a tractor road between the mine and Collins, a distance of 26 miles.

In May, 1935, the refining and smelting plant of Superior Alloys, Limited, at Sault Ste. Marie, Ont., was purchased.

The following is taken from the company's first annual report:—

> After alterations and repairs, silicon operations were started on June 23, and chromium on August 23. This plant was built in 1929 for the production of ferro-alloys, and a considerable amount of manganese ore was treated prior to the general slump in that year. In the fall of 1934, operations were again resumed in the production of silicon mainly for overseas markets.
>
> The building is of the usual steel construction which is used in furnace rooms for operations of this type, floor space being 60 by 160 feet. At the time this plant was taken over, there was in operation, one 3,000 k.w. electric furnace producing ferro-silicon, and transformers and other electrical equipment for a second furnace suitable for the smelting of chromium ore. From this equipment, together with the furnace from Niagara Falls, N.Y., a furnace for the chromium smelting has been assembled. In addition to the above, there is a considerable quantity of furnace parts which can be brought together later for more capacity. The plant having been originally designed for the production of ferro-alloys, extensions and additions may be added with a minimum amount of alterations. The capacity of this plant is 350 tons of ferro-silicon per month at the present time. This is being marketed through well-established channels. Dependent upon the type of alloy processed, from 60 to 200 tons of chromium alloy is being produced monthly. A third furnace is being made ready for chromium and will add to the capacity.

In addition to the purchase of the plant of Superior Alloys, Limited, the company also secured by lease, with option to purchase, the FitzGerald laboratory, which adjoins your furnace plant. The FitzGerald Testing Laboratory is fully equipped with chemical laboratory, two electrical furnaces, and the usual allied equipment for research work. The plant also includes one of the finest libraries of its kind in Canada, the Fitzgerald Memorial and Metallurgical Library.

Ore milled in 1935 amounted to 1,200 tons. Early in 1935, 750 tons of chromium ore was hauled to Collins from the mine by tractor. This was stockpiled at Collins. Nine cars, a total of 400 tons, of this stock was drawn on during the year.

The average number of men employed during 1935 at the mine was 20. During the last seven months of the year an average of 44 men was employed at the smelter. A. R. Globe is general manager of the company's operations. The mine address is Collins.

GOLD

Algold Mines, Limited

Algold Mines, Limited, was incorporated in February, 1934, with an authorized capitalization of 2,500,000 shares of no par value. A first mortgage bond issue of $270,000, issued by New Goudreau Mines, Limited, stands against the property. The officers and directors are: W. R. Knox, president; J. G. Merrick, secretary-treasurer; J. J. Gray, M. C. Van der Voort, and Wm. Edwards, directors. The head office is at 45 Richmond Street West, Toronto.

The property is located in township 28, range 26, district of Algoma. By road, it is about 6 miles west of Goudreau on the Algoma Central railway. The mine address is Goudreau.

Previous operators sank a 425-foot and a 200-foot shaft, both of which are 2-compartment, 70-degree shafts. They established levels at 100, 120, 140, 200, and 400 feet, and mined two small stopes on the 100-foot level.

Algold Mines, Limited, started work in July, 1934. Underground operations were carried on from August, 1934, until the end of February, 1935, suspended until July, and then carried on until December, when they were again suspended.

The development work accomplished by this company from August, 1934, to the end of 1935, and the total in the mine at the end of 1935, on the various levels, was as follows:—

Level	Drifting		Crosscutting		Raising	
	1934-35	Total	1934-35	Total	1934-35	Total
	feet	feet	feet	feet	feet	feet
100-foot	365	865	40	95	.....	.....
120-foot	.....	35	.....	.....	.....	.....
140-foot	35	110	15	15	110	110
200-foot	318	1,388	40	625	.....	.....
400-foot	.....	470	.....	150	.....	.....
Total	718	2,868	95	885	110	110

The plant included a 1,100-cubic-foot Ingersoll-Rand electric compressor, and an 8½- by 10-inch air hoist.

An average of 12 men was employed during 1935. R. F. Mitchell was in charge, except for a short period during which Frank Williams had charge.

Anglo-Huronian, Limited

Anglo-Huronian, Limited, incorporated in 1933, has an authorized capitalization of 2,000,000 shares of no par value, of which 1,252,605 are issued. The officers and directors are: André Dorfman, president; J. H. Black, vice-president; J. Ingram, secretary-treasurer; G. C. Andrew, J. Ritchie, R. D. Stewart, F. H. Hamilton, E. Turk, and Sir A. Hamilton Grant, directors. The head office is at 80 King Street West, Toronto.

The company owns and operates the Vipond mine, which lies south of and adjacent to the Hollinger mine in Tisdale township, district of Cochrane. The following table shows the development work done on the various levels to July 31, 1934; the work accomplished during the last fiscal year, August 1, 1934, to July 31, 1935; and the total:—

DEVELOPMENT WORK BY LEVELS TO JULY 31, 1935

Levels	Previous to August 1, 1934			From August 1, 1934, to July 31, 1935			Total		
	Drifts	Cross-cuts	Raises[1]	Drifts	Cross-cuts	Raises	Drifts	Cross-cuts	Raises
	feet	feet	feet	feet	feet	feet	feet	feet	feet
100-foot	3,250	1,605	.....	59	.....	36	3,309	1,605	36
200-foot	7,089	5,703	157	25	.....	54	7,114	5,703	211
300-foot	6,999	2,021	815	11	.....	216	7,010	2,021	1,031
400-foot	7,601	5,005	579	180	.....	226	7,781	5,005	805
500-foot	8,193	5,287	757	20	.....	113	8,213	5,287	870
600-foot	4,445	2,797	371	250	157	457	4,695	2,954	828
733-foot	4,443	2,270	666	314	226	.....	4,757	2,496	666
866-foot	2,736	4,689	208	.....	.....	17	2,736	4,689	225
1,000-foot	3,888	5,336	10	664	609	186	4,552	5,945	196
1,200-foot	3,750	1,895	218	324	12	220	4,074	1,907	438
1,450-foot	2,807	2,131	1,227	622	192	12	3,429	2,323	1,239
Total	55,201	38,739	5,008	2,469	1,196	1,537	57,670	39,935	6,545

[1]No record available previous to August 1, 1931.

No shaft-sinking or winzing was done during the year, but for purposes of comparison with the preceding table a summary of the work on shafts and winzes to July 31, 1934, is set out below:—

SHAFT-SINKING AND WINZING TO JULY 31, 1935

	Feet
North Thompson (No. 3) shaft	1,200
North Thompson (No. 3) winze (an extension of No. 3 shaft)	250
Vipond (No. 1) shaft	400
Vipond (No. 4) winze (from the 300- to the 500-foot level)	200
Crown (No. 2) shaft	500
Crown (No. 5) winze (inclined, from the 500- to the 900-foot level)	400
Crown (No. 6) winze (from the 900- to the 1,100-foot level)	200

Diamond-drilling done between August 1, 1934, and July 31, 1935, amounted to 17,484 feet. In the same period the mill treated 104,764 tons of ore, which yielded $277,238.73, valuing gold at $20.67 an ounce. Previous to August 1, 1934, the total tonnage treated from the mine was 1,342,808 tons, which yielded $10,583,956.49.

The average number of men employed at the Vipond mine in 1935 was 149, of this number 106 worked underground, 17 in the mill, and 26 on surface. Robt. E. Dye was manager throughout the year; and was succeeded early in 1936 by W. R. Adam. The mine address is Timmins.

Arbade Gold Mines, Limited

Arbade Gold Mines, Limited, has an authorized capitalization of 3,500,000 shares of $1 par value, of which 2,112,939 have been issued.

The officers and directors are: C. A. Floyd, president; C. C. Floyd, secretary-treasurer; D. E. Sanderson and J. F. Kilawee, directors. The head office is at 10 Adelaide Street East, Toronto. The mine address is Matachewan.

The company owns 39 claims in Argyle and Baden townships, district of Timiskaming.

During 1935 a programme of surface development and diamond-drilling was carried out on the southwest group of claims. A mining plant was erected, and camps to accommodate 50 men were completed. A shaft was sunk to a depth of 60 feet.

An average of 7 men was employed.

Ardeen Gold Mines, Limited

Ardeen Gold Mines, Limited, was incorporated in December, 1933, with an authorized capitalization of 3,000,000 shares of $1 par value. In 1935 the capitalization was increased to 4,000,000 shares of $1 par value. The officers and directors are: H. G. White, president; Wm. Taylor, secretary-treasurer; Dr. V. M. Pierce, A. R. Miller, Jr., J. J. McInerney, C. G. Greenshields, James Cooper, and R. E. Allan, directors. The executive office is at 132 St. James Street West, Montreal, Que.

The property is located in Moss township, district of Thunder Bay, and is 18½ miles by road from Tip Top Spur on the Fort Frances branch of the Canadian National Railways.

Underground operations, which had been suspended in January, 1935, were resumed in August. Milling was resumed in the middle of November.

The lateral work accomplished from the resumption of operations until the end of the year consisted of 581 feet of drifting and 47 feet of crosscutting on the 1,000-foot level. Stoping was done on the 875- and 1,000-foot levels. A total of 3,871 feet of diamond-drilling was also done.

During November and December the 200-ton cyanide mill treated a total of 3,970 tons of ore.

An average of 28 men was employed during 1935 under the direction of W. R. Osborne. The mine address is Tip Top Spur, via Port Arthur.

Argosy Gold Mines, Limited

Argosy Gold Mines, Limited, incorporated in May, 1935, has an authorized capital of 3,000,000 shares of $1 par value, of which 1,489,905 shares were outstanding on December 31, 1935. The officers and directors are: F. L. Tretheway, president; J. B. Tyrrell, vice-president; V. H. Emery, managing director; A. L. Bishop and J. A. Wilson, directors. L. Appleyard is secretary-treasurer. The head office of the company is at 8 Wellington Street East, Toronto. The mine office address is Casummit Lake, via Sioux Lookout.

The property held by Argosy Gold Mines, Limited, consists of 21 claims at Casummit lake, about 100 miles north of Sioux Lookout in the Patricia portion of Kenora district. This property was purchased from Casey Summit Gold Mines, Limited, in May, 1935, along with all the other assets of that company. Argosy Gold Mines, Limited, also assumed all liabilities of its predecessor company.

Argosy Gold Mines, Limited, commenced dewatering the mine shaft on May 23. Underground development work was started on June 18. Development work on the partly explored No. 2 vein was continued on the 300-foot level, and a winze was started on the vein from this level to establish new levels at 400 feet and 500 feet. A crosscut was also started on the 300-foot level to intersect the No. 3 vein, which had not previously been developed underground.

Equipment was ordered late in the year to alter the 50-ton amalgamation mill, built and operated for a short time by Casey Summit Gold Mines, Limited, to a 75-ton cyanide mill.

Steam and Diesel engine power are used at this mine. When underground work was resumed, the new company installed a 650-cubic-foot air compressor with direct connection to a 150 h.p. Diesel engine. No other important changes were made in the mining plant.

An average of 42 men was employed at this mine from May, 1935, to the end of the year. R. Massey Williams is mine manager.

Ashley Gold Mining Corporation, Limited

The Ashley Gold Mining Corporation, Limited, has a capitalization of $3,000,000, in shares of $1 par value. The officers and directors are: J. H. C. Waite, president; G. C. Ames, secretary-treasurer; Charles McCrea, C. G. McCullagh, W. R. P. Parker, E. H. Rose, and C. E. Trafford, directors. M. F. Fairlie is managing engineer. The head office is at 350 Bay Street, Toronto. The mine address is Elk Lake.

The mine in Bannockburn township, district of Timiskaming, was operated continuously throughout the year.

The following is taken from the report of the president for the year ending December 31, 1935:—

Operating profits amounted to $54,295.69, as against $60,428.92 in the previous year. After writing off prior development costs of $63,607.11 and transferring $4,000.00 from contingency reserve, there was a net loss of $5,311.42. Net liquid assets increased by $77,513.22 during the year and amounted to $159,683.89 at December 31.

Development of new ore did not keep pace with production, and ore reserves decreased both in tonnage and grade. Estimated reserves at the end of the year amounted to 10,760 tons, averaging slightly less than 0.3 ounces per ton. In addition, there is a considerable quantity of backfill from the initial stoping operations, which, at the current price for gold and with mining costs written off, can be handsorted and treated at a small profit.

There were 47,367 tons of ore, with an average grade of 0.2636 ounces per ton, milled during the year, as compared with 43,532 tons averaging 0.315 ounces in 1934. The value of bullion produced amounted to $440,553.70, against $456,831.86 in the previous year. The total value of bullion shipments to the end of 1935 was $1,465,495.97.

The cost per ton of ore milled, including mining, development and exploration, milling, administration and head office, was $8.26. An appreciable reduction in operating costs was attained towards the end of the year.

Development and exploration work done during the year consisted of 5,265 feet of diamond-drilling, 2,097 feet of drifting, 727 feet of crosscutting, and 2,182 feet of raising.

In September a complete geological examination of the mine was made by an independent consulting geologist, who planned an extensive exploration programme, which is being carried out under his direction. As a result of this work several vein intersections have been located by diamond-drilling, but subsequent development by drifting, raising, etc., has failed to prove any considerable quantity of new ore. Unless new discoveries are made the life of this mine will be short.

An average of 120 men was employed. J. W. Robertson is resident manager.

Bankfield Gold Mines, Limited

Bankfield Gold Mines, Limited, was incorporated in April, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value, of which 2,520,005

shares have been issued. The officers and directors are: C. D. H. MacAlpine, president; T. H. Stinson, vice-president; F. J. Bailes, secretary-treasurer; Jos. Errington, D. M. Morin, and J. H. C. Waite, directors. The head office is at 1006 Concourse Building, Toronto.

The property is located in the Magnet Lake section of the Little Long Lac area, Thunder Bay district. It is reached by a 3-mile road from Kenwell on the Long Lac–Port Arthur branch of the Canadian National Railways. The mine address is Geraldton.

Underground operations were carried on throughout 1935. The 3-compartment vertical shaft was continued to a depth of 552 feet, and levels were established at 275 and 525 feet. A station was cut at 400 feet. The work accomplished on the various levels was as follows:—

Level	Drifting	Crosscutting	Raising
	feet	feet	feet
150-foot	1,323	404	17
275-foot	901	377	51
525-foot	244	.....	.....
Total	2,468	781	68

In addition 2,237 feet of diamond-drilling was done from surface, and 1,416 feet from underground.

The plant included two 90 h.p. boilers, an 11- by 8-inch Ingersoll-Rand steam hoist, and a 750-cubic-foot Ingersoll-Rand steam compressor.

An average of 54 men was employed, of whom 19 were underground. J. W. MacKenzie was in charge.

Barry-Hollinger Mines, Limited

Barry-Hollinger Mines, Limited, is capitalized at 4,000,000 shares of $1 par value. The officers and directors are: Dr. E. Herbert Greene, president; J. P. Patterson, vice-president; D. McKinnon, secretary-treasurer; E. S. Williams, director. The head office is at 57 Bloor Street West, Toronto.

The mine, in the township of Pacaud, district of Timiskaming, was operated throughout the year with an average of 48 men. Operations ceased in January, 1936.

Development for the year consisted of 72 feet of drifting. Ore hoisted amounted to 35,172 tons. The total value of the production for the year was $143,698.26. Douglas Bryden was manager.

Bidgood Kirkland Gold Mines, Limited

Bidgold Kirkland Gold Mines, Limited, has an authorized capitalization of $2,000,000, in shares of $1 par value. The officers are: A. L. Herbert, president; N. W. Byrne, secretary-treasurer; W. Crawford, R. J. Neelands, H. Koza, A. E. Belcher, and O. L. Knutson, directors. O. L. Knutson is mine manager, and S. A. Pain is consulting engineer. Both the head office and mine office are at Kirkland Lake. The company owns 753 acres in Lebel township, district of Timiskaming.

During 1935 work at the mine was confined to the 500-foot level of the No. 2 shaft. The main crosscut was extended 280 feet to the south and tapped the vein system running across the north end of the Moffatt-Hall mine into Bidgood ground.

In this zone a total of 1,337 feet of crosscutting and drifting was carried out, and 1,471 feet of diamond-drilling.

The cyanide mill treated 6,960 tons of ore extracted from the Moffatt-Hall mine under lease during the first seven months of the year, but after July all production was from the Bidgood mine, from which 11,148 tons derived from stoping and drifting on the 500-foot level was treated.

The mill has been gradually stepped up and is currently treating 60 to 70 tons daily. The crusher and rolls are capable of handling 300 tons daily, and the ball mill 110 tons daily. A tube mill is being installed, and with a few additions the cyanide end of the mill can treat 150 tons a day.

The mining plant consists of a 1,000-cubic-foot Sullivan compressor driven by a 200 h.p. motor, a 720-cubic-foot compressor driven by a 125 h.p. motor, and an electrically driven hoist.

The mine water is handled by vertical triplex and horizontal duplex pumps, each handling 100 g.p.m., with a 250 g.p.m. centrifugal pump as a standby.

Production for the year amounted to 2,243 ounces of gold and 806 ounces of silver from the Moffatt-Hall lease and 1,308 ounces of gold and 855 ounces of silver from the Bidgood mine.

An average of 42 men was employed.

Bilmac Gold Mines, Limited

Bilmac Gold Mines, Limited, was incorporated in September, 1934, with an authorized capitalization of 2,000,000 shares of no par value. The officers and directors are: L. F. Hogarth, president; G. E. McVittie, vice-president; A. C. Laing, treasurer; W. R. Marchment, secretary; A. V. Kellum and Edward Coleman, directors. The head office is at 33 Temperance Street, Toronto.

The property consists of six claims in Macmurchy township, West Shining-tree area, district of Sudbury, and comprises the former White Rock, Atlas, Harvey Kirkland, and McVittie properties.

In October, 1934, sampling and mapping were started; and in February, 1935, underground work was commenced on the old White Rock property. Previous operators had put down a 2-compartment vertical shaft to a depth of 175 feet, established levels at 65 and 175 feet, and done 290 feet of drifting and 20 feet of crosscutting on the 65-foot level and 915 feet of drifting and 125 feet of crosscutting on the 175-foot level. They had also put up an inclined raise from the 65-foot level to surface, and mined a small stope on that level.

Work was suspended by the company in June, 1935, after the shaft had been deepened to 425 feet, and about 35 feet of crosscutting on a new level at 410 feet had been accomplished.

The plant included a 104 h.p. boiler, a 560-cubic-foot steam compressor, and a 9- by 8-inch Ingersoll-Rand double-drum hoist. There was an old mill on the property consisting of a jaw-crusher, a Tremaine stamp, and amalgamation plates.

An average of 35 men was employed during the period of work in 1935, of whom 10 were underground. J. E. Grant was manager, and Sydney Brown was superintendent. The mine address is Shiningtree.

Bob Tough Gold Mines, Limited

Bob Tough Gold Mines, Limited, was incorporated in September, 1933, with an authorized capitalization of 3,000,000 shares of no par value. The officers and directors are: R. R. Tough, president; H. J. Tiedt, vice-president;

J. H. Stevens, secretary-treasurer; Albert Levan, assistant secretary; E. B. Ratcliffe, managing director; F. H. Gage, R. E. Thompson, and H. J. Simons, directors. The executive office is at 207 Turner Building, Hamilton.

The property is located in McKinnon township, district of Sudbury, and is reached by a 16-mile road from Massey station on the Canadian Pacific railway.

During 1935 the installation of the plant was completed, and the 3-compartment vertical shaft was sunk 120 feet to a total depth of 150 feet. A level was established at 150 feet, where 118 feet of crosscutting was accomplished. Underground work was suspended in August, and surface work only carried on until the end of October, when all operations ceased.

The plant included a 99 h.p. horizontal return tubular boiler; a 750-cubic-foot Ingersoll-Rand compressor, driven by a 125 h.p. steam engine; and an 8- by 10-inch Jenckes single-drum hoist.

An average of 12 men was employed during the period of operation in 1935, of whom 5 were underground. E. B. Ratcliffe was in charge.

Bousquet Gold Mines, Limited

Bousquet Gold Mines, Limited, was incorporated in November, 1920, with an authorized capitalization of 2,000,000 shares of $1 par value. The capitalization was increased to 3,000,000 shares in 1935. The officers and directors are: Lionel Brooke, president; C. H. Hitchcock, vice-president; Globe Investment, Limited, treasurer; W. B. McPherson, secretary; H. P. Snelgrove, director. The head office is at 171 Yonge Street, Toronto. The mine address is Willisville.

The property consists of 20 mining claims located in two groups in township 11, district of Sudbury. By winter road it is 7 miles east of West River, on the Algoma Eastern railway.

During 1935 the 2-compartment vertical shaft was sunk an additional 134 feet, to a total depth of 468 feet, and a third level established at 450 feet. The lateral work accomplished in 1935, and the total to the end of 1935 on the various levels was as follows:—

Level	Drifting		Crosscutting	
	1935	Total	1935	Total
	feet	feet	feet	feet
150-foot	.....	605	.....	67
300-foot	177	447	.....	102
450-foot	526	526	136	136
Total	703	1,578	136	305

In addition 1,908 feet of diamond-drilling was done from underground.

Anglo-Huronian, Limited, optioned a large block of shares in the company at the beginning of the year, and was responsible for the work done from the middle of February until June, when the option was dropped. The company suspended all work for 1935 at the end of July.

The plant used included an 80 h.p. and a 60 h.p. boiler, a 500-cubic-foot steam compressor, and an 8- by 10-inch steam hoist.

An average of 29 men was employed from the first of the year until the end of July. C. W. MacDonald was in charge during the option period, and Lionel Brooke during the remaining time.

Buffalo Ankerite Gold Mines, Limited

Buffalo Ankerite Gold Mines, Limited, was incorporated in 1932 with an authorized capitalization of 1,000,000 shares of $1 par value. The number of shares issued and outstanding at the end of 1935 was 701,679; this includes shares to be issued to Marbuan Gold Mines, Limited, in consideration of the transfer of their net assets to this company. The officers of the company at the end of 1935 were: Geo. R. Feine, president; G. R. Loesch, vice-president; Henry Kobler, treasurer; R. P. Kinkel, assistant treasurer; E. G. Kinkel, secretary and managing director. The directors were: H. J. Tiedt, J. Betz, and A. J. Baldeck. The executive office of the company is at 1728 Rand Building, Buffalo, N.Y. The head office and mine office are at South Porcupine. The property is in Deloro township, district of Cochrane.

In 1935 plans were made for the acquisition of Marbuan Gold Mines, Limited, by Buffalo Ankerite Gold Mines, Limited. These plans were not approved by the shareholders of each company until January, 1936, but at this time the approval was given as of November 30, 1935.

The following is taken from the managing director's report to the shareholders for the fiscal year ending December 31, 1935:—

The recoveries for the year are indeed gratifying, having exceeded the $1,000,000 mark, the total recovery being $1,023,358.51 (Ankerite mill) and including the Marbuan mill for December, $1,056,653.85, as compared to $712,898.29 in the year 1934, with an average daily tonnage of 345.6 tons.

The operating profit, before depreciation and deferred development write-off, was $311,941.30. This shows considerable improvement over 1934.

During the fiscal year the company acquired by outright purchase claim H.R.951 on McDonald lake, lying about one mile northwest of the company's property, consisting of about 40 acres, for a reasonable cash consideration. This claim may prove of considerable importance to the company in the future.

The most important step taken by the company during the year was the acquiring of the properties of the Marbuan Gold Mines, Limited. This transaction was approved by the Marbuan Gold Mines, Limited, stockholders on January 22, 1936, and the transfer of its properties to this company has been completed. By the consummation of this transaction the mining area of the company has been increased from approximately 155 acres to 331 acres. The milling capacity has been increased by the acquisition of the Marbuan mill to approximately 700 tons per day, with possibilities of being able to increase tonnage in 1936.

During the year 1935 the company employed the Canadian Appraisal Company, Limited, of Montreal, to make a thorough appraisal of the buildings, machinery, and equipment. The report of the Canadian Appraisal Company shows the valuations as of June 29, 1935, as follows:—

	Buffalo Ankerite	Marbuan
Buildings, replacement value	$131,990.54	$71,222.53
Buildings, present value	102,785.48	50,381.85
Machinery and equipment, replacement value	406,940.08	192,252.46
Machinery and equipment, present value	296,019.54	127,055.50
Grand total, replacement value	538,930.62	263,474.99
Grand total, present value	398,805.82	177,437.35

The operation policy for 1936 includes the completion of the crosscut from the Marbuan winze to the No. 5-7 ore zone, the connecting of this crosscut with the main Ankerite shaft, crosscutting to the Nos. 1 and 2 veins from the main shaft on the 875- and 1,050-foot levels, and drifting east and west on these veins. Alterations will be made in the crusher plant and Ankerite and Marbuan mills to increase capacity, providing that the development work progresses sufficiently to warrant increased tonnage.

The broken ore reserves (Ankerite) have increased in grade and tonnage over 1934. The positive ore reserves as estimated have increased from 107,997 tons to 360,648 tons. The estimated values have, however, decreased from the per ton value shown in the 1934 report. We believe this value to be more in line with recoveries of 1935. The excellent values and widths shown in diamond-drill cores below the 875-foot level, north zone, are very encouraging indications of increasing values at depth. In the 1934 report of Marbuan the broken ore reserves were stated to be 12,375 tons of $3.75 grade. In the 1935 report this has been increased to 15,665 tons of $3.10 grade. In 1934 there were no positive ore reserves, and in 1935 there were 33,520 tons

of $2.97 grade. In 1934 the possible ore was given at 11,867 tons of $6.85 assay value. The 1935 report shows 34,740 probable and possible ore reserves with an average assay value of $2.63, all values above being at $20.67.

The following is taken from the report of the manager to the president for the year ending December 31, 1935:—

Production

During the period the mill treated 159,383 dry tons, yielding $1,023,358.51. Recovery per ton milled was $6.42.

Milling

Percentage of total possible running time	97.88
Tons treated per day	437.7
Tons treated per 24 hours' running time	447.3
Mill heads (at $20.67 per ounce)	$3.891
Mill tailings (at $20.67 per ounce)	$0.223

Mining

	Tons
Ore broken in stopes and stope preparation	170,170
Ore broken in development	33,522
Total	203,692

Development and Exploration

The objectives for 1935 were the development of the Nos. 5 and 7 vein structures on the 250-, 350-, 725-, and 875-foot levels, and the extensions of the Nos. 1 and 2 veins on the 475- and 600-foot levels.

	Feet
Drifts	6,892
Crosscuts	70
Raises	2,477
Shafts	466
Diamond-drilling	11,179.5
	cu. ft.
Stations and pockets	9,537.8

Lengths of ore developed on the different horizons follow:—

Level	Vein	Feet
250-foot	No. 91	180
350-foot	No. 91	43
475-foot	Nos. 89, 90, 91, 2	687
600-foot	Nos. 83, 1, 2	279
725-foot	Nos. 90, 91, 89	840
875-foot	Nos. 89, 90, 91, 92, 93	1,542

Shaft-Sinking

The main shaft was repaired, and the timbers were relined from the 475-foot level to the bottom. Shaft sets between the 600-foot level and the bottom were replaced and jacked back into position. Shaft-sinking preparations were completed late in September, and actual sinking started October 10; 466 feet of shaft was sunk and the 875-foot station partially cut by the end of the year. Serpentine entered the shaft above the 1,050-foot station location. The shaft section from this horizon to the 1,200-foot level is in serpentized peridotite and serpentine.

Shaft set intervals were reduced, and it was found necessary to spile the last 35 feet of the section. It appears that the shaft is in the main serpentine mass, and it is questionable whether it would be advisable to continue sinking in this location.

Costs

The total operating costs per ton milled (for a total of 159,383 tons), including workmen's compensation, silicosis, and fire insurance, follow:—

	Total cost	Cost per ton
OVERALL OPERATING COSTS:		
Exploration	$15,341.55	$0.096
Development	103,405.52	.648
Mining	366,362.93	2.299
Milling	124,862.62	.783
General expense and personnel loss	61,440.18	.385
Total	$671,412.80	$4.213
UNIT COSTS:		
Per ton of ore broken in stopes		$1.032
Per foot of drifts		12.859
Per foot of crosscuts		10.253
Per foot of raises		16.518
Per foot of diamond-drilling		1.240
Per foot of shaft (8 by 22 feet)		78.308

Ore Reserves

The development factor has improved over that existing at the end of 1934. It is not up to normal at present. The sinking of the main shaft with stations established at the 875- and 1,050-foot levels will expedite the development of the No. 5-7 and South zone veins on these levels. Diamond-drilling has proved the downward extension of the structures to the 1,100- and 1,000-foot horizons, respectively, with favourable results.

Broken ore reserves are estimated at 105,379 tons, with an assay value of $4.54, and positive ore reserves at 360,648 tons, with an assay value of $5.42 per ton, both values being based on gold at $20.67 per ounce.

Construction

Minor buildings were erected. The Marbuan steam plant was overhauled and is being used as a central heating unit for Marbuan and Ankerite. The necessary lines were installed to Ankerite. The tailings dam was increased in height to provide additional storage.

General

A second-hand Symons cone crusher was purchased and installed in the crushing plant. Two additional discs were purchased and installed on the American filter in the mill, raising the capacity of this machine to 500 tons plus. Costs have been reduced materially.

During 1935, the average number of men employed at the Buffalo Ankerite mine was 274, and at the Marbuan mine 110. Chas. L. Hershman was manager at both properties.

MARBUAN MINE

The following memorandum of the report on the operations of the Marbuan Gold Mines, Limited, for the year 1935 is taken from the annual report of the Buffalo Ankerite Gold Mines, Limited, for the same period.

This memorandum is made for the purpose of supplying general information regarding this property to Buffalo Ankerite Gold Mines, Limited, stockholders, although the property was not acquired until after the expiration of the year ending December 31, 1935.

Production

During the period the mill treated 59,380 dry tons, yielding $287,012.17. Recovery per ton milled was $4.833.

Milling

Percentage of total possible running time	85
Tons treated per day	162.3
Tons treated per 24 hours' running time	191
Mill heads (at $20.67 per ounce)	$2.61
Mill tailings (at $20.67 per ounce)	$0.189
Extraction, per cent	96.02

Mining

	Tons
Ore broken in stopes and stope preparation	58,105
Ore broken in development	9,413

Development and Exploration

The objectives for 1935 were the development of the indicated Nos. 3 and 5 structures on the 8th, 9th, and 10th winze levels.

	Feet
Drifts	3,914
Crosscuts	1,270
Raises	667
Diamond-drilling	7,596.6

Costs

The total operating costs per ton milled, including workmen's compensation, silicosis, and fire insurance, follow:—

Overall Operating Costs:	Per ton
Exploration	$0.159
Development	1.222
Mining	2.112
Milling	1.061
General expense and personnel loss	.489
Total	$5.043
Unit Costs:	
Per ton broken in stopes	$1.137
Per foot drifts	13.143
Per foot crosscuts	12.094
Per foot raises	15.903
Per foot diamond-drilling	1.185

Ore Reserves

Ore reserve calculations are based on extensions within the operating areas and the indicated possibilities beyond stope sections on all horizons.

Cre reserves	Tons	Assay value[1]
Broken	15,665	$3.10
Positive	35,520	2.97
Probable	18,380	2.70
Possible	16,360	2.55
Total	83,925	$2.85

[1]Gold at $20.67 per ounce.

Construction

The steam plant was overhauled and placed in operation as a central heating unit for both the Ankerite and Marbuan. All pipe-lines, steam and water, were replaced and insulated. A new fuse-house was built. The tailings dam was increased in height to provide additional storage.

General

A set of second-hand rolls were purchased and installed in the rock-house. Operating costs were reduced.

Canusa Gold Mines, Limited

Canusa Gold Mines, Limited, was incorporated in July, 1932, with an authorized capitalization of 1,500,000 shares of $1 par value. In December, 1935, the shareholders of the company authorized an increase in the capitalization to 4,500,000 shares of $1 par value. The officers and directors of the company in 1935 were: D. D. Wessels, president; Geo. Neukom, vice-president; Thos. R. Deacon, secretary; Robt. Schram, treasurer; H. Kendrick and P. Du Bois, directors. The head office is at 371 Bay Street, Toronto. The mine office address is South Porcupine.

The company holds 440 acres, 80 acres in Tisdale township and 360 in Whitney township, district of Cochrane. The claims are all in one group and were formerly held by the Scottish-Ontario Syndicate.

The following development work has been reported done at this property:—

	To Dec. 31, 1934	1935
	feet	feet
Shaft-sinking	320	.....
40-foot level:		
Drifting	140	40
Crosscutting	10	.....
Raising	15	15
100-foot level:		
Drifting	600	225
Crosscutting	305	150
Raising	240	.....
300-foot level:		
Drifting	225	.....
Crosscutting	790	.....
Raising	20	.....

There is a 25- to 50-ton amalgamation mill on this property. Only a small tonnage was milled in 1935. No bullion sales have been reported.

Other plant equipment includes one 40 h.p. locomotive-type boiler, one 20 h.p. marine-type boiler, two air compressors, capacities 850 and 300 cubic feet, a single-drum hoist, and electric motors to drive both compressors and hoist.

Operations were suspended at the property about September 1, 1935, with the exception of pumping operations. The average number of men employed was about 14. Robt. Schram was general manager during 1935.

Casey Contact Gold Mines, Limited

In June, 1934, the charter of Brookbank Gold Mines, Limited, incorporated in March, 1929, was acquired by Casey Contact Gold Mines, Limited. The authorized capitalization was increased in November, 1934, from 3,000,000 shares to 3,500,000 shares of $1 par value. The officers and directors are: F. W. Purdy, president; H. L. Walker, vice-president; E. M. Hand, secretary-treasurer; E. L. Cousins, A. K. Roberts, and H. F. Cassidy, directors. The head office is at 67 Yonge Street, Toronto.

The company acquired in 1934 the Brennan-Kenty east group of 12 claims, located about 8½ miles northwest of Nezah in the Sturgeon River area, district of Thunder Bay. Surface work and diamond-drilling was carried on until June, 1935, when underground work was started. A 2-compartment vertical shaft was sunk to a depth of 228 feet. A station was cut at 100 feet, and a level established at 200 feet. All work was suspended at the end of September owing to financial difficulties. A total of 408 feet of lateral work was accomplished on the 200-foot level.

The plant included a 165 h.p. locomotive-type boiler, a 6- by 8-inch Canadian Mead single-drum hoist, and a 275-cubic-foot Sullivan steam-driven compressor.

An average of 23 men was employed in 1935 to the end of September, under the direction of H. M. Parrington. The mine address is Jellicoe. There is a winter road to the property from Nezah.

The company also owns a group of 33 claims at Casummit lake, 100 miles north of Sioux Lookout, in Patricia portion of Kenora district.

At the beginning of 1936 arrangements were being made to change the name of the company to Brengold Mines, Limited.

Central Patricia Gold Mines, Limited

Central Patricia Gold Mines, Limited, was incorporated in 1931, succeeding Central Patricia Mines, Limited, formed in 1927. It has an authorized capitalization of 2,500,000 shares of $1 par value.

The officers and directors are: F. M. Connell, president; W. H. Connell, vice-president; Alan Cockeram, secretary-treasurer; J. H. Rattray, L. Cohen, and G. B. Webster, directors. The head office is at 85 Richmond Street West, Toronto.

The mine is situated in the Crow River area, district of Kenora, Patricia portion. The mine camp is about 110 miles north of Savant Lake Station on the Canadian National railway. It lies about 6 miles west of the property of the Pickle Crow Gold Mines, Limited. The holdings include 85 claims, which lie in several large groups in the surrounding area.

The following is an extract from the president's report for the year ending December 31, 1935:—

Following the addition to the mill in April, increasing the capacity to 100 tons per day, production was maintained at that rate throughout the balance of the year. The total yield was 22,061.26 ounces of gold and 2,296.96 ounces of silver, valued at $777,570.49, from 35,192 tons of ore treated.

A further addition to the mill was decided on in July to bring the milling capacity to 150 tons per day. All the necessary equipment has been purchased and it is expected to have the enlarged plant in operation by March 1, 1936.

Under the existing contract with the Hydro-Electric Power Commission of Ontario, power was delivered to the mine in April and has resulted in a considerable saving. With future requirements in mind, negotiations were opened with the commission for additional power. Your company has concluded a new contract, agreeing to purchase 800 horse-power per annum at $65 per horse-power for a period of seven years. Power exceeding the 800 horse-power is to be supplied at a $35 rate. After the seven-year period, all power is to be supplied at $35 per horse-power for the life of the mine. This new contract will come into effect when the additional power is delivered following the completion of the construction of a second unit at the Rat Rapids development site.

A further reduction in transportation costs was effected on the completion of the Root River portage development last July. Freight can now be transported from Hudson on the Canadian National railway to Doghole bay at the east end of Lake St. Joseph. Doghole bay is 21 miles from the property. The government is now considering the construction of a road from this point to the mine. The road is urgently needed for the general development of this new and proved mining area.

Patents were obtained on 46 mining claims held by your company, representing 2,024.16 acres, making a total of 64 claims, or 2,624.44 acres, on which patents have been acquired. The company has in addition 40 mining claims which will be patented when the required assessment work is completed.

During the coming year it is proposed to sink the main shaft from the 500- to the 1,000-foot level and also carry on further lateral exploration. The amount of development that can be done will be governed by the power available. Delivery of the extra power contracted for is not expected until the 1st of October next.

Development at the No. 2 operation (Springer) was carried out as planned, and the results of the work are covered in the mine manager's report. Power requirements at the main mine made it impossible to carry on further work at this operation for the time being, but in view of the satisfactory results obtained it is the intention of your directors to extend the present shaft to the 500-foot level and do further lateral work when the power is available.

At the close of the year, after treating 35,192 tons, the ore reserves amounted to 95,413 tons, averaging 0.64 ounces per ton.

The development at the main mine continues to be very satisfactory, and that at the No. 2 operation has indicated a substantial length of high-grade ore; and future development of this property shows much promise.

The following is taken from the mine manager's report for the year ending December 31, 1935:—

Production

During the year, 35,192 tons of ore were treated, from which was recovered $777,570.49. The average extraction was 97.36 per cent.

Development

Development was restricted to the opening of the known ore shoots. The "B" and "C" ore shoots were developed on the 3rd and 4th levels. This work has shown the ore to have

greater widths and lengths than previously estimated and has consequently increased the tonnage of ore available while maintaining the same grade.

Diamond-drilling has improved the outlook for increased ore reserves. Drilling was done from underground workings and at surface. A hole drilled from the station at the 500-foot level cut the "C" ore shoot at a vertical depth of 140 feet below that level. An ore intersection in this hole gave 0.55 ounces gold across a width of 9 feet. Shallow surface drilling was done 1,200 feet west of the shaft and has disclosed a new ore area. The results of this work indicate a section 233 feet long by 2.5 feet wide, with an average grade of 0.4 ounces gold. Further exploration of this showing will be undertaken by means of underground work on the 375-foot level. Preparations were made to sink the main shaft from the 500-foot to the 1,000-foot level.

ORE ESTIMATE

	Tons	Grade
		ounces
"A" ore body	6,395	0.59
"B" ore body	31,295	.60
"C" ore body	36,965	.68
"D" ore body	4,450	.52
Broken ore in stopes	16,308	.65
Total	95,413	0.64

Construction

During March and April, a complete change-over from steam to electric power was effected, and at the same time a second mill unit was installed and put into operation, raising the daily capacity from 50 to 100 tons. This change-over of the plant necessitated the construction of a new power-house and a new headframe.

The installation in the power-house of two new compressors, a double-drum hoist, and a standby unit was completed.

The following additional buildings were constructed and equipped: kitchen and dining hall (capacity 150 men), central heating plant, 5 houses, recreation building, machine shop.

No. 2 Operation (Springer)

A plant (electrically operated) was set up and a shaft sunk to 175 feet. A station was established at 150 feet and a total of 1,022.5 feet of crosscutting and drifting was done.

Four ore shoots, varying in length from 25 feet to 90 feet, were found to the west of the main crosscut, giving a total ore length of 198 feet, averaging 2.35 ounces over a width of 14 inches. It was necessary to suspend this work in order to have sufficient power available to carry on shaft-sinking operations at the main property. The results of the exploration to date are very satisfactory, and further sinking and development will be carried on as soon as hydro power is available.

Summary

The change-over from steam to electric power, together with the improved mine conditions, necessitated a complete rearrangement of the plant and camp buildings. The major expenditures have been completed, so the expense of the construction programme for the ensuing year should be moderate.

In July, it was decided to increase the daily capacity of the mill to 150 tons. Material and equipment for this purpose were purchased and the mill addition is now being erected. All work, apart from capital expenditures, has been written into the operating costs.

An average of 105 men was employed during the year. A. J. Anderson is mine manager. The mine address is Pickle Crow.

Central Porcupine Mines, Limited

Central Porcupine Mines, Limited, incorporated December, 1933, has an authorized capitalization of 5,000,000 shares of $1 par value. The officers and directors of the company are: E. Ward Wright, president; C. D. H. MacAlpine, vice-president; Geo. G. Blackstock, secretary-treasurer; W. J. Aikens, W. J. Hume, H. C. McCloskey. and Jos. Montgomery, directors. The head office is at 25 King Street West, Toronto. The mine office is at Schumacher.

The property held by Central Porcupine Mines consists of 13 claims, 520 acres, in the township of Tisdale, district of Cochrane. It lies south of the

Coniaurum mine and east of the McIntyre and Hollinger mines, and adjoins each. Development of this property has been carried on through the Goldale shaft of the Coniaurum mines, work being done from the 1,000-foot level. In 1934 a crosscut, approximately 2,220 feet in length, was started to reach Central Porcupine ground. About 1,303 feet advance was made in this crosscut in 1934. Early in 1935 a vein was encountered on Coniaurum ground, and crosscutting was temporarily held up while some development work was done on this vein. Work on the crosscut was later resumed and Central Porcupine ground was entered about 650 feet east of the northwest corner of the property. The crosscut was continued in a direction S.25°E., for 1,252 feet beyond the boundary. A line drive from a point 85 feet back of the face was then carried due east for 689 feet, from which point a crosscut was again started in a southerly direction. Only a few rounds had been taken from this crosscut at the end of the year. The total advance in 1935 was 2,908 feet. From the same level 3,109 feet of diamond-drilling was done in 1935.

The average number of men employed in 1935 was 32. F. G. Stevens is general manager of this property, and Chas. Workman is mine superintendent.

