PROVINCE OF ONTARIO
DEPARTMENT OF MINES

HON. PHILIP T. KELLY, *Minister of Mines* H. C. RICKABY, *Deputy Minister*
M. E. HURST, *Provincial Geologist*

Metal Resources Circular No. 2

OF THE

ONTARIO DEPARTMENT OF MINES

Copper, Nickel, Lead, and Zinc Deposits in Ontario

(Revised to February, 1957)

By
Jas. E. THOMSON and S. A. Ferguson, W. G. Q. Johnston, E. G. Pye, W. S. Savage, and Robert Thomson

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TABLE OF CONTENTS

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MAP

Copper, Nickel, Lead, and Zinc Deposits in Ontario

By

Jas. E. THOMSON[1] and S. A. Ferguson,[2] W. G. Q. Johnston,[3] E. G. Pye,[4]
W. S. Savage,[5] and Robert Thomson[6]

INTRODUCTION

This is the fourth inventory report on the copper, nickel, lead, and zinc resources of Ontario. The earlier reports, Nos. P.R.1950-4, and P.R.-1952-4, and Metal Resources Circular No. 1, 1954, listed the deposits of each district in tables under the same general headings as used here. In this edition the format of Metal Resources Circular No. 1 has been retained, but properties have been regrouped to conform with the changes in the boundaries of the Mining Divisions of Ontario made in June, 1956. An outline map of the revised mining divisions of Ontario is shown opposite. This circular has been made to conform with the second edition of the Mineral Map of Ontario (No. 1957-A)[7] published by the Ontario Department of Mines; most of the properties described here are located on this map.

Lists of miscellaneous occurrences in each mining division are given in this circular. These occurrences are generally small and not worth describing in detail in their present stage of development. It is difficult to decide which of these small occurrences are worth comment, and a rather arbitrary decision has been made to describe all known discoveries of the last few years regardless of their apparent merit, since it is realized that, occasionally, insignificant occurrences can be rapidly developed into orebodies. Also an attempt is made to describe all properties on which a considerable amount of exploration work has been done since the last circular was issued, again regardless of the outcome of the venture. In some parts of the province the number of small mineral occurrences is almost limitless; the listing of these would be a difficult task and of doubtful value.

Copper, nickel, lead, and zinc form a convenient unit for inventory purposes because of the complex intermingling of the metals in the ores of the various deposits. The ore at one mine may contain a single metal; at another, any combination of copper, lead, and zinc; and at a third, copper and nickel. In addition, many ores carry precious metals, and some ores that are mined mainly for their precious-metal content contain sufficient quantities of base metals to be recoverable when large tonnages are treated. However, such deposits are generally omitted from this compilation.

SUMMARY OF EXPLORATION

Since the last circular was issued in 1954 there has been intensive and widespread exploration for deposits of nickel and copper throughout Ontario. The over-all result of this activity has been successful, as demonstrated by the increased quantity and value of production and by the number of potential producing mines. The Sudbury camp, as usual, leads the way in this expansion with more mines and a larger volume and value of output. Early in 1957 the list of other potential producing areas from west to east across the province included Werner Lake, Populus Lake, Shebandowan, Manitouwadge, Mamainse, Timagami, and Cobalt; Timagami and Cobalt had some copper production in 1955.

The direct search for lead and zinc deposits has decreased in amount, but a considerable production of zinc and a lesser amount of lead are anticipated from the treatment of mixed ores at two mines in the Manitouwadge area and at the Consolidated Sudbury Basin Mines property in the Sudbury area. The Jardun mine, near Sault Ste. Marie, has been in continuous production since 1954.

The search for metals is continuing at several of the properties mentioned in this circular.

SOURCES OF INFORMATION AND ACKNOWLEDGMENTS

The information in this circular has been obtained from government reports, technical publi-

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[5]Resident Geologist, Ontario Department of Mines, Swastika.
[6]Resident Geologist, Ontario Department of Mines, Cobalt.
[7]In preparation.

cations, mining companies, and property owners. Wherever possible, the most up-to-date company records have been used. Information on properties in their respective districts was gathered by the resident geologists of the Ontario Department of Mines. The reports on properties in the Eastern Ontario, Parry Sound, and Sault Ste. Marie mining divisions, and the southern part of the Sudbury mining division were prepared by Jas. E. Thomson, who was also responsible for the general compilation of data.

Production figures were supplied by Miss M. G. Arnoldi, statistician of the Ontario Department of Mines. Statements of ore reserves, dimensions and grade of ore shoots, and most of the assays quoted are taken from company reports.

The authors gratefully acknowledge the information provided by a large number of mining companies, property owners, and individuals, for use in the preparation of this report.

PRODUCTION

The total production and the value of copper, nickel, lead, and zinc from all sources within the Province for the periods indicated are given in the accompanying table:

TOTAL PRODUCTION AND VALUE

	1955		To end of 1955	
	Quantity	Value	Quantity	Value
	pounds		pounds	
Copper	292,813,108	$107,215,943	7,284,352,074	$1,127,831,108
Nickel	322,322,355	198,489,258	7,113,001,178	2,289,836,489
Lead	3,853,603	554,148	85,167,157	6,275,686
Zinc	3,095,640	422,555	42,164,416	1,621,178

More than 99 percent of both the copper and nickel production of Ontario has come from the Sudbury camp. In the 10-year period, 1946–55, the mines at Sudbury were responsible for 53.9 percent of Ontario's mineral production or 20 percent of Canada's total mineral production; in 1955 this output was valued at about $336,007,651. Important by-products of the nickel-copper industry are platinum metals, cobalt, selenium, tellurium, gold, silver, and sulphuric acid, and high-grade iron ore.

MAIN GEOLOGICAL TYPES OF DEPOSITS

The deposits described in this circular may be roughly classified into types according to metal content and geological characteristics. These are listed below with examples of each in brackets:

1. Nickel-Copper

a) Replacement bodies associated with the Sudbury nickel irruptive. (Mines of the Sudbury camp.)

b) Replacement bodies associated with peridotite. (Trebor Mines, Limited; Alexo property of Noranda Mines, Limited; Shebandowan property of International Nickel Company of Canada, Limited; Werner Lake property of Eastern Mining and Smelting Corporation, Limited.)

2. Copper

a) Quartz-carbonate-chalcopyrite filling of fissure veins. The chalcopyrite is apt to be spottily distributed. (North shore of Lake Huron; Bruce mine; Consolidated Bi-Ore Mines, Limited.)

b) Chalcocite, chalcopyrite, and native copper in vein breccias associated with Keweenawan lava flows and conglomerate. (Coppercorp, Limited.)

c) Somewhat layered chalcopyrite and pyrite in quartzite beds of the Cobalt series. The copper may be of sedimentary origin with later remobilization. (Desbarats showings.)

3. Copper-Lead-Zinc

Sulphide replacements with complex mineralization. (Consolidated Sudbury Basin Mines, Limited.)

4. Copper-Zinc

Sulphide replacements similar to (3) but lacking appreciable lead content. (Geco Mines, Limited; Kam-Kotia Porcupine Mines, Limited.)

5. Lead-Zinc

a) Fissure veins, generally with well-defined walls, containing quartz, calcite, barite, and rarely, fluorite, as gangue minerals, and sphalerite and galena as metallic minerals. These veins are gen-

erally located along faults and often contain zones of fault breccia. The galena and sphalerite are apt to be spottily distributed. (Most of the lead-zinc deposits of the Eastern Ontario, Sault Ste. Marie, and Port Arthur mining divisions belong in this group.)

b) Sulphide replacements similar to (3) and (4) but lacking appreciable copper content. (Genex Mines, Limited; Jeanette Minerals, Limited.)

6. Zinc

Sulphide replacements with sphalerite as the main ore mineral. (Zenmac Metal Mines, Limited; Cadieux Mines, Limited; Long Lake zinc mine.)

In all types of deposits, except 2(c), there is some evidence of faulting, fracturing, or brecciation, and this structural deformation appears to have exerted some control on ore localization.

As a general rule, the mineralization in the vein type of deposits 2(a), 2(b), and 5(a) tends to be erratically distributed, and this feature may detract from its possibilities. The replacement deposits generally show more uniformity and promise of the large tonnages necessary for a profitable operation.

The productivity and known ore reserves of type 1(a) (Sudbury) indicate its outstanding importance compared with all other types of deposit.

EXPLANATION OF DESCRIPTIVE NOTES ON PROPERTIES

Listing

Properties are listed alphabetically under company names. There is a general index of townships, mining companies, mines, and properties at the back of the circular.

Location

In most cases the location of the main showings is given by claim number, or lot and concession, but the extent of the property is not indicated.

Most of the properties mentioned in this circular are located on the Mineral Maps of Ontario (Nos. 1953-A and 1957-A), published by the Ontario Department of Mines.

Development

Complete information on development is not always available. In the case of old underground workings, the year in which the last development information was obtained is stated.

Ore Reserves, Dimensions, and Grade

Wherever possible the authority for a statement is given in brackets with the date it was made.

References

Only the most up-to-date references are quoted. In many cases these contain a complete list of earlier reports on the property. Information on some deposits has been obtained from private reports, thus accounting for the lack of any reference. The Canadian Mines Handbook contains information on most of the companies mentioned in the circular.

Abbreviations

The following are used:

G.S.C.—Geological Survey of Canada, Department of Mines and Technical Surveys, Ottawa.

O.B.M.—Ontario Bureau of Mines (now Ontario Department of Mines).

O.D.M.—Ontario Department of Mines.

P.R.—Preliminary Report (Ontario Department of Mines).

DESCRIPTION OF PROPERTIES

Eastern Ontario Mining Division

BONTER PROPERTY

Ownership R. E. Bonter, Marmora, Ontario. (1954.)

Location Hastings county, Marmora township, lot 27, concession V.

Metals Present Nickel, copper.

Development Test pit and rock cuts in 1925; geophysical surveys; six drill holes in 1943 by the Consolidated Mining and Smelting Company of Canada, Limited; seven drill holes, totalling 3,609 feet, by Ontario Nickel Mines, Limited, in 1953.

Geology Pyrrhotite and chalcopyrite are disseminated throughout a mass of pyroxenite, which is 350 feet long and 50–75 feet wide on surface.

Dimensions and Grade Two surface samples contained: (1) 1.34 percent copper and 0.42 percent nickel across 60 feet; (2) 2.39 percent copper and 0.48 percent nickel across 60 feet. In 1943 drilling, three holes cut copper and nickel mineralization over 9- to 127-foot core lengths; assays were mostly under 1.0 percent combined copper and nickel. In 1953 drilling, three holes cut core lengths up to 250 feet of mineralization; assays were below 1 percent combined copper and nickel.

References G.S.C., map No. 560A, 1940.
O.D.M., Vol. LII, 1943, pt. 3, p. 17.

CADIEUX MINES, LIMITED

Location Renfrew county, Admaston township, west half of lots, 1, 2, concession III.

Metal Present Zinc.

Development Surface-trenching; geological survey; diamond-drilling in 1925, 1926, and 1951.

Geology Disseminated sphalerite with minor amounts of galena occur as a replacement in crystalline limestone. The mineralized lenses are small.

Ore Reserves 16,000 tons, averaging 10.5 percent, in 1926.

Reference O.D.M., Vol. LIII, 1944, pt. 3, pp. 114–18.

Remarks The showings have been drilled by several different companies. No work has been done since 1951.

DRAPER LAKE FRONTENAC LEAD-ZINC MINES, LIMITED

Location Frontenac county, Loughborough township, lots 15, 16, concession IX, and lot 14, concession X.

Metal Present Lead.

Development Three old shafts of the Frontenac lead mine; No. 1 is 313 feet deep and has six levels; 17 drill holes were put down by New Calumet Mines, Limited, in 1948. Additional drilling was done in 1951 and 1952 by Draper Lake Frontenac Lead-Zinc Mines, Limited.

Geology The main deposit is in a fissure vein, or set of veins, that strikes almost normal to the strike of the country rock, which is Grenville sediments. At No. 1 shaft the veins have been traced for 1,500 feet and at No. 3 shaft for 1,000 feet. The average width of the veins is 11 feet. These are calcite veins of erratic galena, and low silver, content.

Production In 1916–17, 38,527 pounds of lead valued at $4,845.

Dimensions and Grade A bulk sample of the vein material, for a length of 400 feet northwest from No. 3 shaft, averaged 4.2 percent lead, 0.3 percent zinc, and 0.22 ounces of silver per ton across an average width of 12 feet. (J. C. Dumbrille, Jan., 1952.)

References G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 142–45.
Northern Miner, Aug. 2, Dec. 13, 1951; Jan. 31, 1952.

Remarks Formerly known as the Frontenac lead mine.

DUPEL MINES, LIMITED

Location Haliburton county, Hindon township, lots 4–7, concession II.

Metal Present Copper.

Development Surface work; 31 drill holes, totalling 5,117 feet, from Nov. 1954 to May 1955.

Geology Two sill-like bodies of diorite amphibolite intrude a complex of granite, pegmatite, and gneisses, and contain disseminated chalcopyrite and bornite. The main sill is 200–300 feet thick, strikes north-south, and dips east.

Dimensions and Grade 10 pit samples contained from 1.74 to 4.39 percent copper at intervals over a length of 2,300 feet along the west sill.
Most drill holes gave low copper values. Best holes gave 1.2 percent copper over 17.5 feet and 0.86–0.92 percent over 15–20 feet.

References Northern Miner, Nov. 25, 1954; Jan. 20, May 12, 1955; June 14, 1956.

HOLLANDIA LEAD MINE

Location Hastings county, Madoc township, lots BA, BB, concession VI.

Metal Present Lead.

Development Test pits; four old shafts ranging from 40 to 140 feet in depth. 18 drill holes by the Teck Exploration Company, Limited, in 1956.

Geology Galena with a little sphalerite occurs in a calcite vein along a fault fissure. The average width of the vein is 4 feet with a maximum width of 10 feet. The distribution of the galena is spotty. The vein has been traced a long distance and been developed for more than 400 feet by mine workings. Grade is reported to average 6 percent lead with individual assays ranging from 1 to 12 percent.

Production In 1903–6 and 1916, 2,653,365 pounds of lead, valued at $111,097.

References G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 155–57.
O.D.M., Vol. LII, 1943, pt. 3, pp. 55–56.

Remarks Drilling in 1956 in the vicinity of the old mine workings by the Teck Exploration Company, Limited, failed to locate any mineralization of commercial interest, and their option was dropped.

KINGDON MINING COMPANY, LIMITED

Location Carleton county, Fitzroy township, lots 22–24, concession VI; near the village of Galetta.

Metal Present Lead.

Development Underground work on 13 levels to the 1,400-foot horizon; over 20,000 feet of drifting; surface drilling in 1949 by the Kingdon Mining Company, Limited.

Geology The main vein occupies a fault fissure zone, which cuts Grenville limestone and intrusive dikes; the vein filling is mainly galena in calcite. Average width of the vein is 5 feet, and it has been followed underground for a distance of 2,750 feet. In 1917 the average grade was 8.5 percent lead; no later information on the grade is available. In 1949 the vein was traced for 1,400 feet southeast of the old workings by drilling; this work indicated that the drilled portion was narrower and of lower grade than the mine average.

Production From 1916 to 1931 the mine produced 60,074,077 pounds of lead, valued at $4,226,938, and 857,312 pounds of zinc concentrates.

References G.S.C., Memoir 136, 1924, pp. 95–101.
G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 136–38.
Northern Miner, Dec. 23, 1948; Feb. 10, 1949; Apr. 26, 1951.

Remarks The Kingdon mine has been the largest producer of lead in Ontario. The company has been idle since 1950.

LONG LAKE ZINC MINE

Ownership James Richardson and Sons.

Location Frontenac county, Olden township, lot 3, concessions V, VI.

Metal Present Zinc.

Development There are five old shafts ranging from 60 to 125 feet in depth with a total of 350 feet of drifting; also three open cuts, many pits, and trenches. In 1950 Rochette Gold Mines, Limited, (Consolidated Rochette Gold Mines, Limited) later did some drifting on the 100-foot level at No. 2 shaft and also drilled 24 holes from surface.

Geology Veins and lenses of sphalerite with smaller amount of galena run parallel to the banding of enclosing crystalline limestone. A little pyrite, pyrrhotite, and chalcopyrite occur with the sphalerite, which is reported to carry about 2 ounces of silver per ton. Sulphide bodies found are up to 140 feet in length and 14 feet in width; the largest body mined was 90 by 14 by 40 feet.

Production In 1902–4, 1906, and 1909, a total of 3,442 tons of ore, valued at $41,550, was shipped.

References G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 146–51.
O.D.M., Vol. LVI, 1947, pt. 6, pp. 91–94.

Remarks A small concentrating unit was operated by Rochette Gold Mines, Limited, in 1949–50, but no shipments were reported.

RAGLAN NICKEL MINES, LIMITED

Location Raglan township, lot 19, concession IV; claim E.O.21139.

Metals Present Nickel, copper.

Development Surface work; geophysical survey; 30 drill holes, totalling 7,070 feet, in 1956.

Geology Mostly disseminated pyrrhotite and chalcopyrite in metagabbro over a length of about 500 feet and width of 15–100 feet on the surface.

Dimensions and Grade Drilling indicated two small low-grade flat-lying copper-nickel deposits. The larger lens is 300 by 500 feet and 20–50 feet thick.

References O.D.M., Vol. LXII, 1953, pt. 5, pp. 15–16 and Map No. 1953-2.
Northern Miner, July 19, Sept. 6, Sept. 20, 1956.

MISCELLANEOUS OCCURRENCES

Location	References	Metal Present			
		Copper	Nickel	Lead	Zinc
BRUCE COUNTY:					
Albemarle and St. Edmunds tps.	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	....	X
CARLETON COUNTY:					
Fitzroy tp., NW. extension of con. VI	G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 138–39	....	....	X	....
Fitzroy tp., E. ½ lot 20, con. VII	O.D.M., P.R. 1952-4, 1952, p. 14	....	....	X	....
Fitrov tp., lot 20, con. VIII	G.S.C., Ann. Rept. Vol. XIV, 1906, p. 68	....	....	X	....
FRONTENAC COUNTY:					
Barrie tp., lots 34–36, con. I	O.D.M., P.R. 1952-4, 1952, p. 14	....	....	X	....
Barrie tp., lots 19, 20, con. VI; lot 20, con. VII	O.B.M., Vol. X, 1901, pp. 117–18	X	....	....	....
Barrie tp., lots 9–12, con. VIII	O.B.M., Vol. XXV, 1916, pt. 2, p. 11	X	....	X	X
Barrie tp., lots 5–9, con. IX.	O.B.M., Vol. IX, 1900, p. 209	....	....	....	X
Bedford tp., lot 12, con. IV; lots 13, 14, con. V	O.D.M., Vol. LVI, 1947, pt. 6, pp. 67–72	....	....	X	....
Bedford tp., lots 16–18, con. VI	O.D.M., P.R., 1952-4, 1952, p. 14	....	....	X	....
Bedford tp., lot 20, con. VI; lot 18, con. VII; lots 18, 19, 21, con. VIII	O.D.M., Vol. LVI, 1947, pt. 6, pp. 67–72	....	....	X	....
Bedford tp., (Rideau Base Metals, Ltd.)	Northern Miner, Aug. 23, 1956	....	....	X	....
Olden tp., lot 8, con. II; lot 5, con. III	O.D.M., Vol. LVI, 1947, pt. 6, pp. 91, 95	....	....	....	X
Olden tp., W. ½ lot 10, con. IV	G.S.C., 1901, pt. H, p. 160				
	O.D.M., Vol. LVI, 1947, pt. 6, p. 57	....	X	....	....
Olden tp., lot 10, con. VI	O.D.M., Vol. LVI, 1947, pt. 6, p. 57	....	X	....	....
Olden tp., (Sharbot Lake Mines, Ltd.)	Northern Miner, Aug. 23, 1956	X	X	....	....
Oso tp., lot 31, con. IV.	O.D.M., Vol. LVI, 1947, pt. 6, p. 46	X	....	....	....
Palmerston tp., lots 1, 2, cons. VIII, IX	O.D.M., Geol. Branch, files	X	....	....	....
Storrington tp.	O.B.M., Vol. V, 1895, p. 220	....	X	....	....
HALIBURTON COUNTY:					
Glamorgan tp.	O.B.M., Vol. VII, 1898, pt. 3, p. 231	....	X	....	....
HASTINGS COUNTY:					
Cashel tp., lot 20, con. I.	O.D.M., Vol. LII, 1943, pt. 3, p. 31	....	....	X	....
Cashel tp., lot 29, con. IV.	O.D.M., Vol. LII, 1943, pt. 3, p. 54	....	....	X	....
Dungannon tp., lot 23, con. III	O.D.M., Vol. LII, 1943, pt. 3, p. 17	X	....	....	....

Eastern Ontario—Continued

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Elzevir tp., lot 18, con. I	G.S.C., Summ. Rept. 1866–69, p. 164	....	....	X	....
Lake tp., lot 7, con. II	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	X	X
Lake tp., lot 8, con. XI; lot 10, con. XI	G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 161–62	....	....	X	....
Lake tp., lot 11, con. XI	G.S.C., Summ. Rept. 1863–66, p. 105	....	....	X	....
Limerick tp., lot 2, con. II	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	X	....
Limerick tp., lots 27–29, con. II	G.S.C., Summ. Rept. 1863–66, p. 105	....	....	X	....
Madoc tp., near village of Eldorado	O.B.M., Vol. XV, 1906, pt. 1, p. 90				
	O.B.M., Vol. XVI, 1907, pt. 1, p. 76	X	....	....	....
Madoc tp., (Picton Uranium Mines, Ltd.)	Northern Miner, May 10, 1956	X	....	....	....
Madoc tp., lot 24, con. II	O.B.M., Vol. XVIII, 1909, pt. 1, p. 135	....	....	X	X
Madoc tp., lot 29, cons. V and VI	O.D.M., Vol. LII, 1943, pt. 3, p. 55	....	....	X	X
Madoc tp., lot 9, con. X	O.B.M., Vol. XXII, 1913, pt. 2, p. 99	....	X	....	....
Marmora tp., lots 28, 29, con. III	G.S.C., Summ. Rept. 1863–66, p. 105	....	....	X	....
Marmora tp., lot 1, con. XI	O.B.M., Vol. IV, 1894, p. 38	....	....	....	X
Monteagle tp., lot 21, con. II	O.D.M., Vol. LII, 1943, pt. 3, p. 56	....	....	X	....
Tudor tp., lots 1, 2, con. A	G.S.C., Economic Geol. Ser., No. 8, 1930, p. 160	....	....	X	....
Tudor tp., lots 4, 5, con. B	G.S.C., Economic Geol. Ser., No. 8, 1930, p. 160	....	....	X	....
Tudor tp., lot 11, con. II; lot 32, con. III; lot 12, con. IV; lot 12, con. V; lot 11, con. VI; lot 10, con. VII; lots 28, 29, con. XIV; lots 26–28, con. XIX; lots 21–28, con. A; lots 5, 6, 27, 28, 30, con. B; lots 31, 32, east of Hastings Road	O.D.M., Vol. LII, 1943, pt. 3, p. 57	....	....	X	....
LANARK COUNTY:					
Lavant tp., between Robertson and Joe lakes	O.D.M., Geol. Branch, files	X	....	....	....
Ramsay tp., lot 3, cons. VI and VII	O.D.M., P.R. 1952-4, 1952, p. 14	....	....	X	....
LEEDS COUNTY:					
Leeds tp.	O.B.M., Vol. V, 1895, p. 220	....	X	....	....
LENNOX AND ADDINGTON COUNTY:					
Anglesea tp., lot 6, con. III	O.D.M., Vol. LI, 1942, pt. 2, p. 38	....	....	X	X
Sheffield tp., W. ½ lot 10, con. XV	O.B.M., Vol. XXV, 1916, pt. 2, p. 48	....	....	....	X
LINCOLN COUNTY:					
Clinton tp., lots 18–21, con. VIII	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	X	X
PETERBOROUGH COUNTY:					
Belmont tp., lot 8, con. V	O.D.M., Vol. LII, 1943, pt. 2, p. 21	X	....	....	....
Galway tp., lot 20, con. A	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	X	....
Galway tp., lot 18, con. IX; lot 17, con. X	O.D.M., Vol. LII, 1943, pt. 2, p. 49	....	....	X	....
Methuen tp., lot 2, con. I	G.S.C., Economic Geol. Ser., No. 8, 1930, p. 163	....	....	X	....
RENFREW COUNTY:					
Admaston tp., E. ½ lots 1, 2, con. IV	O.D.M., P.R. 1952-4, 1952, p. 14	....	....	....	X
Lyndoch tp., lot 30, con. IV	O.D.M., Vol. LXII, 1953, pt. 5, p. 46	X	....	....	....
VICTORIA COUNTY:					
Somerville tp., lot 2, con. V; lot 1, con. VII	O.D.M., P.R. 1952-4, 1952, p. 15	....	....	X	....

Fort Frances Mining Division

ABIWIN PROPERTY

Ownership M. W. Bartley, Port Arthur.