Churchill Mining and Milling Company, Limited

The Churchill Mining and Milling Company, Limited, was incorporated in March, 1918, and now has an authorized capitalization of 4,000,000 shares of $1 par value. The officers and directors are: W. R. Knox, president; K. G. Merrick, secretary-treasurer; D. Lieberman, H. H. Van Wart, and F. H. Geddes, directors. The head office is at 45 Richmond Street West, Toronto.

The property held by this company includes a group of four claims in Churchill township, in the West Shiningtree area, district of Sudbury.

Operations at this property, which were suspended in October, 1934, were resumed in July, 1935, and again suspended at the end of November. During 1935 a level was established at the bottom of the 109-foot, 2-compartment shaft, sunk in 1934, and a total of 70 feet of drifting and 154 feet of crosscutting was accomplished.

The plant included a 47 h.p. locomotive-type boiler, a 270-cubic-foot Sullivan compressor driven by a steam engine, and a 6- by 8-inch Jenckes hoist.

An average of 10 men was employed during the period of operation, under the direction of A. Lantagne.

Clark Gold Mines, Limited

Clark Gold Mines, Limited, was incorporated in October, 1934, with an authorized capitalization of 2,000,000 shares of $1 par value, 650,000 of which have been issued. The officers and directors are: R. H. Miner, president; A. J. Reece, vice-president; G. S. Andrews, secretary-treasurer; W. S. Lighthall, A. C. Dick, and M. A. Carton, directors. The executive office is at 7411 De Lanaudiere Street, Montreal, Que. The mine address is Dyment.

The property consists of a group of 15 claims located about 8 miles southwest of Dyment on the Canadian Pacific railway, district of Kenora.

Work was started in October, 1934, and carried on until November, 1935. Some open-cut mining was done, and several shipments of ore were made. Underground work was started in April, 1935, and suspended at the end of September, 1935. An old 2-compartment, 75-degree shaft, 75 feet deep, was slashed to vertical and timbered. A level was established at 68 feet, on which 20 feet of drifting was done.

The plant included a 310-cubic-foot gasoline compressor and a small air hoist. Buildings erected consisted of a power-house, blacksmith shop, and powder magazine.

An average of 21 men was employed during 1935, under the direction of R. R. Clark.

Cole Gold Mines, Limited

Cole Gold Mines, Limited, incorporated in November, 1933, has an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors of the company are: John Y. Cole, president; Wm. Exton, Jr., vice-president; Cecily Cole, secretary-treasurer. The executive office and the mine office are both located at Cole, a recently established post office.

The holdings of the company are located along the southwestern shore of the Pipestone Bay section of Red lake, in the Patricia portion of Kenora district.

The property is being developed through a 2-compartment shaft, which was sunk to 200 feet in 1933. In 1934, a large amount of development work was done on the 200-foot level and a number of veins were partially developed. In 1935, the 300-foot level was opened. Development continued on this level until about the middle of September, when sinking was again resumed, with an objective depth of 550 feet. This work was completed about the end of the year. Two new levels at 300 feet and 400 feet are to be opened.

Work to date has been carried on with a small steam-operated plant, which includes one 70 h.p. locomotive-type boiler, a Canadian Ingersoll-Rand 250-cubic-foot air compressor, and an 8- by 10-inch Jenckes hoist. Arrangements for the supply of electric power to the mine by the Hydro-Electric Power Commission of Ontario were recently reported to have been completed.

From 45 to 55 men were employed at the mine in 1935. John Y. Cole is manager of the property.

Concordia Gold Mining Company, Limited

The Concordia Gold Mining Company, Limited, is a subsidiary company of Associated Gold Mining and Finance Company, Limited. The company was incorporated in May, 1934, with an authorized capitalization of 3,000,000 shares of no par value, of which 1,501,000 shares are reported held by the parent company. The head office of the company is at 276 St. James Street West, Montreal, Que. The officers and directors of the company are: A. E. Ladouceur, president; Walter F. Costigan, secretary-treasurer; Theo. Lanctot and Stuart Grant, directors. C. L. Laederer is mine manager, and E. E. Elliott is mine superintendent. The mine address is Timmins.

The Concordia Gold Mining Company took over the property of Jones-Porter Mines, Limited, consisting of 14 claims in Deloro township, district of Cochrane. The underground workings consist of a 3-compartment shaft, 158 feet in depth, with station at 125 feet, at which level 177.8 feet of crosscutting and 55.7 feet of drifting had been done to December 19, 1935. During 1935, 10 diamond-drill holes were drilled from underground, and 8 from surface. Total footage in all these holes combined was slightly in excess of 2,400 feet.

During the year the plant was altered, and several additions were made. Buildings and equipment are as follows: office and staff residence; cookery; 2 bunk-houses; fully equipped assay office; blacksmith shop, with Climax drill-sharpener; superintendent's residence; oil-house; magazines; auxiliary boiler-house, with two vertical-type boilers, 25 to 30 horse-power each, used for heating and to supply part of the power required in the mill; a main boiler-house, under

construction, and 2 locomotive-type boilers of 100 h.p. each; and a large combination building, in which there is a fully equipped machine shop, welding shop, dry-house, engineering office, mill, and hoist-room. In the hoist-room there is an 8- by 10-inch Jenckes hoist; a Sullivan, steam-driven, 2-stage, 1,000-cubic-foot air compressor; a second compressor with a rated capacity of 180 cubic feet; and a 20 k.w. steam-driven lighting unit.

In a building attached to the hoist-room is a 12- by 14-inch Ingersoll-Rand 480-cubic-foot air compressor belted to a Hercules TXO 110 h.p. gasoline power unit. This power plant was installed in 1935 and supplies the air for the present mining operations.

The Canadian Straub mill, also installed in 1935, has a capacity of from 5 to 9 tons. It was put into operation in October; and it is estimated that about 230 tons were treated during October, November, and December. On December 15, 1935, the first shipment, 32.9842 ounces of bullion was sent to the Royal Mint.

During 1935 the average number of men employed monthly was 24.

Russell C. Cone

In the spring of 1935, Russell C. Cone obtained a lease on No. 5 vein on the Lucky Coon property, mining claim P. 655, located about 4 miles south of Mine Centre in the Rainy River district.

There is an old 2-compartment vertical shaft on this vein, which is reported to be 115 feet deep, but no headframe or buildings were left.

Work was started in June to move equipment into the property and to construct buildings. A small mill was completed and put in operation on October 1 to test ore from the dump, but was shut down a month later. The mill equipment included a jaw-crusher, Gibson rod mill, and amalgamation plates. A 20 h.p. boiler and a 5- by 7-inch single-drum hoist were taken into the property, but no underground work had been started by the end of the year.

An average of 5 men was employed under the direction of Russell Cone. The mine address is Mine Centre.

Coniaurum Mines, Limited

Coniaurum Mines, Limited, has an authorized capitalization of 6,000,000 shares of no par value, of which 2,717,947 shares have been issued. The officers and directors of the company are: Thayer Lindsley, president; A. L. Bishop, vice-president; H. Whittingham, secretary-treasurer; Alex. Longwell, H. Lindsley, H. S. Monroe, T. H. Rea, directors. The head office is at 25 King Street West, Toronto. The mine address is Schumacher. John Redington is mine manager.

The mine property consists of about 760 acres adjoining the McIntyre-Porcupine mine on its east boundary, in Tisdale township, district of Cochrane.

The property has been developed through two shafts and several winzes. The Main, or Bishop, shaft was deepened in 1935 to 3,700 feet. A second shaft goes down to the 1,000-foot level. Some 833 feet of winze-sinking was also done in 1935, bringing the total winze footage up to 1,678 feet.

The following is taken from the mine manager's report for the year ending December 31, 1935:—

Development

Development in various parts of the mine has consisted of considerable lateral work, as well as sinking and raising. The Bishop, or Main, shaft has now reached a depth of 3,700 feet.

Two new levels have been established: the 3,250-foot and the 3,500-foot. In addition, a winze is being put down near the east boundary of the West Goldale claim. This has now reached a depth of 900 feet below the 3,000-foot level. Considerable amounts of drifting and crosscutting have been done on the 1,000-, 1,750-, 2,000-, 3,000-, and 3,500-foot levels.

Exploration

The 3,250- and 3,500-foot levels are now under vigorous exploration. No. 10 crosscut is being driven on the 3,250-foot level to intersect the No. 7 vein fracture, which is located on the south side of the Coniaurum porphyry mass. On the 3,500-foot level M2 crosscut is being driven west to connect with the winze, where a level has already been established. From this point M2 crosscut will be driven due west to the McIntyre boundary.

Veins Nos. 7, 25, and 26 have been indicated on the 3,500-foot level and are now under exploration. Vein No. 24 on the 1,000-foot level has been driven on for some distance. This vein is located in the southwest portion of the property. On the 3,000-foot level, veins Nos. 21 and 22 have been developed for some distance. Both of these provided considerable ore for mill feed.

This year has been one of large expansion both underground and on surface. The full value of this will not begin to make itself apparent until about June of 1936. At that time we expect to bring into production at least two new levels.

Diamond-drilling, as in other years, has been carried on for the purpose of obtaining geological information, as well as for the location of ore bodies.

SUMMARY OF DEVELOPMENT

	Feet
Sinking	1,338
Drifting	2,481
Crosscutting	4,373
Raising	1,857
Diamond-drilling	12,942

The footage driven in ore was 1,684 feet, with an average value of 5 pennyweights per ton over a width of 4.8 feet. Vein No. 15 has been developed on the 350-foot, vein No. 15A on the 1,750-foot, and veins Nos. 21 and 22 on the 3,000-foot level.

Ore Reserves

Broken ore reserves are greater than those of last year and are now 200,067 tons. Stoping supplied 199,357 tons, and development another 17,622 tons of ore. The mill drew 151,055 tons, leaving a carry-forward of 200,067 tons of ore at the end of the year. Unbroken ore reserves are estimated at 171,320 tons, having an average grade of 4.1 pennyweights.

Milling

During the year the mill treated 151,055 tons of ore with an average recovery of $7.51 per ton, extracting 95.94 per cent. of the gold content, operating 354.73 days, or 97 per cent. of the possible running time. The mill was closed down for a period of ten days while making the change-over of crusher into the new crusher building.

New Equipment and Improvements to Buildings

A new hoisting engine, with a maximum speed of 1,800 feet per minute, was installed. A new headframe was erected, and the crushing plant rearranged to facilitate handling larger tonnage. Also some additional equipment was added to the machine shop. The new buildings consist of a fireproof hoist-house and electrical shop; an addition to the dry-house; and an addition to the main office for the use of the resident doctor, as well as a new residence to accommodate the physician.

Tailings Dam

A large tailings dam is now under construction. When complete it will have a storage capcity that will serve our requirements for many years. We are very fortunate in having this available space on our property.

The average number of men employed during the year was 296; of this number 211 were employed underground.

Consolidated Mining and Smelting Company of Canada, Limited

The Consolidated Mining and Smelting Company of Canada, Limited, is capitalized at $20,000,000, divided into 800,000 shares of $25. The officers and directors are: Jas. J. Warren, president; Jas. E. Riley, secretary-treasurer; Jas. J. Warren, Sir Edward Beatty, S. G. Blaylock, Henry Joseph, J. C. Hodgson,

F. G. Osler, R. S. McLaughlin, Sir Herbert Holt, W. A. Black, R. H. McMaster, Thayer Lindsley, Hon. R. R. Bruce, Sir Charles Gordon, and L. A. Campbell, directors. The head office is at 215 St. James Street, Montreal, Que. An office is maintained at 302 Bay Street, Toronto.

Afton Mine

The company started underground operations on this property in January, 1935, and carried them on throughout the year. The property is in Afton township, Timagami Forest Reserve, district of Sudbury.

Previous operators had driven a 200-foot adit, from which a 2-compartment vertical winze had been sunk to a depth of 150 feet. A level was established at that depth, on which 270 feet of crosscutting was accomplished.

During 1935 the winze was sunk an additional depth of 266 feet, to a total depth of 416 feet, and levels were established at 275 and 400 feet. The lateral work accomplished in 1935 consisted of 34 feet of drifting on the 150-foot level, 616 feet of drifting and 249 feet of crosscutting on the 275-foot level, 751 feet of drifting and 210 feet of crosscutting on the 400-foot level. During the year a total of 1,321 feet of diamond-drilling was done from underground, and 957 feet from surface.

The plant used included two 53 h.p. horizontal return tubular boilers, a 360-cubic-foot steam-driven compressor, and an 8- by 6-inch Ingersoll-Rand single-drum hoist.

New Golden Rose Mines, Limited, was incorporated in April, 1935, with an authorized capitalization of 3,000,000 shares of $1 par value to take over this property from Afton Mines, Limited, in return for 1,000,000 shares of New Golden Rose stock. Under the terms of the option Consolidated Smelters was to receive approximately 2,000,000 shares of New Golden Rose stock on an expenditure basis. This expenditure was completed during 1935 and the option fulfilled.

An average of 54 men was employed during 1935, of whom 23 were underground. D. C. McKechnie is mine manager, and W. E. Aitchison is superintendent. The mine address is Sudbury.

Cordova Mine

The company acquired the old Cordova property on the east half of lot 20, concession I, Belmont township, Peterborough county.

In 1935 the old No. 3 shaft was dewatered, retimbered, and enlarged to the 5th, or bottom, level. An additional 160 feet of sinking was done and new hoisting equipment installed. Some 22 feet of drifting and 36 feet of crosscutting was done, and 600 tons of ore and 5,000 tons of waste were hoisted.

C. A. Seaton was manager, employing 39 men. The mine address is Cordova.

Golden Horn Mine

In May, 1935, work was started under option at the old Golden Horn mine, Rush bay, Lake of the Woods, district of Kenora. It is about 22 miles southwest of Kenora.

Previous operators put down two shafts on this property to depths of 106 and 254 feet, and established levels at 100, 166, and 235 feet. They accomplished 231 feet of drifting and 65 feet of crosscutting on the 1st level, 362 feet of drifting and 31 feet of crosscutting on the 2nd level, and 118 feet of drifting and 285 feet of crosscutting on the 3rd level. A small amount of stoping was done. They constructed a small mill containing a jaw-crusher, rolls, Huntingdon mill, and three concentrating tables, with which some gold was produced.

The company dewatered the workings and carried on sampling work till the end of July, when the option was dropped.

The mill and cookery were all that remained of the old equipment. A 310-cubic-foot gasoline compressor was used to dewater the workings.

An average of 7 men was employed during the period of work, under the direction of C. E. White.

McKenzie Claims

The company has under option the McKenzie group consisting of 9 claims, or about 360 acres, in Garrison township, district of Cochrane.

The following work was done in 1935: shaft-sinking, 256 feet; crosscutting, 712 feet; and drifting, 293 feet; about 7,612 tons of waste were hoisted.

The plant consists of a gasoline compressor and a single-drum air hoist. An average of 20 men was employed at the property during the year. The mine address is Matheson. A. S. Hudson was manager.

Rich Rock

The company has under option the property of Rich Rock Mines, Limited, in Kaladar township, Lennox and Addington county. The property consists of 298 acres in lots 24 and 25, concession VI.

Work was started on April 24, 1935, and to the end of the year the following work was accomplished: shaft-sinking, 125 feet; crosscutting, 57 feet; and drifting, 30 feet. About 150 tons of ore and 1,700 tons of waste were hoisted.

C. E. White was manager, employing an average of 25 men. The mine address is Flinton.

Cooper and Barry

W. D. Cooper and P. A. Barry continued operations, on a lease basis, on the Birch Lake property of McIntyre-Porcupine Mines, Limited, to the end of 1935. This property consists of 8 claims on the north side of Birch lake, two miles east of the Argosy mine, in Kenora district, Patricia portion.

In 1934, mining was carried on from an open stope. In 1935, a shaft was started from the bottom of the stope, 42 feet below surface, and sunk to 98 feet. The ore was found to be cut off in this shaft by a horizontal fault. Some exploration work was done along the fault-plane, but the downward continuation of the ore was not found. Work was then resumed at the 42-foot level. Drifting was started from each end of the stope, and about 100 feet of lateral work was done. Some ore was taken down above the drifts. In September, 1935, about 20 tons of ore was being milled daily in a small stamp and amalgamation mill.

The lease was dropped about the end of the year, and since then part of the mill equipment has been removed from the property.

The average number of men employed in 1935 was 19.

Corless Patricia Gold Mines, Limited

Corless Patricia Gold Mines, Limited, was incorporated under the laws of Ontario on January 7, 1935. It is capitalized at 3,000,000 shares of $1 par value; 1,000,000 shares were issued for property. The officers and directors are: Edwin C. Graves, president; H. J. Carmichael, vice-president; Joseph Simpson, secretary-treasurer; Charles Buchanan and Robt. White, directors. The head office address is 25 Richmond Street West, Toronto. The mine address is Jackson Manion.

The property consists of 26 patented claims, approximately 1,000 acres, in Corless township, in the Woman Lake area, district of Kenora, Patricia

portion. It lies about 5½ miles west of the property of J-M Consolidated Gold Mines, Limited, and may be reached from Hudson by a canoe route through Lac Seul, Pakwash lake, Trout Lake river, and Woman river, to Woman lake, but the best route is by air from Hudson or Sioux Lookout. The planes land on Corless lake about one mile from the camp.

Work to date has consisted of trenching and diamond-drilling. Active development was begun in January, 1935. During the year 26 diamond-drill holes, averaging 184 feet in depth, were drilled. Further drilling is planned for 1936.

Ten log buildings have been erected on the property, including a fully equipped assay office.

A. A. Robins was manager during 1935, and was succeeded by W. M. Rice. An average of 15 men was employed at the property during the year.

Coulson Consolidated Gold Mines, Limited

Coulson Consolidated Gold Mines, Limited, has a capitalization of 3,000,000 shares of $1 par value, of which 1,378,980 shares have been issued. The officers and directors are: Nicholas Kinsella, president; A. Ritchie, secretary-treasurer; L. V. Sutton, Raymond Sutcliffe, G. S. Haines, and D. McKenna, directors. The head office is at 1809 Royal Bank Building, Toronto.

The property in Coulson township, district of Cochrane, operated throughout 1935. Underground work was suspended in November.

During the year the south shaft was deepened to 570 feet, and 1,000 feet of drifting and 1,500 feet of crosscutting were done on the 550-foot level.

An average of 35 men was employed. The mine address is Painkiller Lake, via Matheson.

Craig Gold Mines, Limited

Craig Gold Mines, Limited, has a capitalization of 5,000,000 shares of $1 par value, of which 1,923,252 shares have been issued.

The officers and directors are: F. W. Clements, president; W. N. Agnew, vice-president; F. J. Slater, secretary-treasurer; Geo. W. Scobell and Gerald D. Martin, directors. The head office is at 330 Bay Street, Toronto. The mine address is Madoc. The company owns nine claims in Tudor township, Hastings county.

Two shafts have been sunk, No. 1 to a depth of 245 feet and No. 2 to a depth of 200 feet. In No. 1 shaft, stations have been cut at 50, 125, and 225 feet. About 350 feet of drifting was done on the 50-foot level, and 110 feet on the 225-foot level. The mine operated from January to October 15, when work was temporarily suspended.

An average of 30 men was employed under the management of J. G. A. Stevenson. E. B. E. de Camps is consulting engineer and acting manager.

Darwin Gold Mines, Limited

Darwin Gold Mines, Limited, was incorporated in August, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: Geo. Royce, president; David Gross, Robert Fennell, R. E. Hore, and R. A. Darwin, directors. Corporation Management and Executives, Limited, is secretary-treasurer. The executive office is at 304 Bay Street, Toronto. The mine address is Gold Park.

The property is located in township 29, range 23, in the Michipicoten area, district of Algoma. It is about 7 miles by road from Wawa station on the Algoma Central railway.

Work was continued throughout 1935. The 2-compartment 60-degree shaft was sunk an additional 100 feet to a total depth of 543 feet, and a 5th level established at 533 feet on the incline. In July, a 3-compartment vertical shaft was started from surface, and by the end of the year it had reached a depth of 418 feet, with sinking still in progress. Stations had been cut at depths of 276 and 367 feet, connecting with the 3rd and 4th levels from the inclined shaft.

The development work accomplished on the various levels during the year, and the total to the end of 1935, was as follows:—

Level	Drifting		Crosscutting		Raising	
	1935	Total	1935	Total	1935	Total
	feet	feet	feet	feet	feet	feet
200-foot	.....	640	.....	106	.....	50
300-foot	198	957	205	431	232	347
400-foot	328	1,632	210	591	255	373
500-foot	645	645	50	50	112	112
Total	1,171	3,874	465	1,178	599	882

The 50-ton amalgamation-flotation mill, which has been on the property since 1929, was changed to an amalgamation-cyanidation circuit and put in operation on November 5. The equipment now includes a jaw-crusher, Marcy ball mill, Hardinge mill, Dorr Duplex classifier, Dorr Simplex classifier, 4 Pachuca tanks, 2 thickeners, 2 Oliver filters, and a Merrill-Crowe precipitation unit. By the end of 1935, the mill had treated a total of 2,086 tons of ore.

Additions to the plant during 1935 included a 42-inch double-drum electric hoist, and a 770-cubic-foot Ingersoll-Rand electric compressor. A steel headframe was erected for the new shaft. Buildings constructed included a shaft-house, blacksmith and machine shop, hoist-compressor house, dry-house, bunkhouse, and additions to the original mill building.

An average of 61 men was employed during 1935, of whom 30 men were underground. M. H. Frohberg was in charge of operations.

Delnite Mines, Limited

Delnite Mines, Limited, was incorporated in November, 1934, and is capitalized at 3,000,000 shares of $1 par value. This company is a subsidiary of Sylvanite Gold Mines, Limited, and Erie Canadian Mines, Limited. The latter company, a wholly owned subsidiary of Sylvanite Gold Mines, Limited, received Delnite shares for preliminary expenditures and development done during the summer of 1934 and the option to purchase other shares, so that if fully exercised Erie Canadian will hold 1,291,500 shares of the issued capital. There were 840,000 shares issued for the property, which consists of the property of the former La Roche Mines, Limited, and the Rendix or Martin claims, three patented claims located 3 miles southeast of Timmins in the township of Deloro, district of Cochrane. The officers and directors are: E. L. Koons, president; W. L. Marcy, vice-president; Welles V. Moot, managing director; C. L. Ingham, treasurer; W. S. Walton, secretary; Harry Yates, Jas. E. Day, and Jas. Savage,

directors. The head office of the company is at 603 Royal Bank Building, Toronto. The mine address is Timmins.

During 1935, a second bunk-house, 24 by 36 feet, and other small buildings were erected. A 60- by 16-inch air receiver was added to the mining plant, and the 10- by 12-inch air hoist was improved by alterations, including a gear-driven indicator. An electric pump was placed underground after the shaft was deepened. A magneto phone system and an electric cage-call system, to connect each level with the shaft-house and hoist-room, were installed.

An average of 37 men was employed during 1935. J. F. R. Akehurst is resident manager of the mine.

The following is an extract from the general manager's report for the fiscal year ending March 31, 1936:—

During the period, in addition to continuing work on the 125-foot level, the shaft was deepened and two new levels were opened up at the 250- and 375-foot horizons. A summary of the work done during the year is shown in conjunction with all previous work.

Development

SUMMARY OF DEVELOPMENT AND EXPLORATION, MARCH 31, 1936

	Drifting	Cross-cutting	Shaft-sinking	Shaft stations	Total	Diamond-drilling
	feet	feet	feet	feet	feet	feet
To March 31, 1935.....	1,233	903.5	138	25	2,299.5	7,099
April 1, 1935, to March 31, 1936.....	3,015.5	1,599	253	66.5	4,934	9,179
Total to March 31, 1936	4,248.5	2,502.5	391	91.5	7,233.5	16,278

In the 3,015.5 feet of drifting done during the year, 1,121 feet of ore were developed. In the 4,248.5 feet of drifting which has been done at the property since the beginning of operations, 1,439 feet of ore have been developed, which have an estimated average grade of 0.215 ounces over an average width of 5.1 feet. The average grade was calculated from channel sampling, in which all high assays have been reduced to 1 ounce. This combined footage and grade of ore is classified by levels as follows:—

Level	No. of ore shoots	Total length	Value at $20.67	Value at $35.00
		feet		
125-foot.....	5	445	$5.18	$8.75
250-foot.....	3	428	3.96	6.70
375-foot.....	3	566	4.24	7.17
Total.....	.....	1,439	$4.45	$7.53

Diamond-Drilling.—Of the 9,179 feet of drilling done during the year, 5,364 feet was done from surface and 3,815 feet from underground. As part of the surface drilling, a series of three holes were put down to cut, at 750 feet vertical depth, the zone being developed in underground operations. Results indicated vein structure similar to that found in the lateral work.

In the drilling from underground, in addition to the drilling required by current development work, a series of five holes has been put down to explore the values in the downward extensions of vein No. 301 at the 500-foot level. The holes were spaced 100 feet apart. The results secured in these holes indicate the same ore situation on this vein at the 500-foot horizon as has been found at the 375-foot level.

Structure.—The veins on which the drifting has been done are located in a basalt formation, which strikes in a general east-west direction and dips 50°–60°N. The main ore zone is a band of altered basalt, 200 feet wide, which lies between two roughly parallel bands of chlorite schist, which have resulted from intense alteration of previous basalt beds. To the north and south of the above area further basalt flows are shown by drilling. Vein indications and a quartz porphyry intrusive have been cut in this outer basalt, but the importance of the areas has not been determined.

The veins in the main ore zone follow the primary flow structure of the basalt. Where the normal strike and dip of the structure has not been disturbed, the veins of the Nos. 101 to 301 vein system have shown continuity of ore on the levels and in the drilling below the 375-foot level mentioned previously.

In the area 500 feet northeast of the shaft, a drag fold exists in the basalt beds, and the vein structure is irregular, resulting in a condition that does not permit straight-away development. The ore developed in this area has been found to be of higher grade than the average of the mine.

Plant and Equipment

The plant and equipment were maintained in good operating condition. A second bunkhouse was erected. A mine ventilation fan was installed on surface to exhaust from the two bottom levels. Expenditures on new buildings and plant were kept at a minimum pending a decision on a permanent building programme.

General

The total expenditures for the year were $118,684.35. The ore occurrences developed to date and the possible ore indicated by drilling both on and below the present workings, are encouraging.

De Santis Porcupine Mines, Limited

The name of the De Santis Gold Mining Company, Limited, was changed to De Santis Porcupine Mines, Limited, in June, 1935. The capitalization was reduced to $2,400,000 by the cancellation of 1,600,000 issued shares, and then increased to $3,000,000 by the creation of 600,000 additional $1 shares. Shareholders received one new share for each two of the old.

The officers and directors are: Peter De Santis, president and mine manager; Jos. V. Friel, vice-president; Giuseppe Giustini, secretary-treasurer; Theodore Schultze, T. Pomeroi, R. T. Payton, and Frank Prest, directors. The executive office is at 24½ Second Avenue, Timmins. The mine address is Box 1299, Timmins.

The company holds nine claims in Turnbull township and nine in Ogden township, district of Cochrane. It is on this latter group, lying about 4½ miles southwest of Timmins, that development work has been conducted in late years.

The property has been partially developed to a depth of 200 feet. The first shaft sunk was 210 feet in depth. Levels were opened at 90 and 200 feet below the collar. The total amount of crosscutting and drifting done to the end of 1935 on the 90-foot level was 327 feet. On the 200-foot level, the crosscutting and drifting amounted to 3,991 feet. During 1935 a main working shaft was started. It was raised to surface from the 200-foot level, and then then timbered from the surface down. A new timber headframe was erected and enclosed, but the proposed sinking below the 200-foot level had not been begun at the end of the year.

The average number of men employed in 1935 was 26. Fred Knutson was succeeded by H. McQuarrie as mine superintendent during the year.

Dome Mines, Limited

The authorized capital stock of Dome Mines, Limited, consists of 1,000,000 shares of no nominal or par value, of which 46,666 are held under an agreement in trust for the company; the dividends on these shares are returned to the treasury of the company. The mine property lies in Tisdale and Whitney townships, district of Cochrane.

The officers of the company are: Jules S. Bache, president and treasurer; J. H. Stovel, first vice-president; G. C. Miller, second vice-president; Morton F.

Stern, third vice-president; Alex. Fasken, secretary; E. P. Goetz, assistant treasurer and assistant secretary; C. C. Calvin, assistant secretary; John B. Robinson, assistant secretary.

The directors are: Jules S. Bache and Morton F. Stern, New York; G. C. Miller, Buffalo; Dwight B. Lee, Detroit; G. H. Harris and Simon N. Stein (who fills the vacancy caused by the death of Innis P. Allen), Rochester; Alex. Fasken, Frank E. Maulson, and Frederick Burnett, Toronto.

The death took place during 1935 of H. P. De Pencier, who for many years had been first vice-president and general manager of the company. This position has been filled by J. H. Stovel, who was formerly general superintendent. Robert E. Dye joined the staff of the mine as general superintendent early in 1936.

The office of the executive and financial department is at 42 Broadway, New York. The Toronto office is at 36 Toronto Street. The mine address is South Porcupine.

During 1935 there was an average of 738 men employed at the mine; of this number about 439 were employed underground.

The following is taken from the report of the general manager for the year ending December 31, 1935:—

During the year 635,700 tons were hoisted; of this 549,100 tons was ore, which was sent to the mill and treated, and 86,600 tons was waste, which was dumped on the surface. In addition, 4,600 tons of waste was dumped into old stopes.

The 549,100 tons of ore milled yielded bullion containing 204,842.595 ounces of gold, the yield per ton being 0.3731 ounces. In addition, there was recovered from the treatment of by-product, 1,952.434 ounces.

All values of ore, etc., will be expressed in pennyweights throughout this report. One pennyweight equals one-twentieth of an ounce, troy weight.

The following statement gives particulars of revenue and expenditure for the year under review:—

OPERATING STATEMENT

for the year ended December 31, 1935

EARNINGS:		
Bullion production (after deducting gold bullion tax and mint charges—$346,202.04)		$6,939,988.68
OPERATING AND MAINTENANCE EXPENDITURE:		
Development and exploration	$658,460.76	
Mining, including hoisting	731,369.56	
Crushing and conveying	120,313.78	
Milling	504,505.84	
Bullion expense	10,438.84	
Fire protection	6,673.02	
Warehouse expense	12,135.54	
Auditing expense	2,828.81	
Administrative expense:		
Mine office	111,293.90	
Executive office	70,305.19	
Registrar and transfer fees and expenses	11,810.33	
Municipal taxes	18,065.99	
Insurance	15,408.32	
Ontario corporation capital tax	1,220.20	
		2,274,830.08
NET OPERATING PROFIT FOR THE YEAR		$4,665,158.60

Development

The following table gives details of the development accomplished during the year:—

SUMMARY OF DEVELOPMENT BY LEVELS FOR THE YEAR 1935

Level	Stations	Drifts	Cross-cuts	Drift and crosscut slashing	Raises	Winzes	Box-holes	Raise, winze, and box-hole slashing	Total	Diamond-drilling
	feet	feet	feet	feet	feet	feet	feet	feet	feet	feet
1st	.....	81	.....	.....	.....	.....	44	.....	125	.....
3rd	.....	.....	.....	.....	28	.....	.....	.....	28	.....
5th	.....	.....	.....	.....	126	.....	.....	3	129	123
6th	.....	.....	30	11	.....	.....	.....	20	61	1,211
7th	.....	353	.....	41	186	.....	48	2	630	1,234.5
8th	.....	298	.....	17	32	.....	188	.....	535	.....
9th	.....	519	.....	56	115	.....	326	11	1,027	.....
10th	.....	756	.....	117	27	.....	354	14	1,268	.....
11th	.....	288	.....	32	53	.....	397	127	897	.....
12th	.....	397	7	37	150	.....	548	181	1,320	4,202.5
13th	.....	216	.....	16	134	.....	973	279	1,618	671
14th	.....	1,136	780	291	208	62	773	82	3,332	6,128.5
15th	.....	793	710	98	157	.....	601	262	2,621	6,360
16th	.....	289	260	141	.....	.....	.....	.....	690	.....
16th (No. 6 shaft)	.....	2,997	133	1,187	.....	.....	.....	.....	4,317	.....
17th	.....	84	.....	52	.....	.....	.....	.....	136	451
18th	16	493	.....	101	.....	650	.....	.....	1,260	.....
20th	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,360.5
21st	20	.....	.....	6	.....	.....	.....	.....	26	.....
23rd	.....	324	51	7	.....	.....	.....	.....	382	.....
24th	.....	1,046	71	142	663	20	312	111	2,365	1,385
25th	.....	883	391	146	229	59	208	94	2,010	4,026
26th	.....	250	204	59	264	.....	10	43	830	4,851
27th	.....	447	6	6	111	.....	.....	24	594	7,474.5
Total..	36	11,650	2,643	2,563	2,483	791	4,782	1,253	26,201	41,478.5

Approximately 26,200 feet of drifting, crosscutting, raising, winzing, and box-holing, and 41,500 feet of diamond-drilling, has been done in the course of searching for and opening up the various ore bodies.

Above the 16th level, about 13,600 feet of development work was done, mostly in connection with known ore bodies or extensions of same.

At the directors' meeting, held at the time of the annual meeting of this company in the latter part of April, 1935, permission was given your management to proceed with the sinking of a main underground shaft from the 2,050-foot or 16th level. This shaft was to be located about 4,500 feet in an east-northeasterly direction from our No. 3 main shaft. The section of this new or No. 6 shaft will be approximately the same as the present No. 3 shaft and will have similar hoisting equipment and capacity. The hoisting equipment ordered for this shaft is designed for a depth of 3,000 feet, but can be used to 4,000 feet, if it is found desirable to do so. It is planned to sink this shaft at one lift to the 31st level, or 4,250 feet below the collar of No. 3 shaft. This will give us four new levels to explore as well as enable us to do further work in that area between the 18th and 27th levels. Further sinking may be done later from this point.

Drifting to the site of No. 6 shaft was started in May, and this drift reached the general area of the shaft in late December. In all, 3,000 feet of drifting was done, and 1,400 feet of old drift was slashed out to the size of this main haulage drift, which is 9 by 12 feet. A trolley haulage has been established on this drift capable of handling the normal capacity of the mine.

Considerable work remains to be done before sinking can be started from this level. The shaft has to be raised about 160 feet above the level, excavations have to be made for hoist-rooms, ore and waste pockets, a station, and a station storage yard, and rope-way raises from hoist-rooms to sheave wheels. It involves approximately 7,000 cubic yards of excavation. All necessary equipment has been ordered and is in process of manufacture or has been received and installed.

On the 16th level, in addition to the main development, about 700 feet of drifting was done. On the 17th level, a small amount of drifting was done in connection with known ore bodies.

Between the 18th and 23rd levels, approximately 1,300 feet of drifting and sinking was done in connection with establishing a second entry into the 23rd level. This work was completed in September, giving the needed ventilation to the lower levels and permitting a start at actual mining on these levels. In further development of the ore zones below the 23rd level, approximately 6,200 feet of development work was done; also 17,700 feet of diamond-drilling.

The vein structure in drift No. 2,504 has been further drifted on at the 26th and 27th levels, where lengths of 790 feet and 470 feet, respectively, have been established. Also several small, but not yet thoroughly understood ore occurrences in the greenstone to the north and west of this vein structure have been found on the 24th and 25th levels. No development has been attempted on these on the 26th and 27th levels as yet. All the ore occurrences on these levels are characterized by the presence of much visible gold.

The work done to date indicates the probability of securing over 425,000 tons of ore from the 23rd to the 27th levels. It is felt that the grade of this ore will be considerably better than the grade of the ore in the older areas of the mine.

Of the tonnage milled, the stopes yielded 466,600 tons, averaging 7.89 pennyweights per ton, and development work yielded 82,500 tons, averaging 5.95 pennyweights per ton; a total of 549,100 tons, averaging 7.59 pennyweights per ton.

The expenditure on mining was $731,369.56, or $1.33 per ton milled. The expenditure on development was $658,460.76, or $1.20 per ton milled. Of the $1.20 per ton, approximately 32 cents was chargeable directly to the major development work on the 16th level.

Ore Reserves

The ore reserves are estimated at 2,000,000 tons. This includes 773,700 tons of broken ore but does not include 300,000 tons indicated as probable ore between the 23rd and 25th levels.

The Mill

The following are the results of the mill operations during the year from a total of 549,100 tons treated:—

	Value per ton	Extraction per cent.
	dwt.	
Heads	7.5944	.....
Recovery	7.4610	98.24

The small plant treating old iron and other scrap produced 1,952.434 ounces.

Exploration

As hitherto, we have continued to examine prospects and properties. No new properties were taken up during the year.

General

Operating costs for the year were $4.143 per ton milled, as against $3.877 in the year 1934. Actual mine operating costs were slightly less than last year, the increase being due to development work in connection with No. 6 shaft.

The acquisition of the Foley O'Brien Corporation, Limited, in August, 1935, has added thirteen claims to our holdings. While it may be several years before our workings will reach this property, the trend of our ore bodies is all in the direction of these claims, and it is felt that these facts fully justify their purchase.

The death of our late general manager, Mr. H.P. De Pencier, late in November, was a severe loss to the company and to his many friends and admirers on our staff. His passing from the Dome picture is genuinely regretted by all.

Duport Mining Company, Limited

The Duport Mining Company, Limited, was incorporated in January, 1929, with an authorized capitalization of 2,000,000 shares of no par value. The officers and directors are: J. G. Cross, president; Thayer Lindsley, vice-president; W. J. Matthews, secretary-treasurer; W. C. Robinson and R. V. Whiteside, directors. The head office is at 215 Public Utilities Building, Port Arthur. The mine address is Kenora.

The property held by this company includes the Cameron Island mine, located at Shoal lake, district of Kenora. It is about 28 miles southwest of Kenora by air.

Underground operations were continued at the property until November 24, when they were suspended until after Christmas. During 1935 a total of 530

feet of drifting and 137 feet of crosscutting was done on the 124-foot, or 2nd level; a 2-compartment 75-degree winze was sunk from the second level to a depth of 120 feet; and a 3rd level was established at that depth, on which 376 feet of drifting and 318 feet of crosscutting was accomplished. A small high-grade lens on the second level was stoped out.

During the year 376.16 tons of ore was shipped to Tacoma, Wash., and 98.54 tons of ore to Flin Flon, Man. The average gold content of these shipments was 4.45 ounces per ton.

The plant included an 84 h.p. boiler, 40 h.p. boiler, 300-cubic-foot steam compressor, a 500-cubic-foot Diesel compressor, a 7- by 9-inch hoist on surface, and a 6- by 8-inch hoist underground.

An average of 22 men was employed, of whom 12 were underground. J. G. Cross was in charge of operations, with C. Nelson as mine captain.

Edgelake Gold Mining Company, Limited

The Edgelake Gold Mining Company, Limited, was incorporated in September, 1934. The authorized capitalization is 3,000,000 shares of $1 par value. The officers and directors of the company are: P. B. Cameron, president and manager; J. A. Picotte, vice-president; J. M. Forbes, secretary; K. G. Cameron, treasurer; Robert McKinnon and David Craig, directors. The executive office address is Box 128, Schumacher. The mine address is Tashota.

The property consists of ten claims, approximately 400 acres, surrounding the west end of Tashota lake, 1½ miles north of Tashota station on the transcontinental line of the Canadian National Railways, Thunder Bay district.

During 1935, with an average of 2 men per month over a 9-month period, the following construction work was done: a 34-foot headframe was erected over a shaft, sunk at an earlier date to a depth of 32 feet; a boiler- and hoist-room building, 30 by 30 feet, with a 30- by 16-foot wing, was erected; and an Ingersoll-Rand 460-cubic-foot compressor and a 50 h.p. boiler were installed. Other equipment includes a 20 h.p. portable locomotive-type boiler and a 6- by 8-inch Jenckes steam hoist. An assay office and a small cabin were also erected. The president and vice-president have done most of the work so far accomplished at the property. Activities ceased temporarily late in the fall of 1935.

Edwards Gold Mines, Limited

Edwards Gold Mines, Limited, has an authorized capitalization of 2,000,000 shares of $1 par value. The company was formerly known as Del Sol Gold Mines, Limited; the change of name was authorized by letters patent in April, 1935. The officers and directors were: H. C. Orton, president; J. B. Kleckner, vice-president; H. H. Huevelman, secretary-treasurer; Murdock L. Martin, assistant secretary; F. E. Matthews, Neill Richards, R. G. Orton, E. B. Tilton, and H. C. Miller, directors. The head office is at 302 Sterling Tower, Toronto. A business office is maintained at 231 South La Salle Street, Chicago, Ill.

The company acquired the Edwards property, located in township 48, range 27, district of Algoma, on which the Gold Lands Syndicate of Algoma sank a 2-compartment 80-degree shaft to a depth of 97 feet, and did 60 feet of lateral work at that depth.

Underground work was started in March and continued until June, during which period about 400 feet of additional lateral work was accomplished on the 97-foot level.

The plant included a 110-cubic-foot and 310-cubic-foot Gardner Denver gasoline compressor and a gasoline hoist.

An average of 8 men was employed during 1935 under the direction of J. A. S. Roussac.

The property is reached by road from either Goudreau or Lochalsh. The mail address is Lochalsh.

Elizabeth Gold Syndicate

The Elizabeth Gold Syndicate was formed in 1935 to acquire the old Elizabeth mine in Rainy River district about 10 miles north of Atikoken on the Fort Frances branch of the Canadian National Railways. W. L. Doyle is manager of the syndicate. The head office is at 9 Adelaide Street East, Toronto.

The Elizabeth mine was discovered in 1900 and worked until 1903. It was again worked during parts of 1912, 1913, and 1914. A 10-stamp mill was installed in 1902. The old workings include a 280-foot shaft, with levels at 65, 146, and 246 feet.

The syndicate started work in May. During the balance of the year the underground workings were dewatered and examined, in addition to surface work. Buildings and part of the old mining equipment were reconditioned. Operations were practically suspended for the winter at the end of the year.

An average of 15 men was employed during the period of operation, under the direction of C. N. Thompson.

Falcon Gold Mines, Limited

Falcon Gold Mines, Limited, was incorporated in September, 1935, with an authorized capitalization of 2,500,000 shares of $1 par value. The officers and directors are: W. G. Chapman, president; C. H. Hitchcock, vice-president; S. E. Cassan, secretary-treasurer; John Elliott and Lionel Brooke, directors. The head office is at 200 Bay Street, Toronto. The mine address is Sudbury.