Location Northwest shore of Sykes Lake, 1½ miles west of Abiwin and ¾ miles north of the C.N.R.

Metals Present Copper, nickel.

Development Surface work; diamond-drilling; magnetometer and geological traverses in vicinity of the showings (1955); electromagnetic survey; geological survey and diamond-drilling in 1956.

Geology Disseminated chalcopyrite and pyrrhotite occur in an amphibolite phase of a diorite intrusion cutting Coutchiching sediments.

Dimension and Grade Copper and nickel occur in combined amounts of about 1 percent over width of 15 feet and length in excess of 330. There are also low silver values.

Remarks Under two-year option to the International Nickel Company of Canada, Limited, as of February 1, 1956.

ANDOWAN MINES, LIMITED

Property Plateau Lake.

Location 6 miles southeast of Atikokan; claim R.760.

Metals Present Nickel, copper.

Development Three old shafts; surface work; geophysical survey; small amount of drilling, 1948.

Geology Chalcopyrite and pyrrhotite disseminated throughout hornblende, which intrudes a gabbro stock; sulphide exposures traced 1,000 feet, and 50 feet wide; a low-grade copper-nickel deposit.

Grade Picked samples assay up to 1.0 percent nickel and 1.5 percent copper; the average grade is low.

Reference O.D.M., Vol. XLVIII, 1939, pt. 2, p. 34.

V. W. BERGENTHAL PROPERTY

Location Cache Bay, Saganaga Lake, Quetico Provincial Park.

Metal Present Copper.

Development Surface work; 6 drill holes in 1956.

Geology Copper mineralization occurs along and near a contact between granite and volcanic rock. It is about 18 feet wide in a pit but could only be traced about 150 feet by drilling. Drilling gave low-copper values over 1—5 feet.

CORRIGAN PROPERTY

Ownership J. E. Corrigan, Emo.

Location 3 miles west of Mine Centre; claim H.P.187.

Metals Present Copper, zinc.

Development Surface work; shaft, 100 feet deep; 200 feet of drifting, 1917–18; small amount of diamond-drilling 1951; 1955 development by Stratmat, Limited; geophysical surveys, magnetic and electromagnetic; geological survey; 5,000 feet of diamond-drilling.

Geology Replacement-type deposit, chalcopyrite and some sphalerite in lenses that lie in a pyrite zone 75 by 800 feet, which itself is a replacement of sericite schist by about 20 percent pyrite. The schist was originally lava since amygdaloidal structure is preserved in some places.

Production 1916–17; 26,509 pounds of copper valued at $6,506.

References O.B.M., Vol. XXVII, 1918, pt. 1, p. 172.
G.S.C., Map No. 334A, 1936.

Remarks Small amount of drilling by Noranda Mines, Limited, in 1951.

W. H. CRANSTON PROPERTY

Location West shore of Finlayson Lake, Rainy River district.

Metals Present Copper, nickel.

Development Trenching and diamond-drilling, 1955.

Geology Deposit consists of disseminated sulphides, chiefly pyrrhotite with chalcopyrite and pentlandite, in a basic dike cutting greywacke. The dike strikes about N.10°E.

Dimensions and Grade The mineralized dike has been traced intermittently over a length of about one mile. It has an average width on the surface of about 20 feet. The grade has not been reported.

Reference O.D.M., resident geologist, files.

W. H. MEAKIN PROPERTY

Location 1 mile north and 2 miles west of Abiwin on the Canadian National railway in Trottier township.

Metal Present Copper.

Development Surface work, geological mapping, magnetometer surveying, and diamond-drilling (5 holes aggregating 88 feet), 1955.

Geology The showings lie in amphibolite along the contorted east-west contact with quartz mica schist to the south, and occur as three separate lenses of disseminated mineralization. The largest and most easterly lens has been traced for a length of 80 feet and has been found to have a width of about 35 feet. It strikes N.60°E. and dips 75°N. One drill hole bored to cut this lens indicated the presence of a narrow but well mineralized breccia zone bordered by mineralized amphibolite.

The second lens lies about 90 feet west of the first and is exposed over a width of 10 feet. The strike here appears to be northwest rather than northeast. The same sulphides, pyrrhotite, pyrite and chalcopyrite, are present as before.

The third lens outcrops along the lake shore 150 feet west of the second. It has been traced for a length of 50 feet in an east-west direction with exposed widths of up to about 10 feet.

Reference O.D.M., resident geologist, files.

MONETA PORCUPINE MINES, LIMITED
(Banning Property)

Ownership Bert Olsson, Fort Frances.

Location Northwest of Banning, just north of the Seine River; claims F.F.11128–11148 and F.F.11161–11177.

Metals Present Copper, gold.

Development Trenching prior to 1928; partial geological survey and magnetic survey in 1956.

Geology Shear zones striking northeast in a schistose basic lava are mineralized with quartz, carbonate, pyrite, chalcopyrite, and gold. At one locality, 10 chains north of Lake Law, there is a sulphide replacement zone at least 30 feet wide along a shear.

Dimensions and Grade A number of veins and mineralized zones were discovered in early work, which was for gold. These zones were up to 8 feet wide and carried low gold values and assayed up to 1 percent copper.

References O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 49–51.
O.D.M., Vol. XLVIII, 1939, pt. 2, pp. 31–32.

Remarks Optioned to Moneta Porcupine Mines, Limited, 1956; development continuing December, 1956.

NIC-COP MINES, LIMITED

Location West shore of Finlayson Lake.

Metal Present Copper.

Development Diamond-drilling, 1954 and 1955.

Geology The deposit consists of quartz stringers with pyrite and chalcopyrite in greenstone. It strikes N.20°W. and dips steeply east; and, although only up to about 3 feet in width, it has been traced for a length of 500 feet. The chalcopyrite is erratically distributed.

Grade Selected grab samples are reported to have assayed up to 6 percent copper.

STRATMAT, LIMITED
(Emo Property)

Ownership D. R. Young and J. E. Corrigan, Emo.

Location District of Rainy River, Dobie township, lot 9, concession 1, main showing; extensive work between Barwick and Emo.

Fort Frances—Continued

Metals Present Copper, nickel, and cobalt.

Development Geophysical surveys, airborne magnetometer, airborne electromagnetic, ground magnetometer, ground electromagnetic, gravity and self-potential; geochemical surveys; diamond-drilling in excess of 50,000 feet.

Geology Disseminated and massive pyrrhotite, chalcopyrite, and pyrite containing copper, nickel, and cobalt occur in a norite-gabbro complex within an intrusive plug over 9 square miles in extent. Work has been concentrated on a projection that extends southwest from the main plug area towards Barwick.

Reference O.D.M., Vol. LXIII, 1954, pt. 5.

Remarks Main showing optioned to Falconbridge Nickel Mines, Limited, 1952; optioned by Stratmat, Limited in spring of 1955; preparations are being made for production (December 1956).

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Bad Vermilion Lake, 2 miles SW. of Mine Centre	O.B.M., Vol. XXVII, 1918, pt. 1, p. 173	X	....	....	....
Barber Lake, N. of lake, Mine Centre area	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 56	X	....	....	....
Kingsford tp., lots 4 and 5, con. III	O.D.M., Vol. LXIII, 1954, pt. 5, p. 24	....	X	....	....
Mine Centre, 1 mile SE. of	O.B.M., Vol. XXVII, 1918, pt. 1, p. 175–76	X	....	....	....
Mine Centre, 2 miles S. of	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 56	X	....	....	....
Mine Centre, 3 miles E. of	O.B.M., Vol. XXVII, 1918, pt. 1, p. 175	X	....	....	....
Nym Lake	O.D.M., resident geologist, Kenora, files	....	X	....	....
Plateau Lake, 6 miles SE. of Atikokan, claim R.760	O.D.M., Vol. XLVIII, 1939, pt. 2, p. 34	X	X	....	....
Red Horse Lake	O.D.M., resident geologist, Kenora, files	X	X	....	....
Richardson tp., SE. ¼, sect. 1	O.D.M., Vol. LXIII, 1954, pt. 5, p. 24	X	X	....	....
Saganaga Lake, north side of Cache Bay	O.D.M., resident geologist, Kenora, files	X	....	....	....
Steeprock Lake, east of Falls Bay, claim E.246	O.D.M., Vol. XLVIII, 1939, pt. 2, p. 33	X	....	X	X

Kenora Mining Division

ALCOCK PROPERTY, CAVIAR LAKE

Ownership C. Alcock, Kenora.

Location East end of Caviar Lake, 45 miles southeast of Kenora; 69 claims.

Metals Present Copper, nickel.

Development Geological and geophysical surveys; trenching; 23 diamond-drill holes, totalling 7,140 feet, in 1956.

Geology Disseminated chalcopyrite and nickeliferous pyrrhotite in basic intrusives and chalcopyrite in pillow lavas; there were a number of discoveries, but none large or continuous.

Remarks Optioned to the Green Bay Mining and Exploration Company, Limited, 1956.

ALCOCK PROPERTY, EAST OF HIGH LAKE

Ownership C. Alcock, Kenora.

Location 2 miles east of High Lake; claim K.24401.

Metals Present Copper, cobalt, lead, zinc, and gold.

Development Small amount of surface work.

Geology Mineralization is in shear zone in greenstone.

Dimensions and Grade Grab sample assayed over 1 percent copper and 0.14 percent cobalt.

Remarks Optioned to N. A. Timmins (1938), Limited, in 1952; option dropped in 1953.

ALCOCK PROPERTY, HIGH LAKE

Ownership C. Alcock, Kenora.

Location High Lake, 40 miles west of Kenora; claims K.17847 and K.17848.

Metals Present Copper, gold.

Development Rock trenches, surface work; drilling in 1956.

Geology Disseminated chalcopyrite in a granite porphyry.

Dimensions and Grade Mineralization extends a short distance northeast from the shore of High Lake and may extend in the opposite direction under the lake. A 77-foot wide channel sample assayed 0.95 percent copper, and a 150-pound bulk sample from the same pit assayed 1.89 percent copper. Highest gold value obtained was 0.04 ounces over a width of 35 feet, which also ran 0.52 percent copper.

Remarks The above claims and a large number of adjoining claims optioned to Green Bay Mining and Exploration Company, Limited, in 1956; over 2,000 feet of diamond-drilling completed to December 1, 1956, and development continuing.

ALCOCK PROPERTY, KAWASHEGAMUCK LAKE

Ownership C. Alcock and associates of Kenora.

Location Centre of east side of Kawashegamuck Lake, 12 miles south of Dyment.

Metals Present Copper, nickel.

Development Surface stripping and geophysical survey, both prior to 1952.

Geology Disseminated chalcopyrite and nickeliferous pyrrhotite in a gabbro body.

Reference O.D.M., 1933, map No. 42c, 1933.

Remarks Optioned to the International Nickel Company of Canada, Limited, in 1951; option dropped in 1952; reported to have been optioned to Falconbridge Nickel Mines, Limited, in 1956.

APEX CONSOLIDATED RESOURCES, LIMITED

Location Atikwa Lake, 45 miles southeast of Kenora; adjoins Maybrun Mines, Limited, to the east; 93 claims, K.22723–22815.

Metals Present Copper, nickel, and gold.

Development Surface work; geophysical survey, 1955; diamond-drilling, 1955–56, 32 holes, totalling 13,393 feet.

Geology Most work has been done on claim K.22774. This is a discovery made in 1955 in a pod-shaped basic intrusive body in the greenstone, striking N.60°E., which appears to bottom at 600 feet. Spotty disseminated chalcopyrite and pyrrhotite occur almost entirely in the basic intrusive and are most abundant where a diorite phase overlies the amphibolite phase of the intrusive. There are also occurrences of sulphides in agglomerate and greenstone on the property with low copper and gold values.

Dimensions and Grade Mineralization occurs along a length of 500 feet. The two best drill intersections gave 1.08 percent copper and 0.62 percent nickel over 25 feet, and 0.51 percent coper and 0.98 percent nickel over 12 feet. Highest gold values obtained were 0.05 ounces per ton.

Remarks The part of the property with the showings was formerly held by Wright-Hargreaves Mines, Limited, who made geological and geophysical surveys, and did trenching in 1952.

BERGMAN PROPERTY

Ownership H. A. Bergman, M. Y. Cameron and others, Kenora, and Dome Exploration (Canada), Limited.

Location North shore of Isinglass Lake, 45 miles southeast of Kenora; most development on claims K.19079, K.19080, K.19083, and K.22111.

Metals Present Copper, nickel.

Development Geophysical survey; 11 holes, totalling 6,010 feet of diamond-drilling.

Geology Disseminated chalcopyrite and pyrrhotite in a nearly flat-lying basic intrusive in greenstone. The sulphides occur in a basic phase of the intrusive and are up up 100 feet thick. Copper and nickel occur in equal proportions and in combined amount up to 1 percent.

Remarks Part of the property, owned by H. A. Bergman and others, was optioned to Dome Exploration (Canada), Limited, in 1955, and option dropped.

CONSOLIDATED BELLEKENO MINES, LIMITED

Location South side of Reynar Lake, 55 miles northwest of Kenora.

Metal Present Copper.

Development Geophysical surveys, magnetic and self-potential in 1955; diamond-drilling in 1956, 10 holes in claims K.R.L.34577 and K.R.L.34578.

Geology Claims are underlain by granite and gneisses and similar geologically to the property of Norpax Oils and Mines, Limited, which lies to the east. A major west-striking fault zone crosses the claims, but geophysical work did not indicate any of the favourable host rock (peridotite) in the fault zone, and only one drill hole cut peridotite. Drilling over a length of 1,000 feet indicated very narrow and low copper values and only traces of nickel.

Reference Northern Miner, July 5, 1956.

EASTERN MINING AND SMELTING CORPORATION, LIMITED

Property Gordon Lake, 52 miles north of Kenora; development chiefly on claim K.R.L. 19096 and adjoining claims.

Metals Present Nickel, copper, precious metals of the platinum group, gold, and chromium.

Development Geological surveys; geophysical surveys, magnetic and electro-magnetic; trenching; diamond-drilling in excess of 50,000 feet; underground development commenced June, 1954; two shafts and 4,600 feet of lateral work on the 300-foot level, No. 2 shaft being deepened to 1,000 feet (December, 1956).

Geology The most important feature of the property is a major east-west fault zone dipping steeply north. Its surface trace is broadly convex southward and forms the boundary between gneisses on the north and massive granite to the south. On the 300-foot level, however, the fault is entirely in the gneisses and roughly parallels the banding in them. Along this fault zone lenticular bodies of peridotite, containing sparcely disseminated chromite, have intruded the gneisses. The peridotite lenses and immediately adjacent gneisses are mineralized with disseminated and massive pyrrhotite, pentlandite, and chalcopyrite. In the peridotite, joints have exerted some control on the deposition of the sulphides, and in the gneisses the banding has exerted a similar control. On a grosser scale, faults striking nearly at right angles to the main fault zone have had an important structural control. Some sections of the mineralization have been intruded by a later pegmatite with detrimental effects.

Dimensions and Grade Mineralized zones on the 300-foot level are up to 600 feet long and vary in width from 4 to 60 feet. Company officials estimate over 2,000 tons per vertical foot above the 300-foot level with combined nickel-copper content of slightly less than 2 percent. Deep drilling indicates the mineralization extends below 1,000 feet and that 3,000,000 tons are indicated above this level, grading 1.24 percent nickel and 0.69 percent copper. (Northern Miner, Sept. 13, 1956). Gold and platinum group metals run about 0.02 ounces per ton.

References Precambrian, Apr., 1949, p. 53.
Canadian Mining Journal, Apr., 1956, p. 88.

Remarks Company formed in December, 1955, by the amalgamation of the Eastern Smelting and Refining Company, Limited, and the Quebec Nickel Corporation, Limited. Parts of the property were explored by Noranda Mines, Limited, in 1942–43, by the International Nickel Company of Canada, Limited, in 1948, and by Falconbridge Nickel Mines, Limited, in 1949.

FALCONBRIDGE NICKEL MINES, LIMITED, LAVA LAKE PROPERTY

Location 46 miles southeast of Kenora, northeast of Lava Lake.

Metals Present Copper, nickel.

Development Geological and geophysical surveys; 14 inclined diamond-drill holes, totalling 6,415 feet.

Geology Disseminated and streaky pyrrhotite, chalcopyrite, and pyrite in greenstone occurs in an area midway between Lava and Easter Chicken lakes.

Remarks Drilling was apparently done to check geophysical anomalies. None of holes cut ore grade material.

Reference O.D.M., Geol. Circ. No. 5, 1956.

HAWES PROPERTY

Ownership H. N. Hawes and Sons, Kenora.

Location 2 miles northwest of Redditt.

Metals Present Copper, nickel.

Development Trenching, geophysical survey, and 17 diamond-drill holes, totalling 1,765 feet, all in 1956.

Geology Disseminated chalcopyrite and pyrrhotite with minor pyrite occur in a basic dike 150 feet wide, near its west contact. The dike strikes west of north, dips 80°–90°E. and is younger than the enclosing granite, which underlies a large area. The dike is identical in structure and mode of occurrence to diabase dikes found throughout the Canadian Shield; however it is more variable in composition and is cut by aplite.

Dimensions and Grade The sulphides occur over a length of more than 200 feet with a maximum width of 25 feet. No channel samples have been taken, but the zone is said to contain 2 percent combined copper and nickel.

Remarks The dike was discovered from the air. Property optioned to Stratmat, Limited, in 1956, and option dropped.

KENBRIDGE NICKEL MINES, LIMITED

Location Populus Lake, 43 miles southeast of Kenora; most development on claims K.6634 and K.6668.

Metals Present Copper, nickel.

Development Trenching; geological and geophysical surveys, 1952–54; 10,000 feet diamond-drilling in 1937, 12,000 feet in 1949, and over 50,000 feet, 1952–56; underground development commenced March, 1955; levels at 350 and 500 feet with over 1,300 feet of lateral work on each level, shaft to 1,500 feet being deepened to 2,000 feet (December, 1956).

Geology Disseminated and massive pyrrhotite, chalcopyrite, pentlandite, and pyrite in a basic intrusive ranging in composition from gabbro to peridotite, which intrudes greenstone and contains fragments of it. Intrusive is about 2,500 by 200 feet wide and lies in, or near, a major northeast-striking fault zone.

Dimensions and Grade Underground development has been confined to a region, having horizontal dimensions 800 by 100 feet, on a series of flat sulphide lenses lying one above the other. The series as a whole plunges northeast at 55 degrees. Some of these lenses are up to 100 feet wide and 20 feet thick and contain up to 4 percent combined nickel and copper. They are, however, mostly small, and it has not yet been determined if the lenses and intervening rock containing disseminated sulphides will make ore. Surface exploration and drilling prior to the present program indicated 880,000 tons of material averaging 1 percent nickel and ½ percent copper. The mineralized zone extends to a depth below the lower limit of drilling, which is 2,000 feet.

References Northern Miner, Nov. 11, 1954; July 26, 1956.
O.D.M., Geol. Circ., No. 5, 1956.
Canadian Mining Journal, Apr. 1956, p. 87.

Remarks Diamond-drilling in 1937 by The Coniagas Mines, Limited, who formed the original company on the property—Kenora Nickel Mines, Limited; optioned to the International Nickel Company of Canada, Limited, in 1949 who did extensive surface work and diamond-drilling. Since 1951, operations have been under the direction of Falconbridge Nickel Mines, Limited.

LONGE PROPERTY

Ownership R. Longe and others, Kenora.

Location North shore of Rowan Lake, between Rowan and Denmark lakes, 48 miles southeast of Kenora.

Metals Present Copper, gold, and nickel.

Development Surface work; diamond-drilling, 1956.

Geology Chalcopyrite, pyrite, and pyrrhotite with low gold values occur as a replacement of the selvedges in pillow lava along the strike of the flows over a distance of a mile; the mineralized areas located to date are small. A different type of mineralization occurs as copper and nickel sulphides along joints in a basic intrusive.

Remarks Optioned to Nic-Cop Mines, Limited, 1956, and development continuing (December, 1956).

LUN-ECHO GOLD MINES, LIMITED, MAVIS LAKE

Location Zealand Additional township, south half of lot 17, concession VIII, 5 miles northeast of Dryden; claim K.20032.

Metals Present Copper, nickel.

Development Test pits; 10 diamond-drill holes, totalling 803 feet, in 1956.

Geology Pyrrhotite with minor amounts of pyrite and chalcopyrite form an east-striking and steeply north-dipping sulphide zone parallel to the schistosity of the enclosing mica schists. The south contact of a large area of granite occurs just north of the showing.

Dimensions and Grade The zone averages less than 4 feet wide and has been traced for a length of over 500 feet. The best surface sample returned 1.88 percent copper and 0.31 percent nickel over a width of 4.5 feet. Core assays returned the same nickel values as surface sampling — about 0.3 percent — but copper was much lower.

Reference O.D.M., map No. 50e, 1941.

Remarks Optioned to Brewis-White, 1956.

FINLEY McCALLUM
(Boundary Property)

Location Highway No. 17, 2 miles east of the Manitoba boundary.

Metals Present Lead, zinc, copper, and silver.

Development Geophysical survey, test pits, and 4,500 feet of diamond-drilling.

Geology Part of the showing as exposed in a recent rock cut on the highway consists of fine sulphide occurring as a replacement and in flat fractures in a narrow band of garnetiferous graphitic sediment interbedded with lavas. This sediment is slightly manganiferous and contains some values in nickel and cobalt.

MACFIE EXPLORATIONS, LIMITED
(Meridian Bay Property)

Location Meridian Bay, Eagle Lake, 20 miles southwest of Dryden.

Metals Present Nickel, copper, gold.

Development Surface work, trenching 1910; geological and geophysical surveys, 1956, and geophysical survey of water areas planned after formation of ice in 1956.

Geology Along the west shore of Meridian Bay pyrrhotite, magnetite, chalcopyrite, and pyrite replace an inclusion in diorite near the north-striking granite greenstone contact. The sulphides are reported to carry ½—1 percent nickel, copper, and gold.

References O.B.M. Vol. XX, 1911, pt. 1, p. 196.
O.D.M. Vol. XLVIII, 1939, pt. 4, p. 24.

MAYBRUN MINES, LIMITED

Location Atikwa (Deer) Lake, 44 miles southeast of Kenora; main development on claims K.15374, K.15375, K.15368, and K.15369.

Metals Present Copper, gold.

Development 1951—53, geological and geophysical surveys; 3,500 feet of trenching; 28,715 feet of diamond-drilling. September, 1955, to December, 1956, additional geophysical surveys, 75,000 feet of surface and underground diamond-drilling; underground development shaft, and levels at 150 and 275 feet with 1,500 feet of lateral work on each level, and 335 feet of raises.

Geology — The property south and west of a large area of granite; major granite greenstone contact about 1 mile from the underground workings, which are on zones trending west of north and dipping about 65° W. There has been replacement of the selvedges in pillow lava and, to lesser extent, along fractures by chalcopyrite, pyrrhotite, and minor pyrite. There is roughly twice as much chalcopyrite as pyrrhotite. In low-grade material selvedges are replaced at the junctions of three pillows (spherical, triangle-shaped openings); in better grade material the entire selvedges are replaced by sulphides; highest grade is obtained in small pillows.

Dimensions and Grade — A preliminary estimate of the several zones gave 1,263,450 tons of material averaging 1.64 percent copper and 0.07 ounces of gold per ton. (O. E. Owens, 1956.)

Remarks — Property discovered by Noranda Mines, Limited, in 1951 and developed by them, 1951–53. Optioned to Maybrun Mines, Limited, June, 1955, and still owned by Noranda Mines, Limited. (November, 1956.)

NABISH LAKE PROPERTY

Ownership — W. A. Johnson, Kenora.

Location — 10 miles south of Dryden and 1½ miles east of the south tip of Nabish Lake, southeast extremity of claim K.26922.

Metals Present — Copper, nickel.

Development — Two test pits; partial dip-needle survey; 4 diamond-drill holes, totalling 1,000 feet.

Dimensions and Grade — Showing is in an area of fairly extensive overburden and is exposed at two pits, 30 feet apart, where widths of 9 and 22 feet are indicated. A grab sample assayed 1.5 percent copper and 0.3 percent nickel.

Geology — Sulphides are related to shearing in granitized gabbro.

References — O.D.M., map No. 48d, 1939.
O.D.M., map No. 50e, 1941.

Remarks — Discovered, October, 1956, and optioned to Preston East Dome Mines, Limited.

NIEMI PROPERTY

Ownership — Ray Niemi, Dinorwic.

Location — Southworth township, north half of lot 6, concession III.

Metals Present — Copper, gold, and silver.

Development — Limited amount of surface work.

Geology — A 40-foot wide shear zone in greenstone trending northeast has a 10-foot wide quartz vein well mineralized with chalcopyrite and tetrahedrite. Grab samples assay up to 0.45 ounces gold and 2.8 ounces of silver per ton.

Reference — O.D.M., Map No. 50e, 1941.

Remarks — Vein was discovered by stripping the shear zone; under option to Rio Canadian Explorations, Limited, December, 1956.

NORPAX OILS AND MINES, LIMITED

Location Almo Lake, 53 miles north of Kenora.