The property consists of four claims in Falconbridge township, district of Sudbury, and was formerly known as the McConnell or Beckley property. It is about 7 miles northeast of Wanapitei village, to which it is connected by road.

Operations were started in March, 1935, by the parent company, South Tiblemont Gold Mines, Limited, and continued until Falcon Gold Mines, Limited, took it over in September. The latter continued work until the end of November, when operations were suspended.

Previous operators sank a 45-foot shaft and did some diamond-drilling. During 1935 the diamond-drilling was extended to a total of 3,000 feet. A power-house, blacksmith shop, office, bunk-house, and cookery were constructed, and a headframe was erected over the old shaft. A 20 h.p. boiler and a 6- by 8-inch steam hoist had been installed when operations were suspended.

An average of 5 men was employed during the period of work, under the direction of J. E. Jerome.

Foley O'Brien Corporation, Limited

The Foley O'Brien Corporation, Limited, which was incorporated in 1934, has an authorized capitalization of 2,100,000 shares of $1 par value. The officers and directors of the company are: Wm. H. Kinch, president; Samuel J. Dark, secretary-treasurer; John G. Ullmann, A. J. McNab, and Carroll Searls, directors.

The Foley O'Brien Corporation, Limited, purchased from Foley O'Brien, Limited, 520 acres located in concessions II and III of Tisdale township, district of Cochrane. This property adjoins the holdings of Dome Mines, Limited, on the northeast, and in 1935 it was purchased by Dome Mines, Limited.

The following work was done underground at this property before it was taken over by the Foley O'Brien Corporation, Limited:—

Shaft and level	Shaft-sinking	Drifts and crosscuts	Raises
	feet	feet	feet
No. 1 Shaft	79		
39-foot		80	
50-foot		10	
79-foot		65	
No. 2 Shaft	165		
165-foot		700	
Winze (from the 160- to the 250-foot level)	90		
250-foot		670	20
No. 3 Shaft	235		
80-foot		145	
230-foot		130	

The Foley O'Brien Corporation, worked on this property from July, 1934, to May, 1935. In this period they did the following work: Seventeen diamond-drill holes, having an aggregate depth of 14,757 feet, were drilled; five of these holes, totalling 2,882 feet, were drilled from the underground workings from No. 2 shaft; the rest were drilled from surface. (Former operators had drilled 6 holes totalling 2,477 feet.) Eight pits or trenches were dug with mechanical shovels and scrapers on that part of the property known as Slate Hill; dirt removed from these pits totalled 13,082 cubic yards. Hand-cleaning and washing in the bottom of these pits exposed about 2,300 square yards of bed rock. Hand-dug trenches totalled 2,053 linear yards; of this, 1,733 yards reached bed rock. The average depth of these trenches was about 5 feet, with a maximum depth of 15 feet. The total sampling amounted to 1,518.5 feet. This was divided as follows: surface, 704.4 feet; No. 1 shaft, 261.9 feet; No. 2 shaft, 552.2 feet. The No. 3 shaft was not pumped out by the Foley O'Brien Corporation.

A small wooden headframe and shaft-house were erected over the No. 2 shaft, and a 20- by 40-foot compressor- and hoist-house was built.

P. C. Benedict was manager of this property for the Foley O'Brien Corporation. The mine address is South Porcupine.

Fort Hope Consolidated Gold Mines, Limited

Fort Hope Consolidated Gold Mines, Limited, was incorporated in 1934, with an authorized capitalization of 3,000,000 shares of $1 par value, succeeding Fort Hope Gold Mines, Limited. The officers and directors are: J. C. Mackay, president; L. M. Reid, secretary-treasurer; R. D. Felton and C. Cooper, directors. The head office is at 507 Confederation Life Building, Toronto.

The property acquired consists of 16 claims at the northwest end of Eabamet lake, north of the Albany river, in the Patricia portion of Kenora district. The mine is about 115 miles northeast of Collins, a station on the Canadian National railway, from which it is most easily reached by air. Mail going to the mine is addressed to Collins.

In 1928, a 2-compartment shaft was sunk to a depth of 125 feet and about 300 feet of lateral work was done on the 100-foot level. No further work was

done underground until 1935, when the mine was pumped out and sampled. The mine had nearly refilled when it was inspected late in August, 1935. No work of consequence was being done at that time, and at the end of the month only two employees remained at the mine.

The mining plant on the property includes two 50 h.p. locomotive-type boilers, a 350-cubic-foot Canadian Ingersoll-Rand straight-line air compressor, and an 8- by 10-inch Rand sinking hoist.

About 160 cords of wood were cut early in 1935. This work and the examination work done in the spring and summer were in charge of R. Halet.

Fox Lake Gold Mines, Limited

Fox Lake Gold Mines, Limited, was incorporated in May, 1935, with an authorized capitalization of 1,000,000 shares of $1 par value. The officers and directors are: L. W. Adams, president; P. M. A. Hare, vice-president; J. W. Westervelt, secretary-treasurer; D. A. Anderson and Thomas C. Benson, directors. The head office is at 39 New Bank of Toronto Building, London, Ont.

The property includes a group of nine claims in Mongowin township, district of Sudbury, which was taken over from the Fox Lake Gold Syndicate on incorporation. It is on the Espanola–Little Current highway, about 12 miles south of Espanola.

The 25-ton amalgamation mill, the construction of which was started in November, 1934, was completed and put in operation in February, 1935. It was operated for two weeks and then shut down for the rest of the year. Surface work was carried on throughout 1935. Diamond-drilling was started in August and continued intermittently for the balance of the year.

An average of 11 men was employed under the direction of L. W. Adams. The mine address is Espanola.

Franklin Gold Mining Company, Limited

The Franklin Gold Mining Company, Limited, was incorporated in August, 1934, with an authorized capitalization of 3,500,000 shares of $1 par value. The officers and directors were: F. M. Sheehan, president; H. E. Martin, vice-president; M. E. Hoult, secretary-treasurer; G. A. Davis and A. T. McCabe, directors. The head office is at 330 Bay Street, Toronto.

The company took over the property of Ontario Champion Mines, Limited, situated in Haycock township, district of Kenora, 8 miles east of Kenora. Previous operators sank a 2-compartment 55-degree shaft to a depth of 230 feet and established levels at 130 and 230 feet, where 225 feet and 120 feet, respectively, of lateral work were accomplished. A 120-foot adit was also driven to intersect the shaft at a depth of 70 feet. A 70-foot section was stoped out to a height of 50 feet on the 130-foot level. In the spring of 1935 the company dewatered the underground workings and sampled them, but did not do any development work. Surface exploration and mapping was carried on until November.

The plant on the property includes two 40 h.p. locomotive-type boilers, a 10- by 12-inch Allis-Chalmers single-drum hoist, and a 400-cubic-foot Gardner compressor.

R. Adair was in charge. The mine address is Kenora.

Gillies Lake-Porcupine Gold Mines, Limited

Gillies Lake–Porcupine Gold Mines, Limited, was incorporated in January, 1933. It was formerly known as the Porcupine United Gold Mines, Limited,

which was a consolidation of Canadel Gold, Limited, Rochester Consolidated Mines Corporation, and Canadian Gold Mines, Limited, a merger which took place in 1928. The company is capitalized at 2,000,000 shares of $1 par value. The officers and directors are: Ray M. Stanley, president; Howard Thurston, vice-president; Frederick Grotz, secretary-treasurer; F. O. Tidy, A. R. Sproule, and Dr. H. H. Moore, directors. Bernard N. Hyman is general manager. G. C. Chase is resident manager. The head office is at 9 Toronto Street, Toronto. The mine address is Box 2048, Timmins.

The property now consists of six claims adjoining the holdings of both McIntyre-Porcupine Gold Mines and Hollinger Consolidated Gold Mines. It is adjacent to the former on the west end, and to the latter on the north side. Underground work to date has been confined to one claim, the northwest quarter of the north half of lot 2, concession II, Tisdale township, district of Cochrane.

The shaft has two compartments and is 947 feet deep. Levels have been opened at 100, 300, 500, 800, and 925 feet. About 6,780 lineal feet of drifts and crosscuts were driven by previous operators. The present operators commenced underground work on April 2, 1935. Development work during the remainder of the year comprised approximately 120 feet of drifting, 260 feet of raising, and 70 feet of winze-sinking.

During 1935, 5,098 tons of ore were milled, giving a recovery of 1,595.703 ounces of gold and 248.87 ounces of silver, the total value of which amounted to $57,276.95. Milling operations commenced April 3, 1935, at which time two recently installed Kennedy Nutt mills, with a rated capacity of from 10 to 15 tons, were put into operation. The overflow from these mills was passed over blanket tables and the concentrates were stored. Concentrates derived from a second unit, consisting of a Hardinge mill, 4½ feet by 16 inches, a classifier, and blanket tables, were also stored. Later a 6-cell flotation unit was installed to treat the tailings. In the fall of 1935, the two Kennedy Nutt mills were taken out, and a second Hardinge mill, 6 feet by 16 inches, was installed. A 12-inch by 18-foot double-rake Dorr classifier was also installed to classify the product from both ball mills. The installation of cyanide equipment to treat all the concentrates was completed at the end of the year.

No changes were made during 1935 in the mining plant, the principal items of which are: an Ingersoll-Rand single-drum, steam-operated hoist; a 150 h.p. locomotive-type boiler; and a 14- by 12-inch Chicago pneumatic single-stage air compressor, driven by a 100 h.p. General Electric motor.

The average number of men employed during the year was 30.

Gilmour Gold Mines, Limited

Gilmour Gold Mines, Limited, was incorporated in August, 1935, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: M. F. Burrows, president; J. Summers, secretary-treasurer; A. E. Broadley and Dr. R. A. Gemmill, directors. The head office is at 21 King Street West, Toronto. The mine address is Gilmour.

The property consists of 116 acres in Grimsthorpe township, Hastings county. All the development work on the property was done by previous operators. No 1 shaft is 85 feet deep, and during 1935 a station was cut at 75 feet. No. 4 shaft is 260 feet deep, with levels at 75, 125, and 250 feet. About 1,000 feet of drifting and 75 feet of crosscutting have been done from this shaft. About 500 tons of ore was hoisted during the period of operation in 1935.

Buildings on the property include an office, bunk-house, power-house,

hoist-house, assay office, mill, powder-house, and thaw-house. The 100-ton mill was put into operation in September.

An average of 15 men was employed. W. Hitchins was manager and was succeeded by A. A. Kenniger.

Gold Eagle Gold Mines, Limited

Gold Eagle Gold Mines, Limited, incorporated in February, 1934, is capitalized at 3,000,000 shares of $1 par value. The officers and directors are: W. F. Stafford, president; Millard C. Dorntge, treasurer; Bruce P. Davis, secretary; Chas. E. St. Paul, managing director; W. S. Rogers and J. T. Oliver, directors. The head office of the company is at 350 Bay Street, Toronto.

The holdings of this company consist of 24 claims on Mackenzie island in Red lake, Patricia portion of Kenora district, adjoining the south and west sides of the property of McKenzie Red Lake Gold Mines. The mine address is McKenzie Island, a post office established on the island in 1935 to serve these two mines.

The mining plant was installed on the property during the late summer and fall of 1934, and shaft-sinking was commenced late that year. The first station at the 125-foot level was being cut at the end of 1934. The following figures show the total amount of underground development work done up to August 27, 1935, when work was temporarily suspended.

	Feet
Shaft, vertical, 3 compartments	525
125-foot level (station only).	
250-foot level (drifting and crosscutting)	275
375-foot level " " "	400
500-foot level " " "	755

There is a good steam-operated mining plant on the property. No new additions were made to the plant during 1935. Alex. Gillies, the first manager of the property, was succeeded by F. M. Passow during the summer of 1935. An average of 33 men was employed during the first eight months of 1935.

Golden Summit Mines, Limited

Golden Summit Mines, Limited, has a capitalization of 2,500,000 shares of $1 par value, of which 1,650,000 have been issued. The officers and directors are: Wm. J. Simpson, president; Benjamin Kerr, Jr., vice-president; Gordon Belyea, secretary-treasurer; John M. Calder, J. G. Jarvis, Dr. J. J. Matheson, and Theodore G. Miller, directors. The head office is at 2374 Bloor Street West, Toronto. The mine office is at Sesekinika.

The company owns 460 acres in the townships of Maisonville and Grenfell, district of Timiskaming.

The property was operated throughout 1935, with an average force of 21 men, under the management of Wm. J. Simpson.

Development work consisted of 853 feet of crosscutting and 571 feet of drifting; 4,612 tons of ore was hoisted. A 35-ton mill was installed during the year.

Gomak Mines, Limited

Gomak Mines, Limited, was incorporated in December, 1933, with an authorized capitalization of 1,000,000 shares of $1 par value. The officers and directors are: C. N. Haldenby, president; Dr. W. H. Wright, vice-president;

F. O. Gallagher, secretary; Mrs. E. M. Clyde and R. M. West, directors. The head office is at 320 Bay Street, Toronto. The mine address is Gogama.

The property consists of a group of 17 claims in Chester township, Three Duck Lakes area, district of Sudbury. It is reached by a 21-mile winter road southwest from Gogama on the Canadian National railway.

Surface work and diamond-drilling were carried on until June, 1935, when a 2-compartment 65-degree shaft was started on claim S. 20,009. Underground development was suspended at the end of September after 75 feet of sinking and 180 feet of drifting on the 65-foot level, had been accomplished. Some diamond-drilling was done during October and November from underground.

At the end of the year a mill site had been excavated, and plans made to install a 20-ton amalgamation-flotation mill.

The plant included two 260-cubic-foot Ingersoll-Rand gasoline compressors, and a 5- by 7-inch Jenckes hoist. Buildings included a hoist-compressor house, blacksmith shop, office, bunk-house, and cookery.

An average of 10 men was employed during 1935, under the direction of R. D. Jones.

Halcrow-Swayze Mines, Limited

Halcrow-Swayze Mines, Limited, was incorporated in November, 1932, with an authorized capitalization of 2,500,000 shares of $1 par value. The officers and directors were: Horace F. Strong, president; H. A. Butt, vice-president; J. B. Allen, secretary-treasurer; W. J. Yeoell and Martin Shunsby, directors. The executive office is at 709 Excelsior Life Building, Toronto.

The property is situated in Halcrow township, Swayze area, district of Sudbury. By air, it is about 20 miles east of Chapleau on the Canadian Pacific railway.

All work was suspended at this property on February 15, 1935. The underground work accomplished during 1935 consisted of about 35 feet of raising on the 200-foot level, and the same amount on the 354-foot level, for sampling purposes. The 25-ton test-mill treated about 220 tons of ore in 1935.

About 15 men were employed under the direction of H. F. Strong.

Hard Rock Gold Mines, Limited

Hard Rock Gold Mines, Limited, was incorporated in January, 1934, with an authorized capitalization of 2,500,000 shares of $1 par value. The officers and directors are: T. H. Rea, president; Jos. Errington, vice-president; W. S. Walton, secretary-treasurer; A. B. Gordon and H. R. Aird, directors. The head office is at 603 Royal Bank Building, Toronto. The mine address is Geraldton.

The company continued development of its property in Ashmore township in the Little Long Lac area, Thunder Bay district, throughout 1935. The 3-compartment vertical shaft, started in 1934, was at a depth of 463 feet at the end of 1935, and sinking was in progress with an objective of 475 feet. Levels were established at 200 and 325 feet. During 1935, a total of 1,109 feet of drifting and 494 feet of crosscutting was accomplished on the 200-foot level, and 959 feet of drifting and 474 feet of crosscutting on the 325-foot level; 1,342 feet of diamond-drilling was done from surface, and 3,020 feet from underground.

There were no changes in the plant during the year. An assay office and a directors' lodge were constructed, and an automobile road from Geraldton to the property was completed.

An average of 39 men was employed, of whom 16 were underground. J. C. Dumbrille was in charge, with E. J. Bolger as engineer.

Harkness-Hays Gold Mines, Limited

Harkness-Hays Gold Mines, Limited, was incorporated in July, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: R. W. Lee, president; H. J. Sender, secretary-treasurer; Dr. H. L. Van Norstrand, H. L. Duncan, and W. J. Wadsworth, directors. The head office is at 310 Temple Building, Toronto.

The property consists of a group of 8 claims, situated 2 miles east of Schreiber on the main line of the Canadian Pacific railway, district of Thunder Bay.

During 1935 work was carried on from January until the middle of April, and from the middle of July until the end of the year. The underground work accomplished during the year consisted of 110 feet of drifting in No. 3B adit. A 220-cubic-foot Ingersoll-Rand gasoline compressor was used.

A 25-ton amalgamation mill was constructed and was operated intermittently during August and September, when a total of 119 tons of ore was milled. The equipment included a jaw-crusher, vibrating screen, 2 Kennedy Nutt units, 2 Wilfley tables, and two blanket tables, operated by a 20 h.p. Diesel engine.

About 500 tons of rock was mined from open cuts and the ore sorted out, some of which went to the mill.

An average of 13 men was employed during the period of operation. J. F. Anderson was in charge. The mine address is Schreiber.

Hillside Gold Mines, Limited

Hillside Gold Mines, Limited, was incorporated in August, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: E. V. McMillan, president; G. E. MacMillan, secretary; J. J. Phillips, treasurer; M. I. McMillan, M. Kuittinen, and H. Aarnio, directors. The executive office is at 645 Queen Street East, Sault Ste. Marie.

The property consists of thirty-five claims, located in the northeastern part of township 29, range 23, in the Michipicoten area, district of Algoma.

Underground work, which had been suspended in December, 1934, was resumed in the middle of March and continued until August, when all operations ceased for the balance of 1935. During this period the adit on claim S.S.M. 4,925 was driven a further distance of 390 feet, to a total of 790 feet, and 49 feet of crosscutting done. In addition an old 52-foot adit on claim S.S.M. 7,367 was driven a further distance of 56 feet, to a total of 108 feet.

In January, 1935, the construction of a power line and 50-ton mill was commenced. The power line, 1¼ miles long, was extended from the property of Stanley Gold Mines, Limited, and completed in March. Mill construction was suspended after the building was erected, and a jaw-crusher, Hardinge ball mill, and Wilfley table were set up. A 310-cubic-foot Ingersoll-Rand electric compressor was used for driving the main adit.

An average of 18 men was employed from the first of the year until August. D. S. Baird, J. A. Ogilvy, and Howard Webb were successively in charge.

Hollinger Consolidated Gold Mines, Limited

The authorized capital of Hollinger Consolidated Gold Mines, Limited, is $25,000,000, in 5,000,000 shares of $5 par value. At December 31, 1935,

4,920,000 shares were outstanding. The head office of the company is at Timmins. The general office is at 602 Royal Bank Building, Toronto.

The officers at December 31, 1935, were: Noah A. Timmins, president; Jules R. Timmins, vice-president; John B. Holden, secretary-treasurer; A. F. Brigham, consulting engineer; and John Knox, general manager. On January 23, 1936, the company sustained the loss, by death, of its president. Jules R. Timmins has now been appointed president; John B. Holden, vice-president and treasurer; and P. C. Finlay, secretary. The directors of the company are: Jules R. Timmins, John B. Holden, W. L. McDougald, Leo. H. Timmins, Wilson Bell, James Y. Murdoch, Allen A. McMartin, John I. Rankin, and N. A. Timmins, Jr.

The following tribute to the late Mr. Timmins is taken from the new president's statement to the shareholders under date of February 21, 1936:—

Before commenting in detail on the results of the operations of your company during the past year I desire to refer, on behalf of the board and myself, to the great loss sustained by your company through the death of our late president, Mr. N. A. Timmins, on the 23rd of January of the present year.

He was the last of the original five founders of the company, and president since its incorporation. No one had the interests of the company more at heart nor was more intimately associated with its affairs. The late Mr. Timmins was a man of vision, who had in full measure the pioneer spirit and the courage to back his convictions. He will be especially missed by his fellow directors, who have been associated with him for many years, as well as by the Hollinger organization. Not only our company, but the entire mining industry of the Dominion has suffered the great loss.

The following is taken from the general manager's report for the year ending December 31, 1935:—

PROFIT AND LOSS STATEMENT
for the year ending December 31, 1934

SOURCES OF 1935 INCOME:		
Net value of gold and silver produced	$14,704,625.19	
Less Dominion Government tax on bullion	577,783.55	
		$14,126,841.64
Interest on investments and other income		220,372.86
		$14,347,214.50
DISPOSAL OF 1935 INCOME:		
Milling charges	$1,189,388.67	
Mining charges	5,979,810.04	
Marketing bullion	106,306.43	
Workmen's compensation	141,922.93	
Silicosis assessment	130,779.17	
General charges	679,679.10	
		8,227,886.34
		$6,119,328.16
DEDUCT:		
Taxes—		
Province of Ontario:		
Corporation tax	$40,240.99	
Mining profits tax	157,056.15	
Royalties:		
Town of Timmins	51,398.09	
Township of Tisdale	12,770.18	
Municipal:		
Town of Timmins	68,416.15	
Township of Tisdale	2,980.76	
Dominion of Canada re 1933 income tax	1,263.79	
Miscellaneous	76.44	
Dominion, provincial, and municipal, reserved for	521,886.20	
		856,088.75
Net profit from operations before depreciation		$5.263,239.41

Depreciation:		
Plant	$23,709.89	
Investments in other companies and properties written down	4,917.07	
Expenditures on properties abandoned	219,954.03	
		248,580.99
NET PROFIT FROM OPERATIONS CARRIED TO SURPLUS ACCOUNT		$5,014,658.42

SURPLUS ACCOUNT

BALANCE BROUGHT FORWARD, JANUARY 1, 1935	$5,303,012.79
NET PROFITS FROM OPERATIONS	5,014,658.42
NET PROFITS FROM THE SALE OF SECURITIES AND OTHER ASSETS	34,843.85
	$10,352,515.06
PAID OUT IN DIVIDENDS	4,428,000.00
BALANCE CARRIED FORWARD, DECEMBER 31, 1935	$5,924,515.06

BULLION STATEMENT

INVENTORY, JANUARY 1, 1935:		
Solutions		$92,403.20
Slags, litharge, and miscellaneous		880.00
Precipitates held over		3,671.00
Gold in process to scavenger		4,500.00
Silver		3,987.94
Total		$105,442.14
GROSS VALUES PRODUCED IN 1935:		
Ore milled	$14,700,486.52	
Tailings loss	573,644.88	
		14,126,841.64
		$14,232,283.78
INVENTORY, DECEMBER 31, 1935:		
Solutions		106,298.72
Precipitates held over		4,160.00
Gold in process to scavenger		2,000.00
		$112,458.72
BULLION SHIPPED DURING 1935		14,119,825.06
		$14,232,283.78

YEARLY AVERAGE COSTS

Account	Sundries	Labour	Stores	Total	Per ton ore milled
General miscellaneous charges and administration	.....	$321,507.06	$124,599.16	$446,106.22	$0.2429
Surface services	.....	61,484.09	43,627.75	105,111.84	.0572
Fire insurance	$54,411.11	.....	.....	54,411.11	.0296
Group insurance	.....	74,049.93	.....	74,049.93	.0403
Marketing bullion	106,306.43	.....	.....	106,306.43	.0579
Workmen's compensation	.....	141,922.93	.....	141,922.93	.0772
Milling charges	.....	487,834.90	701,553.77	1,189,388.67	.6474
Mining charges	.....	4,208,872.15	1,770,937.89	5,979,810.04	3.2549
Silicosis assessment	.....	130,779.17	.....	130,779.17	.0712
Total charges	$160,717.54	$5,426,450.23	$2,640,718.57	$8,227,886.34	$4.4786

Employees

The average number of men employed during the year has been 2,889, distributed as follows:—

MINERS:		MECHANICS:		GENERAL:	
Exploration	32	Operation	119	Mill and refinery	226
Development	440	Maintenance	211	Technical	90
Production	1,463			Clerical	41
				Miscellaneous	157
				Outside properties	110
Total	1,935	Total	330	Total	624

The men employed at outside properties on December 31, 1935, were distributed as follows: Ross mine, 75; Smith-Thorne, 30; Hunter mine, 5.

The Mill

Milling results were as follows:—

Ore milled	tons	1,837,153
Average value per ton		$8.00
Gross value		$14,700,486.52
Deduct loss in tailings		573,644.88
Net value recovered		$14,126,841.64
Average tons per day		5,075
Per cent. of possible time run		87.6
Tons per 100 per cent. running time		5,793
Solution precipitated per ton ore	tons	0.99
Value per ton tailings		$0.31
Cyanide consumed per ton of ore	lbs.	0.479
Zinc consumed per ton of ore	lbs.	0.045
Zinc consumed per ton of solution	lbs.	0.045
Lime consumed per ton of ore	lbs.	2.110
Lead acetate per ton of ore	lbs.	0.008
Average value of pregnant solution		$7.78
Average value received per ounce of gold sold		$33.77

Ore Reserves

Our ore reserves on the 31st of December, 1935, consisted of 7,355,318 tons, of a total value of $51,918,222.00, having an average value of $7.06 per ton. These figures compare with 7,061,926 tons of a total value of $51,440,260.00, having an average value of $7.28 per ton, at the end of 1934.

In the calculations dealing with ore reserves, the statutory price of gold, namely $20.67 per ounce, has been taken as the basis of value, and the same minimum ore grade as used in former years continued.

Hollinger Mill

During the year alterations have been made to the central shaft crushing plant, which makes its efficiency compare favourably with the most modern plants.

Hollinger Mine

Operations in the upper levels demanded a greater tonnage of backfill than formerly. During the year, 1,224,004 tons of backfill were placed.

The subshaft from the 3,950-foot level, known as No. 25 shaft, has been sunk to the 5,000-foot level and will be continued for another 150 feet before development operations are commenced. The drift west from Schumacher shaft, mentioned in the last annual report, has been extended to a point immediately under the central shaft. No. 21 shaft, which is immediately west of the central shaft, has been sunk to the 3,800-foot level and will be continued to connect with the drift above mentioned, thus given improved ventilation to the lower workings.

Intensive exploration in the upper levels has been continued with gratifying results. Approximately 37 per cent. of the ore came from above the 800-foot level. This figure indicates the importance of this work to the future life of the mine. As a result of this policy it has been unnecessary to draw on the ore reserves below the 2,750-foot level. This will ultimately result in concentration of the mining operations to more restricted areas, allowing considerable decrease in operating costs.

As mentioned in the previous report, operations are still carried on on all levels from surface to the 3,950-foot. There have been no outstanding ore discoveries of note during the year, but general developments have been up to expectations. There has been a further increase of $500,000 in the ore reserves for the year.

Young-Davidson Mine

The operations have been satisfactory during the year. As intimated in the last report a shaft has been sunk to a depth of 475 feet and a station cut at the 262-foot level. Drifting has been extended from this station to the ore body, and crosscuts are now being driven to open up the ore body for production.

Some 229,793 tons were treated during the year. Operating profits amounted to $234,000. The recovery for the year was $3.12 per ton.

Hislop Property

The shaft was extended from the 150-foot level to a depth of 450 feet. Development work has been carried out on the 150-, 300-, and 450-foot levels. The results to date are in-

conclusive. A small mill has been erected on the property for test purposes and went into operation January 1.

Smith-Thorne Property

Work was started on the Smith-Thorne property at Horwood lake, district of Sudbury, in September, 1935. It is reached by a 17-mile winter road southwest from Tionaga on the Canadian National railway.

Buildings were constructed, a plant was installed, and the sinking of a 2-compartment 45-degree shaft was started on claim S. 25,339 on October 28. At the end of the year the shaft was at an inclined depth of 206 feet, and a station was being cut at 200 feet. It is planned to sink to 600 feet before starting lateral work.

The plant included a 42 h.p. boiler, an 8- by 6-inch Ingersoll-Rand steam hoist, a 315-cubic-foot and a 350-cubic-foot oil-engine compressor. Buildings erected included an office, cookery-bunkhouse, steel shop–dry house, boiler-house, and hoist-compressor house.

An average of 38 men was employed during the period of operation. G. F. Gibbs was in charge. The mine address is Tionaga.

Examinations and Explorations

The following is taken from the consulting engineer's report on outside properties for the year ending December 31, 1935:—

In all, 100 examinations on properties of varying merit were undertaken during the year, of which 82 were in Ontario, 17 in Quebec, and one in Manitoba. On some of them a limited amount of work has been done, and during the coming year several will be further investigated when favourable weather and transport conditions obtain.

Prospecting, development, and exploration work on outside properties (except the Young-Davidson and Hislop properties) involved an expenditure of $245,000.

Horseshoe Mines, Limited

Horseshoe Mines, Limited, was incorporated in February, 1929, with an authorized capitalization of 4,500,000 shares of $1 par value. The officers and directors are: Dr. T. B. Armstrong, president; John Aiken, vice-president; M. Abraham, secretary-treasurer; R. J. Dixon, director. The head office is at 801 Excelsior Life Building, Toronto.

The property of this company includes the old Regina mine in the Lake of the Woods area, district of Kenora. It is forty-five miles southeast of Kenora.

The mine was idle from September, 1934, until September, 1935. Work was carried on from September 10 until December 25, and then suspended. The work consisted of repairs to the buildings, a geological survey of part of the property, and repairs to the shaft.

A crew of 9 men was employed during the period of operation, under the direction of W. R. Sutton, who was succeeded by Frank Williams. The mine address is Box 811, Kenora.

Howey Gold Mines, Limited

Howey Gold Mines, Limited, was incorporated in March, 1926. The authorized capitalization of the company is 5,000,000 shares of $1 par value, all of which are issued. The officers and directors are: R. T. Birks, president;

W. S. Cherry, vice-president; H. C. McCloskey, secretary-treasurer; B. E. Martin, assistant secretary-treasurer; J. E. Hammell and John A. Northway, directors. Fraser D. Reid is general manager, Edward Futterer is resident manager, Ralph E. Sullivan is mill superintendent, and Robert Basserman is mine superintendent. The executive office of the company is at 717 Federal Building, Toronto; the head office and mine office are at Red Lake.

The company's holdings lie along both sides of the boundary between Dome and Heyson townships, at the southeast corner of the lower part of Red lake, in the Patricia portion of Kenora district. The greater part of the town of Red Lake is built on Howey property.

During 1935, a new hoist was bought and installed at the 1,000-foot level winze. This winze was completed to the 1,500-foot level early in the year. A new 50 h.p. Westinghouse motor was also bought to drive the hoist. The average number of men employed during 1935 was 218.

The following is taken from the general manager's report for 1935:—

SUMMARY OF WORK ACCOMPLISHED

	1935	1934	1933
Drifts, crosscuts, raises, etc.....feet	5,143.8	3,955	1,879
Shafts and winzes.....feet	249	177	200
Shaft stations, slashing, etc.....cu. yds.	52	296	3,860
Diamond-drilling (underground).....feet	4,185	3,629	1,837.6
Diamond-drilling (outside exploration).....feet	1,514	851	.....
Box-holes.....feet	442	972	1,883
Ore broken.....tons	650,156	502,508	414,611
Low-grade material discarded by sorting.....tons	82,746	85,648	53,170
Milled after sorting.....tons	402,220	396,109	290,965
Broken reserves in stopes (Jan. 1, 1936).....tons	456,958	301,990	276,526

EARNINGS STATEMENT

	1935	1934	1933
Total receipts from sale of gold and silver.....	$1,319,764.26	$1,594,222.51	$1,158,470.03
Total operating cost including Toronto office expense..	844,239.38	881,869.52	770,010.56
Operating profit.....	$475,524.88	$712,352.99	$388,459.47

MISCELLANEOUS OPERATING DATA[1]

	1935	1934	1933	Total from start of operations
Tonnage milled and sorted.....	484,966	481,757	344,135	1,978,213
Tonnage discarded by sorting.....	82,746	85,648	53,170	282,265
Tonnage milled.....	402,220	396,109	290,965	1,695,948
Value a ton hoisted.....	$1.76	$2.20	$2.73	$2.79
Value a ton material discarded by sorting	$0.21	$0.21	$0.54	$0.335
Value a ton of ore milled.....	$2.08	$2.64	$3.12	$3.20
Loss in tailings a ton milled.....	$0.127	$0.214	$0.24	$0.226
Loss a ton of ore hoisted (in milling and sorting).....	$0.141	$0.213	$0.286	$0.242
Net percentage recovery a ton of ore hoisted.....	92.1	90.3	89.5	91.3
Total net recovery of gold and silver....	$1,319,764.26	$1,594,222.51	$1,158,470.03	$6,715,955.81

[1]All values are figured on gold at $20.67 per ounce.

Analysis of Costs

	1935 (484,966 tons)		1934 (481,757 tons)		1933 (344,135 tons)	
	Total cost	Cost per ton milled and sorted	Total cost	Cost per ton milled and sorted	Total cost	Cost per ton milled and sorted
Mine operation	$467,385.23	$0.963	$497,155.74	$1.032	$445,033.50	$1.293
Outside exploration	4,326.53	.009	2,389.43	.005	484.39	.002
Crushing and conveying	40,294.21	.083	44,902.88	.093	34,918.07	.102
Ore sorting	14,200.53	.029	23,485.72	.049	15,612.00	.045
Milling	217,786.10	.450	217,909.85	.452	198,877.14	.578
General expense	67,451.02	.139	63,993.85	.133	48,277.67	.140
Total plant cost	$811,443.62	$1.673	$849,837.47	$1.764	$743,202.77	$2.160
Toronto office salaries and general expense	32,762.26	.068	32,028.69	.066	27,578.92	.080
Interest and exchange	33.50	.....	3.36	.....	.....	.....
Total operating expenses before depreciation, Dominion and provincial taxes, and pre-operating charges	$844,239.38	$1.741	$881,869.52	$1.830	$770,781.69	$2.240
Dominion and provincial taxes	39,472.01	.081	43,284.59	.090	13,016.83	.038
Depreciation (on 10 per cent. basis)	135,705.24	.280	132,749.76	.276	119,108.64	.346
Pre-operating charges	96,993.20	.200	96,351.40	.200	103,240.50	.300
Total cost	$1,116,409.83	$2.302	$1,154,255.27	$2.396	$1,006,147.66	$2.924

Capital Expenditures

Dwellings	$1,266.60
Incinerator	1,243.45
Motor-boat (net)	516.65
Surface pipe line	1,116.86
Miscellaneous surface	556.04
Electric hoist, underground	4,327.63
Miscellaneous, underground	1,418.30
Total	$10,445.53

Ore Reserves

The broken ore reserves as of December 31, 1935, amounted to 456,958 tons, compared to 301,990 tons the previous year. The unbroken reserves amount to 1,267,500 tons of ore, as compared to 1,853,000 tons the previous year.

In addition to this there is a possible 185,000 tons of ore in place indicated in the 1,175-foot level, west block, and 100,000 tons of ore that will in all probability be recovered from the permanent pillars. The total positive ore, and ore indicated as possible, amounts to 2,009,450 tons, with a gold content of between $3.00 and $3.50 a ton at the current price.

Exploration

The 1,175-foot level east drift was extended to a point 1,042 feet east of the shaft, in an attempt to establish the downward extension of the narrow ore body encountered in the 1,000-foot level east drift. Diamond-drilling indicated the presence of a number of short lenses of mineralized quartz, none of which were of sufficient size to be mined at a profit.

The 1,175-foot level west drift was driven to a point 545 feet west of the shaft, and the dike systematically diamond-drilled to establish the downward extension of the 1,000-foot level west ore body. The results obtained justified our including this west block of 185,000 tons in the ore reserves as probable ore.

The winze was sunk to a point 271 feet below the 1,315-foot haulage level. A station was cut at the 1,500-foot level, and the dike explored by drifting and systematic diamond-drilling over a length on the strike of 770 feet. This work disclosed a mineralized section 6 feet wide and 300 feet long, having an approximate value of $4.25 (gold at $35.00 an ounce) per ton. This,

however, cannot be classified as ore. The assay results and results generally from the work done on this level were disappointing.

Surface prospecting and a limited amount of diamond-drilling from the surface was done during the year, resulting in no developments of importance.

Hudson-Patricia Gold Mines, Limited

Hudson-Patricia Gold Mines, Limited, was incorporated in April, 1934, with authorized capitalization of 2,500,000 shares of $1 par value. The capitalization was increased in December, 1935, to 3,500,000 shares. The officers and directors of the company are: W. R. Salter, president; M. H. Lebel, vice-president; P. A. Lavallee, managing director; M. F. Blue, secretary-treasurer; J. L. A. Tetreault, A. J. H. St. Denis, C. H. Ackerman, and General B. R. Hepburn, directors. The head office of the company is at 200 Bay Street, Toronto. The mine office address is Narrow Lake, via Sioux Lookout.

The holdings of the company consist of 26 claims in the townships of Goodall and Dent in the Woman Lake area of the Patricia portion of Kenora district. This company succeeded Metals Development, Limited, the shareholders of which received one share of Hudson-Patricia Gold Mines, Limited, for each four shares of the old company held.

The following table shows the amount of work done up to April, 1934, when the property was taken over by the present operators; at December 31, 1934; and at December 31, 1935:—

	April, 1934	Dec. 31, 1934	Dec. 31, 1935
	feet	feet	feet
Shaft No. 1 (inclined)	100	100	100
100-foot level:			
Crosscutting	15	15	15
Drifting	312	320	320
Shaft No. 2 (vertical)	237	237	237
211-foot level:			
Crosscutting	900	1,749	1,851
Drifting	.....	1,061	1,312
Raising	.....	169	169
Winze (inclined 74° from 211-foot level)	.....	75	144
325-foot level:			
Crosscutting	.....	.....	133
Drifting	.....	.....	579

Mining operations underground were suspended in August owing to lack of funds. Later in the year the capitalization was increased. Plans for a 50-ton cyanide mill were drawn up and approved, and the equipment for this mill was purchased early in 1936.

J. M. Thompson is manager. The average number of men employed at the mine from January 1 to October 1 was 27.

J-M Consolidated Gold Mines, Limited

J-M Consolidated Gold Mines, Limited, incorporated in February, 1932, is capitalized at 3,500,000 shares of $1 par value, of which 2,329,341 shares have been issued. The officers and directors are: J. E. Day, president; Chas. Taylor, vice-president; T. J. Day, secretary-treasurer; Hon. J. D. Chaplin and F. L. Hutchison, directors. The head office of the company is at 1116 Federal Building, 85 Richmond Street, West, Toronto. The mine office address is Jackson Manion.

This company holds 34 claims in the Woman Lake area, Patricia portion of Kenora district. Access by water is from Hudson, through Lac Seul, Pakwash lake, Trout Lake river, and Woman river, to Woman lake. Aircraft reach the property in about an hour flying from Hudson or Sioux Lookout.

The following table shows the development work done up to December 31, 1934, the work accomplished during 1935, and the total:—

	To Dec. 31, 1934	1935	Total
	feet	feet	feet
Shaft	404	.....	404
Winzes (below the 375-foot level)	30	115	145
125-foot level:			
Drifts	730	305	1,035
Crosscuts	160	81	241
Raises	170	30	200
200-foot sublevel:			
Drift	50	31	81
250-foot level:			
Drifts	808	482	1,290
Crosscuts	212	57	269
Raises	170	30	200
375-foot level:			
Drifts	472	504	976
Crosscuts	288	.....	288
Raises	20	105	125
482-foot level:			
Drifts	.....	68	68
Crosscuts	.....	9	9

A cyanide mill of approximately 30 tons daily capacity was installed at this property early in 1934, and operated from May, 1934, to the end of March, 1935. Gross production from 3,448 dry tons milled during 1934 was $34,709.32; and from 1,381 dry tons milled in 1935, gross production was $13,464.99.

No major alterations or additions were made to the mining plant during 1935. The average number of men employed per month during 1935 was 38, divided as follows: underground, 12; mill, 11 (3 months only), and surface 23. D. M. Thomson is manager.

Kenora Prospectors and Miners, Limited

Kenora Prospectors and Miners, Limited, was incorporated in February, 1928. The company has an authorized capitalization of 1,000,000 shares of $1 par value. The officers and directors are: Thayer Lindsley, president; I. A. Lindsley, vice-president and managing director; A. G. Fulton, secretary-treasurer; I. F. Machin and Jos. Errington, directors. The secretary's address is 25 King Street West, Toronto. The head office and mine office are at Kenora.

The property includes the Cedar Island mine, located in Shoal lake, Lake of the Woods area, district of Kenora. It is 25 miles southwest of Kenora by air.

Work was continued throughout 1935 at the Cedar Island mine. During 1935 the Cornucopia, or No. 2 shaft, which is a vertical 2-compartment shaft, was sunk an additional 208 feet to a total depth of 601 feet, and levels were established at 393 and 500 feet. A total of 927 feet of drifting, 368 feet of crosscutting, and 40 feet of raising was accomplished on the 393-foot level; and 712 feet of drifting, 257 feet of crosscutting, and 9 feet of raising on the 500-foot level. In addition stoping was started on these two levels and on the 144-foot level at No. 1 shaft.

In June the construction of a 30-ton amalgamation-flotation mill was commenced. It was completed and put in operation on October 15. The equipment included a jaw-crusher, two ball mills, a thickener, a 6-cell flotation machine, and amalgamation equipment, operated by a 150 h.p. Diesel engine. By the end of the year a total of 3,095 tons had been milled.

The plant included a 55 h.p. boiler, a 20 h.p. boiler, an 11- by 9-inch Ingersoll-Rand steam hoist, and a 600-cubic-foot Diesel compressor.

An average of 45 men was employed during 1935, of whom 15 were underground. Hilding Johnson was superintendent.

Kirkland Consolidated Mines, Limited

Kirkland Consolidated Mines, Limited, is capitalized at 7,000,000 shares of $1 par value. The officers and directors are: Ira Scheifley, president; Ferdinand Frohe, vice-president; C. C. Tyx, secretary-treasurer; Geo. F. Pfeiffer, Kevin Killeen, Norman R. Davis, Richard W. Langford, directors. The head office is at 702 Excelsior Life Building, Toronto.

The company owns 1,200 acres: 4 claims in McVittie township, 14 in Gauthier township, and 14 in Grenfell township, district of Timiskaming. The mine was reopened on August 10, and closed on September 30, 1935. During the operating period 100 feet of drifting was done on the 250-foot level and 1,000 feet of diamond-drilling. Ten men were employed, and Ralph Hurd was manager.