Metals Present Nickel, copper, cobalt, gold, platinum, and palladium.

Development Geological, geophysical surveys; trenching; diamond-drilling, 2,000 feet in 1953–54, over 5,000 feet in 1955, and additional drilling in 1956; shaft and 830 feet of lateral work on 250-foot level; shaft being deepened December, 1956.

Geology Mineralized peridotite occurs at intervals along a major east-west fault zone that dips 80° N. and is almost entirely drift and water-covered. Near the fault zone there are inclusions of gneiss in massive tonalite and granite; the property is underlain mainly by the latter rocks. The peridotite occurs in widths up to 100 feet, but bodies of this width tend to pinch out more rapidly than the narrower widths of 2–30 feet, which are at best discontinuous. The sulphides, pyrrhotite, chalcopyrite, and violarite(?) are mainly in the peridotite.

Dimensions and Grade Surface drilling has indicated a narrow zone of mineralization, 1,400 feet long, in the fault zone. A 700-foot section of this zone to a depth of 500 feet averages 8.5 feet in width and assays 1.2 percent nickel, 0.5 percent copper, and precious metals. (Northern Miner, July 12, 1956.) Underground development to December 1, 1956, indicates a grade of 1.46 percent nickel, 1.03 percent copper over a length of 330 feet, and a width of 20–25 feet. (W. N. Taylor.)

Reference Canadian Mining Journal, Apr., 1956, p. 89.

Remarks Adjoins Eastern Mining and Smelting Corporation, Limited, property to the west and is in many respects similar. The Selco Exploration Company, Limited, explored property in 1953–54 and drilled 8 short holes, totalling 2,000 feet.

PIDGEON PROPERTY, TRAP LAKE

Ownership G. L. Pidgeon, Wabigoon.

Location 9 miles south of Dryden and 1 mile east of Trap Lake; claim K.14474.

Metals Present Copper, gold, silver, nickel, and cobalt.

Development Trenching and diamond-drilling in 1952 and three diamond-drill holes, totalling 1,300 feet, in 1955.

Geology A quartz vein with pyrite and chalcopyrite striking N.60°W. occurs at the contact of a wide diabase dike with fine diorite to the south.

Dimensions and Grade The vein has been trenched for 170 feet. An average of three channel samples ran 2.31 percent copper, 0.11 ounces of gold and 1.02 ounces of silver per ton over an average width of 4.1 feet. Assays up to 0.08 percent nickel and 0.05 percent cobalt have been obtained.

Reference O.D.M., map. No. 50e, 1941.

Remarks Optioned to Preston East Dome Mines, Limited, who did diamond-drilling in 1955.

PIDGEON PROPERTY, ZEALAND TOWNSHIP

Ownership G. L. Pidgeon, Wabigoon.

Location Zealand township, south half of lot 6, concession 4.

Metal Present Zinc.

Development Surface work and one diamond-drill hole in 1956.

Geology Sulphide replacement zone chiefly pyrrhotite with minor sphalerite occurs at the southwest-striking contact of arkose with greywacke to the northwest. There has been a development of very large amphibole crystals adjacent to the sulphides.

Dimensions and Grade The small mineralized outcrop gives assays of 1 percent zinc. From the limited development work dimensions have not been determined.

Reference O.D.M., map No. 50e, 1941.

TACHE PROPERTY

Ownership Canadian Pacific Railway.

Location 25 miles west of Ignace between highway No. 17 and the C.P.R.; development on claim K.24326.

Metals Present Copper, nickel.

Development Geophysical survey, trenching, three diamond-drill holes, totalling 460 feet in 1956.

Geology Disseminated chalcopyrite and pyrrhotite in gabbro in a greenstone belt; a northeast trending shear zone seems to be present near the mineralization.

Remarks Development work done by the Consolidated Mining and Smelting Company, Limited.

WERNER LAKE NICKEL MINES, LIMITED

Location East end of Werner Lake, 50 miles north of Kenora; most development on claim R.L.19136.

Metals Present Nickel, zinc, vanadium, chromium.

Development Geological and geophysical surveys; surface work; diamond-drilling in 1943–44 and 1955.

Geology Most important showing in a basic intrusive 130 by 47 feet with an average content of 0.40 percent nickel, 1.76 percent zinc, and 0.54 percent vanadium pentoxide, and 4.12 percent chromium.

Reference Precambrian, Apr. 1949, p. 53.

Remarks Adjoins Eastern Mining and Smelting Corporation property on the east. Property originally staked by Dome Exploration (Canada), Limited in June, 1943. Present owner did further diamond-drilling in 1955 with negative results.

Kenora—Continued

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Blowout Lake, 30 miles SE. of Ignace	O.D.M., P.R. 1952-3, 1952, p. 3	X	....	....	....
Denmark Lake, 45 miles SE. of Kenora, claim K.17930	O.D.M., P.R. 1952-4, 1952, p. 13	X	X	....	.. ..
Denmark Lake, 45 miles SE. of Kenora, claim K.25516 or claim to the west	O.D.M., P.R. 1952-4, 1952, p. 13	X	X	....	....
George Lake, 42 miles E. of Kenora, claims K.24279–24288	C. Alcock, personal communication	X	X	....	....
Godson tp., S. shore of Kakagi Lake	O.D.M., resident geologist, Kenora, files	X	....	....	....
Kawashegamuck Lake, 200 feet N. of pond on portage to Cox Lake	C.P.R., 1955, Dept. Industrial Development, Kawashegamuk Lake Area, p. 7	X	X	....	....
Lake of the Woods, 12 miles S. of Kenora	O.D.M., P.R. 1952-4, 1952, p. 21	X	....	X	X
Lake of the Woods, Bigstone Bay, claim No. 45	O.D.M., Vol. XXXIX, 1930, pt. 3, p. 69	X	....	....	....
Lake of the Woods, Pipestone Peninsula, claim K.3538	O.D.M., P.R. 1952-4, 1952, p. 21	....	....	X	X
Lake of the Woods, Witch Bay, (Wendigo Gold Mines, Ltd.)	O.D.M., 1935, pt. 4, p. 35	X	....	....	....
Lumby Creek, 30 miles SE. of Ignace	O.D.M., 1952, P.R. 1952-3, p. 3	X	....	....	....
Mulcahy Lake (SW. of Eagle Lake) on S. side and 2,500 feet up creek flowing into central part of lake	C.P.R., 1954, Dept. Industrial Development, Beaverhouse Lake Area, p. 12	X	....	....	....
Oneman Lake, E. side, 38 miles NW. Kenora	O.D.M., P.R. 1948-6, 1948, pp. 1–4	X	....	X	X
Oneman Lake, claims K.25188–25200	C. Alcock, personal communication	X	....	....	X
Redpaint Lake, 28 miles SE. of Ignace	O.D.M., P.R. 1952-3, 1952, p. 3	X	....	....	....
Rowan Lake, SE. of most northerly of the ponds laying immediately W. of the lake	O.D.M., resident geologist, Kenora, files	X	....	....	....
Spoon Lake, 28 miles SE. of Ignace	O.D.M., P.R. 1952-3, 1952, p. 3	X	....	X	X

Kowkash Mining Division

CARNDESSON MINES, LIMITED

Location Onaman area, about 25 miles north of Nezah on highway No. 11.

Metals Present Lead, zinc, gold, silver.

Development Surface work; 5,018 feet of diamond-drilling in 1949; further surface work and diamond-drilling in 1952.

Geology The mineralization occurs as sulphide replacements within sheared zones located at, or near, the contacts between greenstone and narrow porphyry dikes and is found intermittently over a northeast strike-length of 2.4 miles. Several bodies containing galena and sphalerite have been located. The most promising, known as "No. 5 vein," is on claim K.K.4722. This showing was tested by 10 diamond-drill holes over a length of 300 feet in 1949, and by further drilling in 1952.

Dimensions and Grade 10 diamond-drill holes bored in 1949 indicated that the No. 5 vein has an average grade of 1.14 percent lead, 1.58 percent zinc, and 9.0 ounces of silver and 0.089 ounces of gold per ton across a mean width of 5.9 feet.

Remarks Property formerly held by Coulee Lead and Zinc Mines, Limited; optioned to McIntyre Porcupine Mines, Limited, in 1952; Carndesson Mines, Limited, took over the property in 1953.

COPPER JIM MINES, LIMITED

Location North shore of O'Sullivan Lake, about 20 miles northwest of Nakina on the main line of the Canadian National railway.

Metals Present Copper, gold, silver.

Development Surface work, 1954; 13 diamond-drill holes, aggregating 6,209 feet, were bored in early 1955.

Geology The mineralization occurs in a horizon of brecciated and carbonatized rhyolite enclosed by pillow lavas of northeast strike. It consists of disseminated-to-massive iron sulphides with some chalcopyrite. It has been traced for a length of 600 feet and found to occur across horizontal widths up to 35 feet.

Grade Grab samples from two surface trenches were found to contain from 2.78 to 7.43 percent copper and from 0.03 to 0.07 ounces of gold per ton. A sample of massive sulphides from a third trench contained 6.45 percent copper, and 3.62 ounces of silver and 0.06 ounces of gold per ton. The results of diamond-drilling have not been reported.

References
O.D.M., resident geologist, files.
O.D.M., Vol. XL, 1931, pt. 4, p. 102.

DESPARD-FERLAND PROPERTY

Location West of Seymour Creek, 9 miles due north of Ferland on the Canadian National railway, in the Zig Zag Lake area.

Metal Present Copper.

Development Dip needle survey; diamond-drilling, six holes aggregating 631.4 feet, 1955.

Geology The deposit consists of a silicified and heavily mineralized biotite-hornblende schist, along or close to the latter's contact with feldspar-hornblende gneiss to the south. The zone strikes east-west and dips 40°—45° N. With included bands of poorly mineralized schist, it ranges up to 20 feet in true thickness. It has been traced by drilling for a length of 500 feet. Half or more of the material forming the silicified bands in the zone is made up of pyrrhotite and pyrite with minor chalcopyrite.

Dimensions and Grade The best intersection obtained in the drilling was found to average 0.34 percent copper across 8.0 feet.

Reference O.D.M., resident geologist, files.

HEADVUE MINES, LIMITED

Location About 25 miles north of Nezah on highway No. 11.

Metals Present Zinc, lead.

Development 10,649 feet of diamond-drilling and geophysical survey in 1951; 19,302 feet of diamond-drilling in 1952.

Geology Mineralization consists of replacement bodies of quartz, sphalerite, and galena along more or less parallel sheared zones in tuffaceous sediments of Early Precambrian age. It forms several lenticular bodies arranged en échelon along a northeast strike-length of 1,800 feet. These bodies dip 45°—85°NW. and rake steeply to the southwest.

Ore Reserves The drilling has indicated 13 ore shoots having an aggregate length of 2,870 feet and an average width of 13.2 feet. These shoots are estimated to contain 2,293 tons of ore per vertical foot to a depth of 260 feet and to have an average grade of 3.15 percent combined zinc and lead. (Albert Hopkins, Aug., 1952.)

Remarks Property is not being worked at present because of the low prices for lead and zinc.

KENNCO EXPLORATIONS (CANADA), LIMITED

Location ¼ mile north of Pikitigushi Lake, 10 miles north-northwest of Willet on the trans-continental line of the Canadian National railway.

Metal Present Copper.

Development Surface work, ground magnetometer and both ground and air electromagnetic surveys, 1955.

Geology The deposit exposed consists of stringers of pyrite and subordinate chalcopyrite up to 3 inches in thickness, spaced at intervals of from 1 to 2 feet, in greenstone. Both the schistosity of the greenstone and the sulphide stringers strike east-west and dip about 80°N.

LEITCH GOLD MINES, LIMITED

Location East shore of Shabuskwia Lake, about 70 miles north of Armstrong on the transcontinental line of the Canadian National railway.

Metals Present Copper, nickel, cobalt.

Development Surface work, diamond-drilling, 1956.

Geology The showing is reported to be an outcrop of anorthositic gabbro, measuring 30 feet by 60 feet, carrying abundant chalcopyrite, pyrrhotite, and pyrite. The outcrop lies in swampy ground, and the attitude of the deposit has not been reported.

Grade Three grab samples taken from the outcrop indicated from 0.52 to 2.30 percent copper, from 0.38 to 0.62 percent nickel and from 0.21 to 0.26 percent cobalt.

Reference Northern Miner, Aug. 2, 1956.

Remarks Property held under option agreement from discoverer, Neil Smith.

NEW ATHONA MINES, LIMITED

Location South of Athona Lake, O'Sullivan Lake area.

Metal Present Copper.

Development Trenching; dip needle, geological, and electromagnetic surveys; and diamond-drilling, 1955.

Geology The mineral deposit lies within a zone of pillowed lava and metabasalt, from 20 to 70 feet in width, between two north-south dikes of quartz feldspar porphyry; and it appears to be closely associated with a breccia zone striking N. 10°E. The mineralization lies in two parallel bodies, one along the west contact of the east porphyry dike, the other along the east contact of the west porphyry dike. Both bodies range up to 20 feet in width, dip vertically to steeply east, and consist of disseminated pyrrhotite, pyrite, and chalcopyrite in the metavolcanics. The east body has been traced for 120 feet on the surface in a north-south direction; the west body, 150 feet.

Grade The No. 1, or east, body, where channel sampled, averaged 1.64 percent copper across a width of 10 feet; the No. 2, or west, body, 0.47 percent copper across a similar width. The No. 2 zone was estimated by company geologists to average 1 percent copper or better on the surface. Sampling also indicated gold and silver to be present, but in small amounts.

Remarks Diamond-drilling in 1955 failed to extend the lengths of the two bodies, and indicated a low copper content at depth.

TECK EXPLORATION COMPANY, LIMITED

Location ¾ mile south of Gripp Lake and ¼ mile east of the Nipigon Provincial Forest, approximately 11 miles north of Tashota on the transcontinental line of the Canadian National railway.

Metal Present Copper.

Development Trenching, ground and air electromagnetic and magnetometer surveys, geological mapping, and diamond-drilling (20 holes aggregating 8,390 feet), 1955.

Geology The deposits lie in micaceous quartzite of the Marshall Lake series, which, on the property, strikes N.35°W. and dips vertically or nearly so. Four principal sulphide occurrences have been located. The Main, or A, zone is exposed in trenches for a length along the regional strike of about 30 feet. It consists of micaceous quartzite with disseminated sulphides and thin stringers carrying chalcopyrite with a little pyrite and pyrrhotite. Drilling indicates a width of from 15 to 20 feet. The B zone lies about 100 feet north-northwest of the A zone, which it resembles in character. However, it is narrower than the A zone, being less than 10 feet in width, and is not exposed on the surface. The C zone, which lies about 200 feet south-southeast of the A zone, was also indicated by drilling. Again it is similar to the A zone in character, but is much wider (50 feet) and of lower grade. The fourth deposit lies 400 feet northeast of the A zone. It differs from the other deposits in that it consists of a narrow horizon of fractured amphibolite, mineralized with sphalerite, a little chalcopyrite and pyrite, and a trace of pyrrhotite.

Grade The A zone, where exposed on the surface, and the B zone, where intersected in a drill hole, were found to contain abundant chalcopyrite and thus to be rich in copper. But neither the A zone nor the B zone could be traced for any appreciable length along the regional strike. The C zone was found to be much lower in grade than either the A or the B zones. The zinc deposit is narrow and appears to have little commercial value.

References Northern Miner, Nov. 18, 1954; Jan. 27, Feb. 17, Mar. 10, 1955.
O.D.M., resident geologist, files.

Remarks Numerous other copper deposits were located on the property, but all appear to be of restricted size and to be erratically distributed in the micaceous quartzites of the Marshall Lake series.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Caribou Lake, 18 miles N. of Armstrong on main line of C.N.R.	O.D.M., P.R. 1952-4, p. 20	....	....	X	....
Muriel Lake, O'Sullivan Lake area, (Holland-Chellew claims)	O.D.M., Vol. XL, 1931, pt. 4, pp. 100–2	X	....	X	X
Muriel Lake, O'Sullivan Lake area, (Perry claims)	O.D.M., Vol. XL, 1931, pt. 4, p. 100	X	....	....	....
Onaman area, 14 miles S. of Tashota on main line of C.N.R.	O.D.M., Vol. XLVII, 1938, pt. 8, pp. 21–23	X	....	....	....
Zig Zag Lake, about 15 miles NE. of Ferland on main line of C.N.R.	O.D.M., resident geologist, Port Arthur, files.	X	X	....	....

Larder Lake Mining Division

ANDERSON PROPERTY

Ownership E. Anderson, Kirkland Lake.

Location Katrine township; claim L.40697, near Beaverhouse Lake.

Metal Present Copper.

Development Surface trenches; test pits; shaft 30 feet deep in 1943; additional surface work in 1953.

Geology Chalcopyrite erratically distributed throughout a quartz stockwork in massive Keewatin andesite; width of stockwork 2–20 feet; zone traced 275 feet by trenching; old shaft 450 feet away to southwest along strike; small patches rich in chalcopyrite, but average copper content low; only traces of gold.

Dimensions and Grade Chip samples gave 0.65–1.80 percent copper across 4–8.5 feet; bulk sample contained 1.77 percent copper.

Reference O.D.M., Geological Branch, files (Forwood property).

Remarks Optioned and diamond-drilled by the Mogul Mining Corporation, Limited, 1954.

CANAGAU MINES, LIMITED

Property Interprovincial mine.

Location Ben Nevis township; claim L.39767.

Metals Present Lead, zinc.

Development Old shaft, 346 feet deep; three levels; 934 feet of crosscutting; no drifting. Surface work, geophysical survey, and diamond-drilling, 1946.

Geology Three parallel veins along shear zones in Keewatin volcanics; veins up to 1.5 feet wide composed of quartz and carbonates with galena, sphalerite, marmatite, pyrite, and chalcopyrite; main vein traced 300 feet on surface, both ends open; picked samples contained considerable lead, zinc, and silver.

Dimensions and Grade Grab samples from the 225-foot level assayed 7.84 percent lead, 11.48 percent zinc, and 0.52 percent copper and 4.7 ounces of silver and 0.17 ounces of gold per ton. (A. Walz, 1928.)

Reference O.D.M., Vol. XXXVII, 1928, pt. 3, p. 25.

CENTRE HILL MINES, LIMITED

Location Parts of lots 5, 6, 7, 8, and 9, concessions IV and V; claims L.53946–53957 and L.61259–61271.

Metals Present Copper, zinc.

Development A magnetometer survey has been made of the property, and 81 drill holes with a total length of 40,974 feet have been drilled. A row of drill holes to intersect the sulphides at a depth of 250 feet have been completed, and another tier of holes to cut the zone at 500 feet is being drilled.

Larder Lake—Continued

Geology An easterly trending band of rhyolite, rhyolite breccia, and slate is enclosed in basic and ultrabasic rocks. The dip is to the north at about 75 degrees. Two cross-faults striking northeast-southwest cross the zone and have a horizontal displacement of the west side towards the south.

Dimensions and Grade The sulphide zone has been traced by drilling for a length of about 1,200 feet. Near the surface there is a gap of 300 feet in the strongly mineralized zone, but drilling has established the continuity of the sulphides at greater depth. Four sulphide lenses are more or less continuous throughout. The true width of sulphides intersected has frequently been about 20 feet, although wider and narrower sections exist. The copper content averages about 2 percent, and narrow sections of massive sphalerite are found in lenses adjacent to the chalcopyrite mineralization.

To January, 1957, 18 drill holes on the extreme east end of the zone showed a length of 125 feet and a width of 9 feet; they averaged 1.5 percent copper and 1.5 percent zinc. This adjoins a 475-foot length where deeper drilling indicated 872.8 tons per vertical foot having a width of 14.7 feet and a grade of 1.91 percent copper.

References O.D.M., Vol. LX, 1951, pt. 8, pp. 19–21.
Northern Miner, June 28, 1956, p. 892; July 19, 1956, p. 979; Sept. 6, 1956, p. 1209; Jan. 31, 1957, pp. 17–18.

CONSULAR-HARKER MINES, LIMITED

Property Dane Copper mine.

Location Lebel and Teck townships; claims L.52929, L.54022.

Metal Present Copper.

Development Two old shafts on claim L.52929; east shaft to 200 feet; 200 feet of lateral work; west shaft 100 feet deep.

Geology Quartz-chalcopyrite veins in Keewatin lavas and iron formation; low gold values reported in vein material.

Reference O.D.M., map No. 53a, 1944.

Remarks Under option to Nucleonic Mines, Limited; east shaft dewatered and sampled, 1956.

DYMAN PROSPECTING SYNDICATE

(J. J. Mangan, H. Dyer, and associates)

Location Warden township, parts of lots 6 and 7, concession I; claims L.55008–55011, L.56523 – 56525, L.56558 – 56559, L.59423 – 59424, L.59812 – 59815, L.59857–59858.

Munro townships, parts of lots 4, 5, and 6, concession VI; claims L.53314–53322, L.54724–54726.

Metals Present Copper, nickel.

Remarks Diamond-drilling in 1954–55.

HEARST-LARDER MINES, LIMITED

Location Hearst and McElroy townships; claim L.57564.

Metals Present Copper, lead, zinc; gold on north claim group in Hearst township.

Development Geophysical survey; diamond-drilling, 1952.

Geology Small gossan zone with low ground to the north and east. Stringers and patches of chalcopyrite, galena, sphalerite occur with earlier pyrite-pyrrhotite; the mineralization fills fractures of two ages in brittle quartzite. The first fracturing brought in pyrite and pyrrhotite. The second fracturing was more restricted and resulted in a localized concentration of the other sulphides.

Dimensions and Grade Chip samples gave assays ranging from 0.85 to 2.11 percent copper, 0.57 to 5.84 percent lead, and 0.30 to 1.92 percent zinc.

Reference O.D.M., maps Nos. 1947-1, 1947, and 1950-3, 1950.

Remarks Eight holes drilled in 1952; no sulphide intersections of economic grade in the core.

JALORE MINING COMPANY, LIMITED

Location Boston township; claim L.55726.

Metals Present Lead, zinc.

Development Surface work; 12 X-ray diamond-drill holes, 1951.

Geology Two showings about ½ mile apart with intervening low ground; sulphides occur in brecciated Keewatin agglomerate and conglomerate as fine stringers and platings distributed over a wide fractured zone; mineralization consists of pyrite, pyrrhotite, sphalerite, and galena; iron formation on the north claims.

Dimensions and Grade Grab samples assayed 0.93 percent lead and 2.8 percent zinc, 0.9 percent lead and 2.2 percent zinc; best diamond-drill intersection, 1.1 percent lead and 1.7 percent zinc in 2.5 feet of core.

Reference O.D.M., Report by K. D. Lawton in preparation.

Remarks The former Marshall-Evoy property optioned and drilled by McIntyre Porcupine Mines, Limited, 1951; acquired by the Dominion Gulf Company for iron, 1954; property taken over by the Jalore Mining Company, Limited, 1956.

LAKE BEAVERHOUSE MINES, LIMITED

Property Argonaut mine.

Location Gauthier township, northeastern part; claim L.2587.

Metals Present Gold, copper.

Development Shaft and winze to 1,250 feet; lateral work on 10 levels; surface and underground diamond-drilling; additional surface diamond-drilling, 15 holes, 5,185 feet, 1950–51.

Geology Discontinuous quartz and sulphide veins in lavas and syenite prophyry; gold is the principal metal in the ore. Copper content of the ore is 0.8 percent. Sulphide veins are narrow and contain chalcopyrite, magnetite, pyrite, and much of the gold.

Larder Lake—Continued

Dimensions and Grade	92,676 tons of ore averaging 0.34 ounces of gold per ton; copper content not stated.
References	O.D.M., Vol. L, 1941, pt. 8, pp. 16–18. Northern Miner, June 28, 1951.
Remarks	Optioned to Toburn Gold Mines, Limited, May, 1950; agreement terminated August, 1952. Under option to the Arcadia Nickel Corporation, Limited, 1956.

MacGREGOR PROPERTY

Ownership	R. MacGregor, Larder Lake.
Location	Teck township, northwest corner; claim L.1899.
Metals Present	Copper, zinc.
Development	Surface work; shaft 27 feet deep; geophysical survey; diamond-drilling, four holes, 1938; additional diamond-drilling, 1950–51.
Geology	Sulphide zone at contact of siliceous lavas and syenite; zone is 70 feet long at shaft, 2–3 feet wide; mineralization consists of pyrrhotite, pyrite, chalcopyrite, sphalerite, galena; values in copper and zinc; low gold content.
Dimensions and Grade	Best drill intersections; 4.2 percent copper in 2.7 feet of core; 1.03 percent copper in 5 feet of core.
References	O.D.M., Vol. XXXVII, 1928, pt. 3, p. 43. O.D.M., Vol. LVII, 1948, pt. 5, p. 53.
Remarks	Property formerly held by the Winnie Lake Mining Company, Limited; drilled by Eric-Canadian Mines, Limited, 1938; drilled by Macassa Mines, Limited, 1950–51; under option to Carl Boone, Kirkland Lake, 1956.

NEW MINDA-SCOTIA MINES, LIMITED

Location	Clifford township, southeast corner; claim L.62080.
Metals Present	Copper, molybdenite.
Development	Surface work and small prospect shaft, 1928–29.
Geology	Sulphide mineralization occurs in brecciated and sheared basalt to the southeast of a boss of granodiorite. Dikes of hydrothermally altered quartz diorite intrude the Keewatin basaltic flows.
Reference	O.D.M., Vol. XXXVII, 1928, pt. 3, p. 23.
Remarks	Formerly Brett-Trethewey Mines, Limited; acquired from Carl Boone, Kirkland Lake, 1956.

NORANDA MINES, LIMITED

(Alexo Nickel Mine)

Location Dundonald township, parts of lots 1 and 2, concession III; claims L.10556, L.10559, L.58442–58443, L.58976–58979.

Clergue township, part of lots 11 and 12, concession III; claims L.10554–10555, L.58444–58445.

Metals Present Nickel, copper.

Development Shaft 265 feet in depth; levels at 75, 120, and 265 feet; considerable diamond-drilling and shot drilling. Magnetic and electromagnetic survey, 1953.

Geology The orebody lies at the contact of peridotite and Keewatin pillow lava. Massive and disseminated sulphides consist of pyrrhotite, pentlandite and, traces of pyrite and chalcopyrite. The main ore shoot is 700 feet long and 3–40 feet wide. Some 51,861 tons were mined, and averaged 4.2 percent nickel and 0.5 percent copper.

Production In 1912–19, 2,213 tons of nickel and 240 tons of copper, valued at $426,636. In 1943–44, 45,707 pounds of copper and 327,610 pounds of nickel, valued at $111,410 by Harlin Nickel Mines, Limited.

References O.B.M., Vol. XXVI, 1917, pp. 258–70.
Royal Ontario Nickel Commission report, 1917, pp. 229–32.

Remarks Geophysical surveys and diamond-drilling in 1953.

ST. PIERRE PROPERTY

Ownership J. O. St. Pierre.

Location Morrissette township, south boundary of township at mile-post III; claims L.51482, L.41123.

Metals Present Lead, silver.

Development Test pits and trenches; old shaft 61 feet deep.

Geology Several small quartz-calcite veins and rusty shear zones in schisted and carbonatized Keewatin volcanics; the veins are vertical and trend northward; the rusty zones and schistosity are parallel to an adjacent east-west quartz porphyry dike; the shaft vein is heavily mineralized with galena, sphalerite, pyrite, and chalcopyrite; some of the latter is altered to malachite and azurite.

Dimensions and Grade Five channel samples, taken at 10-foot intervals down the shaft, averaged 5.71 percent lead, 0.43 percent copper, and 10.9 ounces of silver and 0.16 ounces of gold per ton across 2 feet (1930).

Reference O.D.M., Vol. XXX, 1921, pt. 6, p. 62.

Remarks Claim L.41123 was former "post" claim L.4868; Mallard Lake Gold Mines, Limited, 1937; property optioned and diamond-drilled by Macassa Mines, Limited, 1956.

Larder Lake—Continued

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Ben Nevis tp., SE. part (Ehrhart prop.)	O.D.M., Vol XXXVII, 1928, pt. 3, p. 25	....	....	X	X
Benoit tp., NW. part (Chamandy prop.)	O.D.M., Vol. XXX, 1921, pt. 6	X	....	....	....
Boston tp., NW. part (Campbell prop.)	O.D.M., Vol. XXXII, 1923, pt. 4	....	....	X	X
Catharine tp., centre of S. boundary (Shortt-Netherton prop.)	O.D.M., Vol. XXXVIII, 1929, pt. 6	X	....	....	X
Clifford tp., SE. part (Bain copper prop.)	O.D.M., Vol. XXXVII, 1928, pt. 3, p. 24	X	....	....	....
Eby tp., NE. corner (Todora-Kirkland prop.)	O.D.M., Vol. XLIV, 1935, pt. 2	X	....	....	....
Grenfell tp., NE. part (Republic-Tungsten prop.)	O.B.M., Vol. XXIII, 1914, pt. 2, Northern Miner, June 18, 1942	X	....	X	X
Hearst tp., centre of W. boundary, claim T.4097	O.D.M., Vol. LVI, 1947, pt. 8, p. 31	....	....	X	....
McElroy tp., NE. part, claim M.R. 25 (Kirkland-Hudson Bay Gold Mines, Ltd.)	O.D.M., Vol LIX, 1950, pt. 6, pp. 37, 52	....	....	X	X
McElroy tp., NE. part (Scarth prop.)	O.D.M., Vol. LIX, 1950, pt. 6, pp. 37, 54	....	....	X	X
McGarry tp., NW. corner (Rose prop.)	O.D.M., Vol. L, 1941, pt. 7, p. 89	X	....	....	X
Maisonville tp., central part, claims H.R.580–582 (Bradford prop.)	O.B.M., Vol. XXIII, 1914, pt. 2, p. 34	....	....	X	X
Maisonville tp., central part, claim L.3664 (Cole prop.)	O.B.M., Vol. XXIII, 1914, pt. 2, p. 34	X	X	....	....
Maisonville tp., west-central part (Peterson prop.)	O.B.M., Vol. XXIII, 1914, pt. 2	X	....	....	....
Pontiac tp., NE. part (Clarice Lake prop.)	O.D.M., Vol. XXXVII, 1928, pt. 3, p. 25	X	....	....	....

Montreal River Mining Division

ETHEL COPPER MINES, LIMITED

Location James township, lot 1, concession VI; claim M.R.10316.

Metal Present Copper.

Geology Chalcopyrite occurs in calcite veins with some quartz; the host rock is Nipissing diabase.

EVECO NICKEL MINES, LIMITED

Location Groves township; claim S.81697.

Metals Present Nickel, copper.

Development Geophysical survey and 9,000 feet of diamond-drilling, 1956.

Geology Pyrrhotite and chalcopyrite are concentrated along the sheared footwall of a sill-like body of quartz gabbro intruded into Keewatin greenstones and altered sediments of the Ridout series. There is also a weak dissemination of sulphides in the adjacent rocks.

Ore Reserves Estimated 500,000 tons grading 1.5–2 percent combined nickel and copper. (Phillip Owen, 1956).

References Northern Miner, March 8, 1956; Aug. 16, 1956. (Consolidated Regcourt Mines, Ltd.)

Remarks Subsidiary of Consolidated Regcourt Mines, Limited.

GILES PROPERTY

Location James township, lot 7, concession V, northwest quarter of south half.

Metal Present Lead.

Geology Galena occurs in a shear in Cobalt conglomerate.

JEANETTE MINERALS, LIMITED

Property Matarrow mine.

Location Yarrow township, Mistinikon Lake; claim M.R.17440.

Metals Present Lead, zinc.

Development Surface work; diamond-drilling; shaft sunk to 347 feet; 1,600 feet of lateral work on the 150-foot level; 1,280 feet of lateral work on the 300-foot level.

Geology Sulphide lenses occurring as replacements in a fractured zone associated with a band of iron formation in Keewatin volcanics; lenses contain quartz, calcite, galena, sphalerite, pyrite, and pyrrhotite.

References G.S.C., map No. 1793, 1920.
Northern Miner, Dec. 25, 1952; Mar. 5, 1953, June 23, 1955.

Remarks Matachewan Consolidated Mines, Limited, took over operation of the Matarrow lead mine in 1951 and brought it into production in July, 1952. Ore grade was not up to expectations, and all operations ceased early in 1953.

KIRKLAND MINERALS CORPORATION, LIMITED

Property Former holdings of Dominion Gulf Company.

Location Sothman township, southeast corner.

Metal Present Nickel.

Development Surface work; geological and geophysical surveys; 43 diamond-drill holes, 1950–53, by Dominion Gulf Company; diamond-drilling, 1956.

Geology Lenses of disseminated nickeliferous pyrrhotite on the margin of a peridotite body; some narrow intersections of massive sulphides; the grade of the disseminated material averages 1.5 percent nickel; the massive sulphides have given assays up to 7.5 percent nickel; copper values up to 0.84 percent over 8 feet have been encountered.

Ore Reserves Nickel values along 1,000 feet of the contact. Main ore shoot, 40,700 tons of 1.46 percent nickel and low values in copper to a depth of 280 feet with an average width of 9.3 feet as indicated by 10 drill holes. (E. W. Westrick, 1954.)

References O.D.M., Vol. LXII, 1953, pt. 6.
Northern Miner, Sept. 20, Oct. 25, Dec. 27, 1956.

Remarks Acquired by Beauvale Mines, Limited, in 1955 and the Kirkland Minerals Corporation, Limited, in 1956.

McGALE GROUP PROPERTY

Location Tudhope township, lot 12, concession III.

Metal Present Copper.

Development Old trenches and pits.

Geology Chalcopyrite and bornite occur in calcite veins with aplite; the host rock is Nipissing diabase.

McLAUCHLIN PROPERTY

Location James township, lot 3, concession III, the northeast quarter of the north half.

Metal Present Copper.

Geology Chalcopyrite and bornite occur in veins in Cobalt series conglomerate near the base of a Nipissing diabase sill.

MIN-ORE MINES, LIMITED

Property Ryan Lake mine.

Location Powell township; claims M.R.6083, M.R.12548.

Metal Present Copper.

Development Surface work; geophysical survey; considerable diamond-drilling; shaft to 459 feet; lateral work on four levels.

Montreal River—Continued

Geology	Main orebody is a mineralized shear zone cutting a peridotite sill in altered Keewatin volcanics; strike of zone is east, with steep dip to the south; chalcopyrite with some associated molybdenite occurs as stringers and disseminations in the shear zone; 626 feet of drifting on the 200-foot level gave an average grade of 2.03 percent copper.
Production	1948 and 1950–55, 3,980,811 pounds of copper, 1,129 ounces of gold, and 28,827 ounces of silver, valued at $1,292,334.
Dimensions and Grade	To 370-foot depth, about 200,000 tons averaging 2.9 percent copper. (G. E. Moody, 1948.)
References	O.D.M., Vol. XLIV, 1935, pt. 2. Northern Miner, June 14, 1953; May 31, 1956.
Remarks	Formerly New Ryan Lake Mines, Limited; became Min-Ore Mines, Limited, 1955; property under lease to G. S. Welsh, Matachewan, 1956.

PARAMOUNT COPPER PROPERTY

Location	Tudhope township, lot 12, concession IV; claim M.R.6196.
Metal Present	Copper.
Geology	Chalcopyrite and bornite in calcite (with quartz) vein associated with aplite; Nipissing diabase in the host rock.
Reference	O.D.M., Vol. L, 1941, pt. 4, pp. 41–42.

SAUVE PROPERTY

Location	Tudhope township, lot 10, concession VI; claim M.R.20292.
Metal Present	Copper.
Development	Surface-trenching; minor diamond-drilling.
Geology	Chalcopyrite occurs in calcite veins at the contacts of a diabase dike in conglomerate of the Cobalt series; a radioactive mineral, probably pitchblende, is associated with the veins; a selected sample gave 1.56 percent U_3O_8 equivalent.

Montreal River—Continued

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Argyle tp., (Kells prop.)	O.D.M., Vol. XLI, 1932, pt. 2, Northern Miner Oct. 18, 1951	X	X	....	....
Cairo tp., central part (De Marco prop.)	O.D.M., Vol. XLIV, 1935, pt. 2	X	....	X	....
Cairo tp., SW. part (King prop.)	O.D.M., Vol. XLIV, 1935, pt. 2, Northern Miner Apr. 2, 1953	X	....	....	....
Champagne tp., central part (North Bay group)	O.D.M., Vol. XLIII, 1934, pt. 3, p. 63	X	....	....	....
Connaught tp., NE. part (Mataris, prop.)	O.D.M., Vol. XLIII, 1934, pt. 3, p. 67	X	....	....	....
Flavelle tp., NW. corner (Allen-Coghill prop.)	O.D.M., Vol. XLIV, 1935, pt. 2, p. 51	X	....	....	....
Flavelle tp., NW. part (Chavigny prop.)	O.D.M., Vol. XLIV, 1935, pt. 2, Northern Miner, Feb. 3, 1949	....	....	X	....
Groves tp., southwest-central part (Tasmigjopen prop.)	O.D.M., Vol. XLIII, 1934, pt. 3, p. 65	X	....	....	X
MacMurchy tp., SW. part (Kingston prop.)	O.D.M., Vol. XXXV, 1926, pt. 6, p. 95	....	....	X	X
Powell tp., SE. part (Ethel copper prop.)	O.D.M., Vol. XLIV, 1935, pt. 2, Northern Miner, May 10, 1956	X	....	....	....
Powell tp., central part (Welsh-Sauve prop.)	O.D.M., Vol. XLIV, 1935, pt. 2, Northern Miner, Dec. 10, 1953	....	....	X	X
Sothman tp., NW. corner, (Edleston-Phillips prop.)	O.D.M., Vol. LXII, 1953, pt. 6	....	....	X	X

Parry Sound Mining Division

KALBROOK MINING COMPANY, LIMITED

Properties They include the old Wilcox and McGown copper mines and a zinc deposit formerly owned by Bayshore Zinc and Copper Mines, Limited.

Location The Wilcox mine is located in Cowper township, lots 18–22, concession IV. The McGown mine is located in Foley township, lot 146, concession B; both are in the Parry Sound district.

Metals Present Copper, zinc.

Development At the Wilcox mine there is an old shaft 175 feet deep, sunk by the Parry Sound Copper Mining Company, Limited; nine holes were drilled by Waterways Copper Mines, Limited, in 1939. In the Bayshore area seven holes were drilled in 1951 and three in 1953 by the Kalbrook Mining Company, Limited.

At the McGown mine there are four old shafts, the deepest being at 238 feet.

Geology At the Wilcox mine several disconnected mineralized lenses occur in biotite gneiss at intervals, over a length of 2,500 feet, from the shore of Georgian Bay. The sulphides are chalcopyrite, pyrrhotite, pyrite, and a little sphalerite. Gold and silver values are very low. The zinc showing lies half a mile east of the copper deposit. Sphalerite mineralization in gneiss and pegmatite is exposed for 380 feet along strike.

At the McGown mine there are three types of mineralization: disseminated chalcopyrite and bornite in quartz veins; lenses of chalcocite and bornite in gneiss; and massive sulphides. The copper mineralization is spotty, and gold values are low.

Production In 1903–4 the Wilcox mine produced 192,000 pounds of copper valued at $7,680. In 1899 the McGown mine shipped 167 tons of ore to the Orford Copper Company.

Dimensions and Grade At the Wilcox mine, four drill holes over a length of 340 feet gave the following intersections: 2.5 percent copper in a 10-foot core length, 3.0 percent copper in a 20-foot core length, 2.1 percent copper in a 5-foot core length, and 4.1 percent copper in 1.2-foot core length. In the Bayshore area, east of the above, five drill holes showed core lengths of 5.2–16.7 feet with 2.8–9.7 percent zinc.

Reference O.D.M., Vol. LI, 1942, pt. 2, pp. 22–26, 31–32.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Armour tp., lot 17, con. VIII	O.D.M., Vol. LI, 1942, pt. 2, p. 33	X	X	....	....
Butt tp., west of Bijou Lake	O.D.M., Geological Branch, files	X	X	....	....
Hardy tp., lot 23, con. VIII	O.D.M., Vol. LI, 1942, pt. 2, p. 34	X	X	....	....
Lount tp., lot 28, con. I; lot 14, con. III; lot 14, con. V; lot 13, con. XII; lot 124, con. A; lot 124, con. B	O.D.M., Vol. LXIV, 1955, pt. 6, p. 25	X	....	....	....
McConkey tp., lot 15, con. IV; lot 18, con. III; lot 20, con. III	O.B.M., Vol. IX, 1909, p. 171	X	X	....	....
McConkey tp., lots 14–17, con. III	O.D.M., Geological Branch, files	X	X	....	....
Perry tp., lot 35, con. XIII	O.D.M., Vol. LI, 1942, pt. 2, p. 35	X	X	....	....

Patricia Mining Division

DON CAMPBELL PROPERTY

Ownership Don Campbell, Sioux Lookout.

Location Pickerel Arm, Minnitaki Lake, 11 miles southwest of Sioux Lookout; claims: P.A.15485–15488, P.A.15495–15496, P.A.15596–15599, P.A.15601.

Metal Present Copper.

Development Geological survey 1955; geophysical survey; diamond-drilling in 1956.

Geology Chalcopyrite occurs in shear zones and fractures at angles to the shearing. These shear zones strike N.55°–75°E., which is the trend of Pickerel Arm and are in silicified and carbonated quartz porphyry, which underlies Pickerel Arm and its shores.

Dimensions and Grade The shearing is widespread, and mineralization occurs over an area of at least 4,000 by 2,000 feet; most of this area however is underlain by water. Diamond-drilling indicated only low copper values.

Reference O.D.M., Vol. XLI, 1932, pt. VI, p. 22.

Remarks Optioned to Rio Canadian Exploration, Limited, 1955; option dropped, 1956.

KAPKICHI NICKEL MINES, LIMITED

Location Kapkichi Lake, 7 miles west of the former Central Patricia gold mine. Main showing on claim P.A.15461.

Metals Present Nickel, copper.

Development Surface work, geophysical survey; 15 drill holes in 1946 and 1949 by Central Patricia Gold Mines, Limited, and Conwest Exploration Company, Limited; four drill holes in 1956 by Thompson-Lundmark Gold Mines, Limited.

Geology Quartz diorite with disseminated sulphides occur in a Keewatin greenstone belt; there are some small gold-bearing quartz veins; finely disseminated pyrrhotite and chalcopyrite carry low-grade copper-nickel values; the main mineralized zone is in an area up to 300 feet wide and over 600 feet long; typical sections showed up to 100 feet of core averaging 0.50 percent copper and and to 0.25 percent nickel in 1946–49 drilling. Other mineralized zones have been found on the property.

Dimensions and Grade In 1946–49 the best intersection was 3.11 percent nickel over 6.9 feet of core. In 1956 drilling, mineralized core averaged about 0.50 percent combined nickel and copper with some samples assaying over 1 percent combined. (F. W. Thompson, Jan., 1957.)

Remarks The property is owned jointly by Thompson-Lundmark Gold Mines and Quebec Cobalt and Explorations, Limited.

MISCELLANEOUS OCCURRENCE

Location	Reference	Metals Present			
		Copper	Nickel	Lead	Zinc
Vermilion Lake, Sioux Lookout area; claim K.R.L.12920.....	O.D.M., resident geologist, Kenora, files.....	X	X	....	....

Porcupine Mining Division

DOMINION GULF COMPANY

Location Jamieson township, parts of lots 9, 10, 11, and 12, concessions II and III; claims P.37625–37626, P.37641, P.37647–37653, P.37676–37678, P.37680–37684, P.37685, P.37887–37889, P.38360–38384.

Metals Present Copper, zinc.

Development During 1955 and 1956 geological, magnetic, and electromagnetic surveys were made of the property. Some 22 drill holes, with a total footage of 8,800 feet, were put down. Most of the drilling was on claim P.37677, which is southeast of the Kam-Kotia mine but appears to be south of the assumed position of the projection of the Kam-Kotia mineralized zone.

Geology The country rocks are andesite and fragmental rhyolite, which are intruded by dikes or sills of diorite. These rocks strike northwest-southeast and dip steeply north. Pyrite mineralization with associated chalcopyrite and sphalerite occurs both in the rhyolite fragmental and in the andesite, particularly near the contacts of the two rock types.

Dimensions and Grade Sections of nearly massive sulphides are present in the drill core of many of the holes, but no information concerning the grade or continuity of the sulphide zone has been released for publication.

JAMIESON LEAD-ZINC PROPERTY

Ownership George Jamieson.

Location Jamieson township, parts of lots 11 and 12, concession I; claims P.8382, P.10584, P.11919, P.22522, P.24793–24798.

Godfrey township, part of lot 12, concession IV; claim P.10583.

Metals Present Lead, zinc, copper.

Reference O.D.M., Vol. LIII, 1944, pt. 4, pp. 15–16.

Remarks Diamond-drilling, 1955.

JAMIESON PROPERTY

Ownership George Jamieson.

Location Godfrey township, parts of lots 9 and 10, concession VI; claims P.20411, P.27861–27865, P.27899, P.28030, P.29900.

Jamieson township, concession I, parts of lots 9 and 10, claims P.27859–27860, P.28029.

Metals Present Copper, zinc.

Development Surface work and diamond-drilling.

Geology A mineralized shear zone in Keewatin volcanics is present on the limb of a minor anticline. The main zone contains massive and disseminated chalcopyrite, sphalerite, and pyrite. Six drill holes contain copper-zinc values in core lengths of from 3 to 28.5 feet. A second area, 1,200 feet northwest along the strike, contains disseminated sulphides.

Dimensions and Grade

Massive sulphides: Surface length, 125 feet; width, about 4½ feet; greatest depth intersected by drilling, 80 feet. Average of the assays from three drill holes, 2.7 percent copper, 4.2 percent zinc.

Disseminated sulphides: At the main showing the surface length is 330 feet and width, 3–4 feet. The deepest drill hole cuts them at 113 feet below the surface. Assays of drill core from these sections contain copper values ranging from 0.27 to 1.46 percent. A second showing, 1,200 feet northwest, contains disseminated sulphides in a zone 300 feet in diameter.

References

O.D.M., Vol. LIII, 1944, pt. 4, pp. 27–29.
O.D.M., Vol. LXIII, 1954, pt. 7, pp. 36–41.

KAM-KOTIA PORCUPINE MINES, LIMITED

Location Robb township; claims P.12339, P.12341.

Metals Present Copper, zinc.

Development Shaft 150 feet in depth; drifting on 150-foot level; considerable diamond-drilling; magnetometric and gravimetric survey, 1950–51.

Geology The deposit is a replacement and stockwork type along a sheared zone in altered Keewatin volcanics. The underground chalcopyrite-pyrite bodies are 350 by 250 feet and 150 by 75 feet. Production was by open-cut methods and averaged 2.02 percent copper. A zinc orebody is present in the hanging wall above the copper orebody.

Production 1943–44, 5,452,927 pounds of copper valued at $651,992.

Ore Reserves Copper orebody, 825,000 tons, averaging 1.95 percent copper and 0.2 percent zinc. (W. R. Dunbar, 1950.)

Zinc orebody, 600,000 tons, averaging 4.0 percent zinc and 0.5 percent copper (W. R. Dunbar, 1950.)

Reference O.D.M., Vol. LIII, 1944, pt. 4, pp. 17–26.

MORDEY COPPER MINES, LIMITED

Ownership Godfrey Lake Copper Mines, Limited.

Location Godfrey township, parts of lots 9, concessions II and III; claims P.27215–27216, P.19290, P.19292, P.28252–28253.

Metals Present Copper, zinc.

Development Under option to Kimberley Copper Mines, Limited, in 1956. Surface prospecting, geophysical survey, and 31 diamond-drill holes for a total length of 7,634 feet (1956).

Geology The mineralized zone trends in a northerly direction and is a breccia zone in andesite and rhyolite. The ore zone partly consists of veinlets of massive sulphides and partly of disseminated sulphides in the quartz matrix of the breccia.

Ore Reserves The northern area contains 140,000 tons of probable ore, containing more than 1 percent copper. In the southern area there is some additional tonnage, containing 1.5 percent copper.

References

O.D.M., Vol. LXIII, 1954, pt. 7, pp. 43–47.
Northern Miner, Oct. 4, 1956, p. 1348.

PLENO MINES, LIMITED

Ownership Subsidiary of New Kelore Mines, Limited.

Location Jamieson township, parts of lots 11 and 12, concessions IV and V; claims P.12344, P.12350, P.25658–25665.

Metals Present Copper, zinc.

Development Eighteen drill holes, with a total footage of 9,511 feet, were drilled in 1954 and 1955.

Geology The drilling was able to trace the andesite-rhyolite contact, which is exposed on the adjacent Kam-Kotia property. The contact trends in a southeasterly direction and is mineralized with pyrite, pyrrhotite, chalcopyrite, and sphalerite.

Dimensions and Grade The mineralization has been traced for 500 feet along the strike by drill holes spaced at 100-foot intervals. The nine holes drilled across the mineralized zone contained an average core length of 6.8 feet of massive sulphides, which in most holes, is divided into two bands. The published information indicates that the copper and zinc values were fairly low.

References Northern Miner, Aug. 26, 1954; Sept. 2, 1954.

WALLINGFORD PROPERTY

Ownership Frank Wallingford.

Locations Hillary township; claims P.34959, P.34962, P.37935–37936, P.39948, P.40234–40235.

Sewell township; claim S.90428–90429.

Metal Present Copper.

Development During 1956 optioned to the Consolidated Tungsten Mining Corporation of Canada, Limited. Geological and geophysical surveys and 5,700 feet of diamond-drilling in 1956. All drilling was in Hillary township.

Geology Copper mineralization is mainly in quartz veins that are enclosed in volcanic rocks with associated diorite dikes. The trend is in an east-west direction.