Kirkland Lake Gold Mining Company, Limited

The officers and directors of the Kirkland Lake Gold Mining Company, Limited, are: J. B. Tyrrell, president; R. G. O. Thomson, vice-president; R. Graham, secretary; V. H. Emery, managing director; A. C. Matthews, J. A. Dalton, J. C. Haight, R. V. Le Sueur, and W. S. Walton, directors. The company owns 465 acres in the township of Teck, district of Timiskaming, and is capitalized at 5,500,000 shares of $1 par value. The head office is at 1312 Metropolitan Building, Toronto. The mine address is Kirkland Lake. P. J. Harris is superintendent. An average of 158 men was employed during the year.

The following is taken from the managing director's report for the year ending December 31, 1935:—

Analysis of Operating Costs

	Total cost	Cost per ton milled
Development and exploration	$109,365.34	$1.52
Stoping	160,118.93	2.22
Transporting ore, hoisting, etc.	91,747.57	1.27
Milling	87,890.42	1.22
Marketing bullion	9,715.49	.14
Taxes	18,495.20	.26
General and undistributed charges (rebuilding and strengthening shaft-house, addition to mill equipment, maintenance mine buildings, administration and management, insurance, workmen's compensation, portion of extension to Kirkland Lake Hospital and drainage tunnel, miscellaneous)	97,461.47	1.36
Total	$574,794.42	$7.99

Summary of Work Done in Mine

As a means of showing the distribution of the work done, the mine has been divided into three vertical sections or hoisting lifts, and percentages are shown from each.

1st hoisting lift.....from the 2,400-foot level to surface.
2nd hoisting lift.....from the 4,900-foot level to the 2,400-foot level.
3rd hoisting lift.....from the 5,800-foot level to the 4,900-foot level.

	Quantity	1st lift	2nd lift	3rd lift
		per cent.	per cent.	per cent.
Ore broken.....tons	86,064	54.2	29.2	16.6
Drifting.....feet	6,020	63.3	32.4	4.3
Crosscutting.....feet	943	68.4	16.8	14.8
Raising.....feet	492	34.6	.....	65.4
Slashing.....cu. ft.	40,176	74.4	21.7	3.9
Diamond-drilling.....feet	11,518	64.4	29	7.4
Distribution of all development.....	.....	67.6	25	7.4

It will be seen from this that the majority of the development was done in the upper levels of the mine.

Practically no attempt was made to develop new ore in the lower lift. It is necessary to carry to completion the stopes already started in this section on account of the comparatively short life of the timber, which, if left for any appreciable time, would have to be replaced. If this had not been the case, for economic reasons, work for the time being would have been susdended in this lift.

Production

Although there were 6,968 tons more milled than in the year previous, there was a gain in broken ore reserves for the year of 14,134 tons, bringing the total broken ore reserves to 33,648 tons.

MILLING STATISTICS

Ore milled.....tons	71,920
Average value per ton.....	$12.02
Gross value.....	$864,477.04
Loss in tailings.....	$85,921.92
Net value recovered.....	$778,555.12
Recovery per ton milled.....	$10.83
Average tons milled per day.....	197
Value in tailings per ton.....	$1.19
Per cent. extraction.....	90.1

During the year there were alterations and additions made to the mill equipment, which resulted in a considerable increase in the milling capacity, with an improvement in the extraction.

General

The surface plant was maintained in good repair, and a number of improvements were made for convenience and efficiency of operation. During the year much of the timber in the shaft-house had to be replaced, and considerable repairing done.

Also, your company had to bear, with the other mines of the camp, its share of the cost of the new Kirkland Lake Hospital extension and the drainage tunnel under the town of Kirkland Lake. Part of the cost of the latter, however, will not be due until 1936. All of the above unusual expenditures, which amounted to $12,950.50, have been charged and paid for out of operations.

Lafayette Long Lac Gold Mines, Limited

Lafayette Long Lac Gold Mines, Limited, has an authorized capitalization of 3,000,000 shares of $1 par value. The name of the company was changed from Swayze-Rand Gold Mines, Limited, in 1934. The officers and directors were: H. J. Martin, president; W. G. Chapman, secretary-treasurer; P. Roche, M. S. McLaughlin, and Lloyd Woods, directors. The head office is at 200 Bay Street, Toronto.

The property includes a group of 25 claims in Errington township, Little Long Lac area, district of Thunder Bay. It is located about 1¼ miles south of Geraldton on the Canadian National railway.

Diamond-drilling was carried on at this property during 1935. In December a small 2-compartment shaft was started. By the end of the year it had been sunk to a depth of 30 feet by hand-steel and windlass.

J. A. Brownlee is in charge. The mine address is Geraldton.

Lake Shore Mines, Limited

Lake Shore Mines, Limited, is capitalized at $2,000,000, in shares of $1 par value. The executive officers and directors are: Dr. W. P. St. Charles, president and treasurer; W. H. Wright, vice-president; A. L. Blomfield, managing director; Kirkland Securities, Limited, secretary; Albert Wende and Ernest Martin, directors. The mine and works are at Kirkland Lake, Teck township, district of Timiskaming.

An average of 1,397 men was employed during the year. E. W. Todd is mine superintendent.

The following is taken from the report of the superintendent for the fiscal year ending June 30, 1936:—

During the period, 873,101 dry tons of ore were milled, having a gross value of $16,361,529.69. The bullion produced yielded 463,427 fine ounces of gold and 104,721 ounces of silver.

PRODUCTION RECORD

Period	Months	Tons milled	Gross value of bullion[1]	Dividends paid
Mar. 1, 1918, to Nov. 30, 1918	9	14,948	$372,352.35	$100,000
Dec. 1, 1918, to Nov. 30, 1919	9	11,907	302,518.17	100,000
Dec. 1, 1919, to Nov. 30, 1920	12	18,889	525,278.38	80,000
Dec. 1, 1920, to Nov. 30, 1921	12	21,681	523,597.39	120,000
Dec. 1, 1921, to June 30, 1923	19	36,825	850,282.92	160,000
July 1, 1923, to June 30, 1924	12	24,223	590,119.98	160,000
July 1, 1924, to June 30, 1925	12	96,838	1,812,008.05	600,000
July 1, 1925, to June 30, 1926	12	125,676	2,233,475.85	700,000
July 1, 1926, to June 30, 1927	12	214,335	3,105,047.85	1,200,000
July 1, 1927, to June 30, 1928	12	237,962	3,629,317.57	1,600,000
July 1, 1928, to June 30, 1929	12	367,015	5,519,138.86	2,000,000
July 1, 1929, to June 30, 1930	12	467,648	6,609,728.42	2,600,000
July 1, 1930, to June 30, 1931	12	698,624	9,153,546.62	3,600,000
July 1, 1931, to June 30, 1932	12	834,434	13,798,128.33	6,000,000
July 1, 1932, to June 30, 1933	12	797,673	13,277,685.72	6,000,000
July 1, 1933, to June 30, 1934	12	836,991	16,382,274.27	6,000,000
July 1, 1934, to June 30, 1935	12	833,094	16,026,108.57	8,000,000
July 1, 1935, to June 30, 1936	12	873,101	16,361,529.69	8,000,000
Total	.....	6,511,864	$111,072,138.99	$47,020,000

[1]Includes exchange premiums.

DEVELOPMENT FOOTAGE FOR THE YEAR 1935–36

Level	Drifting	Cross-cutting	Raising	Box-holing	Sub-drifting	Shaft-raising	Shaft-sinking	Total footage	Diamond-drilling	Station-cutting
	feet	feet	feet	feet	feet	feet	feet		ft. in.	cu. ft.
Surface							93	93		
200-foot		91.2				97	173	361.2	357 10	8,520
400-foot		282.3				186.5	171.5	640.3	111 8	8,388
600-foot		188.2	20		41.9	186.4	28	464.5	32	9,372
800-foot		181.4	44		161	188.5		574.9	293 7	9,132
1,000-foot	47.1	305.2	233.4		266.6	185		1,037.3	406 5	8,484
1,200-foot		254.7			107.7	188.5		550.9		7,860
1,400-foot		140	394.4	53.5	203.3	183.9		975.1	587 4	6,420
1,600-foot	399.2	548.2			16.2	100.9		1,064.5	237 3	7,116
1,800-foot	446.9	604.2	199.7		37.2	188.5		1,476.5	948 4	8,160
2,000-foot	547.3	351	392.6	10.5	251.9	22.5		1,575.8	947 10	9,492
2,200-foot		291.6	230.6		332.4			854.6	713	4,968
2,325-foot		279.2	253.8	12.9	57.6	34.3		637.8	194 3	5,400
2,450-foot	69	250.1	149.5	20.4	116.3			605.3	170	
2,575-foot	58.9	41.3	450.1	31.5	204.2			786	586 9	
2,700-foot	281.5	96.5	681.5		370.8			1,430.3	1,146 4	
2,825-foot	957.5	274.4	226.7		184.8			1,643.4	1,304 10	
2,950-foot	1,772.2	200.7	620.5					2,593.4	1,655 3	
3,075-foot	506.3	249.9	721.5		86.2			1,563.9	2,995 11	
3,200-foot	1,243.6	76.2	526		41.8			1,887.6	1,771 10	
3,325-foot	151.8		49.5					201.3	332 3	
3,450-foot									137 4	
3,825-foot									357 3	
4,450-foot									410 8	
Total	6,481.3	4,706.3	5,193.8	128.8	2,479.9	1,562	465.5	21,017.6	15,697 11	93,312

SUMMARY OF ORE TRAMMED FOR THE YEAR 1935–36

Level	Development	Stoping	Total
	tons	tons	tons
200-foot		127	127
400-foot		160	160
600-foot	131	16,952	17,083
800-foot		21,152	21,152
1,000-foot	1,588	33,032	34,620
1,200-foot	488	5,447	5,935
1,400-foot	265	53,127	53,392
1,600-foot	320	6,465	6,785
1,800-foot	1,406	1,245	2,651
2,000-foot	2,143	52,659	54,802
2,200-foot	1,304	86,447	87,751
2,325-foot	1,297	57,486	58,783
2,450-foot	760	85,105	85,865
2,575-foot	1,476	118,079	119,555
2,700-foot	2,854	93,087	95,941
2,825-foot	3,267	96,451	99,718
2,950-foot	6,568	56,939	63,507
3,075-foot	6,910	40,658	47,568
3,200-foot	2,921	11,566	14,487
3,325-foot	596	846	1,442
3,450-foot		74	74
Total	34,294	837,104	871,398

SUMMARY OF DEVELOPMENT WORK PERFORMED SINCE THE BEGINNING OF OPERATIONS

	Feet
Drifting	128,333
Crosscutting	36,041
Raising	84,128
Subdrifting	18,623
Ore and waste passes	11,647
Shaft-sinking	7,998
Shaft-raising	2,902
Shaft-slashing	1,227
Winze-sinking	1,151
Diamond-drilling	120,629
	cu. ft.
Box-holing	342,272
Station-cutting	854,993
Sumps	57,068

STATEMENT OF COSTS FOR THE YEAR

	Cost per ton
Development	$0.457
Mining	3.409
Milling and refining	1.194
Marketing bullion	.243
General and administrative expense	.317
Operating cost	$5.620
Depreciation	.295
	$5.915
Provision for taxes	1.937
Total cost	$7.852

Development

Exploration for new ore was limited to clean-up work in intermediate levels of No. 2 vein and to the further opening of No. 1 vein to a depth of 3,200 feet. The total drifting amounted to 6,481 feet, of which 2,489 feet were driven in ore having an average grade of 0.655 ounces per ton across an average width in the drifts of 54.7 inches. The policy of stressing development of the No. 1 or hanging-wall zone in preference to the No. 2 or footwall ore bodies has been continued in order that stoping operations in the former may be brought in advance of mining in the latter.

No. 1 vein continued to yield average results under intensive development of intermediate levels, and the amount of ore provided from this zone increased. The proportion of the total, taken from No. 1 vein, is held abnormally high at present in order to conform with the policy referred to above; in future it may be expected to decrease somewhat.

No. 5 Shaft.—Sinking of the concrete caissons to rock through the bed of Kirkland lake was completed with entirely satisfactory results. A pilot raise was driven from the 200-foot level to connect with the inside of the shaft caisson, and a routine underground programme of crosscutting, raising, slashing, and installation of equipment was begun. At the end of the year crosscut connections with mine workings were completed to the 2,450-foot level, pilot-raising to the 1,800-foot level, and shaft-slashing to a depth of 613.5 feet below the collar. Steel sets were installed to 565.2 feet below the surface, and the fireproof lining placed to a depth of 425.2 feet below the shaft collar. The No. 5 shaft is to be sunk to a depth of 4,075 feet.

Stoping.—New sections of No. 1 and No. 2 veins were prepared for stoping on levels extending from the 2,825- to the 3,200-foot levels, and mining will proceed in these working places during the coming year. A filled square-set rill method of stoping has been adopted as most suitable to the ground conditions.

The length of ore exposed in drifts and not prepared for stoping at the end of the fiscal year amounted to 13,819 feet, having an exposed average width before slashing of 61 inches and an average grade of 0.70 ounces. These figures indicate that ore available for mining continues well in excess of requirements.

The total amount of backfill placed in stopes during the year amounted to 515,844 tons.

Additions to Surface Plant

A new assay office and research laboratory was built and equipped, using fireproof materials throughout. A hoist-room was built to house the new hoists for No. 5 shaft and the steel headframe completed. Minor additions and alterations were made to mill equipment.

Milling

Milling results have responded to improvements installed, the extraction being increased to 96 per cent. Operation of the flotation unit was discontinued with a resultant reduction in milling costs.

Supplies and Equipment Purchased, 1918-1936

An indication of the amounts spent by Lake Shore Mines, Limited, for supplies and equipment, purchased mostly in Canada, is given in the list below.

Explosives	$1,682,730
Lumber and timber (83 per cent. local)	2,061,156
Rock drills and parts	657,198
Pipe and fittings, plumbing supplies	576,344
Electrical supplies	852,812
Mill supplies	2,759,481
Machinery and parts	3,672,029
Building materials	612,043
Fuel	396,248
Steel products	1,513,301
Oils and lubricants	224,757
Groceries	580,247
Trucks and cars	63,611
Miscellaneous	1,378,534
Backfill	462,536
Power	3,394,332
Total	$20,887,359

Freight and express included in above materials, $1,555,750.

L. B. United Mines, Limited

L. B. United Mines, Limited, was incorporated in May, 1934, with an authorized capitalization of 3,500,000 shares of $1 par value. The officers and directors were: Dr. W. E. Tindale, president; Allen C. McLean, secretary-treasurer; P. J. Elward, M. A. Chadwick, and Stuart Fleming, directors. The executive office is at 767 Yonge Street, Toronto.

The company optioned the property of Centennial Gold Mines, Limited, located in township 29, range 22, in the Michipicoten area, district of Algoma, and started work on April 2, 1935. The property had been idle since December 4, 1934.

The 130-foot, 2-compartment, 33-degree shaft was deepened to 262 feet, and levels were established at 100 and 250 feet. During 1935, a total of 89 feet of drifting and 51 feet of crosscutting was accomplished on the 1st level, and 478 feet of drifting and 100 feet of crosscutting on the 2nd level. Connections were made on the 1st level with two old 110-foot shafts, which are situated on either side of the main shaft, where 47 feet of drifting had been done at that horizon.

A 50-ton amalgamation-flotation mill was installed and put in operation on October 22. By the end of the year it had treated a total of 2,587 tons of ore, obtained from development work and stope preparation. Flotation concentrates, totalling 34 tons, were shipped to Sault Ste. Marie, where the company has established a refinery.

The mill equipment included a jaw-crusher, Marcy ball mill, Dorr classifier, Deister table, 4-cell Denver Sub-A flotation unit, filter, and amalgamation equipment.

The plant included a 218-cubic-foot electric compressor, a 320-cubic-foot electric compressor, and a small electric hoist. Buildings erected in 1935 included an office, mill, cookery, and two bunk-houses.

An average of 33 men was employed during the period of work. A. D. McWilliams, J. E. Ronaldson, and L. K. Lytle were successively in charge of operations. The mine address is Gold Park.

Lebel Oro Mines, Limited

Lebel Oro Mines, Limited, was incorporated in April, 1920. Early in 1936 the capitalization was increased from 3,000,000 to 3,500,000 shares of $1 par value. The officers and directors are: L. K. Fletcher, president; A. B. Mortimer, secretary-treasurer; W. H. Englebright, E. J. Dwyer, and T. H. Rea, directors. The head office is at Room 10, 320 Bay Street, Toronto.

The property of this company includes the old Long Lake mine, located in township 69, district of Sudbury. It is 16 miles southwest of Sudbury.

Work was resumed at this property in May, 1935, after a suspension of six months. During the balance of the year the work consisted of dewatering the old workings and diamond-drilling 2,391 feet from underground and 1,458 feet from surface. At the end of the year the company was preparing to install a mining plant.

The 200-ton cyanide mill, constructed in 1934, did not operate during 1935. It had been built with the intention of milling the tailings from the original operation, and was not equipped with a grinding unit.

An average of 13 men was employed during the period of operation. The mine address is Box 156, Sudbury. Wm. D. M. Ross is mine manager.

Leitch Gold Mines, Limited

Leitch Gold Mines, Limited, was incorporated in July, 1935, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: K. J. Springer, president; W. E. Segsworth, vice-president; H. J. Mackay, secretary-treasurer; Dr. J. H. C. McClelland, and R. Cryderman, directors. The head office is 320 Bay Street, Toronto.

The property this company acquired consists of about 400 acres in Thunder Bay district, about 4 miles northwest of Beardmore station on the Long Lac–Port Arthur branch of the Canadian National Railways. It is reached by a 6-mile road from Beardmore.

Work was started in August. Following surface work and diamond-drilling, shaft-sinking was started early in November with a gasoline compressor and carried to a depth of 30 feet. The 3-compartment vertical shaft was then collared, a headframe erected, and a mining plant installed. Sinking was resumed on December 29, and was at a depth of 46 feet at the end of 1935. A total of 3,630 feet of diamond-drilling was done in 1935.

The plant included an 8- by 6-inch Ingersoll-Rand hoist and a 530-cubic-foot compressor, driven by a 114 h.p. Diesel engine. Buildings erected included an office, power-house, blacksmith shop, bunk-house, cookery, and stable.

An average of 27 men was employed under the direction of W. J. Hacker. The mine address is Empire.

Little Long Lac Gold Mines, Limited

Little Long Lac Gold Mines, Limited, was incorporated in January, 1933, with an authorized capitalization of 2,000,000 shares of no par value. The officers and directors are: Jos. Errington, president; Thayer Lindsley, vice-president; L. A. Macdonald, secretary-treasurer; D. M. Morin, A. B. Gordon, and D. M. Hogarth, directors. The head office is at 1331 Canadian Bank of Commerce Building, Toronto. The mine address is Oklend.

The property is two miles south of Geraldton, on the Port Arthur–Long Lac branch of the Canadian National Railways, district of Thunder Bay. There is an automobile highway from Geraldton to the mine.

Work was continued throughout 1935. Shrinkage stopes were mined on the 204-, 325-, 445-, and 570-foot levels, and preparations were being made to backfill empty stopes with waste rock.

The plant includes a 125 h.p. boiler, 94 h.p. boiler, a 1,250-cubic-foot Ingersoll-Rand electric compressor, and an Ingersoll-Rand electric double-drum hoist. Electric power was obtained from Cameron falls, 95 miles away.

An average of 170 men was employed during the year, of whom 71 men were underground. A. A. Barton is manager; D. A. Duff is mine captain; and A. Rennick is mill superintendent.

The following is an extract from the manager's report for the fiscal year ending December 31, 1935, and covering further operations to March 31, 1936:—

Construction

Although the mill was completed and went into operation in November, 1934, the past year was still one of construction. The mill was enlarged and the following equipment installed: a second dewatering thickener, two dewatering filters, a 10-cell Sub-A flotation machine, with conditioner tank, thickener, and filter for the treatment of residues. A roasting plant for the treatment of concentrates has been completed and went into operation on April 1. This plant consists of a 15-spindle Edwards roaster and a complete cyanide plant for the treatment of calcines. Another thickener and filter is now being added to the cyanide plant.

The shaft headframe has been raised 15 feet higher and the capacity of the shaft ore bin increased by 125 tons.

A 2,000-cubic-foot Bellis and Morcom compressor and a 125 h.p. stoker-fired boiler has been added to the power plant. Also, an underground air hoist has been installed for shaft-sinking.

This plant enlargement entailed the following costs:—

Mill enlargement and equipment	$75,510.00
Roasting plant and equipment	42,500.00
Power plant enlargement and the purchase and installation of a Bellis and Morcom compressor and a new boiler and stoker	19,329.75
Sprinkler system	12,827.75
Mill storage warehouse	422.65
Machine shop and blacksmith shop addition and equipment	4,652.22
Outside pipe systems	8,764.03
Power and light lines	1,383.97
Docks, sidings, and fences	1,544.87
Shaft-house and headframe	2,180.31
New barn	1,717.56
Powder magazine	882.69
Extensions to bunk-house, hospital, commissary	10,327.15
Employees' residences	19,934.81
Miscellaneous plant buildings	3,421.55
Total	$205,399.31
Further expenditures in mine and plant equipment	22,135.49
Total	$227,534.80

Production

The following is a report on mill operation and production for the year ending December 31, 1935:—

Dry tons milled		62,073
Gold production	ounces	31,445.81
Gold lost in residues	ounces	4,896.21
Calculated amount gold in mill heads	ounces	36,342.02
Calculated mill head assay	ounces	.585
Mill residue assay	ounces	.0788
Percentage recovery		86.51

During 1935 the mill operated 361 days, indicating 98.9 per cent. running time. Tonnage milled was increased from 160 tons to 200 tons per day on September 1. During the year consulting metallurgists concluded that the flotation of refractory sulpho-arsenides from the cyanide plant residue, with subsequent roasting, was fully warranted. This idea was put into practice with the flotation plant operating late in December.

The following figures are typical of mill performance at the present time:—

	Per cent.
Gold recovered by blanket plant	65
Gold recovered by cyanidation	21.7
Gold contained in flotation concentrate	10.5
Gold contained in flotation residue	2.8

Roasting Plant

The results obtained from the first week's operation clearly indicate that the performance is up to expectations; a total recovery of 95 per cent. is reasonably assured and, it is expected, will be further improved during the ensuing year.

Development

During the year new ore was developed on the 4th level, 400 feet south of the main vein to date 300 feet of 0.3 grade has been drifted on. Further new ore has been developed on 2nd, 3rd, and 4th levels, a parallel mineable vein zone about 200 feet long on the 2nd level and above the 3rd level. This parallel zone is connected to the main vein by a series of folded quartz veins, making at these points a mineable zone 80 feet in length by 50 feet wide. To date, no development has been done in this area below the 4th level.

Development work accomplished for the year and to March 31st, is as follows:—

	1935	Total
Drifting feet	3,187.5	3,836
Crosscutting feet	1,024	1,120
Slashing cu. ft.	11,283	31,835
Raising feet	976.5	1,336.5
Sumps cu. ft.	2,004	.....
Station-cutting cu. ft	.....	9,060
Shaft-sinking feet	.....	166.5
Diamond-drilling:		
Surface feet	14,966	19,667
Underground		
Exploration; grouting feet	5,508	8,229

Ore Reserves

	Tons	Ounces gold per ton
Proven ore	85,910	0.565
Broken ore	22,435	.575
Probable ore	135,320	.484
Possible ore	77,090	.496
	320,755	0.515

Operating Costs

Operating costs have been slightly higher than anticipated, owing partly to construction, and an unusual amount of exploration development. Costs (62,073 tons) are as follows:—

	Total cost	Cost per ton
Exploration development and diamond-drilling	$109,732.70	$1.7678
Mining	153,195.34	2.4680
Milling	105,758.23	1.7038
Mine office and supervision	26,963.60	.4344
General expense at property	31,938.63	.5145
Administrative and general expense, Toronto office	24,238.47	.3905
Total	$451,826.97	$7.2790

It is expected that these costs will be lowered during the present year, due to less exploration, greater tonnage milled, and higher recovery.

Macassa Mines, Limited

The capitalization of Macassa Mines, Limited, is 3,000,000 shares of $1 par value. The officers and directors are: Robert A. Bryce, president; L. Soliague, secretary-treasurer; John D. Perrin, Henry M. Porteous, Thomas Riggs, and Arthur G. Slaght, directors. G. A. Howes is mine manager. The head office is at 85 Richmond Street West, Toronto. The mine office is at Kirkland Lake. About 145 men were employed at the mine during the year.

The company owns 6 claims, adjoining the Kirkland Lake Gold mine on the west, in Teck township, district of Timiskaming.

The following is an extract from the report of the mine manager for the twelve months ending March 31, 1936:—

Production

During the year, 69,455 dry tons of ore were treated, from which the gross recovery was $1,140,470.22 in bullion, or $16.42 per ton. In addition, sundry revenue amounted to $1,674.78. The average recovery in ounces per ton was 0.468, with a 93.81 per cent. extraction. The average daily milling rate was 189 tons at 96.62 per cent. running time.

Development

As intimated in the last annual report, the mine had reached the stage, both in hoisting facilities and working places, where a much more intensive exploration and development programme could be carried on. As a result, new ore was found on the 1,300-, 1,400-, 2,000-, 2,175-, 2,575-, 2,675-, and 3,000-foot levels. While the 3,000-foot (or bottom) level has still 1,010 feet east and 1,300 feet west to go before reaching the boundaries, the length explored has proved it to be the best level in the mine to date as regards lengths, widths, and grade of ore.

The abnormal exploration and development programme during the past year increased the costs but also increased the ore reserves. As there is still a great deal of exploration to be done both on the 3,000-foot level and all levels and sublevels above, it is deemed advisable to continue at the present rate of work, the object being to further improve the developed ore position. It was decided that opening up levels below the 3,000-foot would be done from a winze, having the hoist and storage pockets on the 3,000-foot level. It will be the same size as the present main shaft.

The cutting-out of an underground chamber on the 3,000-foot level for the hoist and headframe is nearly complete, and this cost is absorbed in the development cost figure below. Sinking will be under way in May. General mining costs were higher than last year for two reasons: (1) In certain sections stull stoping and backfilling had to be used to prevent dilution of ore; and (2) the broken ore reserve was increased over that of last year, the costs of which were completely absorbed during the year.

The summary of development work is as follows:—

	1935-36	1934-35	1933-34
	feet	feet	feet
Drifting	9,094.5	5,988	3,483.5
Crosscutting	1,697	1,033	349
Raising	1,700	1,409	744
Shaft-sinking	101	481	.....
Station-cutting	43	91	30
Total	12,635.5	9,002	4,606.5
Diamond-drilling	10,109	3,489	2,701.5

Ore Reserves

In the following estimate of ore reserves, only fully developed ore is included.

	Tons	Ounces per ton	Value per ton at $35
Unbroken ore	126,130	0.45	$15.75
Broken ore	13,605	.46	16.10
Surface dump	2,612	.43	15.05

In addition to the above-mentioned fully developed ore, there are lengths and widths of lower-grade ore throughout the mine, and also indicated ore of better grade, which as yet is not fully developed.

Mill

The mill operated efficiently throughout the year. A number of tests have been made, having as their object changes which we think would give us better extraction and lower costs per ton.

Operating Costs

No deferred development charges were set up during the year. Except for the items of capital expenditures listed below, all costs are included in the following, before provision for depreciation, pre-development, and taxes:—

	Cost per ton milled
Development and exploration	$2.80
Mining (stoping, tramming, pumping, etc.)	2.48
Milling	1.49
Administration, and general charges (including head office, Mint charges, and bullion-handling charge)	.97
Total	$7.74

Capital Expenditure

A total of $38,766.98 was spent on additions during the year, as against $72,249.79 in 1934-35. A good portion of it was on underground equipment, spare motors, and additional company dwellings. The itemized list is as follows:—

Residences (4)	$8,854.37
Substation	1,644.21
Machine shop	785.41
Assay office and refinery	1,576.78
Crusher plant and mill	8,000.59
Mine equipment	14,143.13
Office	404.35
Miscellaneous	3,358.14
Total	$38,766.98

It is planned to install during the year a new mine surface hoist and to transfer the original one underground for future work below the 3,000-foot level.

Mac-Auer Gold Mines, Limited

Mac-Auer Gold Mines, Limited, was incorporated in March, 1934, with a capitalization of 50,000 shares of no par value. The officers and directors were: S. P. Myers, president; C. E. Loy, vice-president; M. Auerbach, secretary-treasurer; L. Chatelle and M. G. Greenblatt, directors. The head office is at University Tower, Montreal.

The company acquired 10 claims in Davis township, and 9 claims in Scadding township, district of Sudbury, located at the north end of Ashganing lake, and work started on May 15, 1935. The property includes claim W.R. 35, on which are located two old inclined shafts, 100 feet and 32 feet deep, respectively, and about 200 feet apart. These shafts were dewatered and sampled, and the 100-foot shaft partially retimbered. About 30 feet of drifting was accomplished with a gasoline compressor at a depth of 50 feet in No. 1 shaft. A 10-ton amalgamation mill was erected and operated for about 10 days.

All work was suspended at the end of August and the mill equipment removed. Buildings constructed included a small mill building and a compressor-house of sheet metal, a canvas cookery-bunkhouse, and two small canvas buildings.

About 10 men were employed under the direction of H. I. Huestis.

McIntyre-Porcupine Mines, Limited

McIntyre-Porcupine Mines, Limited, has an authorized capitalization of 800,000 shares of $5 per value, of which 798,000 shares are issued.

The officers of the company are: J. P. Bickell, president; Bernard E. Smith, vice-president; E. D. Fox, secretary; Balmer Neilly, treasurer. The directors are: D. H. McDougall, Strachan Johnston, and R. S. McLaughlin. R. J. Ennis is general manager. The executive office of the company is at 15 King Street West, Toronto. The head office and mine office are at Schumacher.

The company's main property is at Schumacher, in the township of Tisdale, district of Cochrane. The company has also numerous holdings in other parts of the Dominion.

During 1935, McIntyre-Porcupine Mines employed an average of 1,209 men at their Schumacher property. Of this number, 923 were employed underground and 65 were regular mill employees.

The following is taken from the general manager's report for the fiscal year ending March 31, 1936:—

Production

Ore treated.....tons	873,000	
Value per ton (0.280 ounces).....	$9.88	
Gross value.....	$8,621,410.67	
Bullion recovered:		
Gold (232,112.054 ounces at $35.17).....		$8,162,825.88
Silver (46,048.30 ounces at $0.604).....		27,813.26
Total value.....		$8,190,639.14
Recovered per ton (0.266 ounces).....	$9.79	
Bullion melting, refining, and handling charges.....		90,800.26
		$8,099,838.88
Less Dominion production tax.....		105,587.58
		$7,994,251.30

PRODUCTION SINCE THE BEGINNING OF MILLING OPERATIONS IN 1912

Period	Months	Tons milled	Value per ton	Gross value	Recovery per ton	Total value	Price received per ounce for gold
1912	12	14,500	$7.00	$101,555.16	$5.25	$76,166.38	
1913	12	31,979	7.85	251,314.45	7.05	225,752.25	
Jan. 1, '14, to Mar. 31, '15	15	85,654	8.87	760,232.16	8.39	718,331.71	
Apr. 1, '15, to Mar. 31, '16	12	105,758	7.71	815,345.49	7.38	779,990.94	
Apr. 1, '16, to June 30, '17	15	195,307	10.00	1,954,793.28	9.55	1,864,914.28	
July 1, '17, to June 30, '18	12	178,327	10.05	1,793,197.55	9.61	1,714,258.00	
July 1, '18, to June 30, '19	12	179,874	9.78	1,759,627.40	9.29	1,671,646.03	
July 1, '19, to June 30, '20	12	188,835	11.52	2,175,891.31	11.02	2,080,178.44	
July 1, '20, to June 30, '21	12	171,916	11.67	2,005,672.00	11.08	1,904,326.36	
July 1, '21, to June 30, '22	12	193,971	10.69	2,074,088.40	9.99	1,937,105.07	$20.67
July 1, '22, to June 30, '23	12	240,615	9.96	2,397,303.00	9.35	2,249,741.63	
July 1, '23, to June 30, '24	12	360,140	9.69	3,488,863.00	9.14	3,291,178.22	
July 1, '24, to June 30, '25	12	400,259	9.43	3,774,068.00	8.86	3,546,637.52	
July 1, '25, to June 30, '26	12	460,909	8.72	4,020,326.00	8.25	3,804,774.90	
July 1, '26, to Mar. 31, '27	9	385,409	8.08	3,113,500.07	7.67	2,957,060.97	
Apr. 1, '27, to Mar. 31, '28	12	520,460	8.09	4,207,553.00	7.66	3,987,634.94	
Apr. 1, '28, to Mar. 31, '29	12	538,165	8.24	4,433,378.00	7.83	4,212,624.82	
Apr. 1, '29, to Mar. 31, '30	12	550,495	8.46	4,657,188.00	8.05	4,433,626.45	
Apr. 1, '30, to Mar. 31, '31	12	558,115	8.84	4,934,122.00	8.30	4,633,140.73	
Apr. 1, '31, to Mar. 31, '32	12	655,030	8.47	5,548,278.10	8.10	5,305,475.29	21.95
Apr. 1, '32, to Mar. 31, '33	12	736,300	8.45	6,224,493.40	8.12	5,981,714.69	22.79
Apr. 1, '33, to Mar. 31, '34	12	776,845	10.68	8,296,704.60	10.24	7,957,252.54	31.50
Apr. 1, '34, to Mar. 31, '35	12	862,100	10.23	8,819,660.27	9.78	8,430,670.26	34.67
Apr. 1, '35, to Mar. 31, '36	12	873,000	9.88	8,621,410.67	9.38	8,190,639.14	35.17
Total		9,263,963	$9.31	$86,228,565.31	$8.85	$81,954,841.56	

Mining

	Tons
Ore broken in stopes	773,976
Ore from development	72,716
Total	846,692
Ore hoisted	876,698

Development

Development work amounted to 35,410 feet. This includes 21,546 feet of drifting, of which 4,518 feet was on line and 17,028 feet in vein material; of this, 6,696 feet was in ore averaging 0.378 ounces per drift width.

ORE RESERVES, 1935–36

	Tons	Fine ounces gold	Value at $20.67	Value at $35.00
Estimated	3,393,905	1,059,962	$21,909,425	$37,098,670
Broken	180,815	51,748	1,069,630	1,811,180
Total	3,574,720	1,111,710	$22,979,055	$38,909,850
Average per ton		0.3120	$6.40	$10.88

SUMMARY OF DEVELOPMENT AND EXPLORATION, 1935–36

Period	Drifts	Cross-cuts	Raises	Winzes	Shafts	Stations	Sumps	Pockets and passes	Total footage	Total excavation	Diamond-drilling
	feet	feet	feet	feet	feet	cu. ft.	cu. ft.	feet	feet	cu. ft.	feet
1	1,817	1,064	78						2,959		4,532
2	1,699	1,150	170						3,019		4,180
3	1,268	1,092	35						2,395		2,627
4	1,269	914	130						2,313		4,010
5	1,447	1,066	107						2,620		4,607
6	1,734	1,049	216						2,999		4,199
7	2,407	660	80						3,147		4,179
8	2,231	1,176	122						3,569		4,188
9	1,860	1,061	32						2,953		5,310
10	2,068	1,304							3,372		4,681
11	1,981	1,223							3,204		5,380
12	1,765	1,069	26						2,860		5,967
	21,546	12,828	996						35,410		53,860
Previous to date	232,656.8	113,725.8	22,559.9	612.7	14,549.4	1,013,582	55,039	139,699	384,104.6	1,208,320	437,628
Total to date	254,202.8	126,553.8	23,555.9	612.7	14,549.4	1,013,582	55,039	139,699	419,514.6	1,208,320	491,488

Operating Costs

	Total cost	Cost per ton ore milled
MINING:		
Exploration	$93,258.29	$0.1068
Development	494,755.13	.5668
Breaking and stoping	2,497,447.19	2.8607
	3,085,460.61	$3.5343
Milling	609,489.38	.6982
Administration and general expense	100,286.31	.1149
Total	$3,795,236.30	$4.3474

ANALYSIS OF MINING COSTS PER TON MILLED

	Stoping	Drifting	Cross-cutting	Raising	Total cost	Cost per ton
Labour	$1,180,193.42	$161,820.75	$81,809.10	$8,061.23	$1,431,884.50	$1.6402
Explosives	100,483.98	60,807.27	36,793.70	1,555.27	199,640.22	.2287
Supplies	106,567.84	4,322.08	2,619.24	451.79	113,960.95	.1305
Power	79,056.79	15,497.72	7,522.49	1,797.09	103,874.09	.1190
Timbering	251,820.54	.....	.....	442.98	252,263.52	.2890
Shaft repairs	4,077.76	.....	.....	.....	4,077.76	.0047
Backfilling	210,683.27	.....	.....	.....	210,683.27	.2413
Retimbering	33,412.71	.....	.....	.....	33,412.71	.0383
Guniting	.....	1,286.37	7,267.21	.....	8,553.58	.0098
Steel-sharpening	36,413.21	13,871.35	7,269.01	760.00	58,313.57	.0668
Drill repairs	24,862.80	5,059.12	2,427.93	582.51	32,932.36	.0377
Surveying and engineering	33,638.17	6,804.55	3,275.45	747.18	44,465.35	.0509
Sampling and assaying	45,598.19	3,607.74	1,745.05	416.11	51,367.09	.0588
Pumping	12,575.66	2,442.30	1,185.45	275.39	16,478.80	.0189
Ventilating	14,377.66	2,615.80	1,176.30	294.07	18,463.83	.0212
Fire protection	888.98	.....	.....	.....	888.98	.0010
Underground lighting	11,050.64	.....	.....	.....	11,050.64	.0127
Tramming	113,114.32	20,375.07	9,797.26	2,242.17	145,528.82	.1667
Underground crushing	7,274.52	492.03	.....	.....	7,766.55	.0088
Hoisting	231,356.73	15,239.00	.....	.....	246,595.73	.2825
Total	$2,497,447.19	$314,241.15	$162,888.19	$17,625.79	$2,992,202.32	$3.4275
Exploration	.....	.....	.....	.....	93,258.29	.1068
Total	.....	.....	.....	.....	$3,085,460.61	$3.5343
Unit cost per ton	$2.8607	$0.3600	$0.1866	$0.0202	.....	.....

SUMMARY OF MILLING COSTS

	Labour	Supplies	Shop repairs and maintenance	Power	Total cost	Cost per ton
Crushing and conveying	$36,329.03	$29,883.43	$5,367.68	$18,930.10	$90,510.24	$0.1037
Flotation	48,696.67	116,984.96	8,817.22	66,811.91	241,310.76	.2764
Cyanidation	40,770.49	163,987.86	5,639.50	24,625.57	235,023.42	.2692
Refining	7,055.19	10,546.28	557.65	1,367.28	19,526.40	.0224
Assaying	6,347.22	2,775.10	1,311.53	2,020.12	12,453.97	.0143
Mill alterations	7,989.07	1,591.87	1,083.65	.....	10,664.59	.0122
Total	$147,187.67	$325,769.50	$22,777.23	$113,754.98	$609,489.38	$0.6982

ADDITIONS TO PLANT BUILDINGS AND EQUIPMENT

Miscellaneous surface buildings and equipment	$24,903.35
Aerial tramway for backfill	68,106.34
Miscellaneous underground equipment	40,823.30
Buildings and equipment at Mud lake	73,138.53
Total	$206,971.52

General

New ore developed during the year has been sufficient to fully maintain our ore reserve position. Development work on the upper levels has resulted in finding further extensions to previously worked ore bodies and, as anticipated, these areas continue to contribute large tonnages of good-grade ore.

On the lower levels from No. 12 internal shaft, some of the ground considered favourable for ore has been explored with fair results. Referring to the summary of mine development, it will be noted that No. 22 vein was developed for an additional 1,976 feet in ore averaging 0.360 ounces over drift width.

Outside Exploration

Fifty-seven properties were sampled and reported on during the year, and favourable recommendations were made on six. One of these was optioned, and others are under consideration.

Diamond-drilling on properties optioned in Chibougamau, mentioned in last year's report, did not confirm surface sampling, and the option was allowed to lapse.

The option on the O'Leary Malartic group of 19 claims in Guillet township, Lake Expanse district, Quebec, was completed, and we now own an 80 per cent. interest in these claims. A shaft was sunk to 375 feet, with levels at 125, 225, and 325 feet; and 1,824 feet of horizontal work developed 24,000 tons of ore, averaging 0.415 ounces per ton. Thirteen other claims adjoining this group were purchased outright, and our prospectors staked 15 claims also adjoining, bringing the total number of claims in this district to 47.

One one of the groups of claims purchased outright, commonly referred to as the Ranger group, a promising discovery was made. Trenching and diamond-drilling have indicated 41,000 tons of ore, averaging 0.31 ounces per ton from the surface to the 125-foot horizon, and established the continuity of the vein with payable values to the 300-foot horizon. A 3-compartment shaft is being sunk to a depth of 550 feet, and a 100-ton test mill is being erected.

McKenzie Red Lake Gold Mines, Limited

McKenzie Red Lake Gold Mines, Limited, incorporated February 1, 1933, has an authorized capitalization of 3,000,000 shares of $1 par value, of which 2,900,000 shares have been issued. The officers and directors are: W. G. Armstrong, president; F. D. Reid, vice-president; H. M. Anderson, secretary-treasurer; M. F. Fairlie, managing director; G. W. Quinn, director. John W. Shaw is consulting engineer, and J. L. Ramsell is resident manager. The head office is at 507 National Building, 347 Bay Street, Toronto. The mine office address is McKenzie Island.

The mine property consists of 11 claims on the northern end of Mackenzie island, in Red lake, in the Patricia portion of Kenora district. Summer transportation to the property is by barge from Hudson. Plane service from Hudson or Sioux Lookout lands passengers, freight, and mail at the mine. McKenzie Island P.O., established in 1935, is located at the mine. Electric power is supplied to the mine over the company's own line, which taps the Hydro line from Ear Falls to the Howey mine, near the Howey mill.