Reference Northern Miner, Mar. 22, 1956, p. 379.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Loveland tp.	O.D.M., Vol. LIII, 1944, pt. 4, p. 6.	....	X	....	....
Whitesides tp.; claim P.15511 (Kamiskotia Minerals Synd.)	O.D.M., Vol. XL, 1931, pt. 3, pp. 36, 37.	X	X	....	....

Port Arthur Mining Division

AMERICAN-CANADIAN MINERALS, INCORPORATED

Location 5 miles north of Beck siding on the Canadian Pacific railway, and approximately 25 miles northeast of Port Arthur.

Metals Present Copper, molybdenum, gold, selenium.

Development Trenching and diamond-drilling, 12 holes aggregating 4,917 feet, 1955.

Geology The property is underlain chiefly by metasediments of northwesterly strike and northeasterly dip. In them two mineralized zones have been located. These zones lie in the same sedimentary horizon and occur as large lenses separated by 400 feet of barren or sparsely mineralized rock. The south zone strikes N.30°—35°W. and dips 60°—65°NE. It ranges in width up to 150 feet and has been traced in 5 diamond-drill holes for 800 feet. The north zone strikes N.35°—50°W. and dips 50°—55°NE. It ranges in width up to 150 feet, and also has been traced in drill holes for a length of 800 feet. The two zones are similar. They consist of a profusion of quartz veins and stringers, carrying abundant pyrite and pyrrhotite, with intervening mineralized metasediments. The quartz-sulphide mineralization predominates along the walls of the lenses, and disseminated to massive sulphides, replacing metasediments, predominate in the interior portions. In general the sulphides are more abundant in the north zone than in the south zone. An interesting feature is that the south zone is cut by transverse quartz veins and pegmatite dikes of flat southwesterly dip. These veins and dikes are rich in molybdenite.

Grade A grab sample of massive pyrite from the north zone was found by assaying to contain 0.03 percent copper and 0.08 ounces of gold per ton; a grab sample of massive pyrrhotite was found to contain 1.9 percent copper and 0.02 ounces of gold per ton. However, systematic sampling of drill cores, from both the north and the south zones, indicated the average grade in base and precious metals to be low. The molybdenite-bearing veins and dikes cutting the south zone are too narrow to be of economic value. Other metals shown to be present in small amounts are lead, zinc, and selenium.

Reference O.D.M., resident geologist, Port Arthur, files.

Remarks Property optioned to Wright-Hargreaves Mines, Limited, early 1955.

AMERICAN YELLOWKNIFE GOLD MINES, LIMITED

Location Township 80, 1¼ miles by tractor road north of mileage 85 on the Canadian Pacific railway.

Metals Present Lead, zinc, silver.

Development Surface work, 1944, 1947, and 1948; diamond-drilling, 20 holes aggregating 5,022 feet, 1948.

Geology The sulphide mineralization occurs in a vein that has been traced in 13 trenches over a length of 730 feet. The vein strikes N.85°W. and dips vertically to 80°N. It consists of a breccia zone, from 2 to 10 feet in width, with fillings of calcite, quartz, iron sulphides, galena, and sphalerite. The host rocks are Keewatin-type greenstones.

Grade

Surface sampling results are shown in the following table:

Trench	Distances Between Trenches	Width of Samples	Silver	Lead	Zinc
	feet	feet	ounces per ton	percent	percent
1	—	3.3	8.49	2.91	7.89
2	30	5.0	6.46	0.54	10.63
3	33	3.9	16.38	1.88	13.67
4	37	5.9	8.64	2.41	6.21
5	54	2.0	17.78	1.70	6.61
6	22	2.8	20.20	1.23	15.42
7	37	3.8	18.86	0.21	8.73
8	44	4.1	8.73	1.33	2.79

The possible ore shoot outlined was intersected at 50-foot intervals and at vertical depths of 100–200 feet below the trenches, but only a low metal content was indicated.

Reference

O.D.M., resident geologist, Port Arthur, files.

Remarks

Property formerly referred to as the Ollman property.

ANDOWAN MINES, LIMITED
(Dorion Mine)

Location

Dorion township, lot 14, concession VIII, north of Cavern Lake.

Metals Present

Lead, zinc.

Development

Surface pits; a 210-foot tunnel; a shaft 95 feet deep; drifting on the 90-foot level.

Geology

The lead-zinc mineralization of the Dorion mine is located in a breccia zone that strikes N.60°E. and dips 70°S. along the contact between granite and pegmatite. The breccia zone ranges from 10 to 40 feet in width. The ore consists of galena and sphalerite associated with a breccia filling of white and amethystine quartz, some barite, and in places a little chert. Rich sections of vein material have been found at the surface, but there is only scant mineralization on the 90-foot level.

Production

350 tons of concentrate, valued at $10,000 were produced in 1903.

Dimensions and Grade

The lead-zinc mineralization is found intermittently along the breccia zone, which has been traced for ¾ mile across the property. One of the better sections occurs in the vicinity of the shaft, where sampling indicated 4.88 percent lead across 26 inches at one point and 11.48 percent lead at another. Ore carrying 20 percent zinc is exposed across a width of 4 feet in the drift at the east end of the property.

References

O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 69–71.
G.S.C., Mem. 167, 1931, p. 179.

ANDOWAN MINES, LIMITED
(Winston Lake Property)

Location East shore of Winston Lake, claim T.B.42745, about 3 miles east and 13 miles north of Rossport on the Canadian Pacific railway.

Metal Present Copper.

Development Surface work, 1952; 5 diamond-drill holes, aggregating 424 feet, bored in 1952.

Geology Mineralized zone consists of quartz stringers and disseminated iron, zinc, and copper sulphides in garnetiferous biotite gneiss. The zone strikes N.15°–20°E., dips steeply east, and ranges up to 39 feet in true width. It has been traced for 250 feet.

Grade The best section is reported to contain 0.5 percent copper over 20 feet in diamond-drill hole No. 3A.

Reference O.D.M., resident geologist, Port Arthur, files.

ASCOT METALS CORPORATION, LIMITED

Location North-central part of Township 84, about 6 miles northeast of Schreiber on the Canadian Pacific railway.

Metal Present Copper.

Development Surface work, 1921; geological mapping, 1950; diamond-drilling, 1954.

Geology The deposit lies northeast of Ansell Lake; it consists of disseminated pyrite, pyrrhotite, and chalcopyrite in schistose basic lavas and intrusive quartz porphyry dikes striking northeast.

Dimensions and Grade Several test pits have indicated that mineralization occurs within an area 400 feet wide and over 600 feet long. Most of the pits are in greenstone, and values in copper are low. One trench, which intersects a body of quartz porphyry, shows a mineralized section 47 feet wide. Grab samples over this width average 1.06 percent copper. (C. P. Roberston, Oct. 2, 1950.)

Remarks Property optioned to East Sullivan Mines, Limited, from July 23 to October 7, 1950; purchased by Ascot Metals Corporation, Limited, early in 1954.

BANDOWAN MINES, LIMITED

Location Lots K.56 and Z.71, approximately 1 mile south of Kashabowie on the Fort Frances–Lakehead line of the Canadian National railway.

Metals Present Copper, gold, silver, zinc.

Development Trenching; self-potential survey, 1943; magnetometer survey, 1949; electromagnetic survey, 1955; diamond-drilling 1943–56. Up to 1949, 33 diamond-drill holes, aggregating about 10,000 feet, were bored; in 1956, 39 holes, aggregating 24,845 feet, were bored.

Geology The Andowan claims are underlain chiefly by Keewatin greenstones intruded by a large mass of anorthosite. Southeast of the anorthosite body is a strong sheared zone up to about 60 feet in width. This zone strikes N.60°E. and dips vertically to steeply south. It has been traced intermittenly for a length of 4,300 feet on the surface; and contains two mineralized sections, known as the west and the east, 2,300 feet apart. Both zones consist of silicified greenstone, impregnated with disseminated-to-massive sulphides, chiefly pyrite, with pyrrhotite, chalcopyrite, and some sphalerite.

Port Arthur—Continued

Dimensions and Grade

The west section is exposed in trenches for a length of 1,300 feet. Twenty-three diamond-drill holes, bored to cut this section in 1956, indicated, to a vertical depth of 600 feet, approximately 200,000 tons having an average grade of 1.25 percent copper. This tonnage occurs in a southwest-raking shoot about 150 feet in length and 22 feet in width. Zinc, gold, and silver were also found to be present, but in relatively small amounts.

The east section is exposed in trenches for a length of 700 feet, and ranges in width from 5 to 60 feet. Eleven diamond-drill holes, bored to cut this section in 1956, indicated a low copper content.

References

Northern Miner, Mar. 1, Apr. 19, May 3, June 28, and Dec. 20, 1956.
O.D.M., resident geologist, Port Arthur, files.

Remarks

Property optioned from Andowan Mines, Limited, and drilled by Norpick Gold Mines, Limited, 1948–49. Property optioned by Douglas, Allen, Davis, Limited, 1952. Property optioned by Mining Geophysics Corporation, Limited, 1953. Property purchased by Bandowan Mines, Limited, 1955.

BARKER AND DAWIDOWICH PROPERTY

Location

4 miles due east of Vein Lake, approximately 30 miles north of Marathon on highway No. 17 and the Canadian Pacific railway.

Metal Present

Copper.

Development

Surface mapping and trenching, 1955.

Geology

The deposit lies along a strong fractured zone in massive hornblende syenite. The fractured zone ranges from 20 to 30 feet in width. It strikes northwest for a known distance of 1½ miles, and dips 85°S. To the southeast the fractured zone contains hematite, pyrite, and chalcopyrite associated with scattered quartz stringers.

Dimensions and Grade

A 300-foot section of the mineralized fractured zone is reported to contain about 1 percent copper across an average width of 20 feet.

BASELINE MINES, LIMITED

Location

East shore of Drainage Lake in the Killala Lake area, 28 miles north of Marathon on the Canadian Pacific railway.

Metals Present

Copper, nickel.

Development

Geological mapping and diamond-drilling, 1954.

Geology

A large intrusive body of hornblende syenite forms a circular upland that rises about 400 feet above the surrounding country; it is located between Killala Lake on the south, Sandspit Lake on the west, and Drainage Lake on the east. Along the east shore of Drainage Lake, between the syenite and granite gneiss to the southeast, is a dike-like body of anorthosite. This body ranges from 100 to 250 feet or more in width. It strikes N.20°E. from McKergow's base line for 3,200 feet, and dips vertically to steeply east; northward it swings to assume a strike of N.45°E. and a dip of 50°SE. Throughout its exposed length, the anorthosite body is mineralized with disseminated pyrite, pyrrhotite, and subordinate chalcopyrite. Native copper has been observed in weathered outcrops. Assays indicate the presence of nickel.

Reference

O.D.M., resident geologist, Port Arthur, files.

CAMPBELL PROPERTY

Ownership D. Campbell, Schreiber.

Location 8 miles north of Schreiber station on the Canadian Pacific railway.

Metals Present Copper, nickel.

Development Surface work; geological and geophysical survey; a limited amount of diamond-drilling.

Geology The showing trends N.70°E. along a contact between amphibolite on the east and granite on the west. It consists of massive sulphides, up to 3 feet wide, with disseminated sulphides impregnating the walls for a distance of up to 10 feet. The mineralization consists of pyrite, pyrrhotite, pentlandite, and chalcopyrite.

Dimensions and Grade The showing has a known length of 300 feet. One grab sample assayed 4.32 percent nickel and 1.07 percent copper; a second assayed 4.88 percent nickel and 0.10 percent copper.

References O.D.M., Vol. XLVII, 1938, pt. 9, p. 37.
Northern Miner, Feb. 9, 1950.

Remarks Formerly owned by Nicopor Mines, Limited; property optioned to Selco Exploration Company, Limited, early in 1953. Falconbridge Nickel Mines, Limited, carried out extensive exploration in this vicinity in 1950.

S. CIGLEN, PROPERTY

Location East of Winston Lake, 3 miles east and 13 miles north of Rossport on the Canadian Pacific railway; claim T.B.41534.

Metal Present Zinc.

Development Trenching.

Geology The mineralized zone lies in garnetiferous biotite gneiss striking north-south and dipping 35°E. In the zone the gneiss has been highly silicified and mineralized with pyrrhotite, sphalerite, pyrite, and traces of chalcopyrite. The sulphides, which collectively make up from 10 to 15 percent of the zone, occur as disseminations, bands, and streaks localized along, and parallel to, gneissosity of the host rock. Selective replacement of certain bands in the gneiss by sphalerite is evident in the trenches.

Dimensions and Grade Three trenches at 50-foot intervals indicate a length of at least 150 feet and widths of 20 feet or more. Selected samples indicate values up to 26 percent zinc across 4.0 feet

References O.D.M., resident geologist, Port Arthur, files.
The Northern Miner, July 3, 1952, p. 5.

Remarks Similar occurrences have been found along the strike of the structure intermittently over a distance of several thousand feet.

COLDSTREAM COPPER MINES, LIMITED

Location Mining location K.65, 9 miles southwest of Kashabowie on the Fort Frances–Lakehead line of the Canadian National railway.

Metal Present Copper.

Port Arthur—Continued

Development

The property has been developed by four shafts. The No. 1 shaft, sunk by former operators about the beginning of the century, was collared at the west end of the mineralized zone. This shaft was put down to a depth of 200 feet, and from it four levels were established at 50-foot intervals. About 800 feet of lateral work was done. Nos. 2 and 3 shafts, also sunk by former operators, occur east of No. 1 as shallow openings and attain depths of 50 and 20 feet, respectively. No. 4 shaft was sunk in 1952, at a point 500 feet east of No. 1 shaft, to a depth of 350 feet. This shaft has subsequently been deepened and, at the present time, five levels have been established at vertical depths of 180, 325, 475, 625, and 775 feet. Several thousand feet of lateral development work on the first four levels has been completed.

Geology

The ore lies within a large, irregular-shaped body of highly silicified greenstone or "chert", which strikes east-west for at least 1,200 feet, ranges up to 300 feet in thickness, and dips almost vertically. The mineralization consists chiefly of disseminated-to-massive pyrite and chalcopyrite, replacing and healing fractures in the "chert" and occurs in four distinct orebodies. The main orebody lies southeast of the No. 4 shaft. It is best developed on the 4th level, where flat diamond-drilling has indicated an east-west length of 350 feet and widths up to 100 feet. It appears to terminate a short distance below the level, but it continues upward, as a single body, to the 3rd level and then as a series of branching "fingers" to the surface; on the 1st level it is represented by eight isolated ore shoots that range up to 300 feet in length and 14–56 feet in width.

The second, or west, orebody is found on the surface at the collar of the No. 1 shaft. It strikes N.65°E. for a length of about 300 feet on the 1st level and ranges up to about 30 feet in width. It appears to bottom between the 2nd and 3rd levels.

The east orebody was first located in a flat drill hole on the 3rd level about 250 feet east of the main orebody. On the 4th level it was found to have an east-west length of about 250 feet with widths ranging up to 95 feet. Angle diamond-drill holes indicate that this orebody bottoms below the 5th-level horizon.

The south No. 1 orebody was located by drilling about 75 feet south of the main orebody on the 4th level. Here it is 105 feet long. It extends and increases in size downward; at the 5th level it is 370 feet long, and at the 6th level, or 925-foot horizon, it has a length of at least 500 feet. All orebodies appear to rake vertically-to-steeply east.

Production

Copper was recovered by former operators in the years 1903, 1906–7, and 1916–17. In all, 1,312,979 pounds of copper, worth $132,428, were produced.

Ore Reserves

It is estimated by the company that the various orebodies, excluding the south No. 1, contain, from the surface to the 5th level, 2,648,000 tons of ore having an average grade of 2.2 percent copper. This includes 480,000 tons averaging 2.98 percent between the 3rd and 4th levels, and 460,000 tons averaging 3.26 percent between the 4th and 5th levels. The new south No. 1 orebody is reported to have an average grade of better than 2 percent copper. All the orebodies contain a little gold and silver in addition to copper.

Port Arthur—Continued

References

O.D.M., resident geologist, Port Arthur, files.
O.B.M., Vol. XX, 1911, pt. 1, pp. 209–13.
O.B.M., Vol. XXVII, 1918, pt. 1, p. 170.
G.S.C., map No. 432a, 1938.
Northern Miner, July 19, Oct. 18, Nov. 8, 1956; Feb. 14, 1957.

Remarks

Formerly known as Tip Top mine. The operation is financed and directed by the Mogul Mining Corporation, Limited. A concentrating plant of 1,000 tons daily capacity is being built, and production is expected to begin in 1957.

GECO MINES, LIMITED

Location

Manitouwadge Lake, about 40 miles northeast of Marathon station on the Canadian Pacific railway.

Metals Present

Copper, zinc, silver.

Development

Surface work, 1953; surface diamond-drilling, 1953–54; underground development, 1955–57. The mine has been developed by two shafts; one of which extends to a depth of 1,500 feet, and the other to 500 feet. The two openings are connected on the 450-foot level. Over 32,000 feet of underground workings have been completed.

Geology

The Geco orebody is a replacement deposit in an east-west horizon of sericitized mica gneiss, which is bordered on the north by granite and gneiss, and on the south by quartzite. It can be divided conveniently into three sections: the West, Central and East.

The west section of the orebody has a length of 1,200 feet at the surface, ranges up to 220 feet in thickness, and rakes to the east at about 40 degrees. It consists of highly sericitized gneiss with disseminated pyrite and chalcopyrite and occasional quartz stringers. The sulphides replace the wall rock outward from a core of massive ore made up of pyrite and sphalerite, with considerable pyrrhotite, but relatively small amounts of chalcopyrite. This core occurs near the south wall of the orebody, within a few feet of the sericitized gneiss-quartzite contact. It decreases in width and tends to pinch out both to the west and with depth.

To the east, the West section of the orebody is cut off by a north-south fault, so that east of the fault its extension, or Central, section lies approximately 250 feet to the north. The Central section extends eastward from the fault for 850 feet, to a point where it is truncated by a zone of north-south diabase dikes. Near the surface it has an average width of 58 feet. Like the West section, it consists of a core of massive zinc ore enclosed by disseminated copper ore. But here the core is much wider than in the West section, and the disseminated ore is narrower and of lower grade. With depth the core decreases in width and tends to tongue out, whereas the bordering disseminated ore increases in width and grade. The result of this is a transition from a high-grade zinc ore near the surface to a high-grade copper ore at depth.

The East section of the orebody, which lies east of the zone of diabase dikes, extends for a length of 600 feet near the surface. It differs from the Central section in three ways:

1) Both the core of massive sulphides and the disseminated ore are narrower and tongue out eastward.

2) The core attains its maximum thickness of about 50 feet at a depth of 700 feet and pinches out upwards.
3) At the east margin of the zone of diabase dikes, the core is represented by massive pyrrhotite and pyrite, and sphalerite does not become an important constituent until a depth of about 500 feet is reached. The East section, at or close to the present erosion surface, thus represents the upper limit of the east-raking orebody.

Ore Reserves To a vertical depth of about 1,300 feet, the Geco orebody is estimated to contain 15,227,251 tons of ore having an average grade of 1.76 percent copper, 3.48 percent zinc, 1.77 ounces of silver per ton, and 12.21 percent pyrite. (Annual report, Dec. 31, 1956.) The west section is reported to contain a minimum of 5,600,000 tons of ore grading 2.19 percent copper.

References
O.D.M., Geological Circ. No. 3, Mar., 1955.
Annual reports of the company.
O.D.M., resident geologist, Port Arthur, files.
Northern Miner, Feb. 16, 1957.
Western Miner, Vol. 30, No. 1, 1957, pp. 29–34.

Remarks A concentrating plant of 3,300 tons initial daily capacity will commence production in 1957.

HALONEN PROPERTY

Ownership J. E. Halonen.

Location ¼ mile west of Big Duck Lake, about 13 miles north of Schreiber.

Metal Present Copper.

Development Open cut 22 feet long; shaft 25 feet deep.

Geology The following consists of a lenticular deposit of copper-bearing quartz along a contact between hornblende schist and quartz porphyry. This deposit is 75 feet long and up to about 20 feet wide. The quartz contains disseminated pyrite and chalcopyrite. A 7-foot width, exposed in the open cut and shaft, assays approximately 4 percent copper. A little gold is also present.

References
O.D.M., Vol. XXX, 1921, pt. 4, p. 23.
O.D.M., Vol. XLIX, 1940, pt. 7, p. 11.

Remarks Formerly Burstom property.

HORLAC MINES, LIMITED
(Moffat's Strait Property)

Location Moffat's Strait, St. Ignace Island, Lake Superior.

Metal Present Copper.

Development Surface work, 1954; 8 drill holes, aggregating 510 feet, bored early 1955.

Geology Four mineralized zones, each consisting of vertical chalcocite-bearing calcite stringers in flat-lying amygdaloidal lava, have been located. All strike east-west. Three occur west of Moffat's Strait on the shore of St. Ignace Island; the fourth is found east of the strait on Simpson's Island. Widths range up to and may exceed, 65 feet.

Reference
O.D.M., resident geologist, Port Arthur, files.

HORLAC MINES, LIMITED
(Otter Bay Property)

Location Otter Bay, St. Ignace Island, Lake Superior.

Metal Present Copper.

Development Surface work, 1954; 8 drill holes, aggregating 523 feet, bored early 1955.

Geology Two mineralized zones, striking about N.45°E., have been located in flat-lying Keweenawan amygdaloidal lavas. The north zone, tested by three drill holes over a length of 175 feet, consists of a steeply dipping body of calcite stringers over a width of about 30 feet. The calcite stringers contain chalcocite, which also occurs as amygdule fillings and disseminated grains in the lava, between and bordering the calcite stringers.

The south zone lies 400 feet southeast of the north zone. It is of similar character and has been tested by five drill holes over a length of 1,000 feet. The holes were all bored from southeast to northwest at angles of 45 degrees and intersected mineralized rock over core lengths ranging from 11 to 26 feet.

Reference O.D.M., resident geologist, Port Arthur, files.

HUCAMP MINES, LIMITED

Location East of Geco mine in the Manitouwadge Lake area, approximately 40 miles northeast of Marathon station on the Canadian Pacific railway.

Metals Present Copper, zinc.

Development Electromagnetic, magnetometer, and geological surveys, and diamond-drilling, 1954. Further diamond-drilling early 1955.

Geology The deposit is a horizon of mineralized quartzite and sericitized gneiss, up to 110 feet in width, and 2 miles or more in length. This zone strikes N.70°E. and dips 65°S. The mineralization consists of metallic sulphides, chiefly pyrite and pyrrhotite, which occur as disseminated crystals and grains and as massive seams, averaging 4–6 inches in thickness, parallel to the strike.

Grade The minerals of economic interest are chalcopyrite and sphalerite. These minerals are reported to be present throughout the zone. However, they have not been found in concentrations rich enough to make ore.

INTERNATIONAL NICKEL COMPANY OF CANADA, LIMITED
(Shebandowan Nickel-Copper Property)

Location Southwest Bay, Lower Shebandowan Lake, about 73 miles west of Port Arthur.

Metals Present Nickel, copper, platinum metals.

Development Trenching and test-pitting; considerable diamond-drilling in 1936 by the International Nickel Company of Canada, Limited; further diamond-drilling in 1951 and 1952; geophysical surveys.

Geology The ore zone occurs in sheared peridotite, which has been traced for about 4,000 feet along strike. This zone attains widths up to 100 feet, and contain sulphide replacement lenses 800–1,600 feet in length. Ore widths range from 5 to 10 feet; the largest orebody lies under the lake. The ore contains pyrite, chalcopyrite, pyrrhotite, and polydamite in massive and disseminated form.

Port Arthur—Continued

References

O.D.M., Vol. XXIX, 1920, pt. 1, pp. 225–33.
G.S.C., Summ. Rept., pt. D, 1922, pp. 1–8.
O.D.M., Vol. XXXVII, 1928, pt. 4, pp. 128–48.

KILLALA LAKE MINES, LIMITED
(Sandspit Lake Property)

Location Sandspit Lake, approximately 30 miles north of Port Coldwell on the Canadian Pacific railway.

Metal Present Copper.

Development Aeromagnetic and resistivity surveys, 1954; 12 drill holes, aggregating 4,715 feet, were bored in 1954.

Geology The deposit lies within a large body of gabbro throughout which is found small amounts of disseminated pyrrhotite. It appears to be closely associated with a steeply dipping or vertical graphitic fault zone striking N.50°E. and has been traced by drilling for a length of about 1,200 feet. The deposit consists of streaks and patches of massive pyrrhotite, with minor chalcopyrite, alternating with gabbro containing finely disseminated sulphides. The best widths and values occur where the fault swings locally to assume a strike of N.30°E.

Grade The best intersection was obtained in hole No. 5, drilled at an angle of 45 degrees. Here a core length of 50 feet was found to average 0.14 percent copper. Low values in nickel have also been indicated.

Reference O.D.M., resident geologist, Port Arthur, files.

KILLALA LAKE MINES, LIMITED
(Killala Lake Property)

Location Approximately 1 mile northeast of Killala Lake, 25 miles north of Port Coldwell on the Canadian Pacific railway.

Metals Present Copper, nickel.

Development Aeromagnetic and self-potential surveys and drilling in 1954.

Geology The deposit lies within a large body of gabbro, throughout which is found small amounts of disseminated pyrrhotite. It is a zone of massive to disseminated pyrrhotite containing a little chalcopyrite that has been traced by drilling for a distance of 1,100 feet on the west side of, and close to or bordering, a north-south fault. The best mineralization, across a horizontal width of 30 feet, is found at the north end of the zone where the strike changes to N.10°W.

Grade Values in nickel and copper are reported to be low.

Reference O.D.M., resident geologist, Port Arthur, files.

KINASCO EXPLORATION AND MINING, LIMITED

Location Pic township, 2 miles east of Marathon and along highway No. 17.

Metal Present Copper.

Development Self-potential survey and a limited amount of shallow drilling, 1955; further, more extensive, drilling, 1956.

Geology The property is underlain by highly altered Keewatin sediments and volcanics, which on the west are bordered and have been intruded by a complex of augite syenite and gabbro. The intrusive contact strikes north-south and dips 20°—30°W. The mineral deposit, as indicated by the self-potential survey, has a length of 2,000 feet. It lies west of, and about 100 feet above, the contact, to which it appears to conform in attitude. It consists mainly of disseminated-to-massive sulphides (pyrite, pyrrhotite, and minor chalcopyrite) in the intrusive complex and in inclusions of sediments in the intrusive complex. The mineralization appears to be continuous across a true thickness of about 350 feet at one point near the surface.

Grade Of the five shallow drill holes bored in 1955, four indicated massive pyrite and chalcopyrite across widths up to 10 feet. A sample of this massive material assayed 3.5 percent copper. The fifth hole intersected 32 feet of disseminated material having a copper content of 1.2 percent. One long drill hole, bored N.55°W. at an angle of 33 degrees, intersected 495 feet of mineralized rock having an average copper content of 0.28 percent; a 511-foot vertical hole encountered 436 feet of mineralized rock having an average copper content of 0.19 percent.

References O.D.M., resident geologist, Port Arthur, files.
Northern Miner, Mar. 1, 1956.

LAKE CITIES LEAD AND ZINC COMPANY, LIMITED

Property Ogema mine.

Location Dorion township, lot 5, concession XI; claim T.B.30089.

Metal Present Lead.

Development A tunnel 125 feet long; a shaft to a depth of 196 feet; and a limited amount of lateral development on the 44- and 125-foot levels.

Geology The Ogema mine is located on a fault breccia zone in biotite schist. This zone ranges from 2 to 20 feet in width and has been traced at least 1,000 feet along a strike of N.65°—75°E. The vein breccia dips 83°S. The sulphide minerals present are galena, sphalerite, pyrite, and chalcopyrite.

Production A small amount of gold was recovered in 1892. In 1948 a hand-cobbed shipment of 24.8 tons to the Trail smelter was found to average 22.8 percent lead, 0.9 percent zinc, and 0.8 ounces of silver per ton.

Grade The average grade is not known. It is reported that at the bottom of the shaft, a section 18 feet 9 inches wide runs 10 percent combined lead and zinc. A sample at the 125-foot level assayed 9.24 percent lead and a trace of zinc across 30 inches.

Reference O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 74—77.

J. W. LAWRENCE
(Property No. 1)

Location 3¾ miles north-northeast of Quetico station on the Port Arthur–Fort Frances line of the Canadian National railway.

Metals Present Copper, nickel, gold.

Development Surface work and diamond-drilling, 1929.

Geology The property is underlain by schistose metasediments of northeast strike and vertical dip, intruded by a body of gabbro and related rocks.

The deposit is exposed in a rusty weathering outcrop, 20 feet in its maximum dimension, of coarse-grained amphibolite carrying disseminated grains of pyrite, pyrrhotite, and chalcopyrite. About 800 feet northeast of this outcrop is a second exposure, 40 feet in its maximum dimension, of similar mineralized material, cut by quartz veins up to 2 inches in width.

Grade The mineralized rock found on surface is reported to have assayed 0.5 percent nickel, 0.5 percent copper, and $5.50 gold per ton.

Diamond-drill holes, bored to test the zone between the two exposures, indicated only low values.

Remarks Work performed by Spence Development Company, incorporated in March, 1929.

J. W. LAWRENCE
(Property No. 2)

Location 3 miles north-northwest of Quetico station on the Porth Arthur–Fort Francis line of the Canadian National railway.

Metals Present Copper, nickel.

Development Surface work and diamond-drilling, 1929.

Geology The deposit consists of small lenses of disseminated sulphides in gabbro and granodiorite intrusive into schistose metasediments. Sampling indicated the presence of nickel and copper.

LUN-ECHO GOLD MINES, LIMITED
(Finmark Option)

Location Lots 29 and 30, concession 11, Dawson Road lots, 1½ miles north of Finmark on highway No. 17.

Metal Present Copper.

Development Magnetometer survey and diamond-drilling, 17 holes aggregating 2,689.4 feet, early 1956.

Port Arthur—Continued

Geology The two lots are underlain by vertical-dipping Keewatin basic lavas that are cut by a Keweenawan diabase dike that strikes N.70°W. and dips 70°–75°N. Along the north contact of the diabase, the basic lavas have been sheared and brecciated across widths up to 60 feet, and the shattered zone has been mineralized with abundant pyrrhotite, subordinate pyrite, and a little chalcopyrite. The zone is exposed in two pits near the east boundary of lot 30. In one pit, a 30-foot exposure shows 6 feet of massive pyrrhotite carrying abundant chalcopyrite; in the second pit, 60 feet to the east, a 20-foot exposure shows a deep gossan.

Dimensions and Grade The mineralized zone has been traced by drill holes for a length of 1,100 feet, and is shown to have an average width of about 30 feet. A grab sample of massive sulphides from the west pit was found to contain 2.44 percent copper. One diamond-drill intersection, obtained in hole No. 3 below this pit, indicated 2.99 percent copper over a core length of 15 feet. But most of the drill holes showed a low copper content.

Reference O.D.M., resident geologist, Port Arthur, files.

Remarks Property held under option agreement by Lun-Echo Gold Mines, Limited, early 1956.

LUN-ECHO GOLD MINES, LIMITED
(Manitouwadge Property)

Location 5 miles northwest of Manitouwadge Lake, about 40 miles northeast of Marathon station on the Canadian Pacific railway.

Metals Present Copper, zinc, silver.

Development Surface work late in 1953; geological, electromagnetic and airborne magnetometer surveys, and diamond-drilling (83 holes aggregating 27,811 feet, 1954).

Geology Three mineral deposits have been located. Two deposits lie within a horizon of coarse-grained gneiss with associated layered rock (iron formation). This horizon strikes north-south, and dips 20°–25°E. The north deposit is exposed for 750 feet and across widths up to 25 feet. It consists of disseminated and massive sulphides, chiefly pyrrhotite and pyrite with sphalerite, chalcopyrite, and galena, all of which occur in quartz or replace the amphibole and biotite of the host rock. The other deposit is exposed in two trenches, 700 feet and 930 feet south of the No. 1 zone, over widths of 20 and 30 feet. It differs from the No. 1 zone in that the content of iron sulphides and sphalerite is higher, and the content of chalcopyrite is lower.

The No. 3 zone lies about 1,600 feet southeast of the No. 2 zone, in layered rock (iron formation). It strikes N.30°W. and dips flatly, 25°–45°NE. The sulphides, chiefly pyrrhotite and pyrite with sphalerite and chalcopyrite, occur in the quartz or replace the dark layers of the rock. The deposit ranges up to 37 feet and averages 25 feet in thickness.

Dimensions and Grade The No. 1 zone was found by trenching and drilling to contain one ore shoot having a length of 130 feet; the No. 2 zone, an ore shoot having a length of 380 feet; and the No. 3 zone, an ore shoot having a length of 300 feet. Some sampling results are shown in the accompanying table:

ASSAY VALUES

Zone	Location	Width	Cu	Zn	Pb	Ag
		feet	percent	percent	percent	ounces per ton
1	Trench 3S.	6.0	5.41	2.09	2.38	11.76
	D-D hole No. 1	14.4	1.28	8.62	0.17	4.46
	D-D hole No. 2	5.1	0.86	3.49	0.04	2.50
	D-D hole No. 6	23.0	0.89	3.06	0.26	1.89
	D-D hole No. 7	10.5	1.17	0.89	0.24	2.19
2	Trench 7S.	30.0	0.12	14.20	0.84	2.68
	D-D hole No. 13	28.8	0.13	4.77	0.56	1.38
	D-D hole No. 15	14.0	0.20	3.86	1.13	7.60
	D-D hole No. 20	9.9	0.18	4.41	0.53	1.81
	D-D hole No. 28	7.7	0.15	16.54	1.42	2.28
3	D-D hole No. 38	28.4	0.77	2.97	0.47	1.51
	D-D hole No. 41	9.0	1.42	5.59	0.37	2.51
	D-D hole No. 43	33.7	0.83	4.13	0.50	1.69
	D-D hole No. 45	11.2	0.42	7.38	0.66	1.60
	D-D hole No. 47	4.0	0.10	14.95	1.25	0.88
		6.4	0.83	2.51	0.00	1.20
		12.2	0.85	0.61	0.14	1.33

References

O.D.M., Geological Circ. No. 3, Mar., 1955.
O.D.M., resident geologist, Port Arthur, files.

McDONOUGH PROPERTY
(Joseph McDonough)

Name

Little Duck Lake mine.

Location

Northeast shore of Little Duck Lake, about 14 miles north of Schreiber.

Metals Present

Zinc, lead.

Development

Surface-trenching and shaft-sinking by the Little Duck Lake Mining Company; two shafts put down, one to a depth of 120 feet, the other to a depth of 60 feet.

Geology

Several mineral deposits have been found on the property. They are essentially calcite veins or lenses of north-south strike and steep easterly dip in Keewatin-type greenstones. The mineralization consists of massive sphalerite, galena, disseminated pyrite, and some chalcopyrite.

Dimensions and Grade

Old records indicate the occurrence of replacement zones of massive sulphides up to 18 feet in width, and a bulk sample taken from the 120-foot shaft assayed 4.94 percent lead, 8.05 percent zinc, 0.19 percent copper, and 0.11 ounces of gold and 2.06 ounces of silver per ton. (Northern Miner.)

References

O.D.M., Vol. XLIX, 1940, pt. 7, p. 11.
Northern Miner, Mar. 25, 1954, p. 3.

Port Arthur—Continued

Remarks Property under option to the Bathurst Mining Corporation, Limited, and Maritimes Mining Corporation, Limited, in early 1954.

MACKELLAR BAY MINES, LIMITED

Location Township 80, 1 mile north of Ripple station on the mail line of the Canadian Pacific railway.

Metals Present Lead, zinc, silver.

Development Surface work, 1952; diamond-drilling, 9 holes aggregating 2,000 feet, 1954.

Geology The deposit is a narrow fractured zone in basic lava, and consists of quartz-calcite veins and stringers carrying abundant pyrite and sphalerite, some galena, and a little chalcopyrite. The mineralized zone strikes N.85°W. and dips steeply north.

Dimensions and Grade The mineralized zone has been cut in 9 diamond-drill holes, over a length of about 2,000 feet. It ranges in width from less than 2 feet to 15 feet or more. The results of the drilling have not been reported, but samples taken at the shaft collar indicated 7.14 percent lead, 13.00 percent zinc, and 21.80 ounces of silver per ton across a width of 4.5 feet; and 1.14 percent lead, 10.05 percent zinc, and 2.62 ounces of silver per ton across a width of 1.5 feet. A third sample, taken in a trench about 1,500 feet west of the shaft, indicated 1.14 percent lead, 32.31 percent zinc, and 2.22 ounces of silver per ton across a width of 3.5 feet. (R. E. Hore, 1954.)

Reference O.D.M., resident geologist, Port Arthur, files.

Remarks Property acquired from the Saratoga Exploration Company, Limited.

MARLHILL MINES, LIMITED

Location 2½ miles north of the Canadian Pacific railway along the boundary line between Townships 80 and 81.

Metals Present Copper, zinc.

Development Surface work, 1954; geological mapping and drilling, 28 holes aggregating 11,305 feet, 1955.

Geology The mineralization occurs intermittently along a strong sheared zone of east-west strike and vertical-to-steep-southerly dip in metavolcanics and tuffs. This zone has been traced for a distance of about 1 mile. It consists of quartz veins and stringers with associated pyrite and pyrrhotite with, in places, chalcopyrite and sphalerite across widths up to 30 feet.

Grade It is understood that a small shoot, rich in copper and having a length of about 400 feet, was delineated by drilling. However, the grade and width have not been reported.

Reference O.D.M., resident geologist, Port Arthur, files.

MATTAWIN GOLD MINES, LIMITED

Location Lot 10, concession VI, Pardee township, approximately 50 miles southwest of Port Arthur.

Metals Present Copper, nickel, platinum.

Development Surface work, 1952 and 1953; diamond-drilling, 6 holes aggregating 3,471 feet, 1954; further diamond-drilling, late 1956 and early 1957.

Geology Chalcopyrite, pyrrhotite, and pentlandite occur disseminated throughout the lower portion of a flat-lying basic sill, intruding and resting upon Late Precambrian sediments. The sill consists of two parts. The upper part is made up largely of anorthositic gabbro or norite; the lower part, in which the mineralization occurs, largely of gabbro or norite. The mineralized basic rock has been traced intermittently for several miles east of the main showing.

Dimensions and Grade One diamond-drill hole, bored N.5°E. at 60 degrees in 1954 indicated, at a depth in the hole of 830 feet, 55 feet of mineralized rock containing 0.54 percent copper and 0.18 percent nickel. Five vertical holes, bored late 1956 and early 1957, indicated a thickness of from 30 to 70 feet across a width of 400 feet and along a strike length of 1,700 feet. The average grade of the zone, as indicated by these holes, is about 1 percent combined copper and nickel. Platinum may also be present. Boulders believed to have been derived from the showing, and known locally as the McCuaig float, have an average grade of 0.79 percent copper, 0.29 percent nickel, and 0.06 ounces of platinum per ton.

References T. L. Tanton, G.S.C. Paper No. 35-1, 1935.
O.D.M., resident geologist, Port Arthur, files.

Remarks Property optioned to Roy Barker and William Dawidowich, 1954; to the Mogul Mining Corporation, Limited, late 1956.

THE MINING CORPORATION OF CANADA, LIMITED

Location East shore of Chipman Lake, O'Meara township.

Metal Present Copper.

Development Surface work, trenching, geophysical, and geological surveys, 1954.

Geology Two mineralized zones have been located. One lies in diorite along the contact with volcanics to the south. It strikes east-west and consists of massive to disseminated sulphides (pyrite, pyrrhotite, and minor chalcopyrite) over widths up to, and possibly exceeding, 25 feet. The massive sulphides occur north of, and parallel to, the diorite-greenstone contact, from which they are separated by a zone, up to 20 feet wide, of disseminated mineralization.

The second zone lies about 160 feet south of, and parallels, the first. It is similar but lies in volcanics south of a second sill-like body of diorite. This zone has been exposed over a width of 20 feet at one point, and has been traced for a length of 300 feet. The dip of the schistosity in one outcrop along this zone was recorded as 37°N.

Grade Surface sampling indicated values up to 0.36 percent copper over 12.0 feet in the north zone, and up to 0.29 percent copper over 12.0 feet in the south zone.

Reference O.D.M., resident geologist, Port Arthur, files.

MONETA PORCUPINE MINES, LIMITED

Location Township 80, about ¼ mile east of Middleton on the Canadian Pacific railway.

Metal Present Copper.

Development Surface work; diamond-drilling, 3 holes aggregating 794 feet, 1954.

Geology Three copper deposits are exposed on the property. All three consist of gabbro mineralized with disseminated pyrite, pyrrhotite, and chalcopyrite, and all three display surface gossans containing malachite and bornite. One deposit is exposed over a length of 400 feet and across widths up to 80 feet. It strikes N.20°E. and appears to dip vertically. The second deposit lies 600 feet north-northeast of the first. It is exposed over a length of 1,000 feet and across widths up to 30 feet. It does not represent the extension of the first zone, it strikes N.70°W., but like the first zone dips vertically. The third deposit lies 600 feet north-northeast of the second. It strikes north-south for 200 feet on the surface, is exposed across widths up to 60 feet, and appears to dip flatly east.

Grade A channel sample, taken along the strike of the No. 2, or middle, deposit is reported to have averaged 0.63 percent copper over a length of 45 feet. Diamond-drill holes, bored to intersect this and the two other deposits, indicated only a low copper content in each. (G. Perrault, 1954.)

Reference O.D.M., resident geologist, Port Arthur, files.

Remarks Property optioned from Z. Renshaw, D. Smith, and associates, early 1954.

NAMA CREEK MINES, LIMITED

Location 3 miles northwest of Manitouwadge Lake, about 40 miles northeast of Marathon station on the Canadian Pacific railway.

Metals Present Copper, zinc, silver.

Development Electromagnetic and geological surveys and drilling, 40 holes aggregating 16,000 feet, 1954.

Geology The mineral deposit lies along the contact between biotite gneiss and overlying garnetiferous-amphibole-biotite gneiss. It strikes N.50°—60°W., dips 45°NE., and consists of a dark-coloured biotite gneiss and intrusive pegmatite, both of which have been replaced by disseminated-to-massive sulphides. The mineralization consists chiefly of pyrite and pyrrhotite, with abundant sphalerite, some chalcopyrite and quartz, and, in places, a little galena.

Dimensions and Grade The deposit has been traced by diamond-drilling for a strike length of 1,100 feet. It contains an ore shoot 700 feet in length. This ore shoot persists down the dip to depths of up to 700 feet. It ranges up to 20 feet in thickness and averages 8.4 feet; it has been estimated to contain 321,095 tons of ore having an average grade of 1.05 percent copper, 3.44 percent zinc, and 0.91 ounces of silver per ton.

References O.D.M., resident geologist, Port Arthur, files.
Northern Miner, June 23, 1955.

NORANDA MINES, LIMITED

Location 3½ miles north of the east end of Expansion Lake, Rickaby township, Sturgeon River area.

Metal Present Copper.

Development 13 diamond-drill holes, aggregating 4,040 feet, bored in early 1956.

Geology The deposit strikes N.55°E. and dips steeply south. It consists of pyrite, pyrrhotite, some chalcopyrite, and minor sphalerite and galena. The sulphides replace, and are disseminated in, fine-grained to medium-grained acid tuff and agglomerate.

Dimensions and Grade The deposit has been traced for a length of 700 feet by diamond-drilling and ranges up to about 40 feet in thickness. Drill core samples range in value up to 2.60 percent copper and 2.7 ounces of silver per ton over a length of 1.2 feet; and 1.08 percent copper, 1.26 ounces of silver per ton, and 4.68 percent zinc over a length of 3.0 feet in hole No. 4. The grade of the deposit is reported to be low.

Reference O.D.M., resident geologist, Port Arthur, files.

PIC NICKEL MINES, LIMITED

Location East of the Pic River, 17 miles north of Heron Bay station on the Canadian Pacific railway.

Metals Present Copper, nickel.

Development Surface work; in 1953 an aeromagnetic survey was done, and 14 drill holes, aggregating 2,863 feet, were bored by Pic Nickel Mines, Limited.

Geology Drilling indicated the presence of pyrrhotite, chalcopyrite, and pyrite in altered volcanics west of a north-south-trending body of dunite and related rocks. The mineralized zone has been traced by drilling for over 250 feet along strike. The sulphides occur both as fracture fillings and as disseminations in the host rock.

Dimensions and Grade The over-all dimensions of the deposit are not known; the average grade is reported to be low.

Reference O.D.M., Vol. XL, 1931, pt. 2, p. 33.

Remarks Formerly Beggs-Currie property.

POTTER, RAY, AND ASSOCIATES

Location Glacier Creek, Georgia Lake area, approximately 15 miles east of McKirdy on the Port Arthur–Longlac branch line of the Canadian National railway.

Metal Present Copper.

Development Geological mapping, electromagnetic survey; drilling, 13 holes, aggregating about 4,000 feet, in 1956.

Geology Mineralization consists of disseminated pyrite and chalcopyrite in breccia fragments along a vertical fault zone striking N.20°E. The fault zone ranges up to about 100 feet in width, and lies along the westerly contact of a schist-gneiss complex and granite. The breccia fragments are cemented by feldspar veins and quartz.

Port Arthur—Continued

Dimensions and Grade The copper mineralization has been located in 10 drill holes, 200–400 feet apart, over a strike length of 2,400 feet. One drill hole is reported to have cored material averaging about 0.5 percent copper over a width of 104 feet. To the south and north of the drilled section, where the fault zone is bounded to both the east and west by granite, the mineralization dies out.

Remarks Property optioned to Frobisher, Limited, early in 1956; and MacLeod-Cockshutt Gold Mines, Limited, late in 1956.

PROSPECTORS AIRWAYS COMPANY, LIMITED

Location 1 mile southwest of Drainage Lake in the Killala Lake area, 28 miles north of Marathon on the Canadian Pacific railway.

Metal Present Nickel.

Development Aeromagnetic and airborne scintillometer surveys, trenching and geological mapping, 1954.

Geology Mineralization consists of disseminated pyrite and pyrrhotite in a dike-like body of anorthosite, lying between hornblende syenite to the northwest and granite gneiss to the southeast. The anorthosite body ranges up to about ¼ mile in width, strikes N.45°E., and dips 50°SE. To the northeast, where it enters the property of Baseline Mines, Limited, it decreases markedly in width and swings to assume a strike of N.20°E. and a near-vertical dip. The sulphides are found in a conformable zone near the southeast contact.

Grade Values in nickel are reported to be low.

SARATOGA EXPLORATION COMPANY, LIMITED

Location Township 80, north shore of Lake Superior; claim T.B.38060.

Metals Present Lead, zinc, silver.

Development 14 diamond-drill holes in 1951; shaft-sinking, underground development, and geophysical surveys in 1952 and 1953.

Geology The No. 1 zone, on which the underground work was done, strikes N.80°W. in trachytic volcanics. It is represented by a quartz vein carrying galena and sphalerite, with widths up to 1½ feet reported. Most of the sulphides are confined to a 2-inch seam along the south wall of the vein. The No. 1 zone has been traced over 400 feet along strike.

The No. 2 zone lies 150 feet north of the shaft. Drilling indicates values in lead and zinc over a length of 150 feet.

Grade 400 bags of ore from a pocket at the shaft, estimated at 75 tons, were sampled in 1952. This indicated a grade of 60.49 ounces of silver per ton, 52.94 percent lead, and 15.6 percent zinc.

Reference Northern Miner, Jan. 22, Oct. 22, 1953.

SIVILLE PROPERTY

Ownership William Siville, Toronto.

Name Ursa Major mine.

Location Mining locations A.L.219, A.L.220; 6 miles north of Jackfish station on the Canadian Pacific railway.

Metals Present Copper, lead.

Development A shaft was sunk by previous operators to a depth of 121 feet, and an 88-foot crosscut was driven north on the 118-foot level.

Geology The rock formations in the vicinity of the shaft are chlorite and mica schists of northwest strike. About 400 feet northeast of the shaft a large quartz vein, 6–20 feet wide, is exposed. The vein strikes N.78°W. for several hundred feet and is reported to contain considerable pyrite, chalcopyrite, and galena. Gold is also present, but values are low.

References O.B.M., Vol. X, 1901, p. 85.
O.D.M., Vol. XXX, 1921, pt. 4, p. 19.

D. E. SMITH PROPERTY

Location Township 80, north of, and including, the village of Middleton on the Canadian Pacific railway.

Metal Present Copper.

Development Diamond-drilling, June, 1954.

Geology The property is underlain by a body of gabbro, which is cut by numerous acid dikes, chiefly pegmatite, and, on claims T.B.39296 and T.B.41400, is mineralized with disseminated chalcopyrite, pyrrhotite, and pyrite. The gabbro appears to be a banded eruptive, with layers of magnetite rock and syenite.

Dimensions and Grade The dimensions and over-all grade of the deposit are not known. One intersection in diamond-drill hole No. 3 returned low values in copper over a core length of 48 feet. The best material in this section, from footage 110.0 to footage 115.0, assayed 0.75 percent copper.

Reference O.D.M., resident geologist, Port Arthur, files.

RAY SMITH PROPERTY

Location North shore of Discovery Lake, about 1 mile south of Moss township.

Metal Present Copper.

Development Trenching, drilling, 1956.

Geology Surface work indicated a high ridge of greenstone cut by mineralized sheared zones of northeast strike and vertical-to-steep southerly dip. The sheared zones are exposed over widths up to 6 feet, and appear to occur at widely spaced intervals in the greenstone. In places along the zones the host rock has been highly silicified and replaced by abundant pyrite and chalcopyrite.

Grade Individual sheared zones contain abundant chalcopyrite. However, they are narrow, and do not appear to persist for any great distance on the surface. The results of diamond-drilling have not been reported.

Port Arthur—Continued

Remarks Property held under option agreement in 1956 by Noranda Exploration Company, Limited, and Prospectors Airways Company, Limited.

STRATMAT, LIMITED

Location Along the south shore of Big Duck Lake, about 13 miles north of Schreiber.