Underground work was started at this property in the summer of 1933. Development work done since that time to the end of 1935, and during the year 1935, is shown in the following table:—

	To Dec. 31, 1934	1935	Total
	feet	feet	feet
Shaft	272	189	461
Winze	305	.....	305
125-foot level:			
Drifts	838	285	1,123
Crosscuts	225	21	246
Raises	30	395	425
Box-holes	.....	.....	388
250-foot level:			
Drifts	1,133	1,295	2,418
Crosscuts	269	387	656
Raises	210	554	764
Box-holes	.....	.....	497
375-foot level:			
Drifts	616	882	1,498
Crosscuts	98	313	411
Raises	.....	351	351
Box-holes	.....	.....	100
450-foot level:			
Drifts	50	909	959
Crosscuts	.....	480	480
Raises	.....	79	79

Installation of machinery in the 125-ton cyanide mill, erected in the fall and early winter of 1934–35, was completed in February, and production commenced about March 1, 1935. Tonnage milled in 1935 was 36,117 tons, and production amounted to $530,857.65, including the premium on bullion sold.

The average number of men employed in 1935 was 88, divided as follows: mine, 45; mill, 8; construction, 13; and surface, 21.

McLaren-Porcupine Gold Mines, Limited

McLaren-Porcupine Gold Mines, Limited, incorporated in August, 1934, has an authorized capitalization of 3,000,000 shares of no par value. Of this number, 1,500,000 issued for property are pooled, 800,000 have been underwritten, and 700,000 remain in the treasury. The officers and directors of the company are: Dr. W. M. McLaren, president; J. M. McLaren, vice-president; J. J. Gallagher, secretary-treasurer; N. W. Kingsland and Gerard Ruel, directors. Both the head office and the mine office are at South Porcupine.

The property held by the company consists of about 300 acres in Deloro township, district of Cochrane. It is accessible by motor road from either South Porcupine or Timmins.

Buildings on the property consist of a cookery and bunk-house, 24 by 50 feet; an office, 16 by 18 feet; small log cabin, compressor-house and blacksmith house combined, magazine, and mill.

During 1935, mining was carried on from an open glory hole, which has now reached a depth of 50 feet . The material removed from this pit was sorted, and during the year approximately 300 tons was milled. One corner of the glory hole was recently slashed out and will be timbered to serve as a shaft, when proposed drifting from the bottom of the pit commences.

The mill equipment consists of a jaw-crusher, a recently added hammer mill, bin, Kennedy Nutt mill, and blankets. Power for the mill is supplied by Diesel engine. Mining equipment includes a Sullivan portable air compressor, 2-drill capacity; Climax rock drills; and a 5- by 6-inch Jenckes hoist.

During the year about 300 tons were milled with an approximate value of $5,000, as compared with about 100 tons milled in 1934 with an approximate value of $1,000.

The average number of men employed per month was 17. J. M. McLaren is general manager at the property.

J. Bruce McMartin

J. Bruce McMartin, 941 Dominion Square Building, Montreal, Que., is the owner of a group of 9 claims in Rickaby township, district of Thunder Bay, about 10 miles northeast of Jellicoe, on the Long Lac–Port Arthur branch of the Canadian National Railways.

During 1935 underground work was carried on at this property from January 1 to March 10, and from May 6 to November 1. When work was suspended on November 1, the underground development consisted of a 2-compartment vertical shaft, 262 feet deep, 218 feet of drifting and 40 feet of crosscutting on the 150-foot level, and 360 feet of drifting and 45 feet of crosscutting on the 250-foot level. Two small stopes had been mined on the first level, and one on the second level.

A 20-ton cyanide mill was erected early in 1935, and milling started on April 17. The mill was shut down on October 9, after treating a total of 3,295 tons of ore. A Diesel engine was used to supply power.

The mining plant included a 22 h.p. boiler operating an 8- by 10-inch hoist, and a 370-cubic-foot Ingersoll-Rand Diesel compressor.

An average of 23 men was employed under the direction of W. A. Coughlan.

McMillan Gold Mines, Limited

McMillan Gold Mines, Limited, was incorporated in December, 1926. The capitalization was increased in 1935 from 3,000,000 to 4,000,000 shares of $1 par value. The officers and directors are: G. M. Miller, president; G. A. Foot, vice-president; F. A. Lafferty, secretary-treasurer; W. J. Hussey, J. M. R. Corbet, C. B. Goldsborough, and R. L. Patterson, directors. The head office is at Sudbury. The property is about 60 miles southwest of Sudbury, in Mongowin township, district of Sudbury. The mine address is Footbanks.

Work was continued throughout 1935. Underground operations and milling were suspended on December 24, and a diamond-drilling campaign was started.

During 1935 a winze was sunk from the 625-foot level to a depth of 275 feet, and levels were established at depths of 750 and 875 feet. The development work accomplished on the various levels during the year and the total to the end of 1935 were as follows:—

Level	Drifting		Crosscutting		Raising	
	1935	Total	1935	Total	1935	Total
	feet	feet	feet	feet	feet	feet
225-foot	64	429	13	13	260	292
325-foot	.....	1,355	.....	504	90	392
425-foot	.....	333	.....	95	100	132
525-foot	.....	1,609	.....	639	310	355
625-foot	.....	768	.....	143	.....	.....
750-foot	177	177	14	14	.....	.....
875-foot	118	118	45	45	.....	.....
Total	359	4,789	72	1,453	760	1,171

Shrinkage stoping was done on all levels, except the 750- and 875-foot. The 125-ton mill treated a total of 40,213 tons during 1935, of which 33,814 tons was obtained from stoping, 633 tons from development, and the balance from surface dumps. A concentrating jig and amalgamation equipment were added to the mill circuit.

A total of 1,478 feet of diamond-drilling was done from surface, and 2,407 feet from underground.

An average of 82 men was employed during the year, of whom 49 were underground. Jas. G. MacGregor was consulting engineer; George C. Dunn was general superintendent; and W. R. Dennis was mill superintendent.

Madsen Red Lake Gold Mines, Limited

Madsen Red Lake Gold Mines, Limited, was incorporated in March, 1935. with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors of the company are: F. R. Marshall, president; Jos. McDonough, vice-president; W. G. Hughson, secretary-treasurer; G. A. La Bine, A. J. Doane, and M. Madsen, directors. The head office of the company is at 67 Yonge Street, Toronto. The mine office address is Red Lake.

The holdings of this company, 29 claims, are situated at Faulkenham lake, about 7½ miles southwest of the Howey mine, in the Red Lake area, district of Kenora, Patricia portion. The property was bought from Jomac Gold Syndicate and Falcon Gold Syndicate. The claims were prospected and developed by surface trenching and 12 diamond-drill holes in 1935. A vertical shaft, which was started late in the same year with an objective depth of 325 feet, was down about 175 feet at the end of the year. It is located on the hanging-wall side of the vein, which dips toward it at 60 to 65 degrees. It is estimated the vein will be intersected by crosscuts about 200, 150, and 100 feet from the shaft on the 100-, 200-, and 300-foot levels, respectively.

Madsen Red Lake Gold Mines bought the steam plant used in the early stages of development of the McKenzie Red Lake mine. This plant was moved to the Madsen property after the freeze-up in the fall of 1935.

In December, 1935, there were 31 employees at the mine. A. Honsberger is mine manager.

Manitoba and Eastern Mines, Limited

Manitoba and Eastern Mines, Limited, is capitalized at 5,000,000 shares, of which 3,100,006 were issued, 2,000,000 shares being optioned to Bobjo Mines, Limited, for $202,500.

The property consists of 16 claims in Strathy township, district of Nipissing. The head office is at 25 King Street West, Toronto. The officers of the company are: W. E. Hurd, president; W. G. Chipp, treasurer; T. M. Mungovan, secretary; R. J. Jowsey and L. K. Fletcher, directors. The mine address is Timagami.

Underground operations were suspended in February, 1935. Surface exploration was carried on at the west end of the property during the summer and fall.

An average of 6 men was employed. Jas. G. MacGregor is general manager.

Martin Bird Syndicate

The Martin Bird Syndicate owns 9 claims in Hearst township, district of Timiskaming. The officers and directors are: S. J. Bird, president; G. O'Meara, secretary-treasurer; Dr. R. Armstrong, J. Martin, and D. Lough, directors. John Campbell is mine manager. The mine address is Larder Lake.

Buildings on the property include a log cabin, two bunk-houses, cook-house, office, compressor and hoist house, and headframe.

Operations were resumed in June, 1935, and continued to the end of the year. At the end of 1935 the shaft had been deepened to 140 feet, and a total of 700 feet of drifting and 420 feet of crosscutting had been done on the 125-foot level. Ore hoisted during the year amounted to 2,000 tons and waste to 1,500 tons. An average of 12 men was employed.

Matachewan Consolidated Mines, Limited

Matachewan Consolidated Mines, Limited, owns 21 claims, comprising 840 acres, in Powell and Cairo townships, district of Timiskaming. The authorized capital is 4,000,000 shares of no par value, of which 1,200,000 shares are issued to Matachewan Canadian Gold, Limited, shareholders. The balance of the stock is optioned to Ventures, Limited, and Sudbury Basin Mines, Limited, to be taken up as money is expended on the property. The officers and directors are: Thayer Lindsley, president; H. H. Sutherland, vice-president; H. Wittingham, secretary-treasurer; W. J. Boland and Jos. Errington, directors. Ernest Craig is general manager; and Thos. L. Wells is superintendent. The head office is at 25 King Street West, Toronto. The mine address is Elk Lake. During the year an average of 42 men was employed in the mine, 12 in the mill and 26 on surface, making a total of 81.

The following is a summary of the work done in 1935 as reported by the superintendent:—

Shaft-sinking amounted to 176 feet; raising, 99 feet; station-cutting, 86 feet; sumps, 1,878 cubic feet. Development work, by levels, was as follows:—

Level	Drifting	Crosscutting	Raising	Box-holing
	feet	feet	feet	feet
160-foot	151	492	67	105
260-foot	595	.....	.....	.....
Total	746	492	67	105

From surface, 204 feet of diamond-drilling was done; and from underground, 2,261 feet.

Ore hoisted amounted to 49,487 tons; waste, 9,680 tons; and ore broken in stopes, 73,296 tons.

The mill operated 365 days, treating 48,362 tons, with an average per day of 132½ tons.

The following figures show the gold and silver production, with the total gross value:—

	Fine ounces gold	Fine ounces silver	Total gross value
Bullion shipped	9,761.441	1,402.34	$344,265.14
Slag shipped	352.127	248.09	12,558.53
Total	10,113.568	1,650.43	$356,823.67

New construction completed during the year includes the following: headframe, shaft-house, ore bin, power-house and a direct-driven electric hoist and compressor, change-house with lockers and shower baths, new refinery.

Matachewan Pioneer Syndicate

The Matachewan Pioneer Syndicate, capitalized at 7,000 units of no par value, was formed to take over 9 patented claims in Cairo township, district of Timiskaming, which were staked in 1906. During 1935 the syndicate was under the management of C. G. Knott and G. W. Pinner. The head office address is 1109 Northern Ontario Building, Toronto.

During 1935 a 2-compartment shaft was sunk to a depth of 50 feet, and 42 feet of crosscutting was done. Five men were employed under the direction of H. A. Steven. The mine address is Matachewan.

At the beginning of 1936 arrangements were being made to refinance and form a company to be known as Matachewan Hub Pioneer Mines, Limited.

May-Spiers Gold Mines, Limited

May-Spiers Gold Mines, Limited, was incorporated in July, 1934, and is capitalized at 3,000,000 shares of $1 par value, of which 1,280,000 shares are issued. The officers and directors are: Otto May, president and managing director; Nelson Spiers, vice-president; C. M. Lamb, secretary-treasurer; Geo. C. McCullagh, director. The head office of the company is at 159 Bay Street, Toronto. The mine office address is Red Lake.

The mine property consists of 8 patented claims, located at the west end of Red lake, Middle Bay section, in the township of Ball, Patricia portion of Kenora district. A large part of this group of claims lies under water. The mining plant is located on an island about a thousand feet in length.

A mining plant has been taken in to the property and is partially installed. It includes two 80 h.p. John Inglis R.T. boilers, one 840-cubic-foot Sullivan straight-line air compressor, a 7- by 11-inch Stephens-Adamson steam hoist, and all necessary blacksmith and machine shop equipment. A complete set of camp buildings to house a crew of 36 men has been erected.

A shaft has been dug down to bed rock, a distance of 8 feet, and cribbed in preparation for drilling operations.

Work at the property was reported temporarily suspended late in the summer of 1935. An average of 6 men was employed for the first nine months of the year, under the direction of Nelson Spiers.

Minto Gold Mines, Limited

Minto Gold Mines, Limited, was incorporated in July, 1930, with an authorized capitalization of 8,000 shares of no par value. The officers and directors are: John Knox, Jr., president and manager; M. E. Knox, secretary-treasurer; A. Dorfman and J. Ingram, directors. The executive and mine offices are at Wawa.

The property consists of the Minto, Jubilee, and Cooper mines, all located in township 29, range 23, in the Michipicoten area, district of Algoma.

Underground operations were continued at the Jubilee mine throughout 1935. Open stoping was done on the 2nd, 3rd, and 4th levels, and the ore transported by truck from the Jubilee mine to the 100-ton cyanide mill at the Minto mine, where it was milled.

The mill operated 340 days during 1935 and treated a total of 34,890 tons of ore, of which 2,212 tons was obtained from the 2nd level, 9,980 tons from the 3rd level, and 22,798 tons from the 4th level.

The development work accomplished during the year at the Jubilee mine consisted of a 150-foot raise from the 2nd level to surface, 30 feet of drifting on the 3rd level, and 63 feet of drifting on the 4th level.

Work was done at the Cooper property from March 15 to July 15. Previous operators put down a 45-degree shaft to a depth of 65 feet. In 1935 a power line was constructed from the Jubilee-Stanley line to the old shaft, and a compressor-house, bunk-house, and cookery were erected. A 310-cubic-foot Ingersoll-Rand electric compressor was installed, and work was then suspended.

An average of 40 men was employed during 1935, of whom 18 were underground. John Knox, Jr., was in charge of operations; Frank McLennan was mine captain; and Wm. Hosking was mill superintendent.

Moffatt-Hall Mines, Limited

Moffatt-Hall Mines, Limited, has a capitalization of $5,000,000, in shares of $1 par value. The officers are: L. R. Moffatt, president; and C. F. Tuer, Haileybury, secretary-treasurer. The company owns 15 claims in Lebel township, district of Timiskaming.

The property was operated under lease during the first seven months of 1935 by the Bidgood Kirkland Gold Mines, Limited. An account of this operation appears on page 82 of this report.

Morris Kirkland Gold Mines, Limited

Morris Kirkland Gold Mines, Limited, was formed in January, 1935, with an authorized capitalization of 2,500,000 shares of $1 par value. The officers and directors are: George W. Morris, president; M. C. Smith, vice-president; Jas. E. Day, vice-president; L. H. Watts, treasurer; Roy Weldon, secretary; W. B. Robb, Dr. W. H. Bennett, C. F. Jordan, H. P. Armstrong, and L. B. Black, directors. The head office is at 902 Kent Building, Toronto. The mine address is King Kirkland.

The company took over the assets of Kirkland Gold Belt Mines, Limited, on a basis of one share of Morris Kirkland Gold Mines for three shares of Kirkland Gold Belt Mines. The property consists of 292 acres in Lebel township, district of Timiskaming.

At the beginning of the year the shaft was 768 feet deep, and 727 feet of crosscutting and 3,529 feet of drifting had been done. During 1935 the present owners did 75 feet of raising, 445 feet of crosscutting, 2,556 feet of drifting, and 740 feet of slashing. A 12,000-gallon sump was cut on the 500-foot level.

An average of 32 men was employed under the management of T. C. Fawcett.

Munro Croesus Mines, Limited

Munro Croesus Mines, Limited, owns 160 acres in Munro township, district of Cochrane, 12 miles east of Matheson. The authorized capital is 40,000 shares of $1 par value. The officers of the company are: Robert Coffey, president; J. E. Grant, Haileybury, vice-president and general manager; L. A. Lillico, secretary-treasurer.

Operations were renewed in July, 1935, and continued to the end of the year, with an average of 14 men. During that time there were 800 tons of ore and 200 tons of waste mined and hoisted. The production was 31 ounces of crude bullion, having an approximate value of $930, and 25 tons of concentrates, valued at $4,500.

At the end of the year the property was leased to Tellaurum Gold Mines, Limited, of which Douglas Mutch is president. The deal was financed through an option given to Thayer Lindsley on 2,000,000 shares of Tellaurum stock.

Murray-Algoma Mining Company, Limited

The Murray-Algoma Mining Company, Limited, was incorporated in January, 1934, with an authorized capitalization of 40,000 shares of no par value. The officers and directors are: Dr. A. Sinclair, president; E. G. Archer, vice-president; G. J. Lamb, managing director; E. L. Lamb, secretary-treasurer; T. E. Carmichael, director. The executive office is at 18 Lansdowne Avenue, Sault Ste. Marie.

The property consists of a group of 18 claims in township 28, range 24, district of Algoma, a short distance west of Hawk Junction on the Algoma Central railway.

During 1935 sampling was carried on until the end of March, and work was then suspended until July. During the balance of the year a 2-mile power line was constructed from Hawk Junction to the property. Buildings erected included a compressor-house, blacksmith shop, cookery, and stable. By the end of the year a 220-cubic-foot Sullivan compressor, driven by a 50 h.p. motor, and an 1,800-gallon centrifugal pump, driven by a 5 h.p. motor, had been installed. It is planned to do open-cut mining and to install a small mill during 1936.

An average of 7 men was employed from July to the end of the year, under the direction of G. J. Lamb. The mine address is Hawk Junction.

Murwood Gold Mines, Limited

Murwood Gold Mines, Limited, was incorporated in June, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: A. T. Gilles, president; J. A. Griffith, treasurer; R. E. Hore, Benjamin Meen, Robert Fennell, Dr. A. McD. Murray, and J. R. Gifford, directors. Corporation Management and Executives, Limited, is secretary. The head office is at 304 Bay Street, Toronto.

In October, 1935, work was started under option at the old Big Master mine, located on Upper Manitou lake, district of Kenora. It is about 20 miles south of Wabigoon on the Canadian Pacific railway.

Previous operators sank a shaft to 270 feet and established three levels, on which a total of 1,888 feet of lateral work was done. They also obtained about 5,000 tons of ore from stoping, which was treated in a 10-stamp mill.

By the end of 1935 the company had installed a mining plant, dewatered the mine, and repaired the old buildings and shaft. Sinking was started from the bottom of the 270-foot shaft on January 1, 1936.

The plant included a 45 h.p. boiler, a steam hoist, a 370-cubic-foot Ingersoll-Rand semi-Diesel compressor, and a 220-cubic-foot Ingersoll-Rand gasoline compressor.

An average of 16 men was employed during the period of operation. E. A. Boadway was in charge. The mine address is Wabigoon.

Naybob Gold Mines, Limited

Naybob Gold Mines, Limited, incorporated in January, 1934, has an authorized capitalization of 3,500,000 shares of $1 par value. The officers and directors are: R. J. Naylor, president; Richard N. Clarke, vice-president; H. J.

Haddleton, secretary-treasurer; Geo. E. Beggs, John G. Jones, Sherman J. Le Pard, and Jos. Montgomery, directors. The executive office is at 808 Genesee Valley Trust Building, Rochester, N.Y.; the head office is at 808 Federal Building, Toronto, and the mine office address is Timmins.

The mine was formerly operated by the Hayden Gold Mines Company, Limited. The property consists of 16 claims in Ogden and Deloro townships, district of Cochrane, about 4 miles south of the town of Timmins.

The property has been developed to date from a 2-compartment vertical shaft, 719 feet in depth. Levels have been established at 100, 200, 300, 400, 550, and 700 feet. Naybob Gold Mines, Limited, has worked on only the 300- and 700-foot levels. The following table shows the work done on these two levels:—

	To Dec. 31, 1934	1935
	feet	feet
300-Foot Level:		
Crosscutting	325	745
Drifting	40	390
700-Foot Level:		
Crosscutting	1,030	1,180
Drifting	835	1,324
Raising	48	219

The company added a ball mill to the old Hayden mill, which consisted of a flotation unit and a cyanide unit. This addition considerably increased the capacity. Milling began March 1, 1935. A maximum capacity of slightly over 100 tons per day was reached, but average tonnage milled to the end of October, when operations ceased for the year, was only about 44 tons. The total tonnage milled was 10,681 tons. The gross value of production was $23,338.29. A small refinery was erected in 1935.

The average number of men employed during the 10-month period of activity in 1935 was 43. Operations were suspended owing to lack of capital, and negotiations for refinancing are proceeding. Robt. J. Naylor is general manager of the mine.

Neville Canadian Gold Mines, Limited

Neville Canadian Gold Mines, Limited, was incorporated in March, 1934, with an authorized capitalization of 3,000,000 shares of no par value. The officers and directors are: E. H. Dickenson, president; P. A. Fisher, vice-president; J. H. Thomas, secretary-treasurer; T. M. Mungovan, W. H. Schneider, and L. J. Lahay, directors. The head office is at 347 Bay Street, Toronto. The mine address is Shiningtree.

The property consists of a group of 9 claims in Churchill and Macmurchy townships, in the West Shiningtree area, district of Sudbury. It is about 23 miles by road north of Westree, on the Canadian National railway.

Work was resumed at this property on March 14, 1935, after a suspension of three months. It was again suspended at the end of March, after the mine had been dewatered, and the first two levels sampled by the Reward Mining Company, of British Columbia.

The property remained idle until August 14 when Bramor Mining (Ontario), Limited, in return for stock in the company, commenced the erection of a 30-ton

mill. The mine was again dewatered while the mill building was constructed. Work was suspended on October 17 before any mill equipment was installed. G. F. Milne was in charge.

At the beginning of 1936 arrangements were being made to form a company, to be known as Ronda Gold Mines, Limited, to take over the property.

North Shores Gold Mines, Limited

North Shores Gold Mines, Limited, was incorporated in November, 1933, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: E. E. Watts, president; P. L. Howell, vice-president; H. A. Coon, secretary; J. A. Ross and R. N. Palmer, directors. The executive office is at 1022 Federal Building, Toronto.

The property is located about 3½ miles south of Schreiber, on the main line of the Canadian Pacific railway, district of Thunder Bay.

Work was continued throughout 1935. During the year three new adits were started, making a total of five on the property. A 130-foot 27-degree winze was put down from the 1st level adit on the strike of the vein, and a sublevel was established at the bottom. The lateral work accomplished in the various adits during 1935, and the total to the end of 1935, was as follows:—

Level	Relative elevation	Lateral work	
		1935	Total
	feet	feet	feet
1st level	zero	.....	930
Sublevel	—50	260	260
Crosscut level	—95	370	370
2nd level	—175	40	440
No. 11 vein	—175	75	75
Total	.....	745	2,075

Four small stopes were mined on the sublevel, and two on the 2nd level. The 25-ton amalgamation mill was operated for 192 days during 1935, and treated a total of 1,404 tons of ore.

An average of 37 men was employed during the year. D. E. Graham is in charge. The mine address is Schreiber.

In December a syndicate was formed from shareholders of the company to supply working capital in return for a mortgage on the property and buildings. The syndicate is to control operations during the life of the mortgage.

Northern Empire Mines Company, Limited

The Northern Empire Mines Company, Limited, was incorporated in July, 1932. The company has an authorized capitalization of 500,000 shares of $1 par value. The officers and directors are: Fred Searls, Jr., president; G. B. Agnew, vice-president; H. E. Dodge, secretary-treasurer; Carroll Searls and A. Douglas, directors. The executive office is at 14 Wall Street, New York. The mine address is Empire.

The property is located at Empire, on the Port Arthur–Long Lac branch of the Canadian National Railways, district of Thunder Bay.

Work was continued at this property throughout 1935. The 2-compartment

vertical shaft was sunk to a total depth of 667 feet. The development work accomplished during the year on the various levels was as follows:—

Level	Drifting	Crosscutting	Raising
	feet	feet	feet
150-foot	.....	18	.....
300-foot	509	135	86
450-foot	187	19	.....
600-foot	1,279	230	52
Total	1,975	402	138

The amalgamation-flotation-cyanidation mill was operated throughout the year. Additional equipment was installed in August, including two flotation units, two Dorr thickeners, and an Oliver filter, which permitted the tonnage milled to be increased from 125 tons to 150 tons per day. A total of 45,736 tons of ore was milled during 1935, which was obtained from cut-and-fill stoping on the 150-, 300-, and 450-foot levels, and from development work.

The plant included two 1,080-cubic-foot Ingersoll-Rand electric compressors and a double-drum electric hoist. Electric power was obtained from Cameron Falls, 55 miles away.

An average of 123 men was employed during 1935, of whom 82 were underground. R. J. Hendricks was in charge, with P. E. Corrin as mine captain and W. Hargraft as mill superintendent.

Northern Mines, Incorporated

Northern Mines, Incorporated, was incorporated in Delaware in 1934, with an authorized capitalization of 4,000,000 shares of $1 par value. The officers and directors for 1935 were: I. E. Haight, president; F. Erion, vice-president; F. Dobmeier, secretary-treasurer; W. B. Woodbury and E. W. De Wilton, directors. The executive office was at 516 Walbridge Building, Buffalo, N.Y.

In March, 1935, this company started work on the property of Wabigoon-Contact Gold Mines, Limited, located at Contact bay, Wabigoon lake, about 7 miles south of Dryden, in Kenora district. Previous operators had put down two 80-degree shafts on the property, No. 1 shaft to a depth of 63 feet without lateral work, and No. 2 shaft to a depth of 100 feet with 40 feet of drifting at the bottom.

The company dewatered and sampled the shafts and carried on surface work. A mining plant was being set up at No. 2 shaft, including a 10- by 12-inch steam hoist and three boilers, totalling 104 h.p., when operations were suspended early in September.

About 15 men were employed under the direction of W. L. Haight.

Olive Gold Mines, Limited

Olive Gold Mines, Limited, was incorporated in January, 1935, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: Dr. W. C. Ryckman, president; J. J. Hoefle, vice-president; C. V. Jacobs, E. J. Wolfe, and H. F. Lichtenstein, directors. The head office is at 372 Bay Street, Toronto. The mine address is Mine Centre.

The property consists of the old Olive mine, located 4½ miles west of

Mine Centre, district of Rainy River. The Fort Frances branch of the Canadian National Railways is within a short distance of the property.

Previous operators sank a 2-compartment 70-degree shaft to a depth of 251 feet, and established levels at 60, 135, and 245 feet. They did 867 feet of drifting on the 60-foot level, 290 feet on the 135-foot level, and 177 feet of drifting and 65 feet of crosscutting on the 245-foot level. A second shaft was connected with the 1st level 300 feet east of the first shaft; and a third shaft, 50 feet deep, was put down 290 feet east of the second shaft. Considerable stoping was done on all levels, and the ore milled in a 25-stamp mill.

Work was started in May, 1935. The underground workings were dewatered and sampled during June and July. In September the construction of buildings and the installation of a plant was started. By the end of the year a power-house, blacksmith shop, office, bunk-house, cookery, dwelling house, and assay office had been built. A 472-cubic-foot Ingersoll-Rand compressor, driven by a 100 h.p. semi-Diesel engine, and a 9- by 12-inch Jenckes hoist were installed, with the intention of starting underground work early in 1936.

An average of 7 men was employed during the period of work, under the direction of F. G. Huycke.

Omega Gold Mines, Limited

Omega Gold Mines, Limited, was incorporated in May, 1935, with a capitalization of $5,000,000 in shares of $1 par value.

The officers and directors are: J. P. Bickell, president; Balmer Neilly, assistant to the president; E. D. Fox, secretary-treasurer; Dr. A. F. Demary, A. Dorfman, and E. M. Thomson, directors. A. D. Campbell is manager. The executive office is at 15 King Street West, Toronto. The head office and mine office are at Larder Lake.

The company acquired the Costello and Crown Reserve properties in McVittie township, district of Timiskaming. Work was commenced on surface in July, 1935. The Crown, or No. 1, shaft was put into shape for mining operations, a small amount of rock work only being done. A new 75-foot headframe and hoist-house was erected at the shaft. Underground mining commenced in January, 1936.

A complete new 300-ton milling plant was constructed and brought into operation in January, 1936.

Power for the mine's operation was supplied after December 1 by the Hydro-Electric Power Commission of Ontario, which extended its 110,000-volt line from Kirkland Lake to a new substation at the mine.

The following is an extract from the manager's report, dated April 16, 1936:—

> The preparation of a report that covers only the first two months' production from a new plant presents certain difficulties, and the results set forth cannot be accepted as indicative of what may be normally expected from such plant after the preliminary and necessary adjustments have been completed. Actual construction of the plant commenced August 1 last, and in the interval the mill has been completed and put in operation and there has been provided the necessary shops, office, boarding house, and other essential and complementary plant and equipment.
>
> Shaft heads were renewed and re-equipped, and underground, on the 300- and 550-foot levels the crosscuts and drifts were enlarged to provide for production equipment. In addition, a certain amount of work in preparation for stoping and early development work was completed.
>
> The tonnage treated during the two months' operations under review came from surface dumps and from the work done underground in slashing and preparing for regular stoping operations. At present raises are started from the 550-foot level on either side of the main hoisting shaft and when completed to surface will provide for cut-and-fill stoping operations. Shaft stations and crosscuts have been enlarged; two connections between Nos. 1 and 2 shafts have been provided and, as soon as stoping operations are well organized, an aggressive plan for further underground development will be formulated and put in effect.

The milling practice finally adopted is an adaptation of the McIntyre system of flotation followed by cyanidation. The mill went into production with few mechanical difficulties and soon demonstrated its capacity to be in excess of 300 tons per day. Indeed, with slight changes and little or no additional equipment, this capacity can be increased to approximately 500 tons per day.

During February and March the mill treated 17,352 tons of ore, from sources previously described, for a net recovery of $60,992.30, and for a cost, as now computed, of approximately the same amount. As previously explained, these results are preliminary and will be gradually improved. Costs to date have averaged $3.70 per ton of ore treated.

Ore reserves are estimated at 440,000 tons, averaging 0.197 ounces per ton, and in addition to the ore thus computed, a considerable low-grade tonnage, though indicated, has not been developed sufficiently to permit its inclusion in a reserve calculation.

Pamour Porcupine Mines, Limited

Pamour Porcupine Mines, Limited, was incorporated in March, 1934, under a Dominion charter. The company is capitalized at 5,000,000 shares of no par value. The officers and directors are: J. Y. Murdoch, president; G. H. Rainville, vice-president; A. Lafontaine, secretary-treasurer; Jules R. Timmins, M. Kendall, E. Hibbard, T. N. Hay, and W. Meen, directors. R. M. Macaulay is general manager. The executive office is at 804 Royal Bank Building, Toronto. The mine office address is Pamour, a post office established in 1935.

Pamour Porcupine Mines, Limited, was formed by the Quebec Gold Mining Corporation to take over three properties known as Three Nations, La Palme, and Porcupine Grande, in all about 800 acres situated in the northeast corner of Whitney township, district of Cochrane, near the east end of the Porcupine area. The Temiskaming and Northern Ontario railway (Timmins branch) passes through the property, as does also the main highway. The property is 6 miles east of South Porcupine.

The following is taken from the general manager's report for the year 1935:—

Diamond-Drilling

Diamond-drilling from surface was continued until August, during which time 55 holes were drilled, aggregating 29,105.5 feet. This drilling intersected 2,337 feet of vein material, or about 8 per cent. of the footage drilled. The record is as follows:—

	Feet
Old drilling	6,569.8
1934—16 holes	5,966.5
1935—55 holes	29,105.5
Total drilling to date	41,641.8

Most of this drilling was done to locate ore at the 200-foot horizon. A few holes were drilled to locate ore at the 400-foot horizon, with only two holes to locate ore at the 600-foot horizon. Both these two holes cut ore at the 600-foot horizon.

Mine Development

The old No. 2 shaft and steam equipment was operated continuously and only shut down at the end of the year. A new large 5-compartment main shaft, located 1,100 feet east of No. 2 shaft, was started in the fall and was sunk and timbered to 356.4 feet deep. Stations were cut at the 200- and 300-foot levels. During the year 3,458.7 feet of development work was done, and the following is the development record of the mine:—

	1935	Total to date
	feet	feet
Shafts	356.4	686.4
Winzes	.....	33
Drifts	1,547.1	3,825.6
Crosscuts	1,304.9	2,752.4
Raises	250.3	490.3
Total	3,458.7	7,787.7

All drifting, crosscutting, and raising was done on the 200-foot level, and the muck was hoisted through the old No. 2 shaft until December, when the new main shaft was ready for use to the 200-foot level and underground work could be speeded up. The development work on the 200-foot level covers a distance of 1,600 feet along the bedding, opening up three different ore sections.

Ore Reserves

The property was diamond-drilled from the surface over the area east of No. 2 shaft, but only a restricted area was drilled sufficiently closely to allow of connecting up the ore intersections to form indicated ore. In this area, from No. 2 shaft east to diamond-drill hole No. 53, a distance of 3,000 feet, ore indicated by diamond-drilling aggregated 1,530,000 tons, averaging 0.261 ounces in gold.

Development underground on the 200-foot level so far has proved three ore sections to aggregate 726,000 tons, averaging 0.246 ounces in gold. In mining the above ore there will, of course, be dilution with waste and lower-grade ore, so the grade of ore sent to the mill will be somewhat less than given above.

Plant Construction

Construction of a mining plant was started in July and the following construction has been completed: main shaft-house, crusher building with conveyor runways and junction house, hoist- and power-house, substation, shops buildings, change-house, assay office, warehouse and office, central heating plant, elevated water tank, pumping plant, powder magazine, 3 bunk-houses, dining room and cook-house, 7 residences. Plant buildings are of permanent and substantial construction, steel frames on heavy concrete foundations, with a special copper-lined insulboard siding, covered with corrugated iron, or of brick and tile.

Power from the Ontario Hydro Commission's Abitibi development was contracted for in the summer, and a secondary transmission line was built from their substation at Timmins to the mine. Delivery of power at 26,400 volts to the mine substation began in October.

Plans have been completed for a first unit mill. The foundations are completed and erection will begin early in 1936.

Parkhill Gold Mines, Limited

Parkhill Gold Mines, Limited, was incorporated in April, 1929, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers are: Sir Thomas Tait, president; A. P. Earle, vice-president; G. F. Racine, secretary-treasurer; C. F. Elderkin, G. M. McKee, Charles Adams, and Dr. C. A. Peters, directors. The executive office is at 1835 Beaver Hall Building, Montreal. The mine address is Gold Park. The property is located 6 miles from Wawa on the Algoma Central railway, in township 29, range 23, Michipicoten area, district of Algoma.

During 1935 the 2-compartment 40-degree shaft was sunk an additional 197 feet to a total depth of 1,500 feet on the incline; and levels, the 10th and 11th, were established at 1,332 and 1,450 feet.

Development footages accomplished on the various levels during 1935 were as follows:—

Level	Drifting	Crosscutting	Raising
	feet	feet	feet
2nd	36	.....	18
3rd	4	29	.....
4th	.....	.....	.....
5th	37	.....	.....
6th	41	18	67
7th	397	.....	.....
8th	373	69	177
9th	1,953	183	504
10th	1,597	92	259
11th	192	85	24
Total	4,630	476	1,049

A total of 20,714 tons of ore was obtained from the mine during 1935, of which 17,420 tons was from stoping and the balance from development. Stoping

was done by open-stoping methods on all levels from the 1st to the 10th, inclusive, although over half of the stope production was obtained from the 8th and 9th levels. A total of 1,371 feet of diamond-drilling was done from underground. An average of 97 men was employed, of whom 67 were underground. R. E. Barrett was in charge.

Paymaster Consolidated Mines, Limited

Paymaster Consolidated Mines, Limited, was incorporated in February, 1930. It has an authorized capitalization of 9,000,000 shares of $1 par value, 7,761,000 of which have been issued. The officers and directors at December 31, 1935, were: A. S. Fuller, president; E. H. Walker, vice-president; E. L. O'Reilly, secretary-treasurer; A. W. Hodgetts, assistant secretary; Chas. E. Cook, general manager; C. J. O'Brien and H. D. Rothwell, directors. The executive office is at 804 McKinnon Building, Toronto. The head office address and mine office address are both South Porcupine.

Paymaster Consolidated Mines, Limited, holds large acreages in Tisdale township, district of Cochrane. The chief property is the block of ground between the Dome mine and the Buffalo Ankerite mine. There are 6 shafts on this property having an aggregate depth of 3,099 feet. The old Dome Lake or No. 5 shaft and the West Dome (Heinze) or No. 6 shaft are the only two which have been used by this company. No. 5 shaft is 1,097 feet in depth, and No. 6 shaft, inclined at 62 degrees, is 456 feet in depth.

The following is an extract from the president's report to the shareholders for the fiscal year ending June 30, 1936:—

During the period covered by the report your company has produced bullion having a gross value of $782,533.48. This production is more than double the production for the preceding fiscal year. After deducting all costs of operation, including exploration and development, but before provision for depreciation on plant, buildings, and equipment, an operating profit of $166,539.09 has resulted.

All production to June 30, 1936, amounting to $1,111,288.63, has been taken from ore mined at our No. 5 and No. 6 shafts only. Your board now considers it advisable to open shafts No. 2 and No. 3, near the Buffalo Ankerite boundary, and these shafts have both been dewatered to the 400-foot level, and within the past few weeks our geologists and engineers and samplers have been examining the 100-, 200-, and 300-foot levels. As a result larger mining operations are contemplated.

Two 40-acre claims in Tisdale township, formerly known as the "Apex mine" and adjoining the No. 5 shaft section of our property to the northwest, have been acquired by purchase.

The following is taken from the report of the general manager for the fiscal year ending June 30, 1936:—

Mining

During the year an active development campaign was carried out, consisting of: deepening of No. 2 winze at No. 5 shaft from the 1,325-foot to the 1,575-foot level with stations and sump; excavating for winze headframe, bins, and hoist-room on the 400-foot level, No. 6 shaft, and sinking from the 400-foot level to the 1,050-foot horizon with intermediate levels at 525, 665, and 805 feet; excavating for a headframe, bins, and hoist-room at No. 3 winze in the 1,008 section at No. 5 shaft; drifting, crosscutting, and raising, which opened up new ore on the 600-, 750-, 900-, 1,050-, 1,200-, 1,325-, and 1,450-foot levels at No. 5 shaft, and on the 200-, 300-, and 400-foot levels at No. 6 shaft.

Work on the 1,575-foot level at No. 5 shaft is now under way, and a small amount of drifting has been accomplished on the new 525- and 665-foot levels at No. 6 shaft since sinking was completed. Stoping was carried out on all levels from the 400-foot to the 1,200-foot level at No. 5 shaft and from surface to the 400-foot level at No. 6 shaft.

Broken ore reserves were increased 561 per cent., from 9,500 to 62,798 tons.

Diamond-Drilling

As will be noted in the following tabulation a total of 32,178 feet of diamond-drilling was done. Three No. 10 "E" Mitchell diamond-drills were purchased, and the contracting of diamond-drilling discontinued. Costs on this work done to date show a saving of approximately 50 per cent. In addition to the above, a larger drill (Mitchell No. 20) has been ordered.

Summary of Stoping and Development

Drifting	feet	7,371
Crosscutting	feet	525
Raising	feet	600
Diamond-drilling	feet	32,178
Winzing	feet	927
Station- and sump-cutting	cu. yds.	713
Ore stoped	tons	151,770
Ore produced from development	tons	16,668
Waste hoisted	tons	19,756

Ore Reserves

Ore reserves, which during the year were increased 74.2 per cent., from 166,400 tons as of June 30, 1935, to 289,899 tons as of June 30, 1936, are as follows:—

	Tons	Ounces per ton
Ore blocked out, two or more sides	84,726	0.261
Probable ore	142,375	.228
Broken ore in stopes	62,798	.176
	289,899	0.227

Milling

During the fiscal year there were milled 113,971.7 dry tons of ore, having an assay value of 0.213 ounces per ton of ore milled. The average daily tonnage milled for July, 1935, was 201.3 dry tons per day, as compared with 401.9 dry tons per day for June, 1936, an increase of 99.65 per cent. The increased tonnage rate in the mill was due to the finer mill feed made possible by the installation of a vibrating screen and a gyratory crusher in the crusher-house.

Costs

The mining costs per ton broken for the year were as follows: No. 5 shaft, $2.46; No. 6 shaft, $3.07.

Following is an analysis of operating costs:—

	Total cost	Cost per ton milled
EXPLORATION AND DEVELOPMENT:		
Diamond-drilling, underground	$23,094.34	$0.20
Diamond-drilling, surface	320.46	.....
Surface exploration	199.56	.....
Outside exploration	229.12	.....
Development No. 5 shaft	74,815.84	.66
Development No. 6 shaft	34,486.09	.30
Sinking, stations and sumps, No. 5 shaft	20,047.23	.18
Sinking, stations and sumps, No. 6 shaft	2,727.82	.02
Station-cutting No. 5 shaft	1,759.68	.02
Total	$157,680.14	$1.38
MINING:		
No. 5 shaft	$258,195.35	.....
No. 6 shaft	143,615.34	.....
	$401,810.69	.....
Less for breaking 54,466.3 tons more than drawn from stopes	144,335.70	.....
Total	$257,474.99	$2.26
Ore transportation	$21,737.83	$0.19
Sorting and skipping	5,398.48	.05
Crushing and conveying	25,570.02	.22
Milling	97,140.52	.85
General expense	42,888.33	.38
Total operating costs	$607,890.31	$5.33

General

The saving effected by the change over to Hydro-Electric Power Commission power has been sufficient to completely pay for all the new equipment and the cost of installation. In addition there has also been paid to the Hydro-Electric $3,170.16 on the total of the required deposit of $15,000.00

A 24- by 14½- by 12-inch Canadian Ingersoll-Rand X.V.H.E. 2 air compressor with a capacity of 1,586 C.F.M. actual, and driven by a 300 h.p. synchronous motor was purchased and put in operation at No. 5 shaft. Two 1½-ton storage-battery locomotives and 40 additional ore cars were purchased and put in service at No. 5 shaft.

The blacksmith and steel-sharpening shop at No. 6 shaft was destroyed by fire. The loss was fully covered by insurance. All steel sharpening, blacksmithing, and plate work has now been centralized in the newly equipped shop at No. 5 shaft.

During 1935 the average number of employees at the mine was 192, divided as follows: underground, 121; mill, 17; and surface, 53. A. Pugsley is underground superintendent, and D. Robinson is mill superintendent.