Metals Present Copper, molybdenum.

Development Surface trenching, 1920; resistivity survey and drilling, 16 holes aggregating 6,775 feet, 1955.

Geology The Estell showing occurs in hornblende schist along the south shore of Big Duck Lake. In consists of alternating bands of quartz and hornblende schist carrying pyrite, chalcopyrite, copper carbonate, and a little molybdenite. This stringer zone, which dips 60°—65°N., has been traced by drilling from the surface westward for 500 feet and eastward for 200 feet. Other trenches to the east suggest a possible strike length of ½ mile. True widths, as indicated by the drilling, range up to 50 feet.

A second stringer zone lies about 300 feet north of, and parallels, the Estell zone. It has been traced by drilling in an east-west direction for a distance of 900 feet, and has true widths ranging up to 50 feet as before. A third stringer zone of narrower width lies about 100 feet north of, and parallels, the second. Both zones, like the Estell, dip 60°—65°N.

Grade A sample of mineralized quartz from one drill hole, bored at 45 degrees to cut the Estell zone, assayed 0.18 percent copper and 0.16 percent molybdenum over a core length of 2.2 feet; a sample from a second hole indicated 0.48 percent copper and 0.005 percent molybdenum over a core length of 6.4 feet. A low gold content was also indicated in the drilling. Comparable base and precious metal contents were found in the other zones.

Reference O.D.M., Vol. XXX, 1921, pt. 4, p. 22.
O.D.M., resident geologist, Port Arthur, files.

Remarks Formerly known as the Estell property. Acquired by S. Knox and J. Lang in 1954, and subsequently transferred to Stratmat, Limited.

TOMCAR MINES, LIMITED

Property Little Pic copper mine.

Location Township 80, about 1 mile north of Ripple station on the Canadian Pacific railway.

Metals Present Copper, gold.

Development Surface work, 1875.

Geology The property is underlain by basic and acid lavas, agglomerates, and slaty-to-schistose sediments. These have been intruded by gabbro dikes and a stock-like mass of syenite. Chalcopyrite and sphalerite are found in a zone of sheared sediments up to 200 feet in width, between a sinuous gabbro dike on the north and the syenite mass to the south. This zone strikes N.75°E. The best mineralization is found at points where the gabbro dike has curved outwards away from the sheared zone.

Port Arthur—Continued

Dimensions and Grade According to old reports, a test shipment of 4½ tons of ore to Swansea, Wales, was found to contain 10.33 percent copper. This sample came from a deposit 100 feet long and about 3½ feet wide. A channel sample taken from this deposit in the summer of 1952 is reported to have assayed 5 percent copper and 0.12 ounces of gold per ton. (T. W. Page, Nov. 24, 1952.)

References O.D.M., resident geologist, Port Arthur, files.

Remarks The central part of the Tomcar property was first staked by Peter McKellar and associates as claim K.120 in 1875. The property was restaked by T. J. Cook and A. Crout in July, 1952, and was acquired by Tomcar Mines, Limited, in April, 1953.

VIOLAMAC MINES, LIMITED

Location Goodchild Lake, 13½ miles northeast of Marathon on the Canadian Pacific railway.

Metals Present Copper, nickel.

Development Surface work, geological mapping, and drilling, 5 holes aggregating, 1,991 feet, 1954.

Geology The mineral deposit consists of a silicified sheared zone, from 8 to 100 feet in width, in fine-grained diorite. It strikes N.75°W. for a length of 2,300 feet, and dips 75°N. Mineralization consists of pyrite, pyrrhotite, and chalcopyrite in narrow seams that parallel the strike, and in transverse joints.

Grade Assays of samples from surface trenches indicate that the grade increases towards the northwest where the zone narrows, and that it ranges up to about 2 percent copper, 0.5 percent nickel, and 2 ounces of silver per ton across a width of 8 feet. It is understood that diamond-drilling gave inconclusive results. (D. N. Jeffs, 1954.)

References Northern Miner, Sept. 16, 1954.
O.D.M., resident geologist, Port Arthur, files.

WHALEN PROPERTY

Location North shore of Upper Shebandowan Lake, about 3 miles east-southeast of Kashabowie on the Fort Frances–Lakehead line of the Canadian National railway.

Metal Present Copper.

Development Trenching.

Geology The mineral deposit can be traced intermittently for several hundred feet along the north shore of the lake and is exposed across widths up to 50 feet. It strikes east-west and dips vertically-to-steeply north; and consists of sericite schist cut by a few irregular quartz stringers and heavily mineralized with pyrite and subordinate chalcopyrite.

Grade The copper content appears to be higher along the north side of the zone. The grade has not been reported, but visual examination indicates an over-all copper content of 1 percent or less.

Remarks The Whalen sheared zone is one of the strongest structural features exposed in the Shebandowan area.

WILLROY MINES, LIMITED

Location West of the Geco mine at Manitouwadge Lake, about 40 miles northeast of Marathon station on the Canadian Pacific railway.

Metals Present Copper, zinc, silver.

Development Surface work, 1953; drilling, 1954–56; shaft sinking, 1955–56; underground development, 1957.

Geology Three ore zones have been located on the Willroy property. No. 1 ore zone lies 600 feet north and 1,800 feet west of the Geco orebody, in the same horizon of sericitized mica gneiss. It strikes roughly east-west for 1,900 feet, and dips 70°N. to vertical. The orebody contained within it has a maximum horizontal length of 1,590 feet and an average width of 21.0 feet. It lies within the central part of the sericitized gneiss horizon, and consists of disseminated pyrite, pyrrhotite and chalcopyrite, and occasional stringers in quartz. It rakes to the east at about 40 degrees.

No. 2 zone lies about ½ mile west of No. 1 zone. It strikes about N.80°W. throughout the greater part of its length of 1,600 feet, and dips about 70°N. It is a continuous horizon of mineralized iron formation. The mineralization consists principally of pyrite, with pyrrhotite, sphalerite, and galena, and minor amounts of chalcopyrite. The sulphides are concentrated close to the south side of the iron formation, across widths ranging from 7 to over 15 feet. This section forms a core, and to the north and south, the sulphide content of the host rock diminishes. The orebody within No. 2 zone has a maximum horizontal length of 960 feet, and an average width of 14.7 feet. Like No. 1 orebody, it also appears to rake about 40°E. 100 feet south and parallel to No. 2 zone is another horizon of mineralized iron formation. It contains a small ore shoot having a horizontal length of 587 feet and an average width of 21.3 feet.

No. 3 ore zone lies about 700 feet south of the No. 2. It is similar to No. 2 in character. The principal sulphide is pyrrhotite; chalcopyrite is present in significant amounts; galena is scarce. The orebody within No. 3 zone has a maximum horizontal length of 670 feet, and an average width of 18.6 feet. It rakes about 40°E.

Ore Reserves No. 1 orebody is estimated to contain, to a vertical depth of 760 feet, 740,000 tons of material grading 1.48 percent copper, with low values in zinc and silver. No. 2 orebody is estimated to contain, to a vertical depth of 560 feet, 322,170 tons having an average grade of 0.03 percent copper, 6.46 percent zinc and 2.57 ounces of silver per ton; No. 3 orebody, to a vertical depth of 1,150 feet, 1,000,000 tons having an average grade of 1.24 percent copper, 10.27 percent zinc, and 1.80 ounces of silver per ton. The small shoot, 100 feet south of No. 2 orebody, is estimated to contain, to a depth of 254 feet, 100,897 tons having an average grade of 0.03 percent copper, 9.75 percent zinc and 7.77 ounces of silver per ton.

References

O.D.M., Geol. Circ. No. 3, Mar., 1955.
Western Miner, Vol. 30, No. 1, 1957, pp. 35–37.
Northern Miner, Jan. 31, 1957.
O.D.M., resident geologist, Port Arthur, files.

Remarks A mill of 1,000 tons capacity is being constructed and is expected to commence production at 750 tons daily late in 1957.

ZENMAC METAL MINES, LIMITED
(Cleaver Lake Property)

Location Cleaver Lake, 4 miles east and about 13 miles north of Rossport on Canadian Pacific railway.

Metal Present Copper.

Development Surface work; 1,848 feet of drilling, three holes, in early part of 1953.

Geology In the vicinity of the showings the principal rock formations are schists and granite gneisses, which strike north and dip 40°–45°E. These schists and gneisses have been intruded by bodies of syenite porphyry. Several exposures showing chalcopyrite mineralization have been observed. One exposure consists of coarsely crystalline chalcopyrite in narrow seams that parallel the banding in a gneissic rock; another consists of disseminated chalcopyrite in a biotite schist. The showing tested by diamond-drilling consists of disseminated chalcopyrite within syenite porphyry, and has been traced in a north-south direction for 500 feet.

Grade Drill hole No. 8 intersected 5 feet of mineralized material that assayed 0.23 percent copper.

Reference O.D.M., resident geologist, Port Arthur, files.

ZENMAC METAL MINES, LIMITED
(Zenith Zinc Property)

Location 5 miles east and 13 miles north of Rossport; claim T.B.42277.

Metal Present Zinc.

Development Some underground work about 1900; considerable drilling in 1952 and early 1953.

Geology Two closely spaced mineralized zones, containing massive sphalerite, are in an east-trending body of metagabbro. The mineralized zones strike northwest and dip about 40°NE. They consist of lenses and irregular bodies of massive sphalerite, with minor amounts of pyrrhotite and chalcopyrite and, locally, intervening areas of disseminated sphalerite.

Ore Reserves The No. 1 orebody, with a length of 700 feet and an average thickness of 17 feet, is estimated to contain 252,600 tons of ore having a grade of 12.3 percent zinc. The No. 2 orebody has a length of 150 feet and an average thickness of 4 feet. It is said to contain 9,000 tons of ore with an average zinc content of 16.7 percent. (Northern Miner, Apr. 23, 1953.)

References G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 190–93.
O.D.M., map No. 49k, 1940.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Big Duck Lake, 1 mile SW. of; 12 miles N. of Schreiber	O.D.M., Vol. XXX, 1921, pt. 4, p. 23	X	....	....	....
Black Bay, Lake Superior, S. shore	G.S.C., Mem. 167, p. 195	X	....	....	....
Black River, Lake Superior, N. of Slate Islands	G.S.C., Economic Geol. Ser., No. 8, 1930, p. 190	....	....	X	....
Cloud Bay, Lake Superior	G.S.C., Paper 35–1, 1935	X	X	....	....

Port Arthur—Continued

Location	Reference	Metals Present			
		Copper	Nickel	Lead	Zinc
Crooks tp., lot B, Pigeon River area	G.S.C., Paper 35–1, 1935	X	X	....	....
Dorion tp., lot 12, con. VI	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 73	....	....	X	X
Dorion tp., mining location 6L	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 71	....	....	....	X
Dorion tp., N. of., NE. of Dorion mine	O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 71, 72	....	....	X	....
Dorion tp., N. of lot 14, con. XIII	O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 72, 73	....	....	X	X
Dorion tp., lot 5, con. VII	G.S.C., Mem. 167, 1931, pp. 176, 177	....	....	....	X
Dorion tp., lots 9, 10, con. VII	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 73	....	....	X	....
Garden Lake, S. shore of; W. of Lake Nipigon	O.D.M., resident geologist, Port Arthur, files	....	X	....	....
Haines tp., S. shore of East Divide Lake	O.D.M., resident geologist, Port Arthur, files	....	....	....	X
Haines and Begin tps., W. of Lower Shebandowan Lake	O.D.M., resident geologist, Port Arthur, files	X	X	....	....
Long Lake, N. shore of; W. of Long Lac station	O.B.M., Vol. XXVI, 1917, p. 245	X	....	....	....
Loon Lake, 1½ mile N. of; W. of McTavish tp.	G.S.C., Mem. 167, 1931, p. 162	....	....	X	X
MacGregor tp., lot 3A	G.S.C., Mem. 167, 1931, p. 158	....	X	....	....
McTavish tp., mining locations 21, 24, Blende Lake	Rept. Royal Commission, Ontario, 1890, p. 30	....	....	X	X
McTavish tp., lots 5–7	O.D.M., Vol. XXVIII, 1929, pt. 6, pp. 77–79	....	....	X	X
McTavish tp., Pearl station	G.S.C., Economic Geol. Ser., No. 13, 1934, p. 57	X	....	X	X
McTavish tp., mining lots 1–3	O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 81, 82	....	....	X	X
McTavish tp., lot 4, con. IV	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 79	....	....	X	....
McTavish tp., lot C; 2½ miles S. of Ancliff	O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 79–81	X	....	X	....
McTavish tp., lot 6	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 79	....	....	X	X
Middleton station, 1½ miles W. of	O.D.M., Vol. XXX, 1921, pt. 4, p. 25	....	....	X	....
Moss tp., E. of; SW. of Burchell Lake	O.D.M., resident geologist, Port Arthur, files	X	....	....	....
Nipigon tp., lot 9, con. III	G.S.C., Mem. 167, 1931, pp. 181, 182	X	....	X	X
Pardee tp., Pigeon River area; near Crystal Lake	T. W. Page, personal communication	X	X	....	....
Pardee tp., near Pigeon River P.O.	G.S.C., Paper 35–1, 1935	X	X	....	....
Pardee tp., lot 13, con VIII	G.S.C., Paper 35–1, 1935	X	X	....	....
Pays Plat., 12 miles N. of	O.D.M., P.R. 1952-4, 1952, p. 19 O.D.M., resident geologist, Port Arthur, files	....	....	X	....
Pie Island, Lake Superior	G.S.C., Mem. 167, 1931, pp. 187, 188	....	....	X	X
Pigeon River area, Jarvis Point, Jarvis location	G.S.C., Paper 35–1, 1935	X	X	....	....
Rickaby tp., Sturgeon River area; claims T.B.42547–T.B.42555	O.D.M., P.R. 1952-4, 1952, p. 20	....	....	X	X
Roslyn Lake, E. shore; 28 miles N. of Rossport on C.P.R.	J. S. Brodie, communication	X	....	....	....
Savant Lake, E. shore	O.D.M., Vol. XXXVII, 1928, pt. 4, p. 72	....	X	....	....
Savant Lake, E. shore	O.D.M., Vol. XXXVII, 1928, pt. 4, p. 78	X	....	....	....
Savant Lake area, Neverfreeze Lake	O.D.M., Vol. XXXVII, 1928, pt. 4, p. 79	X	....	....	....
Schreiber, 1½ miles SE. of	O.D.M., Vol. XXX, 1921, p. 23	X	....	....	....
Schreiber, 11 miles NW. of; mining location E. 79	O.D.M., Vol. XXX, 1921, pt. 4, p. 24 G.S.C., Economic Geol. Ser., No. 8, 1930, p. 195	....	....	....	X
Schreiber, 7 miles NE. of; Ellis Lake	O.D.M., Vol. XXX, 1921, pt. 4, p. 23	X	....	....	....
Schreiber, 2 miles SE. of; on Crooked Green Creek	O.D.M., Vol. XXX, 1921, pt. 4, p. 23	X	....	....	....
Sturgeon Lake area	O.B.M., Vol. XX, 1911, pt. 1, pp. 142–45	X	....	....	....
Taradale, 5 miles E. of Stevens on C.N.R.	O.D.M., resident geologist, Port Arthur, files	X	....	....	....
Thomson Island, Lake Superior	G.S.C., Paper 35–1, 1935	X	X	....	....
Township 91, near C.P.R.	O.D.M., Vol. XXXVIII, 1929, pt. 6, pp. 83–85	....	....	X	X
Tripp Point, Cloud Bay, Lake Superior	G.S.C., Paper 35–1, 1935	X	X	....	....
Upper Shebandowan Lake, claims T.B.3178–T.B.3179	O.D.M., XXXVII, 1928, pt. 4, p. 148	X	....	....	....

Red Lake Mining Division

CAMPBELL ISLAND MINES AND EXPLORATIONS, LIMITED

Location Earngey township, Uchi Lake; claim K.R.L.38014 and adjacent claims.

Metals Present Copper, nickel, cobalt.

Development Extensive surface work; 6 diamond-drill holes, totalling 390 feet in 1956.

Geology The showings occur entirely within a coarse-grained hornblende gabbro cutting greenstone, sediments, and various intrusive rocks. The gabbro is 200 feet wide and has a maximum width of 300 feet. The southern 1,000 feet of this body strikes north then swings to the northwest for an additional length of 1,800 feet. Chalcopyrite, pyrrhotite, and pyrite occur where the gabbro is sheared and especially at the contacts of narrow diabase dikes, which strike north to northeast and are younger than the gabbro.

Dimensions and Grade The main showing lies in the north-south portion of the gabbro, strikes near north, and is about 300 feet long; although mineralization is not continuous, it is found along a length of 600 feet. The average width of mineralization cut in five drill holes is 21 feet. An 18-foot chip sample ran 1.08 percent copper and 0.40 percent nickel. A 22-foot chip sample ran 0.44 percent copper and 0.12 percent nickel. The best 25 feet of drill core assayed 0.62 percent copper and 0.04 percent nickel. Core assays gave as high as 0.03 percent cobalt.

Reference O.D.M., map No. 48g, 1939.

Remarks Overburden is a hinderance to development, which is continuing. Property formerly known as the Colberj discovery.

PRESTON EAST DOME MINES, LIMITED
(Keg Lake)

Ownership Carl Hewston, Balmertown.

Location Byshe township, north shore of Keg Lake, 13 miles east of Red Lake.

Development Geological mapping, soil sampling.

Geology Disseminated chalcopyrite in lenses that lie, probably in drag folds, along the contact of lava with the Howey diorite.

Reference O.D.M., map No. 49b, 1940.

Remarks Optioned to Preston East Dome Mines, Limited, 1956.

SENET COPPER MINES, LIMITED

Ownership Capital Lithium Mines, Limited.

Location East side of the southern portion of Setting Net Lake, 125 air miles north of Red Lake.

Metals Present Copper, gold.

Red Lake—Continued

Development Extensive stripping and trenching 1928; in 1956 geological survey; geophysical surveys: magnetic, self-potential, resistivity, and electromagnetic; diamond-drilling commenced late October, 1956—10 holes totalling 3,739 feet; drilling being continued in 1957.

Geology There are four copper showings and two gold showings on the 19-claim group. One gold showing along the west margin of a porphyry stock has minor-to-moderate amounts of pyrite and chalcopyrite occurring in multiple quartz veins and disseminated in the porphyry between the veins. The copper showings are in silicified andesite and consist chiefly of disseminated-to-massive pyrite and pyrrhotite with chalcopyrite. One showing is along the east contact of a basic intrusive.

Dimensions and Grade Drift is a hinderance to tracing the mineralized zones. The main showing, in a small outcrop, gave an assay of 2.55 percent copper over 18.0 feet and 1.90 percent over 5 feet, these two widths being separated by 9 feet of barren material. The showing, now called the Springer showing, is 4–5 feet wide and over 400 feet long.

Remarks Some of the showings are indicated on O.D.M., map No. 38a, 1929.

SPLIT ROCK MINES, LIMITED

Location Snake Lake, 38 miles east of Red Lake; most development on claims K.R.L.35824–35826.

Metals Present Copper, silver.

Development Trenching, 1955; electromagnetic survey; and eight diamond-drill holes, totalling 1,850 feet, in 1956.

Geology Property is underlain by granite, amphibolite, and east-striking biotite; biotite amphibole gneiss, garnetiferous biotite amphibole gneiss and *lit par lit* gneiss; and a small amount of highly metamorphosed thin-bedded sediments and iron formation. Pyrrhotite occurs with very much smaller amounts of chalcopyrite, both disseminated and in stringers, associated with shear zones and quartz or silicification. Pyrite and sphalerite have also been identified.

Dimensions and Grade The two surface showings are lenses of undetermined length within narrow shear zones. A chip sample of the best of these two showings gave 4.65 percent copper and 1.18 ounces of silver per ton over 4 feet. (W. C. Ringsleben.) Diamond-drilling indicated mineralization is widespread, but no intersections approached commercial grade.

Reference O.D.M., map No. 36e, 1927.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Ball tp., Red Lake Area, Galena Island	O.D.M., P.R. 1952-4, 1952, p. 21	....	....	X	....
Balmer tp., NW. corner, Red Lake area	Northern Miner, Aug. 12, 1954	X	....	....	....
Belanger tp., W. part; claim K.R.L.37781	O.D.M., resident geologist, files	X	....	....	....

Red Lake—Continued

Location	Reference	Metals Present			
		Copper	Nickel	Lead	Zinc
Berens River Mines, Ltd. 200 miles NW. of Sioux Lookout	O.D.M., Vol. XLVII, 1938, pt. 7, pp. 79–92	X	....	X	X
Quarter-mile W. of above location	O.D.M., Vol. XXXVIII, 1929, pt. 2, p. 79	X	....	X	....
Gorman River, 150 miles NW. of Red Lake	Northern Miner, Jan. 31, 1952	....	....	X	X
McFinley Red Lake Gold Mines, Ltd., Red Lake; claim K.1499	O.D.M., P.R. 1952-4, 1952, p. 21	....	....	X	X
Mitchell tp., Woman Lake area; cancelled claim K.R.L.32538	O.D.M., P.R. 1952-4, 1952, p. 21	X	....	....	X
Mitchell tp., Woman Lake area; claims K.R.L.38758, K.R.L. 38127	O.D.M., P.R. 1952-4, 1952, p. 21	X	....	....	X
Setting Net Lake, 200 miles NW. of Sioux Lookout	O.D.M., Vol. XXXVIII, 1929, pt. 2, p. 79	X	....	....	X
Uchi Lake; claim K.R.L.38014 (or 38024)	O.D.M., P.R. 1952-4, 1952, p. 21	X	X	....	....

Sault Ste. Marie Mining Division

ABBICAN MINES, LIMITED

Location Township 175, central part, 35 contiguous claims in 1957; main showing on claim S.S.M.38546.

Metal Present Copper.

Development Surface work; bulk sampling; over 6,000 feet of drilling (25 holes) in 1955 and 1956.

Geology Quartz-chalcopyrite veins trend east-west and dip steeply north in sedimentary rocks of Huronian age intruded by diabase. The two main veins are exposed in three sections, A, B, and C zones. The A zone has been traced 1,200 feet, the B zone 800 feet, and the C zone 300 feet.

Dimensions and Grade The A zone contains 105,750 tons, averaging 1.08 percent copper after dilution allowance over a length of 600 feet; true width of 10 feet, to a depth of 235 feet. (J. de Geoffroy, Dec. 1956.)

Reference Northern Miner, July 12, 1956.

Remarks Normingo Mines, Limited, owns a 50 percent interest in the claim group.

BAR-FIN MINING CORPORATION, LIMITED

Location Thompson township, north half of section 13.

Metal Present Copper.

Development Several surface pits; a shaft 130 feet deep with about 250 feet of lateral work done at the 117-foot level. Three holes drilled in 1952 by Strathallan Enterprises; a little drilling done by Parkway Mines, Limited, in 1954. Drilling and underground examination of old workings by the Bar-Fin Mining Corporation, Limited, in 1956.

Geology A vein strikes N.74°E. and occurs in relatively flat-lying sediments intruded by diabase. Chalcopyrite occurs in a quartz-carbonate gangue and in a vein breccia. Near the shaft the vein is 1–4.5 feet wide and contains up to 8 percent copper.

Production In 1906, 120,000 pounds of copper, valued at $12,000, from 1,500 tons of ore raised.

References

O.B.M., Vol. XV, 1906, p. 69.
O.B.M., Vol. XVI, 1907, pt. 1, p. 70.
Can. Dept. Mines, *Mining and Metallurgical Industries of Canada,* 1907–8, pp. 399–401.

Northern Miner, Dec. 30, 1953; Feb. 25, 1954; Oct. 6, 1955; May 10, Nov. 1, 1956.

Remarks The property was worked by the Northern Ontario Consolidated Copper Company in 1906. Results of 1956 work by the Bar-Fin Mining Corporation, Limited, were discouraging, and no further work is planned.

BILTON OPTION
(Mogul Mining Corporation, Limited)

Location Patton township, sections 27 and 28.

Metal Present Copper.

Development 31 drill holes totalling 7,650 feet.

Geology Quartz-chalcopyrite veins trend east-west in the Gowganda formation. Twenty-nine drill holes tested a zone along a length of 2,600 feet and to a maximum depth of 425 feet, and indicated two mineralized zones. The West body was indicated over a lengh of 450 feet by five drill holes; the East body, which is separated from the West body along the strike by 200 feet of almost barren material, has an indicated length of 400 feet by four drill holes. The lower limit of better grade mineralization in both bodies is about 200 feet below surface.

Dimensions and Grade Combined East and West bodies contain an estimated 95,160 tons, averaging 1.72 percent copper over an average width of 7.3 feet to a depth of 200 feet. (F. C. Knight, Aug. 1956.)

BRETON PROPERTY
(Sylvanite Gold Mines, Limited, Option)

Location Township 28, range XIII; claims S.S.M.35136, S.S.M.35137, S.S.M.35127, S.S.M. 35128.

Metal Present Copper.

Development 22 drill holes in 1955 by Sylvanite Gold Mines, Limited.