Pickle Crow Gold Mines, Limited

Pickle Crow Gold Mines, Limited, incorporated in January, 1934, is capitalized at 3,000,000 shares of $1 par value. The officers and directors of this company are: J. E. Hammell, president; A. L. Smith, vice-president; Robt. Fennell, secretary-treasurer; G. A. Cavin, assistant secretary-treasurer; Mrs. Eola Hammell and B. H. Budgeon, directors. The executive office of the company is at 930 Canadian Bank of Commerce Building, Toronto. The head office and the mine office of the company are at Pickle Crow.

The company's property consists of 59 claims in the Pickle Lake–Crow River area, in the Patricia portion of Kenora district. The main claims of the property were originally staked in 1928, and early development work was done by Northern Aerial Minerals Exploration, Limited. The property is reached by airplane from Hudson, Sioux Lookout, or Collins, on the Canadian National railway, to Pickle lake, from which point a truck road, constructed during the summer of 1935, leads to the property, 8 miles east of the lake. Supplies are taken in by water from Hudson over Lac Seul, up the Root river, across a marine railway to Lake St. Joseph, and thence to Doghole bay, which is about 25 miles from the property. From here supplies are transported to Pickle lake by plane during the summer and by tractor during the winter. Supplies are also freighted by tractor from Savant Lake during the winter.

A mining plant was taken into this property in 1933. The sinking of a 3-compartment shaft was commenced in September, 1933. Since that date operations have been continuous. At the end of 1934, the shaft was down 380 feet; and by the end of 1935, it was 789 feet deep. The following table shows the amount of development work by levels done at this property to the end of 1934 and at the end of 1935:—

Level	Crosscutting		Drifting		Raising		Diamond-drilling	
	To Dec. 31, 1934	To Dec. 31, 1935	To Dec. 31, 1934	To Dec. 31, 1935	To Dec. 31, 1934	To Dec. 31, 1935	To Dec. 31, 1934	To Dec. 31, 1935
125-foot	126½	126½	707	1,427	.....	134	347	1,189
250-foot	222	222	1,135	1,135	177	177	1,268	1,337
375-foot	379	379	1,478	1,529	73	88½	2,180	2,180
500-foot	.....	166½	.....	226	.....	.....	.....	202
625-foot	.....	155½	.....	.....	.....	.....	.....	.....
750-foot	.....	222	.....	.....	.....	.....	.....	.....
Surface	.....	.....	.....	.....	.....	.....	3,107	6,604
Total	727½	1,271½	3,320	4,317	250	399½	6,902	11,512

A mill, comprising both amalgamation and cyanide units and having a daily capacity of 150 tons, was constructed during the latter part of 1934 and the winter of 1935. The mill was first turned over on April 17, 1935, and actual milling operations were started on May 1, 1935. During the last eight months of the year the mill treated 36,200 tons, having a gross value of $874,088.72.

During 1935 the following additions were made to the plant equipment: a 1,000-cubic-foot Ingersoll-Rand cross-compound, electrically driven compressor; the 600-cubic-foot Ingersoll-Rand steam-driven compressor was converted to an electrically driven compressor; an Ingersoll-Rand, 42- by 30-inch, class PE-I, 8,000-lb. pull, electric hoist and 60 h.p. motor; a Fairbanks-Morse horizontal split-case, double-action suction, centrifugal pump (for fire protection); and a Continental industrial type engine with automatic starter (attached to pump). An emergency power unit has also been installed. This consists of a gasoline engine and electric generator, which generates 125 horsepower, sufficient to operate all necessary mill units and to light the buildings in case of failure of the main power supply.

The following buildings were erected or completed during 1935: mine warehouse, 26 by 58 feet; machine shop, 26 by 60 feet; mine dry, 30 by 40 feet; compressor and hoist room, 31 by 78 feet; refinery, 14 by 16 feet, equipped; shaft-house and steel headframe, 60 feet in height, completed; standby power unit building, 14 by 16 feet; bunk-house, 26 by 30 feet; 2 dwellings, 22 by 25 feet and 24 by 28 feet; cookery warehouse, 16 by 40 feet; 2 warehouses at Doghole bay, 24 by 60 feet and 24 by 30 feet.

An average of 102 men was employed at the mine during 1935. Alex. G. Hattie is mine manager.

Porcupine Lake Gold Mining Company, Limited

The Porcupine Lake Gold Mining Company, Limited, was incorporated in 1927, and at that time took over the property of the old Porcupine Lake Gold Mines, Limited; it has an authorized capitalization of 3,000,000 shares of no par value. The officers and directors are: C. E. Calvert, president; H. H. Sutherland, vice-president; Geo. McKeown, secretary-treasurer; J. R. L. Starr and H. J. Batkin, directors. The head office of the company is at 112 Yonge Street, Toronto. The property, often called the Hunter mine, is located at the northeast corner of Porcupine lake, Whitney township, district of Cochrane.

The mine workings consist of a shaft, inclined at 65 degrees, and one level about 275 feet below the collar of the shaft. About 700 feet of crosscutting and drifting was done on this level by Porcupine Lake Gold Mines, Limited, before the mine was closed down in 1914. From that year until 1927 the property was idle. In 1927 it was pumped out and sampled, and some diamond-drilling was done. Work ceased again in June, 1928, and it was not until November, 1935, that the mine was again pumped out.

Work commenced in September, 1935, with the repairing of several of the old buildings and a diamond-drilling programme. About 2,000 feet of diamond-drilling was done from surface by the Porcupine Lake Gold Mining Company. The mine was pumped out early in November, and on the 23rd of the month Hollinger Consolidated Gold Mines became interested in the property, and sampled it and drilled 8 diamond-drill holes from underground, with a total footage of 1,764 feet. Hollinger completed this work in December, and no further work was done to the end of the year.

The mining equipment now on hand at the property includes an 80 h.p. boiler, which was reconditioned in October; a Jenckes straight-line air compres-

sor, steam-driven, with a steam cylinder, 10 by 12 inches, and an air cylinder, 12 and 7½ by 12 inches; and an 8- by 10-inch steam hoist, built by Ottumwa Iron Works.

Wm. Sixt was in charge of the work done by the Porcupine Lake Gold Mining Company. Geo. M. Henderson was superintendent.

Red Lake Gold Shore Mines, Limited

Red Lake Gold Shore Mines, Limited, incorporated in December, 1927, has an authorized capitalization of 5,000,000 shares of no par value, of which 4,500,000 shares are outstanding. The officers and directors are: Chas. E. St. Paul, president and managing director; Ira E. Hough, vice-president; Dr. Robt. W. Breuls, secretary-treasurer; Chas. V. Gallagher and Henry A. Newman, directors. The head office is at 244 Bay Street, Toronto. The mine office is at Red Lake.

The holdings of this company consist of 23 claims in the townships of Dome and Heyson, Red Lake area, in the Patricia portion of Kenora district. The mine shaft is about a mile west of the town of Red Lake. The present programme of work was commenced in June, 1934, although surface-trenching had been done on the property some years ago. Shaft-sinking was started late in the summer of 1934. At the end of 1934, the shaft was down 182 feet, with a level at 180 feet; at the end of 1935, it was 435 feet deep, with additional levels at 300 and 425 feet. The following table shows the development work accomplished during the past two years:—

	At Dec. 31, 1934	At Dec. 31, 1935
	feet	feet
Crosscutting	127	220
Drifting	80	1,429
Raising	.....	157

Equipment for a mill to be built in 1936 has been purchased. The initial capacity will be 125 tons, and provision will be made for enlarging the capacity to 250 tons if needed.

In 1935, electric power was made available at the mine. The formerly steam-driven compressor of 750-cubic-foot capacity was electrified. The mine pump was also electrified. A new Ingersoll-Rand double-drum hoist was installed in 1935. New buildings erected in 1935 included an assay office, a combined pipe- and machine-shop, and enlargements to the hoist- and compressor-building.

The average number of employees in 1935 was 34. W. P. Mackle is mine manager.

Richelieu Gold Mines, Limited

Richelieu Gold Mines, Limited, incorporated in May, 1934, is capitalized at 3,000,000 shares of $1 par value, of which 1,614,407 shares have been issued. The officers and directors are: A. B. Stodart, president; W. R. P. Parker, vice-president; W. J. McDonough, secretary-treasurer; H. R. Drummond-Hay and R. Spreckels, directors. The head office of the company is at 330 Bay Street, Toronto. The mine office address is Savant Lake.

The property consists of 24 claims, totalling 854 acres in Thunder Bay district. Fifteen of these claims are in one group, located on a peninsula extending southward into the northeast bay of Sturgeon lake, about 10 miles

southeast of Savant Lake station on the transcontinental line of the Canadian National Railways. The sixteenth claim, 104 acres, adjoins the St. Anthony Gold mine, about 4 miles to the southwest. In addition to the above holdings, the company recently acquired 8 claims, comprising approximately 400 acres, known as the Iron Duke group, 6 miles south of the main group.

On the main group, a 2-compartment shaft was started in December, 1934. By the end of 1934 it had reached a depth of 115 feet. Sinking continued in 1935 to a depth of 278 feet. Levels were established at 125 and 250 feet, and exploration by drifting was actively carried on to September 17, 1935, when the mine was closed down.

The mining plant at this property includes two boilers, one of 70 and one of 150 horse-power; a Canadian Ingersoll-Rand 2-stage air compressor, of 614-cubic-foot capacity; and a Canadian Ingersoll-Rand, 8- by 6-inch reversible steam hoist.

The average number of men employed up to September 17, 1935, was 35. J. G. Harkness was mine manager from the commencement of operations till the mine shut down.

Rickard Ramore Gold Mines, Limited

Rickard Ramore Gold Mines, Limited, was incorporated in October, 1934, with a capitalization of 3,000,000 shares of $1 par value. The officers and directors are: W. H. C. McEachern, president; E. Wise, secretary-treasurer; J. W. Morrison, consulting engineer; H. Hollands-Hurst, mine superintendent; and Jas. Travis, director. The head office is at 601 Concourse Building, Toronto. The mine office is at Iroquois Falls.

The company acquired claims Nos. 18,405, 18,406, 18407, 19,629, and 19,630 in the township of Rickard, district of Cochrane. The property, which was staked in 1917, was formerly known as the Raty mine. A mining plant was installed and camps were erected.

Previous operators had sunk an inclined shaft to a depth of 100 feet and had done over 700 feet of lateral work on the 100-foot level. The present company began operations in December, 1934, and at the end of 1935 the lateral work amounted to about 1,000 feet. Some 10,000 feet of diamond-drilling and considerable surface-trenching has been done.

St. Anthony Gold Mines, Limited

St. Anthony Gold Mines, Limited, was incorporated in 1921 with an authorized capitalization of 3,000,000 shares of $1 par value. The capitalization was increased to 3,300,000 shares in 1934. All shares are issued. The officers and directors at the end of 1935 were: H. P. Bellingham, president and general manager; R. F. Taylor, vice-president; R. F. Cairns, secretary-treasurer; R. Robertson and D. M. Bellingham, directors. The head office of the company is at 159 Bay Street, Toronto. The mine office address is Savant Lake.

The mine property, in the Sturgeon Lake area, lies 12 miles south of Savant Lake station on the main line of the Canadian National Railways, in Thunder Bay district. A 3½-mile wagon road from Savant Lake station leads to the north end of the North arm of Sturgeon lake. From this point transportation to the mine is by water. Large scows and power-boats are used to transport supplies over the water route.

The following is taken from the president's report for the fiscal year ending December 31, 1935:—

Continuous mining and milling operations were carried on throughout the year, and a total of 44,550 tons of ore was treated. The actual cost of mining and treating this ore was $5.18 per ton.

The total bullion production for the year was $303,151.80, as against $123,263.57 in the year 1934, an increase of $179,888.23, or 146 per cent. There was an operating profit of $73,516.61. After charging $37,520.73 for depreciation, $17,269.00 for development, $16,684.44 for the balance of rehabilitation, and sundry write-offs and provisions for Dominion and provincial taxes, the sum of $2,042.44 was transferred to earned surplus.

The following is taken from the mine manager's report for the year ending December 31, 1935:—

Mine

A total tonnage of 34,912 tons of ore was broken and 34,538 tons delivered to the mill. This ore, with the exception of 700 tons recovered from the development work on the 500-foot level was drawn from the 250-foot and 350-foot levels. Ore was mined over widths from 5 to 15 feet as against an original width calculated at 5 feet. The balance of the tonnage was derived from the old mill tailings.

A total of 842 feet of drifting and crosscutting was accomplished during the year. The drifting accounted for 579 feet distributed as follows: 250-foot level, 191 feet; 350-foot level, 148 feet; 500-foot level, 240 feet.

The crosscutting done was in connection with the new inclined shaft and distributed as follows: 150-foot level, 114 feet; 250-foot level, 84 feet; 350-foot level, 65 feet.

Summary of Work Accomplished to Date

	Feet
New inclined shaft	121
Old shaft	150
Winzes and raises	500
Drifts	5,164
Crosscuts	1,693
Total	7,628

After the 500-foot level was dewatered, drifting was carried on and the main vein was exposed for a total length of 330 feet, with an average grade of 0.40 ounces of gold per ton. This level is much drier than the upper levels, and pumping is carried on only 4 per cent. of the time.

The management decided that economical mining required the excavation of an inclined shaft from the 500-foot level to the surface. This work was started near the end of the year, and a total footage of 121 feet had been excavated by December 31. This new shaft will improve the working conditions considerably, in comparison with the system of hoisting through a series of winzes, which is not efficient and is more costly. Operating through the new inclined shaft will permit us to save labour costs in tramming, mucking, cage-tending, and hoisting, together with power costs, and should, in the aggregate, account for the majority of the capital outlay during the year 1936.

At this time the small amount of development work that has been done north in the granodiorite does not justify my making any estimate as to ore reserves in this section of the mine, although the vein intersections are large and may be profitably mined on a large tonnage basis.

Mill

The mill operated 90 per cent. of the possible running time. The tonnage treated was as follows:—

	Tons	Ounces per ton
Old mill tailings	10,012	0.17
Underground ore	34,538	.26
Total	44,550	.....

The average tons milled per day of 24 hours' running time was 136.63 tons. The total gold bullion recovered and shipped was 8,538.6 fine ounces. The total silver bullion recovered and shipped was 1,957.7 fine ounces. The average recovery was 91 per cent. The average cost of milling was $1.473 per ton. A new crusher, amalgam barrels, and blanket tables were added to the mill circuit during the year.

Hydro-Electric Power Plant

The power plant was damaged by fire due to lightning. It was found, however, that the undamaged generator supplied sufficient power to carry on all mining and milling operations. The cost of repairs to the plant was fully covered by insurance.

The rapids, about a mile below the power plant, were lowered during the summer, which improved the gross head approximately one and a half feet. This improvement in the gross head relieves us of any further anxiety with regard to power shortage. The plant is now operated by 3 employees where 4 were employed.

General

Building construction work throughout the year was confined to minor changes in the bunk-house and the erection of a new cabin at the power site. A new stable was erected at the mine. A steam-heating system was installed throughout the mine buildings.

Two major accidents were reported during the year. One of the employees was injured in the mill and fully recovered, the other accident occurred in the mine and proved fatal. An average of 114 men was employed throughout the year. Mine timber and cordwood are being recovered as near to the mine property as possible.

Developed Ore

While the character of the ore in the mine is difficult to sample, there is, in my opinion, one year's ore available at this time. However, the opening-up of the ore on the 500-foot level for a distance of 330 feet would indicate there is a continuity of ore to a greater depth than now opened up and as formerly indicated by diamond-drilling.

R. P. Teare was manager throughout the year, employing an average force of 108 men.

Sakoose Gold Mines, Limited

Sakoose Gold Mines, Limited, was incorporated in June, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors were: A. H. Acres, president; M. J. Maloney, vice-president; D. McGrory, secretary-treasurer; M. S. Shulman, director. The head office is at 231 St. James Street, Montreal, Que. The mine address is Dyment.

The property of this company includes the old Sakoose mine, located about 6 miles south of Dyment, in Kenora district.

During 1935 the new 2-compartment vertical shaft was continued to a depth of 143 feet. All work was suspended in May.

In August, the assets of the company were taken over by Nordic Sturgeon Gold Mines, Limited, but no work was undertaken by them at this property during 1935.

An average of 31 men was employed during the period of operation in 1935 under the direction of D. H. Traynor.

Selected Canadian Golds, Limited

Selected Canadian Golds, Limited, was incorporated in March, 1932, with an authorized capitalization of 10,000 preferred shares of $100 par value, and 15,000 common shares of no par value. The officers and directors were: D. M. Hogarth, president; G. G. Blackstock, secretary-treasurer; Halstead Lindsley, R. Livermore, W. T. McEachern, Quincey Shaw, and C. D. H. MacAlpine, directors. The head office was at the Bank of Commerce Building, Toronto.

The company continued work, until March 1, under their option, on the old Sultana mine, located about 7 miles southeast of Kenora, and then dropped the option. The work accomplished in 1935 consisted of 79 feet of drifting on the 4th level, 136 feet of drifting on the 7th level, and 1,703 feet of diamond-drilling from underground.

A crew of 23 men was employed under the direction of Cameron McDonald.

Selected International Mines, Limited

Selected International Mines, Limited, an English company, with a capitalization of £1,000, in shares of £1 par value, leased the property of Cheltonia-

Swastika Mines, Limited, in June, 1935. C. F. Davies is chairman of the board of directors. Thomas Evans and J. J. L. Helou are directors. The head office is at 33 Chancery Lane, London, W.C.2, England. C. J. Poole was manager at the property, employing 18 men. The mine address is Swastika.

The property consists of 5 claims in Eby and Otto townships, district of Timiskaming. The operating company did 105 feet of shaft-sinking and 60 feet of lateral work on the 100-foot level.

Shenango Gold Mines, Limited

Shenango Gold Mines, Limited, was incorporated in March, 1935, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: Louis Normandin, president; Bruce Cameron, vice-president; James Hutchison, secretary-treasurer; Jack Owens and William Cromar, directors. The head office is at 1107 Bank of Hamilton Building, Toronto.

The property consists of a group of 4 claims in Hawkins township, and one of 12 claims in Walls township, district of Algoma.

During 1935 work was confined to the group in Hawkins township, where open-cut mining was done on a small scale. In November the construction of a 25-ton amalgamation mill was started. By the end of the year the mill building was completed and the installation of equipment begun, with the expectation of starting up the mill in March, 1936. The equipment will include a crusher, Morley mill, rolls, ball mill, and amalgamation equipment, to be operated by gasoline engines.

It is expected that ore for the mill will be obtained from open-cut operations. A 220-cubic-foot gasoline compressor was installed in December.

Buildings erected included the mill, blacksmith shop, office, 2 bunk-houses, and cookery. The mill is located about three-quarters of a mile east of Langdon, on the Algoma Central and Hudson Bay railway, and about 5 miles from Oba. The mine address is Oba. About 15 men were employed under the direction of Jack Owens.

Shinintree Gold Mines, Limited

Shinintree Gold Mines, Limited, was incorporated in March, 1935, with an authorized capitalization of 1,000,000 shares of $1 par value. The officers and directors were: Lionel Brooke, president; C. H. Hitchcock, vice-president; W. B. McPherson, secretary-treasurer; Gilbert Bennett and W. J. Laforest, directors. The head office is at 171 Yonge Street, Toronto. The mine address is Shiningtree.

The property consists of claims W.D. 1,406 and T.R.S. 2,507, totalling 126 acres, in Macmurchy township, West Shiningtree area, district of Sudbury. It is 26 miles by road northeast of Westree on the Canadian National railway. Previous owners did some surface stripping and put down a vertical shaft to 36 feet.

The company started work in May. The old shaft was cleaned out and timbered into two compartments, and sinking started with hand-steel and windlass. By the end of the year the shaft had reached a depth of 100 feet, and a level had been started at that depth, on which 26 feet of drifting had been done.

Buildings erected consisted of a bunk-house, cookery, and blacksmith shop. No mining plant or headframe was installed.

An average of 9 men was employed during the last eight months of 1935, under the direction of Lionel Brooke.

S. B. Smith

Dr. S. B. Smith, Cleveland, Ohio, is the owner of claim S.S.M. 301, formerly known as the Van Sickle mine, located in township 29, range 23, in the Michipicoten area, district of Algoma. It adjoins the east boundary of the Parkhill mine. The mine address is Gold Park.

During 1935 the 2-compartment 45-degree shaft was sunk an additional 149 feet, to a total depth of 289 feet on the incline, and a second level established at 261 feet.

Stopes were started on both levels during the second half of the year, from which 6,122 tons of ore was obtained on the first level and 1,534 tons on the second level, by open-stoping methods.

The 15-ton mill installed in 1934 was replaced by a 50-ton mill, which started operating on June 1. The equipment included a Telsmith crusher, ball mill, rake classifier, four Wilfley tables, and amalgamation equipment. By the end of the year the mill had treated a total of 7,946 tons of ore.

A 312-cubic-foot electric compressor was added to the plant. An assay office was constructed in addition to the mill.

Operations were suspended early in January, 1936. An average of 38 men was employed during 1935, of whom 20 were underground. J. C. Canfield was in charge.

Sol-D'Or Gold Mines, Limited

Sol-D'Or Gold Mines, Limited, incorporated in September, 1934, has an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors elected at the first annual meeting are as follows: C. M. Edwards, president; E. R. Bremner, vice-president; F. W. Runge, A. B. Wright, and G. W. Mitchell, directors. A. W. Reynolds is secretary-treasurer for the company. The head office is at Room 505, 140 Wellington Street, Ottawa. The mine office address is Narrow Lake.

The company's holdings, which consist of 24 patented claims and 14 unpatented claims, lie in the northeast corner of Honeywell township, the northwest corner of McNaughton township, and in the block immediately north of these two townships. These claims take in part of the western end of Grace or Rainbow lake, a small lake south of Birch lake in the Patricia portion of Kenora district. Most of these claims were formerly held by T. W. Bathurst, Limited, and more recently by Rainbow Lake Gold Mines, Limited.

The most important discoveries made to date on this property are on claim No. 10,790. Five narrow veins carrying visible gold have been discovered within a few rods of each other. In 1932–33 a Jack Nutt mill was taken into the property, and several hundred tons were milled. The ore was taken from an open cut on the No. 3 or centre vein. The cut has a maximum length of 250 feet and a maximum depth of 40 feet. The ore was sorted before being sent to the mill. The value of production, from 400 tons milled from this cut in 1932–33, is reported as about $10,000.

Sol-D'Or Gold Mines erected a new mill in 1935 and equipped it with a Mitchell jaw-crusher, a 10-ton Straub ball mill, amalgamation plates, and a Straub table. A new 9 h.p. Diesel engine was bought to supply power for the mill. Milling was commenced about October 1 and continued for two and a half months. In this period 119.38 tons were milled, and the value of production was $1,390.78.

The following exploration and development work has been done on the property by Sol-D'Or Gold Mines and by former operators: 800 feet of trenching,

ranging from 5 to 40 feet in depth, including the open cut from which mill feed has been taken; 2,000 feet of stripping and a number of test pits; 3,000 feet of diamond-drilling (done in the winter of 1934–35). No shaft-sinking has been done on the property.

Buildings include a log-cabin office, log-construction bunk-house, warehouse, powder magazine, cap-house, and pump-house. The last three buildings were erected in 1935.

Milton Hersey Company, Limited, was engaged to direct the operations at the mine and to act as consulting engineers. They have placed Dr. H. S. Hicks in charge of the property as mine manager. An average of 9 men was employed at the mine during 1935.

South Vermillion Gold Mines, Limited

South Vermillion Gold Mines, Limited, was incorporated in April, 1934, with an authorized capitalization of 1,500,000 shares of $1 par value. The officers and directors were: A. E. Broadley, president; A. Pacitto, vice-president; G. McLaughlin and F. J. McFarlane directors; M. F. Burrows, secretary-treasurer. The head office was at 21 King Street East, Toronto.

The property owned by this company consists of a group of three claims located on Bad Vermilion lake, about 3 miles southwest of Mine Centre, Rainy River district.

The 2-compartment vertical shaft was sunk an additional 5 feet by hand-steel during January, 1935, to a total depth of 45 feet. During the balance of the year a bunk-house and cookery were constructed, and surface work was carried on intermittently.

A 300-cubic-foot Ingersoll-Rand compressor and a 175 h.p. boiler were obtained but not put in use.

A. Pacitto was in charge. The mine address is Mine Centre.

Stanley Gold Mines, Limited

Stanley Gold Mines, Limited, was incorporated in November, 1933, with a capitalization of 2,000,000 shares of $1 par value. The officers and directors are: H. E. Perry, president; J. C. MacKay, vice-president; Mrs. Stanley Siscoe, secretary-treasurer; and Armand Bastien, director. The head office was at 231 St. James Street West, Montreal, Que. The mine address is Wawa.

The property is located in township 29, range 23, in the Michipicoten area, district of Algoma. It is about 5 miles by road from Wawa on the Algoma Central railway.

Work was supended at this property at the end of December, 1934, following the death of Stanley Siscoe, who had been privately financing the work. A 2-compartment inclined shaft had been sunk to a depth of 300 feet, and levels had been established at 123 and 256 feet. A total of 648 feet of drifting and 97 feet of crosscutting had been done on the 123-foot level, and 778 feet of drifting and 71 feet of crosscutting on the 256-foot level.

The property remained idle until December 29, 1935, when dewatering of the mine was started in preparation for the resumption of underground work.

S. MacDougall is in charge of operations.

Straw Lake Beach Gold Mines, Limited

Straw Lake Beach Gold Mines, Limited, was incorporated in August, 1934, with an authorized capitalization of 2,500,000 shares of no par value. The

officers and directors are: W. E. Segsworth, president and secretary; L. L. Steindler, vice-president and treasurer; R. J. Jowsey, J. D. Conover, and J. A. Gairdner, directors. The head office is at 67 Yonge Street, Toronto.

The property consists of a group of 9 claims at Straw lake, district of Kenora, which were taken over from Straw Lake Beach Gold Mines Syndicate, Limited. It is about 35 miles north of Fort Frances, and is reached by a 70-mile route from Emo on the Canadian National railway.

During 1935 operations were carried on until the end of October, when they were suspended for the winter. The 2-compartment vertical shaft was deepened to 320 feet, and a second level established at 300 feet. The total footage of lateral work underground when operations were suspended consisted of 558 feet of drifting and 92 feet of crosscutting on the 100-foot level and 719 feet of drifting and 77 feet of crosscutting on the 300-foot level. A total of 1,560 feet of diamond-drilling was done from surface during 1935.

The plant used included a 310-cubic-foot Ingersoll-Rand gasoline compressor and a 6- by 8-inch Ingersoll-Rand air hoist.

An average of 19 men was employed during the period of operation in 1935. Frank Carnegie was in charge, with A. J. MacDonnell as contractor. The mine address is Emo.

Sturgeon River Gold Mines, Limited

Sturgeon River Gold Mines, Limited, was incorporated in August, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors were: A. L. Bishop, president; J. M. Wood, vice-president; C. S. Kennedy, secretary-treasurer; F. D. Reid, general manager; A. Longwell, W. T. Brown, and Fraser Raney, directors. The head office is at 320 Bay Street, Toronto.

The property consists of a group of 7 claims in the Sturgeon (Namewaminikan) River area, district of Thunder Bay, about 8 miles northwest of Nezah station, on the Long Lac–Port Arthur branch of the Canadian National railway.

A 3-compartment vertical shaft was started on May 9, 1935, and completed to a depth of 523 feet. Levels were established at 125, 250, 375, and 500 feet. The work completed on these levels to the end of 1935 was as follows:—

Level	Drifting	Crosscutting	Raising
	feet	feet	feet
125-foot	213	29	44
250-foot	277	24	57
375-foot	426	40	87
500-foot	361	180	.....
Total	1,277	273	188

A total of 3,200 feet of diamond-drilling was done from surface in 1935.

The plant included two 70 h.p. locomotive-type boilers, a 750-cubic-foot Babcock and Wilcox steam compressor, and a 9- by 8-inch Ingersoll-Rand double-drum hoist. Buildings erected included a hoist-compressor house, boiler-house, blacksmith-machine shop, assay office, dry-house, 2 bunk-houses, office, cook-house, and manager's residence.

An average of 46 men was employed throughout 1935. C. M. Bowyer was in charge. The mine address is Jellicoe in summer and Nezah in winter.

Supreme Gold Mines, Limited

Supreme Gold Mines, Limited, was incorporated in February, 1934. The authorized capitalization is 2,000,000 shares of $1 par value. Officers of the company are: Walter F. Stewart, president and manager; H. M. Richardson, vice-president; Harry J. Beck, secretary-treasurer. There is also an advisory board of three: Frank Grew, John Rennie, and Walter G. Lumbers. The head office is at 314 Metropolitan Building, Toronto. The mine office address is Savant Lake.

In September, 1935, the company held 32 claims, east of Couture lake between the North and the Northeast arms of Sturgeon lake, in Thunder Bay district.

A mining plant was freighted into this property in the spring of 1935. It includes one Case boiler of approximately 25 h.p., a 240-cubic-foot Schram portable gasoline compressor, a Ledgerwood tandem-drum hoist, and a tractor. This mining plant has not been set up. Buildings include a combined cookery and bunk-house, office, residence, and powder magazine.

Work during 1935 was confined chiefly to prospecting and trenching. There were 7 men employed at this property at the end of the summer.

Swain, Harris, and Cavano

Messrs. Swain, Harris, and Cavano hold 9 claims, Nos. 12,254–62, three miles south of the west end of Birch lake in the Patricia portion of Kenora district. On these claims they discovered a rusty zone in which fairly coarse residual gold is found. During the summer of 1935, they carried on small-scale mining operations on claim No. 12,258, digging up rusty, oxidized material out of small pits, packing it to a stream a few hundred feet distant, and there passing it over crude ripples and blankets on cradles. In this way, handling about half a ton of material per day, they recovered a heavy concentrate of arsenopyrite and gold, but the value of their concentrate is unknown. No report of a shipment of bullion or concentrate had been received up to the end of the year.

The post office address is Narrow Lake.

Sylvanite Gold Mines, Limited

Sylvanite Gold Mines, Limited, has an authorized capital of 3,300,000 shares of $1 par value. The officers and directors of the company are: Edward L. Koons, president; William L. Marcy, vice-president; W. S. Walton, secretary; Clark L. Ingham, treasurer; Welles V. Moot, managing director; C. E. Rodgers, general manager; Alfred H. Sharpe and Harry Yates, directors. The head office is at Kirkland Lake, and the executive office is at 300 Erie County Bank Building, Buffalo, N.Y.

The property is situated in the township of Teck, district of Timiskaming. An average of 270 men was employed during the year.

The following is taken from the general manager's report for the fiscal year ending March 31, 1936:—

Ore Reserves

Comparing broken ore reserves as at March 31, 1935, with the figure for the same date in 1936, we have, respectively, 82,990 and 82,415 tons, showing a negligible change, notwithstanding the substantial increase in tons treated last year.

Operating Costs

	Total cost	Cost per ton ore milled
1932:		
Development and exploration	$184,936.28	$1.962
Mining	285,365.41	3.026
Milling	112,630.68	1.194
General charges	43,863.49	.465
Administrative charges	24,594.16	.261
Bullion selling expense[1] (insurance, shipping, and Mint refining charges)	5,615.12	.060
Total	$657,005.14	$6.968
1933:		
Development and exploration	$227,278.95	$2.364
Mining	249,907.58	2.599
Milling	105,168.81	1.094
General charges	44,083.76	.459
Administrative charges	23,437.97	.244
Bullion selling expense (insurance, shipping, and Mint refining charges)	4,823.89	.050
Total	$654,700.96	$6.810
1934:		
Development and exploration	$235,067.63	$2.391
Mining	217,517.25	2.213
Milling	111,849.51	1.138
General charges	42,160.87	.429
Administrative charges	34,774.84	.353
Bullion selling expense (insurance, shipping, and Mint refining charges)	5,912.90	.060
Total	$647,283.00	$6.584
1935:		
Development and exploration	$242,173.47	$1.938
Mining	263,644.48	2.109
Milling	151,620.64	1.213
General charges	39,314.93	.315
Administrative charges	39,000.00	.312
Bullion selling expense[2] (insurance, shipping, and Mint refining charges)	5,525.11	.044
Total	$741,278.63	$5.931
1936:		
Development and exploration	$211,169.44	$1.372
Mining	348,251.50	2.262
Milling	167,324.47	1.087
General charges	47,641.25	.310
Administrative charges (partly mine)	59,116.83	.384
Township drainage tunnel expense	5,914.12	.038
Kirkland District Hospital building expense	3,868.15	.025
Bullion selling expense:		
Insurance, shipping, and Mint refining charges	5,834.38	.038
Mint handling charge	16,750.88	.109
Total	$865,871.02	$5.625

[1]The item "bullion selling expense" was included with the item "general charges" in previous annual reports.

[2]Mint bullion handling charge, effective for the month of April, 1934, at 35 cents per ounce, amounted to $1,007.70, which together with bullion tax was deducted from production.

Production

The mill extraction, based upon Mint assays, plus tailing loss, was 95.95 per cent. for the full year; 96.27 per cent. for the last six months, and 96.40 per cent. for March. Mill heads were lowered slightly to permit inclusion of a greater amount of low-grade and marginal ore.

Fiscal year ending March 31	Tons milled	Production	Average recovery, troy ounces per ton
1931	83,034	$837,013.97	0.49
1932	94,276	948,926.13[1]	.49
1933	96,140	912,377.15[1]	.40
1934	98,311	1,558,912.87[1]	.52
1935	124,956	1,584,817.39[2]	.41
1936	153,942	1,931,891.87[3]	.36

[1]Including exchange on bullion.
[2]Including exchange on bullion, after bullion tax is deducted.
[3]Including exchange on bullion, after deducting bullion tax effective for period April 1, 1935, to May 31, 1935, but before deducting Mint handling charge of 35 cents per fine ounce gold, effective for period June 1, 1935, to March 31, 1936.

Mining

Year	Ore broken			Waste			Total ore and waste broken
	In Stopes	From development	Total	Hoisted to surface	Used for backfill	Total	
	tons	tons	tons	tons	tons	tons	tons
1933	66,130	37,467	103,597	21,774	5,347	27,121	130,718
1934	54,423	31,971	86,394	25,457	5,838	31,295	117,689
1935	93,883	37,161	131,044	11,812	10,623	22,435	153,479
1936	111,091	42,183	153,274	12,576	7,607	20,183	173,457

During last year drifting and subdrifting through ore amounted to 3,342.5 feet. This represented 36.4 per cent. of the total advance. Structural features and geological evidence encountered generally throughout the sections mined, remained favourable.

Development and Exploration

Class of work	Year ending March 31, 1934	Year ending March 31, 1935	Year ending March 31, 1936	Total from beginning of operations to March 31, 1936
	feet	feet	feet	feet
Drifting	4,399.5	8,985	8,837	57,227.5
Crosscutting	2,347	2,688	2,875.5	27,701
Raising	2,464.5	1,905.5	1,392.5	15,131
Sublevel drifting	1,473.5	1,268.5	349.5	9,640
Box-hole raising	429	352	301	6,945.5
Winzing	97.5	.....	.....	97.5
Shaft-sinking	612	.....	.....	5,654
Total	11,823	15,199	13,755.5	122,396.5
Per cent. of crosscutting to total of crosscutting and drifting	34.8	23.2	24.6	32.6
	cu. ft.	cu. ft.	cu. ft.	cu. ft.
Shaft stations and sump excavations	19,140	840	1,420	207,278
	feet	feet	feet	feet
Diamond-drilling	6,713	15,952	19,359	96,385

No. 2 Shaft.—A continued programme of extensive exploration on and between levels was carried out during the year. Particular attention was given to further successful development near the 875-foot level and below the 2,500-foot level, mentioned in last year's report. Approximately one-half of the footage of ore drifted on this year was in these horizons. Upper level work, also continued in volume and wide extent, was productive to an encouraging degree. In addition, ore was developed at the 1,750-foot level on the south vein system, west of the major fault, in an area where previous exploration had been disappointing.

No. 4 Shaft.—Of the ore sent to the mill, this part of the property produced 21,552 tons. Considerable exploration has yet to be completed here and this, with clean-up operations, is expected to continue to furnish a fair volume. Beginning with 1933, the tonnage of ore coming from this section of the mine was, respectively, 51,916 tons, 47,189 tons, 36,362 tons, and 21,552 tons.

Additional Buildings and Equipment.—These included an extension to the main office, which enlarged the directors' quarters, store-house, engineering office, and general office. A section and fire-wall were also added to the machine shop–steelshop building. Three-ton aluminum skips replaced the two-ton steel units previously used. One agitator and one filter were added to the mill and some additional experimental equipment was purchased for the mill laboratory.

Summary

Promising areas in both sedimentary and igneous formation responded well to development, and general conditions appear to warrant continued confidence in profitable operation. Earnings were substantial and in excess of dividend requirements.

Compared with the previous period, the year ending March 31, 1936, showed: production increased by $347,074.48; 28,986 more tons treated; milling costs reduced by 12.6 cents per ton; and a decline in operating costs of 30.6 cents per ton. Persistent experimental work in the mill has resulted in increased extraction and tonnage, and will be continued.

Tashota Goldfields, Limited

Tashota Goldfields, Limited, incorporated November, 1932, has an authorized capitalization of 3,000,000 shares of $1 par value, of which 2,894,598 shares have been issued. The officers and directors are: H. H. Vaughan, president and managing director; Thomas Arnold, vice-president; P. W. Ogden, secretary-treasurer; W. A. Eden, H. Preston Corsan, W. A. RuKeyser, and R. J. R. Stokes, directors. Both the head office and the mine office of the company are at Tashota. The management of this property is controlled by Minefinders, Limited, whose head office is at 100 Adelaide Street West, Toronto.

The property consists of 9 patented claims and 9 unpatented claims, in one group, with a total area of 642.24 acres, lying about 15 miles south of Tashota station on the main line of the Canadian National Railways, in Thunder Bay district. In winter, access to the property is by way of a 17-mile road; in summer it is reached by an 18-mile canoe route, starting from Paska Siding, and a 6-mile wagon road. A third route by airplane was established in the fall of 1935 from Robinson Lake Siding, 2 miles west of Tashota, to Onaman lake, 4 miles southeast of the mine, and thence by a 4-mile wagon road to the property.

Tashota Goldfields, Limited, succeeded Tashota Gold Mines, Limited. The latter company started underground operations in 1928. To the end of 1935 the following development work had been done: crosscutting, 924 feet; drifting, 2,134 feet; raising, 392 feet; diamond-drilling, 13,415 feet.

Early in 1935 a 50- to 75-ton mill was installed. From April 25 to December 31, 1935, the tonnage milled was 12,828 tons. A Denver jig and blankets catch the coarser gold, and this concentrate is treated in an amalgamation barrel. The greater part of the gold is recovered in a flotation concentrate, which is shipped to a smelter for further treatment. On account of the high cost of summer transportation of this product from the mine to the railway, only about one-third of this had been shipped and treated at the end of the year.

The average number of men employed at the mine in 1935 was 68; of this number, 22 were underground, 6 in the mill, 10 working as construction labourers, and 29 on surface. A. Robertson was acting mine superintendent at the end of the year.

Teck-Hughes Gold Mines, Limited

Teck-Hughes Gold Mines, Limited, has an authorized capital of 5,000,000 shares of $1 par value, of which 4,807,144 shares are issued. The officers and directors are: Albert W. Johnston, chairman of the board; D. L. H. Forbes,

president and general manager; George C. Miller, vice-president; H. C. McCloskey, secretary; K. P. Emmons, treasurer; P. Nugent Tapley, assistant-treasurer; J. W. Stephenson, assistant-secretary; John F. Lash and John F. Thompson, directors. R. J. Henry is general superintendent. The head office is at Kirkland Lake, and the executive office is at 25 King Street West, Toronto. An average of 635 men was employed during 1935 at the mine in Teck township, district of Timiskaming.

The following is an extract from the general superintendent's report for the 12 months ending August 31, 1935:—

During this period the mills treated 383,958 tons of ore from the mine and 40,290 tons of tailing. The total recovery in bullion and precipitate was the equivalent of 144,384.37 Troy ounces of fine gold, and 4,610.25 ounces of this came from retreatment of tailing. After deducting the bullion tax of $338,281.44, the realizable value of the gold and silver production was $4,678,-875.02. With addition of income from investments, the gross revenue was $4,810,545.03, or $11.34 per ton.

The total operating cost amounted to $2,194,202.93, or $5.17 per ton milled. After making provision of $279,453.66 for taxes other than the bullion tax, and adding $19,027.50, a profit derived from the sale of bonds, the surplus for the twelve months was $2,355,915.94. Following is an analysis of operating costs:—

	Total cost	Cost per ton of ore treated	Cost per ounce of gold produced
Development and exploration	$332,317.78	$0.78	$2.30
Mining	1,083,287.05	2.55	7.50
Milling	456,809.26	1.08	3.16
General expense	286,502.52	.68	1.98
Examination of new properties	35,286.32	.08	.25
Total	$2,194,202.93	$5.17	$15.19

During the year the sinking of the No. 3 winze was completed at the 50th level, a depth of 6,100 feet below surface. On the 49th and 48th levels, drifting in the ore zone was begun during August. Lateral development on the 47th and 46th levels had exposed on September 1 a total of 463 lineal feet of ore at an average grade of 10.41 pennyweights over 7.8 feet of width. Development of the block of levels from 41 to 45 inclusive, was practically completed during the year, and the ore found totalled 2,065 feet at an estimated average grade of 9.46 pennyweights per ton. Development footage for the year was as follows:—

	Feet
Drifting	7,236
Subdrifting	4,376
Crosscutting	1,903.5
Raising	4,989.5
Winzing	771.3
Total development	19,276.3

Diamond-drill exploration amounted to 18,449.1 feet. Ore produced from drifting and crosscutting totalled 12,655 tons.

The technical estimate of "positive ore" reserve at September 1 is as follows:—

	Tons	Gold content in troy ounces	Average grade in pennyweights per ton
Broken ore	243,660	86,551.7	7.10
Blocked ore	440,049	193,504.5	8.79
Total	683,709	280,056.2	8.19

Teddy Bear Valley Mines, Limited

Teddy Bear Valley Mines, Limited, has a capitalization of $10,000,000, in shares of $1 par value. The property consists of 1,500 acres in Holloway and Harker townships, district of Cochrane. Finances for development are furnished by the Teddy Bear Valley Syndicate, which has an office at 503 Royal Bank Building, Toronto. C. Ellwood Hoffman is president.

From April 16 to August 9 operations at the property were confined to diamond-drilling, 602 feet of drilling being done from surface and 2,310 feet underground.

Total development work at October 31 consisted of two shafts, 32 feet and 300 feet deep, 922 feet of drifting and crosscutting on the 150-foot level, and 186 feet on the 275-foot level.

Operations were suspended for the winter months. Edward H. Orser is consulting engineer. The mine address is Lightning River.

Thesaurus Gold Mines, Limited

Thesaurus Gold Mines, Limited, has an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: W. L. Forrest, president; G. W. Adams, secretary-treasurer; M. Conkey and P. E. F. Smiley, directors. The head office is at 320 Bay Street, Toronto.

The property consists of 16 claims in Baden township, district of Timiskaming.

There is a 300-foot shaft on the property, and about 300 feet of lateral work had been done on the 100- and 300-foot levels prior to the end of 1924.

In July, 1935, the mine was pumped out, and a small amount of lateral work was done on the 300-foot level. Operations ceased in September. Harry Crawford was manager, employing 8 men.

Toburn Gold Mines, Limited

Toburn Gold Mines, Limited, has a capitalization of 2,000,000 shares of $1 par value. The officers and directors are: H. A. Guess, president; R. F. Goodwin, vice-president; G. A. Brockington, secretary; Charles Earl, assistant secretary; J. C. Emison, treasurer; E. C. Corson, assistant treasurer; W. J. Boland and James Moore, directors; F. G. Hamrick, comptroller and auditor. The New York office is at 120 Broadway, and the Toronto office at 217 Bay Street, in care of W. J. Boland.

The mine is in Teck township, district of Timiskaming. During 1935 an average of 133 men was employed. M. W. Hotchkin, Kirkland Lake, is manager.

The following is an extract from the president's report for the year ending December 31, 1935:—

Your company was formed in January, 1931, to take title to an option upon the Tough-Oakes Burnside gold property in the Kirkland Lake district of Ontario and, later, purchased the property. The property, although idle for several years prior to that time, was the first producer in Kirkland Lake district and contained several miles of underground workings and several shafts, the more important being the main hoisting shaft from surface to the 1,090-foot level and an interior shaft from the 1,090-foot level to the 1,850-foot level, and it was equipped with a mining plant and a cyaniding mill of 100 tons daily capacity.

The foregoing general information is given for the enlightenment of such of the minority stockholders as may have acquired share ownership since the issuance of the last annual report, and for these there is also given the information that of the total of 1,850,000 shares issued of your company, Premier Gold Mining Company, Limited, owns 1,490,000.

Your manager's summary of the exploration and development work done upon your property for the calendar year 1935 is as follows:—

During the year a small amount of surface cross-trenching was done in deep overburden in an effort to trace the eastward continuation of the No. 7 vein, but the results of this trenching were not conclusive. Total development work done during the year 1935 amounted to 8,826 feet, all of which was above the 1,090-foot level. This development consisted of 3,939 feet of drifting, 1,293 feet of sublevel drifting, 2,351 feet of crosscutting, 1,055 feet of raising, 17 feet of winzing, and 171 feet of slashing. Of this total, approximately 2,962 feet was done on ore, breaking 8,738 tons, which was sent to the mill. Approximately 91 per cent. of the year's development was confined to the A-200, No. 3 shaft, 400-, 800-, 893-, 1,018-, and 1,090-foot levels.

The most important development results for the year 1935 were:—

1. Location of the No. 410 drift vein structure, west of the dike fault, which is considered to be the eastward continuation of the North vein system in the Kirkland Lake camp. Its vertical extensions were identified in the No. 306 drift, at the A-300-foot level, and in the Nos. 548, 678, 804, and 928 drifts.
2. The location of the downward extension of the No. 7 vein, east of the dike fault in the No. 211 drift east, at the A-200-foot level, which indicates excellent possibilities for both downward and eastward continuity.
3. Extending the ore on the nearly vertical No. 11 vein to the 800-foot level on the west side of the dike, and from the 100-foot level to the 300-foot level, east of the dike fault.
4. The location of the No. 921 drift vein east of the dike from its junction with the North branch of the South break, in the No. 1,031 stope upward to the No. 808 drift on the 800-foot level.
5. Locating ore on the North branch of the South break to the east of the dike, in the Nos. 1,031 and 1,099 drifts.

Production figures for 1935, compared with those of the year 1934, are:—

Year	Tons milled	Average ounces gold per ton	Ounces fine gold produced	Percentage mill recovery
1934	36,230	0.583	20,401	96.6
1935	35,360	.592	20,200	96.5

The estimated ore reserves broken and unbroken at December 31, 1934, were 60,550 tons, averaging 0.63 ounces gold per ton, and at December 31, 1935, were 82,650 tons, averaging 0.57 ounces gold per ton. This means that 57,460 tons of new ore, averaging 0.52 ounces gold per ton were found and opened up by the exploration and development of 1935.

Earnings for the year 1935, after deducting administration and taxes, but before deduction of $60,894.25 depreciation and depletion, were $280,118.32.

Tombill Gold Mines, Limited

Tombill Gold Mines, Limited, was incorporated in October, 1935, with an authorized capitalization of 1,000,000 shares of $1 par value. The officers and directors are: P. E. Hopkins, president; Fred Searls, Jr., first vice-president; D. E. Thomas, second vice-president; A. W. Burt, secretary; Carroll Searls, assistant secretary; Henry E. Dodge, treasurer; T. A. Johnson, H. D. Smith, W. R. G. Johnson, and C. R. Ellis, directors. The head office and mine office are at Empire. The executive office is at 171 Yonge Street, Toronto.

The property consists of a group of six claims in Lindsley township, district of Thunder Bay, located immediately to the west of the property of Bankfield Gold Mines, Limited, near Magnet lake.

The Newmont Mining Company of New York has optioned a minority interest in this company, under an agreement which gives them the management of the company.

Work was started in November, and by the end of 1935 a bunk-house, cookhouse, warehouse, blacksmith shop, and powder magazine had been erected. A vertical 3-compartment shaft had been sunk with hand-steel to a depth of 21 feet, and a headframe constructed. A mining plant, including a 60 h.p. locomotive-type boiler, a portable Diesel compressor, and an 8- by 6-inch Ingersoll-Rand double-drum hoist, was in transit to the property.

R. J. Hendricks was in charge.

Vimy Gold Mines, Limited

Vimy Gold Mines, Limited, owns 320 acres in Hislop township, district of Cochrane. The company is capitalized at 1,000,000 shares of $1 par value. The officers and directors are: Douglas Jones, president and manager; Joseph Berini, vice-president; Frank N. Bowes, secretary-treasurer; Nelson A. McDougall and J. A. Mongeon, directors. The head office is at Timmins, and the secretary's office is at 906 Excelsior Life Building, Toronto. The mine address is Ramore.

A 25-ton mill was installed on the property in 1935 and operated for a short time with ore from an open cut. A 2-compartment shaft, begun late in the fall, had reached a depth of 35 feet at the end of the year.

Joseph Berini was in charge of the work, employing about 20 men.

Wells Longlac Mines, Limited

Wells Longlac Mines, Limited, was incorporated in June, 1934, with an authorized capitalization of 3,000,000 shares of $1 par value. The officers and directors are: A. J. Felton, president; A. W. Burt, vice-president; F. E. Forster, secretary-treasurer; E. C. J. McCracken and Chas. Palmer, directors. The head office is at 347 Bay Street, Toronto.

The option which the company held on the Stagee property in the Mine Centre area was dropped at the end of February, 1935, after a total of 125 feet of drifting had been completed on the 100-foot level.

The property owned by the company consists of 15 claims in the Magnet Lake section of the Little Long Lac area, district of Thunder Bay. It is to the east of the Bankfield property.

During 1935 surface work and diamond-drilling were carried on at this property. During the year 4,062 feet of diamond-drilling was done, making a total of 24,641 feet accomplished to the end of 1935. No construction work was done, nor was any machinery installed during the year. The equipment of the company used at the Stagee property was brought to Kenwell, 3 miles from the Magnet Lake property, and stored there.

W. L. Brown was in charge of the work at the Magnet Lake property. The mine address is Geraldton.

Wendigo Gold Mines, Limited

Wendigo Gold Mines, Limited, was incorporated in October, 1933, with an authorized capitalization of 2,000,000 shares of $1 par value. The capitalization was increased to 3,000,000 shares in July, 1935. The officers and directors were: H. D. Tudor, president; H. G. Young, vice-president; H. R. Tudhope, secretary-treasurer; A. J. Bolton and W. G. Cameron, directors. The head office is at 701 Dominion Bank Building, Toronto.

The property of this company is located at Witch bay, on the Lake of the Woods, district of Kenora, and is 22 miles southeast of Kenora.

The mining plant installed included a 100 h.p. boiler, a 375-cubic-foot Ingersoll-Rand steam compressor, two 525-cubic-foot Ingersoll-Rand steam compressors, and an 8¼- by 10-inch Ingersoll-Rand hoist.

In 1935 underground work was carried on from the first of the year until the middle of February, during which period 341 feet of drifting and 66 feet of crosscutting was accomplished on the 500-foot level, and 1,855 feet of diamond-drilling from underground. Operations were not resumed until the middle of

December, when a start was made to take down backs on the 100-foot level in preparation for stoping.

At the end of September the construction of a 50-ton amalgamation-cyanidation mill was commenced, and at the end of the year it was expected that it would be completed and in operation in February, 1936.

The mill equipment includes a Dodge crusher, Allis-Chalmers ball mill, Dorr rake classifier, two blanket tables, two Dorr agitators, two Dorr thickeners, two Oliver filters, and a Merrill-Crowe precipitation unit. It is to be operated by a 264 h.p. Ruston Diesel engine, direct-coupled to a 219 k.v. a. generator.

An average of 31 men was employed during 1935, under the direction of C. L. Spencer. The mine address is Kenora.

West Red Lake Gold Mines, Limited

West Red Lake Gold Mines, Limited, is capitalized at 3,000,000 shares of $1 par value, of which 1,999,205 shares have been issued. The officers and directors of the company at December 31, 1935, were: F. J. Bailes, president; H. Hunter, secretary-treasurer; W. S. Hall, A. J. Doane, B. Johnston, and W. T. McEachern, directors. The head office is at 11 King Street West, Toronto.

The property consists of 27 claims in four groups located in the townships of Todd and Ball in the Pipestone Bay section of the Red Lake area, Kenora district, Patricia portion. The main group consists of 9 claims, totalling approximately 375 acres. The mining plant is on claim No. 10,057, approximately 21 miles west of the Howey gold mine.

Operations were resumed at this mine in July, 1935, after an eight months' period of idleness, during which period the company was reorganized. During July, the plant was reconditioned and the mine dewatered. Underground exploration work was carried on throughout August and most of September. During October some diamond-drilling was done from surface, but all operations were again suspended on October 27, 1935. During the four months' period when operations were carried on, an average of 16 men was employed, under the direction of C. H. E. Stewart.

The following figures show the amount of development work done at the property in the past two years:—

	1934	1935	Total
	feet	feet	feet
Shaft (vertical 2-compartment)	200	17	217
Crosscutting	95	49.7	144.7
Drifting, 200-foot level	280	347	627
	cu. ft.	cu. ft.	cu. ft.
Station-cutting	1,260	724	1,984

No additions were made to the plant or equipment during 1935.

Wright-Hargreaves Mines, Limited

Wright-Hargreaves Mines, Limited, has an authorized capital of 5,500,000 shares of no par value. The officers and directors of the company are: E. L. Miller, president and managing director; W. H. Wright, vice-president; P. H. Gerhard, secretary; Gerard F. Miller, treasurer; M. W. Summerhayes, general

manager; Oliver G. Donaldson and James Y. Murdoch, directors. The head office is at Fort Erie. The mine address is Kirkland Lake.

An average of 779 men was employed during 1935 at the mine in Teck township, district of Timiskaming.

The following is taken from the general manager's report for the fiscal year ending August 31, 1935:—

During this period 350,196 tons of ore were treated, containing 211,674 ounces fine gold and 31,716 ounces fine silver. There was realized from marketing this bullion, $6,844,539.20.

The average grade of the ore going to the mill at $20.67 per ounce was 0.625 ounces, or $12.919 per ton, with a recovery of 0.605 ounces, or $12.503 per ton, an extraction of 96.78 per cent.

ANALYSIS OF OPERATING COSTS

	Total	Cost per ton milled
Development, exploration, and pumping	$488,238.04	$1.394
Stoping	713,853.98	2.038
Transporting ore (hoisting, etc.)	260,997.94	.745
Milling charges	462,896.59	1.322
General surface charges	35,476.49	.101
Stock transfer, dividend, and annual report expense	13,632.13	.039
Employees' group insurance, silicosis, workmen's compensation, property taxes, and insurance	69,584.97	.199
General and undistributed charges (storehouse, hospital, maintenance miscellaneous mine buildings, mine management and administration, exchange, legal expenses, miscellaneous)	141,857.96	.405
Depreciation buildings and equipment	292,287.17	.835
Marketing bullion	23,148.06	.066
Mint bullion handling charge	21,375.92	.061
	$2,523,349.25	$7.205
Provision for taxes (exclusive of bullion tax)	470,000.00	1.342
Amount written off, shaft No. 4	85,299.62	.244
Total	$3,078,648.87	$8.791

PRODUCTION RECORD, 1921–1935
(Based on gold at $20.67 per ounce)

Year	Tons milled	Value per ton	Gross value	Recovery per ton	Bullion produced	Dividends
1921 (8 mos.)	36,081	$13.96	$503,302	$13.00	$468,665	.....
1922	66,181	12.49	827,447	11.52	762,752	$412,500
1923	79,242	10.48	830,992	9.52	754,978	206,250
1924	84,487	14.16	1,194,217	12.89	1,088,725	206,250
1925	147,939	14.49	2,148,554	12.93	1,913,401	550,000
1926	153,392	15.66	2,400,795	14.02	2,150,844	893,750
1927	209,164	11.77	2,455,460	10.51	2,151,916	1,237,500
1928	256,331	8.36	2,144,002	7.20	1,845,923	825,000
1929	188,238	10.29	1,938,552	9.25	1,741,872	.....
1930	220,430	12.20	2,687,828	11.03	2,431,896	275,000
1931	266,352	11.73	3,124,533	10.93	2,912,308	825,000
1932	295,525	12.85	3,796,295	12.00	3,546,903	1,100,000
1933 (8 mos.)[1]	193,441	13.56	2,623,456	12.63	2,443,760	550,000[2]
1934[3]	330,741	13.68	4,525,150	13.07	4,321,945	2,750,000
1935	350,196	12.92	4,524,193	12.50	4,378,326	3,300,000
Total	2,877,740	$12.41	$35,724,776	$11.44	$32,914,214	$13,131,250

[1]In 1933, the fiscal year closing changed from December 31 to August 31; the years 1921 to 1932, inclusive, are calendar years.

[2]April and July dividends only.

[3]The 12 months of the fiscal year ended August 31, 1934.

SUMMARY OF DEVELOPMENT AND EXPLORATION
August 31, 1935

	Drifting	Shaft-sinking	Cross-cutting	Raising	Total footage	Diamond-drilling	Excavation
	feet	feet	feet	feet	feet	feet	cu. ft.
August 31, 1934..	136,626	10,681	48,110	9,178	204,595	104,391	398,168
Fiscal year.....	20,483	535	3,892	1,298	26,208	16,801	85,384
August 31, 1935.	157,109	11,216	52,002	10,476	230,803	121,192	483,552

MILLING STATISTICS
September 1, 1934, to August 31, 1935

Ore milled	tons	350,196
Average value per ton		$12.919
Gross value	$4,524,193.19	
Loss in tailings	145,867.02	
Net value recovered		$4,378,326.17
Average tons milled per day		959.44
Per cent. of possible running time		95.94
Tons 100 per cent. running time		1,000
Solution precipitated	tons	1,369,884
Solution precipitated per ton of ore	tons	3.91
Value per ton in tailings		$0.417
Per cent. extraction		96.78
Cyanide consumed per ton of ore (K.C.N.)	lbs.	0.535
Zinc consumed per ton of ore	ounces	1.956
Zinc consumed per ton of solution	ounces	0.500
Lime consumed per ton of ore	lbs.	3.595
Steel consumed per ton of ore, ball mills	lbs.	2.685
Steel consumed per ton of ore, tube mills	lbs.	2.593
Cost of flotation reagents consumed per ton of ore		$0.048
Average value of pregnant solution per ton		$3.166
Average h.p. consumed per day		2,410
Average h.p. consumed per ton milled		2.513
Power cost per h.p. consumed		$55.43

N.B.—All values at $20.67 per ounce.

ORE RESERVES ESTIMATE

	Tons	Ounces	Grade	Value at $20.67 per ounce
On hand August 31, 1934	1,185,204	0.639	$13.20	$15,643,197
Developed in fiscal year	409,649	.507	10.48	4,292,223
	1,594,853	0.604	$12.50	$19,935,420
Milled in fiscal year	350,196	.625	12.92	4,524,193
Ore reserves, August 31, 1935	1,244,657	0.599	$12.38	$15,411,227

ADDITIONS TO PLANT, BUILDINGS, AND EQUIPMENT
September 1, 1934, to August 31, 1935

Mill structure and equipment	$20,754.67
Shops and equipment	4,279.28
Power-house and electrical equipment	53,422.88
Assay office	102.00
General surface and buildings	24,498.44
Sprinkler system	6,718.88
Tailings disposal	29,107.41
Underground equipment	7,449.54
Substation	2,427.37
New buildings	1,325.67
Offices	6,465.47
Total	$156,551.61

Development

The policy outlined in our report of 1933, to as soon as possible complete the development and mine out a number of the upper levels, with the object of reducing the maintenance cost of of having so many levels producing and, too, the need as deeper workings are opened up, to facilitate ventilation, has been rigorously followed. The results have been the finding of considerable new tonnages of ore of lower grade. At the present time we have 28 operating levels, none of which can yet be abandoned.

This programme together with the fact that the present developments are in the more easterly and westerly areas, where the ore occurrences are more scattered and of somewhat lower grade, has resulted in the percentage of ore developed and the grade of ore found being lower. There were 409,649 tons of new ore developed, and after deducting 350,196 tons milled, 59,453 tons were added to ore reserves. Of the 20,483 feet of drifting, 7,654 feet was on ore.

The preparations for sinking an interior shaft to open up the mine below the 3,900-foot level, as outlined in our last report, were completed, and the sinking of this shaft is now actively being carried out. There were 535 feet of shaft work done during the year, all in the new interior shaft, 290 feet above the 3,900-foot level and 245 feet below that level. At the present writing the depth of this shaft is 4,300 feet.

Milling

It is satisfactory to note that the per cent. extraction is considerably better than our pilot mill work indicated, and while the extraction for the whole period under review is 96.78 per cent., the extraction for the last quarter was 97.04 per cent.

General

The trouble which existed in the refining of our precipitates, and referred to in our last report, has been completely overcome and our new process is enabling us to check satisfactorily with the Mint, the difference in assays during the twelve months' period being only 0.013 per cent.

Young-Davidson Mines, Limited

The officers and directors of Young-Davidson Mines, Limited, are: Gideon Grant, president; C. G. Knott, vice-president; F. M. McKay, secretary-treasurer; Jacob A. Davidson, W. C. Young, Roy Driscoll, directors. The capitalization is $3,000,000, in shares of $1 par value.

The company owns a property in Powell township, district of Timiskaming, which is being operated under agreement by the Hollinger Consolidated Gold Mines, Limited. An account of the work done on the property appears on page 115 of this report. The mine address is Elk Lake.

Young-Shannon Gold Mines, Limited

Young-Shannon Gold Mines, Limited, was incorporated in 1932, with an authorized capitalization of 3,000,000 shares of no par value. The officers and directors are: C. T. Young, president; S. J. Defoe, secretary; W. C. Huff, treasurer; and A. J. Bolton, director. The head office is at 1 Toronto Street, Toronto. The mine office is at Gogama.

The property includes a group of claims at Clam lake on the west boundary of Chester township, district of Sudbury. Work was suspended at this property in February, 1935, after a 2-compartment vertical shaft had been sunk to a depth of 100 feet, and 100 feet of lateral work done at that depth.

Work was then transferred to the property of the Martin Syndicate, consisting of a group of 25 claims at the north end of Three Duck lakes in Chester township, west of and adjoining the Gomak property. During the balance of the year about 600 feet of diamond-drilling was done, as well as surface trenching and pitting. Operations were carried on under a percentage of profits agreement.

An average of 4 men was employed during 1935, under the direction of C. T. Young.

GRAPHITE

Black Donald Graphite Company, Limited

The officers of the Black Donald Graphite Company, Limited, are: R. F. Bunting, president and manager; W. B. Bunting, vice-president; R. A. Telfer, secretary-treasurer.

The mine and refinery in Brougham township, Renfrew county, operated almost continuously during 1935. Graphite to the value of $78,500 was produced.

An average of 9 men was employed in the mine, and 25 in the refinery. The mine address is Calabogie.

GYPSUM

Canadian Gypsum Company, Limited

The Canadian Gypsum Company, Limited, has a capitalization of $300,000, divided into 3,000 shares of $100 par value. The officers and directors of the company are: S. L. Avery, president; R. G. Bear, secretary-treasurer; O. M. Knode, C. F. Henning, Otis Wack, and J. E. MacLeish, directors. The head office is at 1221 Bay Street, Toronto. The head office officials are: B. S. Barns, agent and comptroller, and F. B. Gibbs, manager. Otis Wack, Windsor, N.S., is director of operations.

The company operates a gypsum mine and plant near Hagersville, in Oneida township, Haldimand county. All commercial gypsum products are produced at the plant, which includes a mill, wall board and block manufacturing buildings. During 1935 some 19,569 tons of rock were hoisted. An average of 53 men was employed. W. E. Allen, Hagersville, is superintendent.

The company also operates a quarry and lime plant at Guelph; a large gypsum quarry at Windsor, N.S.; a gypsum mill at Hillsborough, N.B.; a gypsum calcining mill at Iona, Cape Breton; and a winter gypsum storage depot at Deep Brook, N.S.

Associated with the company is the Gypsum Packet Company, Limited, operating four 7,000-ton freight and passenger steamers between Nova Scotia and United States ports.

Gypsum, Lime and Alabastine, Canada, Limited

Gypsum, Lime and Alabastine, Canada, Limited, has a capitalization of 2,000,000 shares of no par value. The officers are: R. E. Haire, president and manager; S. H. J. Reid, secretary-treasurer; W. E. Armstrong, Henry Cockshutt, H. J. Haire, Jas. R. Inksater, G. H. Kranenberg, J. E. McConnell, R. S. McCurdy, N. L. Nathanson, W. C. Pitfield, and John F. Cameron, directors. The head office is at Paris, Ont.

The mine and mill at Caledonia, Seneca township, Haldimand county, was operated throughout the year. L. V. Robinson was superintendent, employing an average of 92 men.

There were hoisted 28,461 tons of rock. Of this, some 2,716 tons of crushed and fine-ground gypsum were sold, and the rest was manufactured into land-plaster, stucco, Paristone, Gyproc, dry Insulex, gypsum lath, and other building products.

In addition to the Caledonia mine, the company operates gypsum plants at Montreal, Winnipeg, Vancouver, and Calgary.

Lime plants are situated at Beachville, Elora, Hespeler, Milton, Limehouse, and Puslinch, Ont., and at St. Mark and Joliette, Que.

Quarries are operated at Mabou, N.S.; Gypsumville, Man.; and Salmon River, B.C. The alabastine plant is at Paris, Ont.

MOLYBDENITE

Phoenix Molybdenite Corporation, Limited

The Phoenix Molybdenite Corporation, Limited, has a capitalization of 1,000,000 shares of $1 par value, of which 700,000 are issued. The property is in Bagot township, Renfrew county. The officers and directors are: F. L. Stinson, president and manager; E. A. Dempster, vice-president; W. G. Chipp, secretary-treasurer; Geo. Joynt and John Thomson, directors. The head office is at 710 Excelsior Life Building, Toronto. Work was started on May 17, 1935, and continued to the end of the year with an average force of 15 men. The mine address is Ashdad.

The following work was done during the year: drifting, 631 feet; cross-cutting, 422 feet; shaft-sinking, 65 feet; station, 12 by 12 by 12 feet; ore hoisted, 976 tons; waste hoisted, 2,974 tons.

NICKEL AND COPPER

Cuniptau Mines, Limited

Cuniptau Mines, Limited, has an authorized capital of 3,000,000 shares of $1 par value, of which 2,500,000 shares have been issued. The property consists of 62 claims in Strathy township, district of Nipissing.

The officers of the company are: B. W. Watkins, president; A. L. Herbert, vice-president; W. G. Watkins, secretary-treasurer; Gordon McLaughlin and Ian MacLaren, directors. The Mining Research Corporation are consulting engineers. Geo. M. Lee is mine manager. The mine address is Goward. The head office is at 465 Bay Street, Toronto.

In January, 1935, a small quantity of ore was tested in the 50-ton blast furnace. During the rest of the year operations were confined to surface exploration, with an average force of 10 men.

In November funds were raised by the sale of treasury stock to enable the purchase of concentrating and converter equipment, and to carry on further underground work.

Falconbridge Nickel Mines, Limited

The officers and directors of Falconbridge Nickel Mines, Limited, are: Thayer Lindsley, president; N. F. Parkinson, secretary-treasurer; Halstead Lindsley and J. G. Hardy, vice-presidents; W. S. Morlock, director. The authorized capital is 5,000,000 shares of no par value. The head office is at 25 King Street West, Toronto.

The company operates a nickel-copper mine, concentrator, and smelter in Sudbury district, and a refinery at Kristiansand, Norway. Ernest Craig is general superintendent of operations in the Sudbury district; J. R. Gill, assistant general superintendent; E. J. Martin, mine superintendent; R. C. Mott, concentrator superintendent; and M. J. Tamplin, smelter superintendent. During

1935 an average of 567 men was employed, of whom 185 were underground. The mine address is Falconbridge.

The following is an extract from the annual report of the company for the year ending December 31, 1935:—

As heretofore, interruptions to continuous operation were due entirely to necessary periodic repair campaigns in the single-unit smelting plant.

Mine Development

Development footages attained during the year, and combined over all levels, distribute as tabulated below:—

Drifting and crosscutting (including slashing)	feet	5,708
Raising (including slashing)	feet	1,813
Ore passes (including slashing)	feet	869
Fill passes (including slashing)	feet	416
Box-holes		6
Diamond-drilling	feet	4,805
Station-cutting	cu. ft.	47,389
Loading station	cu. ft.	7,620
Shaft-sinking	feet	856

Practically all lateral work along the ore zone was confined to the 500- and 1,200-foot levels. On the former, an advance of 986 feet was made easterly in ore averaging 15.1 feet in width, though of slightly below mine average grade. This drive continues in ore at 1,600 feet from No. 5 shaft. On the 1,200-foot level, 153 feet and 807 feet were driven east and west, respectively, from No. 5 shaft in ore of mine average grade, with a mean width of 12.5 feet. Both these faces continue in ore.

No. 5 shaft was deepened 856 feet to a point slightly below the 1,400-foot level. Stations were established on the 200-, 325-, 1,200-, and 1,400-foot levels, and a loading station commenced at 1,350 feet. Stations for three levels between the 500- and 1,200-foot horizons are yet to be taken out. As the 1,200-foot level is a main haulageway, considerable work was carried out in anticipation of the large tonnage to be handled. A pump sump of sufficient size to accommodate a large volume of water is being excavated.

Steps were taken during the year to abandon the shrinkage method of mining and adopt the cut-and-fill system, with the conversion of active shrinkage stopes to the new practice. In preparation for this, as well as to back-fill the old stopes as they are emptied, a fill pass system was established near No. 1 shaft and two further series of passes were commenced, one located west of No. 1 shaft and the other east of No. 5 shaft. Ore passes were completed from the 350- to the 750-foot levels. At present, cut-and-fill stopes are yielding 25 per cent. of the ore hoisted, and this figure will be increased as the shrinkage reserves are drawn.

Ore Reserves

Ore reserves, computed as at December 31, 1935, are tabulated hereunder:—

	Tons
Ore reserves as at December 31, 1934	2,960,238
Plus new ore added 1935	1,436,780
Total	4,397,018
Less: drawn during 1935	337,543
Total ore reserves (averaging 1.93 per cent. nickel and 0.91 per cent. copper), December 31, 1935	4,059,475

Mining

The results of mining activities during the year are set out in the following table:—

Broken Ore in Stopes

	Tons
Balance December 31, 1934	509,742
Broken during 1935	170,196
Total	679,938
Less: hoisted from stopes during 1935	292,601
Broken ore reserves December 31, 1935	387,337

ORE HOISTED

From stopes, 1935	292,601
From development, 1935	25,781
From concentrating dump, 1935	16,762
From development dump, 1935	2,399
Total ore to crushing plant, 1935	337,543

Crushing, Sorting, and Transportation

From 337,543 tons of ore delivered to the crushing plant, 35,206 tons, or 10.4 per cent., of waste was eliminated by sorting. The balance, amounting to 302,337 tons, was transported over the aerial tramway to the treatment plant bins.

Smelter

The reduction plant was in operation 346.93 days, or 95.3 per cent., of possible time. That the plant is being burdened beyond its limit is reflected in higher metallurgical losses as the result of slightly increased production.

Results of operation tabulate as below:—

	Short tons
Total ore treated	302,510
Matte produced	10,029.50
Nickel in matte produced	5,651.55
Copper in matte produced	2,597.26
Metals per ton of ore:	Pounds
Nickel	40.97
Copper	19.71
Metallurgical losses per ton of ore:	
Nickel	3.43
Copper	2.54

Construction

An extensive construction programme at No. 5 shaft embraced the erection of a steel headframe, power-house with hoisting and compressor equipment, change-house with office accommodation for the mine staff, carpenter shop, combined drill-steel and repair shop, central heating plant and substation. All buildings are of steel and concrete-block construction with fireproof roofing. A substation was also erected at the property by the Hydro-Electric Power Commission, and 25-cycle power at 26,400 volts was being delivered before the end of the year. Standard-gauge track to the extent of almost 1½ miles was laid during the year to tie in the future ore and backfill handling system. Additional grinding, flotation, and thickening equipment was added in the concentrator.

Housing facilities were further increased by the erection of a number of dwellings. In addition, a spacious community hall was built for the use of employees and their families.

Refinery

The refinery, which is located in Norway, operated very steadily throughout the year, keeping in step with the somewhat increased matte production. A certain amount of additions and alterations took place, which raised the total capacity of the plant, including capacity for custom matte, to 7,000 short tons of nickel annually, at which rate it occasionally operated.

Custom matte was received regularly at a rate of 1,000 long tons of nickel annually. The plant for separation of precious metals started delivery of gold, silver, platinum, and palladium. The quality was found satisfactory, and the marketing took place without difficulty. The quality of the nickel and copper was maintained to the satisfaction of the market at the high quality previously set.

For the year 1935, the amount of metals in matte received from the smelter, the refinery production, the metals in process, and metals in matte on hand at the end of the year is set out in the following table:—

	Nickel	Copper
	lbs.	lbs.
Metals in Falconbridge matte received, less refining losses	10,421,850	4,768,704
Produced in marketable form during the year	10,753,756	5,029,525
Metals in process of refining at end of year	2,260,586	427,043
Metals in matte on hand at end of year	715,864	319,041

Marketing

This key factor in our business was favourable during the year and reached a peak in the third quarter. European exchange difficulties, of course, had their effect, as did the observance lately of "sanctions." At that, sales of nickel totalled 10,829,865 pounds and of copper 5,129,483 pounds, which closely parallels our year's production, and closed the year with little change in stocks. These continue to be lower than we would like to see, but should be reinforced by the steps now taken to increase production by the end of 1936. Forward bookings for 1936 deliveries are again higher than in prior years.

International Nickel Company of Canada, Limited

The authorized capital of the International Nickel Company of Canada, Limited, consists of $27,679,900 of preferred shares of $100 and $5 par value, and 15,000,000 shares of common stock of no par value.

The officers are: Charles Hayden, chairman of the board; Robert C. Stanley, president; John F. Thompson, vice-president; Paul D. Merica and John C. Nicholls, assistants to the president; James L. Ashley, secretary-treasurer.

The directors whose term expires in 1936 are: John P. Bickell, Hon. H. Cockshutt, Wm. N. Cromwell, D. Owen Evans, Sir Harry McGowan, R. H. McMaster, Wm. W. Mein, Rt. Hon. Lord Melchett, Paul D. Merica, Sir Robert Mond, Thomas Morrison, Seward Prosser, and Grant B. Shipley.

The directors whose term expires in 1937 are: James L. Ashley, John F. Dulles, Reg. Halladay, Charles Hayden, J. W. McConnell, R. S. McLaughlin, Britton Osler, J. A. Richardson, Robt. C. Stanley, Andrew V. Stout, John F. Thompson, and Rt. Hon. Lord Weir of Eastwood.

The executive office is at 67 Wall Street, New York, N.Y., and the general offices are at Copper Cliff, Ont.

This company and subsidiary companies operate hydro-electric power plants at High Falls, Big Eddy, Wabageshik, and Nairn Falls, Ont.; nickel-copper mines in Sudbury district, Ont.; smelters at Copper Cliff and Coniston, Ont.; refineries at Copper Cliff and Port Colborne, Ont., Acton, England, and Clydach, Wales; rolling mills at Birmingham, England, Huntington, W. Va., and Glasgow, Scotland; a colliery at Pontardawe, Wales; and a foundry at Bayonne, N.J.

The following information is extracted from the annual report of the company covering the year ending December 31, 1935:—

General

The progressive improvement in your company's business, which started in May, 1932, continued throughout 1935. Total sales of nickel were in excess of those recorded during 1929, which formerly was the peak year in the history of the nickel industry, and consumption was well diversified geographically and industrially. New sales records were achieved, not alone for nickel but for copper and the platinum metals as well.

During the year operations at mines and plants were conducted without interruption, and output was increased in order to meet the growing demand for your company's products. As a result of these activities pay-rolls increased in all plants, and unemployment was reduced in Sudbury district as well as in the town of Port Colborne, where your Canadian nickel refinery is located.

Attention is called to the redemption of outstanding debentures and to the acquisition of the minority interest in the Ontario Refining Company, Limited. The former transaction, by eliminating all funded debt, leaves your company and its subsidiaries in an entirely unencumbered financial position; and the latter gives your company full ownership in the copper-refining enterprise which was organized in 1929 primarily to refine your company's copper.

A net profit of $26,086,527.47 was realized after all charges, including provision for taxes, depreciation, mine depletion, and other purposes. After payment of preferred dividends of $1,933,898.75, there remained $24,152,628.72, or $1.65 per share of common stock. Cash on hand of $30,473,311.32 indicates a strong financial position, which is now more than ever necessary to assure at all times adequate production facilities and a continuation of aggressive market development to meet the exigencies of expanding business.

There follows a classified digest of essential facts concerning your company's varied activities during the year under review.

Sales

Your company's sales of nickel in all forms, including nickel in alloys, amounted to 129,850,207 pounds, comparable with 91,459,554 pounds in 1934, an increase of 42 per cent. Sales of nickel in products of the Port Colborne and Clydach refineries amounted to 105,620,318 pounds, comparable with 73,964,621 pounds in 1934, an increase of 43 per cent. Sales of nickel in products of the Copper Cliff smelter amounted to 4,085,570 pounds, comparable with 1,357,008 pounds. Sales of nickel in products of the rolling mills at Birmingham, Glasgow, and Huntington, and of the foundry at Bayonne, totalled 20,144,319 pounds, comparable with 16,137,925 pounds, an increase of 25 per cent.

Sales of Monel metal, a nickel alloy made direct from Creighton ore, totalled 13,411,624 pounds, comparable with 10,763,821 pounds in 1934, an increase of 25 per cent.; sales of pure rolled nickel were 9,339, 595 pounds, comparable with 7,469,914 pounds, an increase of 25 per cent., and sales of Inconel increased from 428,605 pounds to 609,632 pounds, or 42 per cent.

Sales of copper increased from 194,870,682 pounds in 1934 to 233,009,392 pounds, or 20 per cent.

Gold sales were 69,944 ounces, comparable with 74,375 ounces in 1934; silver sales were 3,160,222 ounces, comparable with 1,006,808 ounces; and sales of the platinum metals were 128,874 ounces, comparable with 124,424 ounces. Sales of selenium were 72,616 pounds, comparable with 73,516 pounds in 1934; and sales of tellurium increased from 1,110 pounds to 9,987 pounds.

Mines

During 1935 a total of 3,382,409 tons of ore was mined and shipped to the smelters at Copper Cliff and Coniston. All of this ore was extracted from the Frood and Creighton properties, which were operated continuously throughout the year. The Frood mine furnished 2,875,599 tons, and the Creighton mine 506,810 tons.

Development work in the Frood was carried on at a rate to conform to ore requirements. The advance of shafts, drifts, and crosscuts, raises, winzes, and box-holes for the year was 16,012 feet, bringing the total development footage in this mine to 183,211. There are now available for production 103 stopes and 16 pillar stopes, having respectively a daily capacity of 125 tons and 55 tons each.

In the Creighton mine development work was advanced 9,200 feet. Good progress was made in shaft-sinking and surface-plant construction. It is expected that this undertaking will be completed during the current year and that ore from this development will be available in 1937. The new shaft, 16 feet by 28 feet in cross-section, is being sunk to a depth of 4,200 feet and will be served by a hoist capable of handling 4,000 tons of ore per day.

By replacing mild steel skips with lighter skips made from nickel steel, the hoisting capacity at the Frood and Creighton mines has been increased approximately 15 per cent.

Smelters

The concentrator treated 2,584,666 tons of ore, the largest tonnage handled since this plant was built. Further improvements in metallurgy were effected, and from the standpoint of efficiencies and recoveries results were the most gratifying thus far attained. Milling was increased to 8,000 tons per day, and it is planned to expand capacity to 11,000 tons per day during the current year. Results have further shown the value of research experimentation, and work of this character will be intensified when the new research laboratory is completed.

At the Copper Cliff smelter there were produced 118,016 tons of bessemer matte and 121,574 tons of blister copper. All of the reverberatory furnaces, five in number, and all twelve converters, were in use from February until the end of the year. Operating results were satisfactory in respect to tonnage of ore smelted, fuel consumption, and slag losses. The Orford process department was operated throughout the year with improvement in costs, partly due to the increased tonnage of bessemer matte consumed.

The Coniston smelter, with the exception of the month of July, ran continuously with four blast furnaces and five converters in operation. Ore to the amount of 790,351 tons was processed, and 54,248 tons of bessemer matte produced. Plant practice was efficient as reflected in the higher percentage recovery of metal from ore smelted.

Hydro-Electric Plants

Your company's hydro-electric power plants are in good condition, and the capital expenditures thereon during the year were comparatively small. All of the plants are fully equipped and were operated throughout the year to the extent of the available water supply. Power purchases from the Hydro-Electric Power Commission of Ontario, including the requirements of the Port Colborne nickel refinery, totalled $759,906.07.

Refineries

Port Colborne Nickel Refinery.—Increased demand for nickel necessitated operating the electrolytic plant at capacity for the first time since additional units were installed in 1929. The year began with six circuits in service, to which were added during the year the three reserve circuits, this bringing the refinery to maximum output. There was produced 80,381,532 pounds

of nickel in all forms. Continuous research and experimentation have resulted in many minor process improvements through which improved quality of product and lower costs have been attained.

Ontario Refining Company, Limited.—There was a substantial increase in the tonnage of blister copper treated at this refinery, and plant output and copper shipments increased correspondingly. Refined copper production was 109,966 tons, comparable with 95,558 tons in 1934. Shipments of refined copper were 107,032 tons, comparable with 97,292 tons in 1934.

A new selenium plant was completed and put into operation in March, 1935, thus enabling your company to produce a substantially larger quantity of this metal. In order to eliminate silver losses and to further increase recovery of selenium a Cottrell electrical precipitator was installed and has shown satisfactory results. A plant to produce "single" and "double" nickel salts for the Canadian market was authorized in 1935 and is now completed and in operation.

An electric furnace installation for producing high-quality copper wire-bars and other shapes, authorized in 1935, will be put in operation during the current year. Research work was continued in all departments. Many improvements have resulted, and in consequence cost has been lowered and quality bettered.

Your company purchased for $1,175,000 the 10 per cent. minority capital stock of the Ontario Refining Company, Limited, and the latter is now a wholly owned subsidiary.

Ore Reserves

Proved ore reserves at December 31, 1935, were 205,590,592 tons. Additional ore proved during the year amounted to 4,573,538 tons.

Outlook

International use of nickel for industrial purposes is essentially dependent upon assured source of supply, prompt deliveries, and price schedules advantageous to consumer and producer alike. Furthermore, it is necessary at all times, while avoiding undue expansion, to maintain reserve productive capacity and adequate stocks of metal. In furtherance of this policy your plants in Canada and Great Britain are being enlarged with due regard to balanced operations from mine to market.

Sales and development activities, now world-wide in scope, have been augmented as new uses for your metals have been found. The potential field of application for nickel is extensive and in a large measure still unexplored.

The trend of consumption has been upward for nearly four years and more nickel is being used currently than ever before. It is not unreasonable to assume that with a continuation of your company's established methods this upward trend will continue as world trade improves.

Employees

The total number of employees at the year end was 12,452, distributed as follows: Canada 8,117, Great Britain 2,990, United States 1,293, other countries 52. Employees on December 31, 1934, numbered 9,154. The increase, amounting to 36 per cent., was due to the increased scale of operations and to the construction work in progress in Canada and Great Britain.

During 1935 an average of 1,894 men was employed at Copper Cliff, 456 at Coniston, 2,243 at Frood, and 883 at Creighton. Of these, an average of 1,835 was employed underground at Frood, and 552 at Creighton.

Donald MacAskill is general manager; R. D. Parker, general superintendent; H. J. Mutz, superintendent of mines; S. J. Kidder, superintendent of the Creighton mine; F. J. Eager, superintendent of the Frood mine.

Van Nickel Mines, Limited

In January, 1935, the name of Delta Metals, Limited, was changed to Van Nickel Mines, Limited. It has an authorized capitalization of 4,000,000 shares of $1 par value. Wm. Spears is president, and Dr. W. R. Naylor, vice-president. The head office is at 43 Victoria Street, Toronto.

In March work was started on the property of the Delta Mines Syndicate, located about 5 miles northwest of Worthington in Drury township, district of Sudbury.

In August a 2-compartment vertical shaft was started. Sinking was suspended at the end of September at a depth of 65 feet, and surface work done for the balance of the year.

The plant installed included a 55 h.p. boiler, an 8- by 10-inch steam hoist, and a 200-cubic-foot compressor, which was replaced by a 1,000-cubic-foot compressor after sinking was suspended. Buildings erected included a power-house, magazine, and cap-house. A bunk-house, cookery, office, blacksmith shop, and assay office had been erected in previous years.

An average of 12 men was employed during the year, under the direction of W. F. Taylor. The mine address is Worthington.

PEAT

Caledon Peat Company

A few miles south of Orangeville, in lot 27, concession I, Caledon township, Peel county, the Caledon Peat Company produced from 100 to 150 tons of peat fuel, which sold at approximately $10.00 per ton. The work was done under the direction of C. H. Burbridge and J. Pollock, Brampton.

The deposit is quite small, only 3 to 4 acres. The peat ranges from 4 to 5 feet in thickness with a few inches of humus and grass covering it. The actual operation consisted in cutting the peat out in blocks and spreading it on the ground to dry.

In quality the peat fuel is fairly good, having a low ash and good heating content. The operation ceased in the fall of 1935.

H. L. Hodgkins and Son

At a peat operation near the Forks Road, 5 miles from the village of Wainfleet, Wainfleet township, Welland county, 75 tons of peat fuel was produced and sold in the neighbouring towns. The fuel sold for $7.00 per ton at the bog, and $8.00 per ton delivered. The operators are H. L. Hodgkins and Son, R.R. 2., St. Ann's.

The peat is about 5½ feet thick. The upper 1½ feet is a mossy peat, which is sold to the nurseries for packing trees and shrubs; the lower 4 feet is a fair quality peat, rather high in ash.

The raw peat is processed in a manner similar to the Leasa operation near Stratford. The raw material is fed into a rebuilt clay pug mill, mixed, caught on drying racks, and placed in the open to dry. In all, about 7 men were employed for the greater part of the summer months.

Wm. Leasa

The largest peat operation in the province for the past year is located in lot 11, concession X, Ellice township, county of Perth, some seven miles north of Stratford. The operator is Wm. Leasa, Milverton.

The deposit is 1,200 acres in size. The area is wooded around the margin with small poplar, and in the centre, grasses and small shrubs are abundant. The thickness of peat utilized for peat fuel is only one foot.

The peat fuel is prepared by passing the raw peat through a clay pug mill, in which the peat is mixed to a soft plastic pulp. By means of a force feed the soft pulped peat is extruded from shaping mouthpieces on to drying racks. When only partially dry, the peat blocks are taken off the racks and placed in a drying shed.

During the summer of 1935 between 550 and 800 tons of peat fuel was produced and sold at $7.00 per ton, delivered. The quality of the fuel is fairly good, having a high heating content, but also high in ash.

Northern Peat Company

The Northern Peat Company, under the direction of W. B. Brewer, Timmins, produced and sold in Timmins 100 to 150 tons of machine-made peat fuel at approximately $9.75 per ton delivered, or 18 cents per bushel.

The deposit is located 5½ miles west of Timmins in lot 8, concession III, Mountjoy township, district of Cochrane, and is estimated to contain at least 100,000 tons of peat. The thickness varies from a few inches at the margins to over 20 feet in the central zone.

In much the same manner as the Leasa and Hodgkins peat operations, raw peat is cut and broken down by knives rotating in opposite directions. The pulped peat then passes through extruders on to racks and is dried.

During 1936 the operator will try out new methods of handling both the raw and pulped peat. Handling of the raw peat is a very important factor, since seven to nine tons of raw peat are required to make one ton of salable peat fuel.

G. Runke and Sons

G. Runke and Sons, 115 Cameron Street, Kitchener, produced and sold about 115 tons of peat fuel from a small bog, 20 acres in extent, situated in the upper part of the German tract, lot 55, Waterloo township, Waterloo county. The fuel sold readily in Kitchener, and according to the operators many times the quantity produced in 1935 can be sold in the area surrounding the deposit.

The thickness of peat that is used for peat fuel runs from 1½ feet to 2 feet. Approximately 8 inches of moss, covered by grass and small shrubs, overlies the peat. The quality is excellent, being low in ash and high in heating value.

The processing is carried on with a rebuilt brick press, which produces a very solid peat fuel, which sells at $7.00 per ton, delivered in Kitchener.

From 7 to 10 men were employed for the greater part of the summer.

RADIUM

Canada Radium Mines, Limited

Canada Radium Mines, Limited, has a capitalization of 2,500,000 shares of no par value, of which 1,561,037 shares have been issued. The property consists of 750 acres in Cardiff township, Haliburton county. The officers and directors are: K. W. Wright, president; I. L. Fletcher, secretary-treasurer; Frank Austin, managing director; A. Arthur, Geo. F. McCandless, E. W. Austin, and John G. Cole, directors. H. L. McClelland is consulting engineer. The head office is at 244 Bay Street, Toronto. The mine address is Cheddar.

The shaft has been sunk to a depth of 388 feet, with levels at 125, 250, and 365 feet. Approximately 1,200 feet of lateral work has been done.

About 15 men are employed at the mine.

SILVER AND COBALT

Bellorain Mines, Limited

Bellorain Mines, Limited, has an authorized capitalization of 1,000,000 shares of no par value. M. Lebovitz, Cobalt, is president; and Max Kaplan, Kirkland Lake, is secretary-treasurer. The address is Box 206, Cobalt.

The company acquired the old Bellellen property in South Lorrain township, district of Timiskaming. Previous operators had sunk a shaft to a depth of 400 feet and done considerable lateral work.

The present owners operated from July 15 to November 10, 1935, employing an average of 24 men. Some 77 feet of diamond-drilling was done; ore hoisted amounted to 39.5 tons; and shipments of ore, having a value of $1,687 in silver and $3,067 in cobalt, were made.

Cobalt Properties, Limited

Cobalt Properties, Limited, is capitalized at $25,000, in shares of $1 par value. The officers are: Ambrose Murphy, president; Arthur Brocklebank, managing director; T. Wainwright, vice-president; H. E. Tomney, secretary-treasurer; Agnes Reid, director. The head office is at Cobalt.

The company owns the following properties in the township of Coleman, district of Timiskaming: Coniagas, Mining Corporation, Right of Way, McKinley-Darragh-Savage, and Cobalt Townsite.

During the year 74 feet of drifting was done and 854 tons of ore were hoisted, from which 279,414 ounces of silver were produced. An average of 72 men was employed.

Cobnor Silver Mines, Limited

Cobnor Silver Mines, Limited, owns one claim of 40 acres in the township of Bucke, district of Timiskaming. The company is capitalized at 750,000 shares of no par value. The officers and directors are: M. King, president; Norman D. Johnston, vice-president; C. B. Munday, secretary-treasurer; Percy Luscombe, managing director; Edmund Eaves and Edward Smith, directors. H. F. Fancy is mine manager. An average of 20 men is employed.

The property was reopened on September 9, 1935, and the following work was done to the end of the year: drifting, 485 feet; crosscutting, 20 feet; ore hoisted, 900 tons; waste hoisted, 900 tons. About 20 tons of cobalt ore was shipped. The mine address is Cobalt.

Comet Leasing Company

Jas. H. Price and Bruce Williams, of Kirkland Lake, leased the Drummond mine in Coleman township, district of Timiskaming, under the name of the Comet Leasing Company.

Two men were employed throughout the year. Shipments totalling 23,010 ounces of silver, valued at $14,862, were made.

Dean and Downey

J. C. Dean and Ralph Downey, of Cobalt, leased the surface at the Wettlaufer mine in South Lorrain township, district of Timiskaming, and employed 3 men from April 24 to September 24 in picking over the dumps.

From 135 tons of ore shipped, a recovery of 6,538 ounces of silver, valued at $4,309.00, was obtained.

Hudson Bay Mines, Limited

The property owned by Hudson Bay Mines, Limited, in Coleman township, district of Timiskaming, was leased to several operators during 1935.

Shipments of ore yielded a total of 1,527 ounces of silver, valued at $774. The company's address is Box 700, New Liskeard.

George Martin

The Crown Reserve mine in Coleman township, district of Timiskaming, was leased to George Martin, of Cobalt.

Three men were employed from May 1 to December 31 sorting ore from the dumps, and 4 men were employed in the mill from June to October.

Shipments amounting to 10,551 ounces of silver, valued at $6,208, were made.

H. G. Miller

H. G. Miller, Silver Centre, leased the dumps on the Canadian Lorrain property, in South Lorrain township, district of Timiskaming, and employed three men during part of October and November picking over the rock in the dumps. A recovery of 812 ounces of silver, valued at $357, was obtained from 16 tons of ore shipped.

Mr. Miller also leased the Keeley mine in South Lorrain township and employed four men from May to November to pick over the dumps. Shipments from this property yielded 2,412 ounces of silver, having a value of $1,226.

A. G. Morgenthalor

A. G. Morgenthalor, 2108 South Second Street, Philadelphia, Pa., acquired the old Beaver mine in Coleman township, district of Timiskaming. The property was operated throughout the year, with an average force of 8 men.

Development work amounted to 112 feet of winze-sinking, 180 feet of drifting, and 30 feet of crosscutting. About 305 tons of ore were hoisted, which yielded 51,771 ounces of silver, valued at $31,770.

Morrison Mines, Limited

Morrison Mines, Limited, has a capitalization of $3,000,000, in shares of $1 par value. The officers and directors are: Horace F. Strong, president and manager; H. D. Fripp, vice-president; Jas. F. Cunningham, secretary-treasurer; W. W. Robinson and Jos. Montgomery, directors. The head office is at 165 Sparks Street, Ottawa.

The property consists of two claims, T.C. 204 and 205, in Nicol township, district of Timiskaming.

Operations at the mine were resumed in June, 1935, after a period of idleness since December, 1930. The shaft was sunk an additional 162 feet, and new levels were established at 500 and 575 feet. The following table shows the work done on these levels:—

	500-foot level	575-foot level
	feet	feet
Drifting	192	44
Crosscutting	120	86
Raising	66	.....

About 700 tons of ore and 3,800 tons of waste rock were hoisted. Production amounted to 28,526 ounces of silver.

An office and an addition to the shaft-house were built. Operations ceased at the end of the year, during which an average of 18 men was employed.

Mosher, Richardson, and Lafrange

I. E. Mosher and associates, of Cobalt, leased the Buffalo mine in Coleman township, district of Timiskaming, and made a clean-up of the mill from June 10 to October 12, 1935.

Some 46 tons of residues and precipitates, having a silver content of 5,597 ounces, valued at $3,582, were sold to Noranda Mines, Limited.

Nipissing Mining Company, Limited

Nipissing Mines Company, Limited, has a capital of 1,200,000 shares of $5 par value. The directors of the company are: E. P. Earle, president and treasurer; Alexander Fasken, vice-president and secretary; Richard T. Greene, Dr. F. R. Bennetto, C. W. Nichols, Halstead Lindsley, and Hugh Park, directors. The head office is at the Excelsior Life Building, Toronto, and the New York office is at 165 Broadway.

The operating company is the Nipissing Mining Company, Limited, with a capital of 2,500 shares of $100 par value. The officers and directors of the company are: Alexander Fasken, president and secretary; E. P. Earle, vice-president and treasurer; Richard T. Greene, C. W. Nichols, Dr. F. R. Bennetto, Halstead Lindsley, and Hugh Park, directors. Hugh Park, Cobalt, is general manager.

Mining operations at the property in Coleman township, district of Timiskaming, consisted principally of the extraction of cobalt ore at No. 81 shaft. An average of 38 men was employed, some in mining work and some on surface, in connection with shipping residue and general clean-up.

The following is an extract from the general manager's report for the year ending December 31, 1935:—

Operations at the Cobalt property were of the same nature as in the previous year, consisting largely of mining cobalt ore, shipping cobalt-nickel-arsenic residues, and recovering silver clean-up from various parts of the property, all operations showing a profit. Total shipments amounted to 4,380 tons, as against 1,692 tons in 1934. There was an increased demand and higher prices for cobalt, with the result that shipments of residue were 1,000 tons greater than in 1934.

The following shipments were made during the year:—

	Tons	Ounces silver
Fine bullion	39.75	1,158,985.50
Clean-up	552.32	57,800.22
Leasers' ore	1,884.39	90,883.58
Residue	1,615.13	112,673.43
Cobalt ore	288.49	.....
Total	4,380.08	1,420,342.73

There was considerable variation in the price of silver, the variations at times being extreme from day to day, with comparatively long periods of more or less constant quotations. The year opened at 55 cents; a low of 53½ cents was recorded on February 1; a high of 81 cents on April 26; the average for the year was 64.27 cents, closing at 49¾ cents. During most of February and March of 1936 the price has been fairly constant at 44¾ cents.

The stock of refined bullion held in storage at Cobalt was sold in December at varying prices, averaging 62 cents per ounce. This silver was held during the severe decreases during the past three or four years, including the low of 24¼ cents in 1932.

There still remains some indeterminate amounts of cobalt and silver in scattered surface workings and in dumps, which might be profitably concentrated if prices for both metals remain at their present levels.

Some ore was also obtained on the property by leasers. The recovery in given in the company's table of shipments above.

M. J. O'Brien, Limited

Cross Lake Mine

The Cross Lake mine in Coleman township, district of Timiskaming, is owned and operated by M. J. O'Brien, Limited. J. G. Dickenson is general manager, and W. A. O'Flynn is manager. About 105 men are employed. The mine address is Cobalt.

The following development work was done in 1935: drifting and crosscutting, 4,585 feet; raising, 446 feet; sinking, 10 feet.

The following table shows the ore hoisted and milled in 1934:—

	Tons
Total tons broken	44,597
Ore hoisted	25,860
Waste hoisted	16,553
Ore milled	25,863
Custom ore milled	4,649

The silver recovered amounted to 1,036,643 ounces, of which 138,783 ounces was from custom ore. There were shipped:—

Cobalt	lbs.	60,545
Copper	lbs.	35,969
Lead	lbs.	13,136
Gold	ounces	6.7

Miller Lake O'Brien Mine

The Miller Lake O'Brien mine, Nicol township, district of Timiskaming, is owned and operated by M. J. O'Brien, Limited. J. G. Dickenson is general manager and H. G. Kennedy is manager. The mine address is O'Brien. The average number of men employed was 95.

The 1934 report is as follows:—

	Feet
Drifting	1,871
Crosscutting	963
Raising	24
Sinking	56
	Tons
Ore stoped	18,918
Ore and waste broken	28,375
Ore hoisted	20,691
Waste hoisted	7,559

J. C. O'Donald

In 1935, J. C. O'Donald, Cobalt, leased the old Silver Queen mine in Coleman township, district of Timiskaming, for three years.

During the year a shaft was sunk 64 feet and a shaft-house, machine shop, and dry were built.

About 60 tons of low-grade ore was hoisted, and 500 tons of waste. The production for the year amounted to $1,269 in silver and cobalt. An average of 12 men was employed under Mr. O'Donald's supervision. The post office address is Box 286, Cobalt.

C. W. Price

The Foster mine in Coleman township, district of Timiskaming, was operated under lease by C. W. Price, Cobalt, who employed 2 men. Shipments of ore yielded 1,591 ounces of silver, having a value of $969, and cobalt to the value of $130.

Rowe and Stuckey

Alfred Rowe and Charles Stuckey, of Cobalt, leased the surface and dumps of the Frontier mine, in South Lorrain township, district of Timiskaming, during 1935. Shipments of silver ore and mill rock yielded 14,000 ounces of silver and 13,000 pounds of cobalt.

Sandoe and Moyle

The Temiskaming mine in Coleman township, district of Timiskaming, was leased to Richard Sandoe and H. Moyle, of Cobalt.

Production amounted to 10,246 ounces of silver, valued at $6,660, and 12,844 pounds of nickel-cobalt ore, valued at $534.

Silver Cliff Syndicate

R. H. Lyman leased the old Silver Cliff mine in Coleman township, district of Timiskaming, in April, 1935, and operated it as lessee until August. From then until November 26 he operated as manager for the Silver Cliff Syndicate. Mr. Lyman died on November 30.

During these operations there were sent to the O'Brien mill 694 tons of ore, which yielded 19,404 ounces of silver, valued at $11,836.

Silverado Gowganda Mines, Limited

Silverado Gowganda Mines, Limited, held under lease nine claims in the Gowganda area, Leith township, district of Timiskaming. F. E. Forster, 347 Bay Street, Toronto, is secretary of the company.

Work was started on May 15, 1935, and continued until December 1, an average force of 20 men being employed. About 387 feet of drifting and 78 feet of crosscutting were done.

Donald E. Sirola

Donald E. Sirola, Kirkland Lake, operated the Colonial mine in Coleman township, district of Timiskaming, under lease, from June to December 31, 1935. Production amounted to 11,860 fine ounces of silver and 669 pounds of cobalt.

An average of 7 men was employed.

Smith Cobalt Mines, Limited

Smith Cobalt Mines, Limited. has a capitalization of 4,000,000 shares of $1 par value. The officers and directors are: W. H. Smith, president; A. A. Amos and E. F. Armstrong, vice-presidents; A. Kelso Roberts, secretary-treasurer; R. D. Hoffman, director. The head office and mine office are at Cobalt. The secretary's office is at 320 Bay Street, Toronto.

The property is in Coleman township, district of Timiskaming, east of Cross lake. Operations were carried on from May to December 31, 1935, an average of 21 men being employed. The following work was done:—

Level	Winze-sinking	Station-cutting	Drifting and cross-cutting	Raising	Stoping
	feet	cu. ft.	feet	feet	cu. ft.
450-foot	17	3,259	931	19	1,508
500-foot	59	520	365	.....	.....

About 9,570 pounds of cobalt ore was shipped. The late G. S. Scott was manager until August, and was succeeded by D. G. Russell.

A. Wood

The old mill of the Dominion Reduction Company, at Cobalt, was leased to A. Wood. Two men were employed from July 5 to November 10 in making a clean-up of the plant. Screenings from the mill site yielded 10,694 ounces of silver, valued at $4,307, and 165 ounces of gold, valued at $5,198. This mill at one time treated high-grade gold ores from several Ontario properties.

TALC

Canada Talc Company, Limited

The mine and mill of the Canada Talc Company, Limited, at Madoc, Huntingdon township, Hastings county, were operated throughout the year with an average force of 18 men. The officers and directors of the company are: W. S. Morden, president; E. S. James, vice-president; Roy Taylor, Madoc, secretary and manager. The company owns 50 acres. The capitalization is $50,000.

During 1935, 250 feet of shaft-sinking and 850 feet of drifting were done. Ore hoisted and milled amounted to 6,379 tons.

Geo. H. Gillespie Company, Limited

The officers and directors of the Geo. H. Gillespie Company, Limited, are: Geo. H. Gillespie, president; M. H. Ludwig, secretary-treasurer; Alexander Longwell, director. The head office and mine office are at Madoc.

The property, which is called the Henderson mine, consists of 400 acres in Huntingdon township, Hastings county.

The production for 1935 was 7,330 tons mined and milled. L. Ashley is manager. About 12 men were employed in 1935.

METALLURGICAL WORKS

Algoma Steel Corporation, Limited

During 1935 only one blast furnace was operated by the Algoma Steel Corporation, Limited, located at Sault Ste. Marie. No. 4 furnace was in blast from February 8 to December 31, and produced a total of 119,394 gross tons of iron.

Jas. H. Bell was blast furnace superintendent.

Canadian Furnace Company, Limited

The Canadian Furnace Company, Limited, at Port Colborne, operated the furnace from January 1 to February 1, and from June 20 to December 31, in 1935. The production for the year was as follows:—

	Gross tons
Pig iron	64,484
Spiegeleisen	8,937
Total	73,421

The officers of the company are: Frank B. Baird, Buffalo, N.Y., president; Richard C. Yates, Port Colborne, vice-president and manager; Frederick C. Slee, Buffalo, N.Y., secretary. W. J. Higgins, Port Colborne, is superintendent.

The average number of men employed during 1935 was 102.

Canadian Industries, Limited

During 1935 the plant of Canadian Industries, Limited, located at Copper Cliff, was in continuous operation.

The three 50-ton-per-day sulphuric acid units were operated to capacity. These units manufacture the acid from converter gases produced at the smelter of the International Nickel Company. The oleum unit was also operated to capacity. The nitre-cake unit, in which sodium sulphate is treated with sulphuric acid to produce nitre cake, used in the Orford process of separating nickel from copper, was operated at about 70 per cent. of capacity.

An average of 46 men was employed. E. Jordon was plant manager.

Deloro Smelting and Refining Company, Limited

The blast furnace at the plant of the Deloro Smelting and Refining Company, Limited, operated for short periods during each quarter in 1935. Silver production amounted to 2,090,737 ounces. Arsenic and cobalt products, including stellite, were also produced.

The officers of the company are: M. J. O'Brien, chairman of the board; J. A. O'Brien, president; S. F. Kirkpatrick, vice-president and managing director; S. B. Wright, general manager; F. A. Bapty, secretary-treasurer; R. A. Elliott, works superintendent.

International Nickel Company of Canada, Limited

The refinery of the International Nickel Company of Canada, Limited, at Port Colborne was operated continuously throughout the year. An account of the operations appears on page 178 of this report.

Ontario Refining Company, Limited

The copper refinery of the Ontario Refining Company, Limited, situated at Copper Cliff, was operated continuously during 1935. Operations were increased from 85 per cent. of the rated capacity of the plant at the first of the year to about 95 per cent. at the end of 1935.

By-product departments were further expanded. A new selenium recovery plant was built and put in operation in March. A Cottrell unit was being installed at the end of the year to reduce the dust losses in the by-product departments.

The refinery operated chiefly on blister copper from the smelter of the International Nickel Company, although several lots of gold ores, gold-bearing slags, and mattes from various Canadian mines were treated during the year.

An average of 547 men was employed, in comparison with 462 in 1934. F. Benard was plant manager.

Steel Company of Canada, Limited

The Steel Company of Canada, Limited, operated "B" furnace for 365 days, with a production of 208,230 gross tons of pig iron. The average number of men employed was 87. R. A. Gillies is blast furnace superintendent.

The officers of the company are: Charles S. Wilcox, chairman of the board; R. H. McMaster, president; H. M. Jaquays and H. T. Diplock, vice-presidents; H. H. Champ, vice-president and treasurer; H. S. Alexander, secretary; S. E. Le Brocq, comptroller. The address is Hamilton.

MINING ACCIDENTS IN 1935

Chief Inspector of Mines, D. G. Sinclair, Toronto; Inspectors, E. B. Weir, Timmins; E. C. Keeley, Kirkland Lake; D. F. Cooper, Sudbury; A. R. Webster, Toronto.

Accidents during 1935

During the year 1935 at the mines, metallurgical works, quarries, and clay, sand, and gravel pits regulated by *The Mining Act*, there were 2,079 accidents to employees reported to the Department of Mines up to January 16, 1936. Thirty-five fatalities arising out of 31 separate accidents were reported.

These returns represent an increase of 134 in the total number of accidents and an increase of 1 in the number of fatalities recorded over the preceding year.

The report shows a fatality rate of 1.52 men killed per thousand men employed, which is a decrease of 0.13 from the rate for the preceding year and 1.09 per thousand lower than the average for the past twenty-five years.

There were 90 non-fatal accidents per thousand men employed, which is a decrease of 3 per thousand from the rate for 1934.

The percentage of non-fatal accidents followed by infection increased from 7.1 in 1934 to 7.4 in 1935.

Fatal Accidents

A comparison of fatal accidents for the past five years is given below:—

Distribution	1931	1932	1933	1934	1935
Mines, underground	21	17	20	23	25
Mines, surface	8	0	1	2	2
Metallurgical works	1	1	1	5	3
Quarries	2	1	0	1	0
Clay, sand, and gravel pits	4	4	2	2	1
Total	36	23	24	33	31

By months the fatal accidents occurred as follows:—

Month	No. accidents	No. men killed
January	4	4
February	1	1
March	1	2
April	1	1
May	0	0
June	3	5
July	4	4
August	5	5
September	5	5
October	4	5
November	2	2
December	1	1
Total	31	35

Classifying the fatalities according to industries gives the following:—

Gold mines	23
Nickel mines	8
Silver mines	0
Talc mines	0
Metallurgical works	3
Quarries	0
Sand, gravel, and clay pits	1
Total	35

ANALYSIS OF FATALITIES AT MINES, 1931–1935

Cause	1931	1932	1933	1934	1935
	per cent.	per cent.	per cent.	per cent.	per cent.
Fall of ground	31	21	23	31	45
Run of ore or rock	3.5	5.3	9	8	6.5
Shaft accidents	17.2	15.8	9	8	10
Explosives	6.9	31.6	9	18	16
Miscellaneous, underground	13.8	26.3	45	27	16
Surface	27.6	.....	5	8	6.5

TABLE OF FATAL ACCIDENTS IN MINES, METALLURGICAL WORKS, QUARRIES, AND GRAVEL, SAND, AND CLAY PITS, 1911–1935

Year	Persons killed at metallurgical works and mines	Persons employed at metallurgical works and producing mines	Persons employed at non-producing mines (estimated)	Total persons employed	Fatal accidents per 1,000 employed
1911	49	12,543	2,000	14,543	3.37
1912	43	13,108	2,000	15,108	2.84
1913	64	14,293	2,000	16,293	3.93
1914	58	14,361	1,500	15,861	3.6
1915	22	13,114	1,500	14,614	1.51
1916	51	14,624	2,000	16,624	3.07
1917	36	16,791	1,000	17,791	2.02
1918	32	14,726	500	15,226	2.1
1919	39	11,926	1,000	12,926	3
1920	29	10,486	1,000	11,486	2.61
1921	24	8,436	1,000	9,436	2.54
1922	30	9,500	1,500	11,000	2.72
1923	30	10,500	1,500	12,000	2.5
1924	40	11,000	1,500	12,500	3.2
1925	42	11,500	1,500	13,000	3.23
1926	32	11,500	1,500	13,000	2.46
1927	33	13,311	2,000	15,311	2.1
1928	85	15,787	2,000	17,787	4.76
1929	55	17,145	1,849	18,994	2.89
1930	56	18,217	317	18,534	3.02
1931	37	17,820	447	18,267	2.03
1932	25	14,378	431	14,809	1.69
1933	25	15,080	804	15,884	1.57
1934	34	19,302	1,254	20,556	1.65
1935	35	21,444	1,528	22,972	1.52

The comparative fatality rate per thousand men employed at mines, metallurgical works, quarries, and clay, sand, and gravel pits is as follows:—

	Men employed	No. killed	Rate per thousand
Mines	17,193	31	1.80
Metallurgical works	4,479	3	.63
Quarries	700	0	0
Clay, sand, and gravel pits	600	1	1.67
Total	22,972	35	1.52

The ages of the men killed were as follows:—

17–20	21–25	26–30	31–35	36–40	41–45	46–50	Over 50	Total
1	6	6	7	6	5	2	2	35

The occupation and nationality of the men killed at mines, metallurgical works, and clay, sand, and gravel pits are set out in the following table:—

Occupation	British	Czecho-Slovakian	Finn	Italian	Jugo-Slav	Norwegian	Pole	Ukrainian	Total
Chute-blaster	.....	.....	.....	.....	1	.....	.....	.....	1
Conductor	1	.....	.....	.....	.....	.....	.....	.....	1
Driller	5	1	.....	2	1	.....	1	.....	10
Hoistman	1	.....	.....	.....	.....	.....	.....	.....	1
Labourer	1	.....	.....	.....	.....	.....	.....	.....	1
Machine helper	1	1	.....	.....	.....	.....	.....	.....	2
Mucker	.....	.....	.....	2	2	.....	1	.....	5
Pumpman	1	.....	.....	.....	.....	.....	.....	.....	1
Scaler	.....	.....	.....	.....	1	.....	.....	.....	1
Shaft leader	1	.....	.....	.....	.....	.....	.....	.....	1
Shaftman	.....	.....	1	.....	.....	1	.....	.....	2
Shoveller	.....	.....	.....	.....	.....	.....	2	.....	2
Slusherman	1	.....	.....	.....	.....	.....	.....	.....	1
Stope boss	.....	.....	1	.....	.....	.....	.....	.....	1
Switchman	1	.....	.....	.....	.....	.....	.....	.....	1
Tableman	1	.....	.....	.....	.....	.....	.....	.....	1
Teamster	1	.....	.....	.....	.....	.....	.....	.....	1
Timberman	.....	.....	.....	.....	.....	.....	.....	1	1
Unitman	1	.....	.....	.....	.....	.....	.....	.....	1
Total	16	2	2	4	5	1	4	1	35

Non-fatal Accidents

The causes of non-fatal accidents at mines are shown in the following table:—

Cause	Surface	Under-ground	Total
Fall of persons	107	157	264
Falling objects	62	131	193
Rock or ore at chute	.....	138	138
Flying objects, sledging, etc.	28	105	133
Handling rock or ore	5	116	121
Fall of rock or ore, scaling, drilling, etc.	.....	120	120
Crushed between two objects	25	90	115
Hand tools	51	51	102
Tramming	7	92	99
Fall of rock or ore at face	.....	80	80
Strain while lifting	28	51	79
Nails or splinters	24	43	67
Drilling machines	.....	65	65
Machinery	45	9	54
Running into or striking objects	7	40	47
Cage, skip, or bucket	.....	27	27
Burns	20	4	24
Fall down shaft, winze, or stope	.....	16	16
Explosives	.....	11	11
Air or rock blast	.....	8	8
Poisoning from cyanide	4	.....	4
Electricity	3	.....	3
Gas	2	1	3
Explosions from carbide	1	1	2
Unclassified	14	.....	14
Total	433	1,356	1,789

The causes of non-fatal accidents at clay, sand, and gravel pits were:—

Fall of material	5	Strain while lifting	3
Fall of persons	4	Falling objects	1
Crushed between two objects	3	Hand tools	1
Machinery	3		
Transportation	3	Total	23

The causes of non-fatal accidents at metallurgical works were:—

Falling objects	32	Transportation	4
Fall of persons	21	Hand tools	4
Machinery	10	Strain while lifting	3
Flying objects, sledging, etc.	10	Nails or splinters	2
Burns	7	Burns by acid	2
Burned by slag, matte, or scrap	5	Electricity	2
Cranes, ladles, hooks	5	Gas	1
Crushed between two objects	4		
		Total	112

The causes of non-fatal accidents at quarries were:—

Handling material	31	Machinery	5
Fall of rock	14	Crushed between two objects	5
Fall of persons	14	Derricks, cranes, etc.	3
Flying objects, sledging, etc.	12	Explosives	3
Hand tools	10	Nails or splinters	3
Falling objects	8	Electricity	1
Transportation	8		
Strain while lifting	7	Total	124

Infection

Location	No. of accidents	Accidents followed by infection	Per cent. infection
Mines, underground	1,356	103	7.6
Mines, surface	433	38	8.8
Metallurgical works	112	2	1.8
Quarries	124	9	7.2
Clay, sand, and gravel pits	23	.....	.....
Total	2,048	152	7.4

Accidents from Explosives

Cause	Non-fatal		Fatal		Total	
	No. of accidents	Men injured	No. of accidents	Men killed	No. of accidents	Men killed or injured
Delayed too long blasting	3	3	2	2	5	5
Drilled into explosive	2	3	.....	.....	2	3
Unexplained blast	2	2	.....	.....	2	2
Concussion from blast	2	2	.....	.....	2	2
Cap exploded while being tested	1	1	.....	.....	1	1
Hit by rock from blast	2	2	1	1	3	3
Walked into blast	1	1	.....	.....	1	1
Fumes from blasting	.....	.....	1	2	1	2
Total	13	14	4	5	17	19

Electric Accidents

The following table shows the fatal accidents due to the use of electricity at mines, metallurgical works, and quarries during the last ten years:—

1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	Total
.....	2	1	.....	6	.....	.....	.....	.....	.....	9

Kirkland Lake Hospital.

The following table shows the total number of non-fatal electric accidents during the last ten years:—

1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	Total
5	10	4	14	10	7	3	4	4	6	67

Classification of Non-fatal Accident Rates at Producing Mines

In the following table the producing mines are arranged in order, according to their rate of non-fatal accidents per thousand men employed:—

0–50	Canadian Gypsum Howey McIntyre-Porcupine
50–100	O'Brien (Cobalt) International Nickel (Frood and Creighton) Minto (Jubilee) Miller Lake O'Brien Nipissing Sylvanite Kirkland Lake Gold Naybob (Hayden) Hollinger Dome Darwin Tashota J-M Consolidated Lake Shore Young-Davidson Northern Empire
	Average producing mines—99.2 per M
101–150	Wright-Hargreaves Coniaurum Parkhill Anglo-Huronian (Vipond) Falconbridge (mine) Teck-Hughes McKenzie Red Lake Ashley Gypsum, Lime and Alabastine Central Patricia St. Anthony Van Sickle (S. B. Smith)
151–200	Ardeen (Moss) Henderson Talc Little Long Lac Cobalt Properties Toburn Gillies Lake–Porcupine
Over 200	Matachewan Consolidated Bidgood Barry-Hollinger Macassa North Shores McMillan Pickle Crow Paymaster Consolidated Buffalo Ankerite Canada Talc Marbuan Kenora Prospectors (Cedar Island) Black Donald

Mine Fires

Hollinger Consolidated Gold Mines, Limited

About 5.30 A.M., January 27, a small fire was discovered in a by-pass chute at the 975-foot station off the Central shaft at the Hollinger mine.

The discovery was made by Joseph Bell, night-shift ore-pass operator on the 675-foot level. Bell had smelled wood smoke while at his work on the 675-foot

level and, being unable to locate the source of the smoke on that level, descended first to the 800-foot level and eventually to the 975-foot level, where he located the fire in the timbers of an unused by-pass chute behind the shaft. Two 12-foot 10- by 10-inch timbers, bolted together to form the end posts of this chute, were found to be smouldering. A section of these timbers extending from the floor of the level to a height of 8 feet was charred along the contact of the two timbers to a maximum depth of 5 inches. In the centre of the burned section the 20-inch face formed by the two timbers was charred across the full width.

The fire was easily extinguished and no material damage was done, but the consequences might have been serious indeed had it not been for the persistence of Bell in tracing the origin of the slight smoke he noticed on the 675-foot level.

During the afternoon of January 26 a crew of repair men had used an oxy-acetylene torch to cut out some plates and bolts at this chute and the original ignition of the timbers is presumed to have been due to this operation. The last cutting with the torch was completed about 2 P.M. and, although this crew worked at the location for nearly an hour and three-quarters after the last use of the torch, they noticed no indication of fire up to the time they stopped work and went to surface.

While it seems that from 2 P.M. to 5.30 A.M. was an almost incredible length of time for the fire to smoulder without spreading farther, this is partly accounted for by the nature of the wood in the posts—it was dry-rotted on the outer surface—and by the fact that until the waste-pass was drawn by the night shift there was little or no circulation of air through this by-pass.

It is thought that either the flame of the oxy-acetylene torch impinged on the joint between the two timbers while the cutting operations were under way or that a splash of molten metal became lodged in the joint and caused the fire.

International Nickel Company of Canada, Limited

On April 15, at 1.15 A.M., a smouldering timber was discovered by Motor Repairman F. Anderson at the 26th level crusher station, Creighton mine. It was thoroughly wetted and all signs of fire were easily extinguished.

An acetylene torch had been used in the vicinity on the previous shift to "burn" some crusher plates overlying this timber, and it is presumed that this operation was responsible for the ignition.

Lake Shore Mines, Limited

A small fire broke out in the hoist-room of No. 1 shaft, 2,000-foot level of the Lake Shore mine, on the afternoon of April 12.

This hoist-station contains the hoist-room proper and the adjoining grid-room, which is separated from the hoist-room, by a partition of metal lath and plaster, erected on 2- by 6-inch studding. Ventilation in the station is usually supplied by a fan. At the time of the fire, however, a repair job was being carried on and the fan was temporarily shut off.

The fire was confined to one stud and is presumed to have originated from the heat generated in the grids.

No damage was done, but, in order to guard against a repetition of the occurrence, the old partition was torn out and replaced by a concrete wall.

Porcupine Lake Gold Mining Company, Limited

Fire broke out in the shaft of the Porcupine Lake mine (formerly the Hunter) on the night of November 18, completely destroying three sets of shaft timbers,

including the collar set, and damaging the three sets immediately below. The sills of the shaft-house were also damaged, and approximately 170 square feet of shaft-house flooring was burned.

After the watchman discovered the fire, between 10.30 and 10.45 P.M., its progress was retarded by good work on the part of a quickly organized bucket brigade, who worked until the arrival of the chemical truck and firemen from South Porcupine. But for the prompt action of the watchman and his hastily summoned assistants, and the timely arrival of the fire department with chemical extinguishers, the entire shaft-house and boiler-compressor-hoist-house, which stands much too near the shaft-house, would undoubtedly have been destroyed.

Until early in October, when the buildings were repaired preparatory to dewatering the mine and examining the underground workings, no work had been done at this property for a number of years. Dewatering was completed early in November, after which the pumping crew on night shift was laid off and only a watchman-fireman retained on the shift.

The cause of the fire, at the time of writing, remains unknown.

Prosecution

A charge was laid against Norman S. Blue, chute blaster at the Frood mine of the International Nickel Company of Canada, Limited, in connection with a fatal accident to K. Karjula, for blasting in No. 1 north drift on the 2,600-foot level on September 9, without first causing all entrances to be effectively guarded, contrary to Subsection 61, Section 163, of *The Mining Act.*

Blue was convicted of the charge by Magistrate J. S. McKessock at Sudbury on October 9, and a fine of $10 and costs, or one month in jail, was imposed.

Summary of Rope Tests, 1935

The following is a summary of the tests made in the Wire Rope Testing Laboratories of the Department of Mines during 1935:—

Test for Ontario mines under Act	373
Special informative tests for mines	11
Tests for wire-rope manufacturers	19
Tests for mines outside Ontario	21
Other tests	5
Total	429

Classes for Prospectors, 1935-36

By E. M. Burwash

Introduction

Classes for the instruction of prospectors in mineralogy and geology were held during the past winter as usual, this being the ninth season during which the present instructor has had charge of the classes. The places visited were ten in number, including Hamilton, in which this work had not been done before, and Schreiber, where there had been no classes for a number of years. The numbers in attendance at these two places were fairly satisfactory.

Analysis of Class Attendance

The following table gives detailed information of the last season's work. The heading "Total registration" means enrollment for the daylight classes in mineralogy and petrography. The actual attendance at these classes is given under "Mineralogy." The heading "Geology" refers to attendance at illustrated lectures given in the evening. The column marked "Student hours" contains an estimate of the total hours of study done by the classes as a whole.

TABLE OF ATTENDANCE, 1935-36

Places	Dates	Total registration	Average attendance	Total attendance		Student hours
				Mineralogy	Geology	
	1935		per cent.			
Hamilton	Nov. 12	62	60.5	300	408	708
Ottawa	Nov. 21	38	67.4	205	126	419
Sudbury	Dec. 2	22	57.1	103	60	225
Sault Ste. Marie	Dec. 12	51	60.5	247	127	615
	1936					
Toronto	Jan. 2	227	70.3	1,277	820	3,135
Fort Frances	Jan. 14	13	54.8	57	37	151
Fort William	Jan. 23	62	64.7	321	123	696
Schreiber	Feb. 3	26	56.25	117	93	320
Kirkland Lake	Feb. 13	81	63.9	414	286	1,114
Kapuskasing	Feb. 24	22	64.8	114	154	365
Total		604		3,155	2,234	7,748
Averages		75.5	62.03	315.5	223.4	774.8

The total registration shows a considerable falling off as compared with the ten places visited a year ago, when the total was 1,084.

COMPARISON OF REGISTRATION BY YEARS

Year	No. of places	Total registration
1927-28	16	492
1928-29	14	353
1929-30	15	281
1930-31	15	345
1931-32	13	614
1932-33	13	1,667
1933-34	15	1,257
1934-35	10	1,084
1935-36	10	604

The conclusion drawn in previous reports that the attendance decreases as the prosperity of business in general advances and increases with depressed business conditions seems well sustained.

Acknowledgments

Acknowledgments are due to the following persons and public bodies who have aided in the promotion of the classes in the various centres where they were held, or who have provided rooms or otherwise assisted our work:—

Hamilton—F. P. Healey, Secretary, and the Hamilton Chamber of Commerce; and McMaster University for use of lecture room.

Ottawa—F. C. C. Lynch and the Geological Survey of Canada for the use of rooms at 227 Sparks Street.

Sudbury—L. E. R. Stephens, Principal, and the Board of the Sudbury Mining and Technical School.

Sault Ste. Marie—A. D. Hone, Principal, and the Board of the Sault Ste. Marie Technical School; W. N. Miller, Mining Recorder.

Toronto—Chester S. Walters, Deputy Minister of Public Works, and the Governors of the University of Toronto for the use of a classroom in the Economics Building, 273 Bloor Street West.

Fort Frances—The Town Council and the Town Clerk, J. W. Walker.

Fort William—H. E. Johnston, Secretary, and the Thunder Bay Chamber of Mines; the Mayor and City Council for the use of their auditorium.

Schreiber—W. A. Spicer, Clerk, and the Mayor and Town Council for use of space in the Town Hall.

Kirkland Lake—H. G. Ginn, Mining Recorder, Swastika, for arrangements for the class at Kirkland Lake.

Kapuskasing—Herbert J. Swetman, Manager, and the Community Club.

The employment of a regular travelling assistant for the classes was abandoned in favour of the securing of local assistance as far as practicable. Jas. E. Thomson, geologist of the Department of Mines, did this work at Hamilton, Schreiber, Kirkland Lake, and Kapuskasing; and D. G. Sinclair, Chief Inspector of Mines, officiated very ably at Sudbury.

Local helpers were D. J. O'Brien at Sault Ste. Marie, J. McVey at Fort Frances, and Douglas Fraser at Fort William, who were employed for this work in whole or in part and performed their respective duties quite satisfactorily.

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NOTE.—All places referred to are in Ontario, unless otherwise designated.

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