Geology Chalcopyrite occurs in a breccia of quartz, greenstone, and porphyry near a granite contact.

Dimensions and Grade The mineralization was traced by drilling over a strike length of 700 feet. Some of the holes cut several zones of low-grade copper mineralization. The best intersection averaged 3.45 percent copper over a core length of 26.5 feet. (Company plans by W. D. Stroud.)

Reference Northern Miner, Dec. 30, 1954; Mar. 10, 1955.

Remarks The option was dropped by Sylvanite Gold Mines, Limited.

BRUCE MINE
(Algo-Bruce Mines, Limited)

Location Village of Bruce Mines, Plummer Additional township.

Metal Present Copper.

Development Ten old shafts and extensive lateral work, the deepest level being at the 527-foot horizon.

Geology Quartz-chalcopyrite veins occur in diabase. There are four principal veins. The main vein has a known length of 8,000 feet, and stopes have been opened for a total of 2,000 feet along the lode. The average grade of the ore mined in the earlier operations is said to have been 4—5 percent copper.

Production There are no exact figures on production. W. H. Collins (G.S.C. Mem. 143, 1925, p. 125) stated that the value of production to 1916 was estimated to be between $3,500,000 and $7,000,000.

Sault Ste. Marie—Continued

Ore Reserves At the Taylor shaft about 40,000 tons, averaging 1.8 percent copper, above the 155-foot level. (S. E. Wolfe, 1942.)

References O.D.M., Vol. XXIV, 1915, pt. 1, pp. 231–34.
G.S.C. Mem. 143, 1925, p. 125.

Remarks The Bruce mine was discovered in 1846 and produced intermittently until 1921. From 1914 to 1921 it was operated by the Mond Nickel Company, Limited, and siliceous ore was shipped to the Coniston smelter for fluxing.

BRUCE-PRESTO MINES, LIMITED

Location Plummer Additional township, about 3,000 acres held in concessions VI, VII, and VIII of the Keating and Cuthbertson locations. The Bald Dome showing is on lots 6–8, concessions VII and VIII, Cuthbertson location. The Steinberg showing is on the north half of lots 1–3, concession VI, Keating location. The Campbell-Dukes showing is on the north half of lots 7 and 8, concession VI, Keating location, near Bruce Mines.

Metal Present Copper.

Development Surface work, geophysical survey, and about 20,000 feet of drilling in 1955–56.

Geology The Bald Dome showing consists of a diabase-quartzite-greywacke breccia zone with a quartz-carbonate matrix. Chalcopyrite with minor bornite and chalcocite occur in the matrix and partly replace some of the fragments. The exposed breccia zone is at least 150 by 80 feet with the main mineralized area confined to 50 by 10 feet. The average grade has been estimated at 1–2 percent copper.

The Steinberg showing consists of a quartzite breccia in the Gowganda formation. Spotty chalcopyrite mineralization is found in the quartz-carbonate matrix. The main showing is in a pit 30 by 10 by 10 feet and would average about 1 percent copper.

The Campbell-Dukes showing is a quartz-chalcopyrite vein zone along a quartzite-diabase contact. The vein is traced 600 feet and is 6–10 feet wide with an average grade of about 2.5 percent copper in exposed areas.

Production In 1919, five cars of ore, totalling 139 tons, were shipped from the Steinberg showing. This averaged 1.59 percent copper.

Ore Reserves At the Steinberg showing 67,000 tons averaging 1.82 percent copper. At the Campbell-Dukes showing 33,000 tons, averaging 1.2 percent copper. (D. A. Firth for Bruce-Presto Mines, Limited, Dec. 1956.)

Reference Northern Miner, June 7, 1956.

Remarks Exploration in 1955–56 was under the direction of Preston East Dome Mines, Limited, which holds a controlling interest in the company.

CHENEY MINES, LIMITED

Location Gould township, lots 6–8, concession V.

Metal Present Copper.

Development Surface drilling; 1,625 feet of drifting and 860 feet of crosscutting on the 150-foot level in 1929 by Sudbury Basin Mines, Limited; 8 holes, totalling 4,723 feet, were drilled in 1955–56.

Geology The main quartz-chalcopyrite vein has been traced 4,780 feet. Certain sections of the vein contain 5–15 percent copper across 2–4 feet. The country rock is sediments cut by diabase dikes.

Production In 1916 the mine produced 33,468 pounds of copper valued at $8,564.

Dimensions and Grade On the 150-foot level there is a shoot 192 feet long and 5 feet wide, averaging 5.6 percent copper. There are 13,445 tons, averaging 5.6 percent copper, above the 150-foot level. (A. S. Dadson, 1942.) In 1955–56, six holes were drilled to intersect the vein at the 300-foot horizon. Three of these gave intersections of 2 percent copper over widths of 8–11 feet. One hole, drilled to the 1,000-foot horizon, failed to locate the vein.

Reference O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 10–15.

CHIPMAN LAKE MINES, LIMITED

Location Johnson township, northeast quarter of south half of lot 0, one mile north of Portlock station; claim S.S.M.15114.

Metal Present Copper.

Development An old shaft 160 feet deep with 280 feet of lateral work on the 100-foot level; four drill holes by Chipman Lake Mines, Limited, in 1951.

Geology A vein, up to 3 feet wide, striking N.80°E., is exposed for a length of 50 feet near the shaft. Underground, two veins are reported up to 3 feet in width. The country rock is gently dipping quartzite of the Cobalt series. Several tons of rich chalcopyrite-chalcocite-bornite-quartz ore may be seen on the mine dump.

Reference Northern Miner, Nov. 22, Nov. 29, 1951.

Remarks Mine has been idle since 1901. It was acquired by Chipman Lake Mines, Limited, in November, 1951.

CONSOLIDATED BI-ORE MINES, LIMITED

Location Township 1A, Cobre Lake; claims M.301–303, M.306, M.307.

Metal Present Copper.

Development East adit driven 1,040 feet, west adit 1,368 feet; stoping above west adit section in 1948–49; surface drilling in 1950–51.

Geology Fissure veins lie along faults in flat-lying cherty quartzite of the Cobalt series. The east vein strikes S.80°E., is exposed for 850 feet along strike, and is 3–5 feet wide. A 1,000-foot section of Cobre Lake separates east and west adits. The tunnel on the west vein runs S.80°W., and the main stope is 150 feet long and up to 25 feet wide. Some 9,547 tons of ore were milled from January to July, 1949, and averaged 4.9 percent copper. The veins are locally rich in chalcopyrite with lesser specularite in a calcite-quartz gangue.

Production In 1948–49, 1,647,079 pounds of copper, valued at $335,998, from 2,726 tons of concentrates were shipped.

References O.D.M., Vol. XLVIII, 1939, pt. 2, p. 10.
Northern Miner, Oct. 28, 1948; Sept. 27, 1951; Aug. 30, 1956; Feb. 7, 1957.

Remarks The property was formerly owned by White Lake Mines, Limited. Copper concentrates were shipped to the Noranda smelter in 1949. A Mace smelter was installed at the property in 1956, but no shipments have been reported from this operation.

CONSOLIDATED NEGUS MINES, LIMITED
(Ryan Township Property)

Location Ryan township, 29 contiguous claims. Main showing on claim S.S.M.43190.

Metal Present Copper.

Development Surface work; geophysical survey; 7 drill holes, totalling 2,334 feet, in 1955–56.

Geology Disseminated chalcopyrite in a body of epidiorite.

Dimensions and Grade 3 drill holes showed disseminated chalcopyrite, assaying from 0.10 to 0.25 percent copper over considerable core length. (M. C. Halstead, Feb., 1956.)

COPPER PRINCE MINES, LIMITED

Location Township 168; claims S.S.M.6204, S.S.M.6206, S.S.M.6198, S.S.M.6199.

Metal Present Copper.

Development Surface work in 1928; 21 drill holes in 1929 by The Consolidated Mining and Smelting Company of Canada, Limited; four drill holes by Copper Prince Mines, Limited, in 1951

Geology Quartz-chalcopyrite veins occur in sediments of the Cobalt series that are intruded by diabase. The discovery vein is 8 to 20 feet wide, was traced 1,000 feet on surface, and contains erratic mineralization.

Dimensions and Grade There are four shoots on surface, as follows: (1) 310 feet long, 6.3 feet wide, averaging 3 percent copper; (2) 60 feet long, 9.7 feet wide, averaging 1.9 percent copper; (3) 45 feet long, 6.6 feet wide, averaging 2.3 percent copper; and (4) 110 feet long, 9.6 feet wide, averaging 0.9 percent copper. Nine holes drilled in 1929 showed copper values ranging from 1 to 4.8 percent over core lengths of 2.5–14.5 feet.

Remarks The showing was staked by S. Dillabough in 1928. Surface work and drilling were done in 1928–29 by The Consolidated Mining and Smelting Company of Canada, Limited.

COPPER QUEEN MINE

Ownership J. Krupp and associates, Milwaukee, Wisconsin, U.S.A.

Location Morin township, lots 3–6, concession IV.

Metal Present Copper.

Development In 1904, two shafts were sunk to depths of 85 and 140 feet.

Geology A fissure vein lies along the contact of a diabase dike and granite capped by patches of Gowganda conglomerate. The main vein is 4–10 feet wide and has been traced 1,900 feet along strike. It strikes east and dips vertically. Short sections of the vein are rich in chalcopyrite and specularite, but most of it is poorly mineralized.

Reference O.D.M., Vol. XIII, 1904, pt. 1, p. 80.

COPPERCORP, LIMITED

Location Mamainse Point, Lake Superior, 60 miles north of Sault Ste. Marie; Quebec and Lake Superior location and Montreal Mining Company location.

Metal Present Copper.

Development Old shafts and surface workings; 19 drill holes by Macassa Mines, Limited, 1949; 33,342 feet of drilling by C. C. Huston and associates, 1951; six additional holes, 1952. Coppercorp has sunk a shaft 550 feet and done lateral work on the 250-, 375-, and 500-foot levels.

Geology Chalcocite, chalcopyrite, and native copper occur in gently dipping Keweenawan amygdaloidal lava flows and conglomerate. Drilling has located four brecciated and fractured zones that contain chalcocite. The main zones are located along faults. The C zone has been traced 4,500 feet, dips normal to the bedding of the host rocks, and is 5–35 feet wide. The C-2 zone, on the hanging wall of the C zone, strikes at right angles to it and consists of two members, 10 and 30 feet wide. The S zone was traced 3,100 feet and is 8–15 feet wide. The M zone has been traced for 1,350 feet and is up to 8 feet wide.

Dimensions and Grade To Feb., 1957, on C zone, 352,850 tons averaging 2.37 percent copper, or 629,544 tons averaging 1.75 percent copper, to a depth of 58 feet below the 500-foot level, after 20 percent dilution allowance. (J. C. Perry, President, Feb. 7, 1957.) No tonnage estimate available for other zones.

References O.D.M., Vol. LXII, 1953, pt. 4, pp. 21–23.
Northern Miner, July 5, Aug. 9, 1956; Feb. 7, 1957.

Remarks The property was optioned by C. C. Huston and associates in 1951, and acquired by Coppercorp, Limited, in 1955.

DESBARATS SHOWINGS

Location Tarbutt township, north half, lot 1, concession I. Tarbutt Additional township, north half, lot 1, concession VI; 2–3 miles northwest of Desbarats village.

Metal Present Copper.

Development Surface work on lot 1, concession I, Tarbutt township; 15 drill holes by Kennco Explorations (Canada), Limited, in 1956.

Geology Pyrite and chalcopyrite in pink and purple quartzite beds of the Cobalt series that dip 10–12 degrees northwest and west. The sulphides are confined to certain beds and may be of sedimentary origin with later remobilization. There is little evidence of structural disturbance.

Dimensions and Grade Drilling suggests the possibility of widespread mineralization, but the average copper content is well below commercial limits. Some samples contain up to 3 percent copper.

Remarks In 1955, Aberdoon Mines, Limited, held north half lot 1, concession I, Tarbutt township, and did some surface work. Kennco Explorations (Canada), Limited, drilled at both locations mentioned above in 1956.

GLAGOMA COPPER MINES, LIMITED

Location Gladstone township, northwest quarter of north half lot 1, concession II, 1½ miles northeast of Iron Bridge.

Metal Present Copper.

Development Surface work; two old shafts; the main shaft is probably 250 feet deep with levels at 150 and 250 feet; 6 drill holes in 1951.

Geology Quartz-carbonate vein with chalcopyrite, striking N.80°E. The western section of the vein, exposed at the Hydro-Electric Power Commission transmission line, is 250 feet long. The eastern section is traced about 400 feet on surface. The 500 feet of intervening ground is drift covered. The vein is up to 7 feet wide and occurs in diabase.

Production In 1917, 1,785 pounds of copper from 28.8 tons of ore valued at $468.

Dimensions and Grade Western surface showing is 150 feet long, averages 4 feet in width, with 3.5 percent copper. No information on shaft area. (D. C. McKechnie, Oct., 1951.)

References O.D.M., Vol. XXVI, 1917, p. 89.
O.D.M., Vol. XXVII, 1918, pt. 1, p. 98.

Remarks The underground work was probably done by the Sudbury Copper Company, Limited, in 1916–17. The property was optioned to the International Cobalt and Silver Mining Company, Limited, in 1956.

GLENDALE MINES AND PROPERTIES, LIMITED

Property Taylor copper property.

Location Anderson township; the east boundary of the property adjoins the property of Glenrock Gold Mines, Limited.

Metal Present Copper.

Development An old shaft, probably 112 feet deep; a 60-foot adit; surface work.

Geology Showings are located on the probable western continuation of the main Glenrock shear. A quartz-chalcopyrite vein lies in a shear along the north contact of a diabase dike with granite. The vein has been traced 900 feet and is still open. The width of the vein is from 2 to 15 feet, but the average copper content is probably low. The vein follows a gorge and extends up a cliff.

References O.B.M., Vol. XI, 1902, p. 272.
O.B.M., Vol. XIII, 1904, pt. 1, p. 82.

GLENROCK GOLD MINES, LIMITED

Location Anderson and Chesley townships; claims S.S.M.12605–12606.

Metals Present Copper, gold.

Development In 1904, No. 1 shaft was 213 feet deep with lateral work on the 200-foot horizon.

Geology Quartz-chalcopyrite veins occur in a sheared zone along a granite-diabase contact. There are three showings over a distance of 2,000 feet along the shear. On surface the western showing is 22 feet long and 7 feet wide; the eastern showing is 60 feet long, and 10 inches to 2 feet wide. The ore dump at the shaft is estimated to average 4 percent copper. Low gold values are associated with the copper mineralization.

Sault Ste. Marie—Continued

Dimensions and Grade Very little information available. A bulk sample of 480 pounds, sent to the Mines Branch, Ottawa, for testing purposes in 1948, assayed 9.84 percent copper and 0.085 ounces of gold per ton.

References O.B.M., Vol. XIII, 1904, pt. 1, p. 81.
Northern Miner, Apr. 17, 1952.

Remarks This was originally known as the Ranson mine.

JARDUN MINES, LIMITED

Location Jarvis and Duncan townships, 9 miles north of the Garden River on highway No. 17.

Metals Present Lead, zinc, silver, copper, gold.

Development At No. 1 zone (Victoria mine) No. 5 shaft has three levels, the deepest being at the 383-foot horizon.

No. 2 zone is at the Cascada mine, which has an old shaft.

No. 3 zone lies 1,600 feet northwest of the Victoria mine and will be developed by a crosscut from the third level of No. 1 zone.

No. 4 zone is at Weashkog Lake. There is a shaft 400 feet deep with lateral work at 125-, 225-, and 375-foot levels. Operations ceased here in August, 1956.

Geology At No. 1 zone (Victoria mine) the mineralization is found over widths of 10–35 feet and occurs in two bands of greenstone schist bounded by granite; the schist and quartz veins contain disseminated sphalerite, galena, pyrite, and chalcopyrite.

No. 2 zone consists of copper, lead, and zinc mineralization in a sheared basic dike that cuts granite.

No. 3 zone is a vein-type deposit.

No. 4 zone, which was discovered in 1951, consists of a mineralized basic dike (?) with heavy mineralization across a few feet, over a length of 400 feet.

Production 1954–55, 9,478 tons of concentrates shipped, valued at $1,625,671.

Ore Reserves At No. 1 zone, 160,000 tons averaging 5.28 percent combined lead and zinc, and 1.73 ounces of silver per ton.

At No. 2 zone, 20,000 tons, averaging 7.25 percent combined lead and zinc, and 1.52 ounces of silver per ton.

At No. 3 zone, 19,367 tons averaging 9.56 percent combined lead and zinc, and 1.10 ounces of silver per ton. (G.E.A. Edwards, August, 1956.)

References O.D.M., map No. 352, 1926.
O.D.M., Vol. XXXVII, 1928, pt. 3, pp. 74–76.
G.S.C., Economic Geol. Ser., No. 8, 1930, p. 183.
Northern Miner, Jan. 21, Feb. 18, 1954; June 30, 1955; Nov. 1, 1956.

Remarks A 250–300-ton mill commenced production of concentrates in May, 1954; about 200 tons milled daily in August, 1956.

LOCK CITY COPPER MINES

Location Kehoe township, north side of Echo Lake. Lots A, B, C, and D, Garden River Indian Reserve.

Metal Present Copper.

Development Old adit and pits; surface work; 15 drill holes.

Geology Quartz-chalcopyrite veins in greywacke and arkose. On lot A the vein has been traced for 400 feet.

References Report of the Royal Commission on Mineral Resources of Ontario, 1890, pp. 91, 92.
O.B.M., Vol. VIII, 1899, pt. 2, p. 124.

Remarks The showings were originally described as the Austin copper mine.

MARICONA MINERALS, LIMITED

Location Pointe aux Mines, Lake Superior; 70 miles north of Sault Ste. Marie.

Metal Present Copper.

Development Old workings; 56 drill holes, totalling 23,000 feet, by Maricona Minerals in 1955 and to August, 1956.

Geology Chalcocite, chalcopyrite, and native copper occur in vein breccias in Keweenawan lava flows that overlie a granitic complex.

Dimensions and Grade In the old mine area, 295,405 tons, averaging 1.17 percent copper within a length of 1,098 feet and to a depth of 345 feet. The average width is 8.1 feet. (A. S. Bayne, Feb., 1956.)

References O.D.M., Vol. LXIV, 1955, pt. 3, p. 11.
Northern Miner, Sept. 29, 1955; Mar. 8, 1956.

NEW KELORE MINES, LIMITED

Property Leased from Lakemount Mines, Limited.

Location Township 28, range 24, near Sunrise and Elbow lakes.

Metals Present Nickel, copper.

Development Surface work; geophysical surveys; approximately 30,000 feet of drilling by N. A. Timmins Explorations (Ontario), Limited, in 1945. Additional drilling by Kelore Mines, Limited, in 1952–53, and by New Kelore Mines, Limited, in 1956.

Geology The main showing is the F zone at Elbow Lake. Here, disseminated chalcopyrite and pyrrhotite occur in the contact zone of a peridotite intrusive body. The mineralized zone has been traced for 900 feet; the best mineralization is confined to widths of 25 feet or less. This is a low-grade, copper-nickel deposit; it contains low values in gold and platinum.

References O.D.M., Vol. LV, 1946, pt. 4, pp. 119–21.
Northern Miner, Feb. 19, Apr. 9, 1953; Oct. 18, Dec. 13, 1956.

Remarks Kelore Mines, Limited, was reorganized as New Kelore Mines, Limited, in 1953.

PATER URANIUM MINES, LIMITED

Location Spragge township, ½ mile E. of Spragge station, C.P.R. SE. part of section 29.

Metal Present Copper.

Development Extensive surface drilling; shaft 1,000 feet deep; lateral work on 950-foot level.

Geology A well-defined zone of fault breccia containing quartz, pyrrhotite, and chalcopyrite occurs in chlorite-hornblende schist and schistose amygdaloidal lava cut by metagabbro. The zone strikes about east-west and dips 80°–85°S.; it lies a short distance south of a regional fault (Murray fault). The vein zone has been traced about 1,200 feet along the strike and to a depth of 1,100 feet by drilling.

Ore Reserves About 500,000 tons, averaging 1.96 percent copper and 0.14 percent cobalt. (G. Gregg, Mine Manager, Aug. 1956.)

References G.S.C. map No. 1970 (Blind River Sheet).
O.D.M., P.R.1953-2, 1953, p. 7.
Northern Miner, June 7, Dec. 13, 1956.

Remarks Development work is under the direction of Rio Tinto Mining Company of Canada, Limited.

PRINCIPLE STRATEGIC MINERALS, LIMITED

Location Gladstone and Patton townships; main showing on claim S.S.M.47911.

Metal Present Copper.

Development Surface work; three old shafts up to 40 feet deep.

Geology A quartz-chalcopyrite vein occurs in diabase that intrudes Gowganda conglomerate and quartzite. The vein strikes east-west, dips almost vertically, and has been traced for 940 feet on the surface. The width is 4–6 feet.

Dimensions and Grade Channel samples from 6 trenches along the vein assayed 2.09–4.58 percent copper across 3–6 feet.

References Northern Miner, Jan. 31, 1957.
Company prospectus.

RENNER PROPERTY
(Falconbridge Nickel Mines, Limited, Option)

Location Township 30, range 19; about 3 miles west of the southwest end of Old Woman Lake.

Metals Present Nickel, copper.

Development Surface work; geophysical survey and 16 drill holes, totalling 6,829 feet, by Falconbridge Nickel Mines, Limited, in 1955–56.

Geology Sulphides occur in a gabbro body near the contact with altered greenstone and granite rocks. Pyrite, pyrrhotite, pentlandite, and chalcopyrite are disseminated throughout the host rock; a few veinlets of massive sulphides are found. The mineralized zone was traced a considerable distance by drilling, but the average nickel-copper content is low.

Remarks Exploration of the showing by Falconbridge Nickel Mines, Limited, was discontinued late in 1956.

ROCK LAKE MINE

Ownership H. W. Darling and P. T. Mulliette.

Location Aberdeen township, south half of lot 3, concession I.

Metal Present Copper.

Development Two adits; a shaft 420 feet deep with lateral work at the 100- and 200-foot levels; seven drill holes by East Sullivan Mines, Limited, in 1950.

Geology Disconnected quartz-carbonate-chalcopyrite veins occur in a sheared and brecciated zone that was traced 1,000 feet along strike by drilling. The country rock is sediments of the Cobalt series cut by quartz-diorite. Low copper values were obtained in drilling operations over core lengths of 5 to 45 feet.

Production From 1899 to 1903, 43,300 tons of ore were raised from which 1,524,000 pounds of copper, valued at $103,082, were produced.

Reference G.S.C., Mem. 143, 1925, p. 126, and accompanying map No. 1969.

ROMAR MINES, LIMITED

Location McMahon and Morin townships.

Metal Present Copper.

Development Surface work; geophysical survey.

Geology Chalcopyrite and bornite are found in quartz-carbonate veins up to 2 feet wide and in adjacent gabbro, which occurs along and near a granite contact. To August, 1956, the zone had been traced about 250 feet and was up to 30 feet wide.

Reference Northern Miner, July 19, 1956.

SAULT LEAD-ZINC MINES, LIMITED

Location Township 3H; claims S.S.M.12754, S.S.M.15521.

Metals Present Zinc, lead, silver.

Development Surface work; shaft sunk 30 feet in 1927; eight holes drilled in 1951 by Crowshore Patricia Gold Mines, Limited.

Geology Quartz veins, up to 7 feet wide, occur in a fault in an altered diabase dike that cuts granite. The fault has been traced 1,600 feet. The veins contain galena, sphalerite, with lesser pyrite, arsenopyrite, and chalcopyrite. Galena is found in stringers up to 4 inches wide and carries silver values.

Dimensions and Grade Four holes showed zinc-lead-silver values over a core length of 1.5–2.5 feet. Only one intersection showed high values.

Reference O.D.M., Vol. XXXVII, 1928, pt. 3, pp. 62–65.

Remarks The property was formerly owned by Ranger Lake Mines, Limited.

SUDBURY CONTACT MINES, LIMITED

Location Montgomery township, lots 2–6, concession V; lots 6–8, concession VI; claims S.S.M.22634, S.S.M.22642.

Metal Present Copper.

Development Surface work; considerable drilling in 1952 by Sudbury Contact Mines, Limited.

Geology The main north vein system has been traced at intervals for 18,000 feet with both ends open. It is up to 20 feet wide. The strike is N.75°W., and the dip is vertical to 60°S. A second parallel vein lies 500 feet to the south; this has been traced 2,500 feet and is up to 20 feet wide. These are quartz-chalcopyrite veins with spotty mineralization. The country rock is relatively flat-lying sediments of Huronian age, and diabase.

Dimensions and Grade Two shoots have a combined length of 960 feet, averaging 2.65 percent copper across 5.6 feet. The 730-foot interval between these shoots has been explored by two holes with low copper values.

References Northern Miner, Oct. 16, Nov. 13, 1952; Feb. 19, Aug. 20, 1953.

Remarks The veins were mapped and sampled by Hoyle Mining Company, Limited, in 1946.

SUPERCREST COPPER MINES, LIMITED

Location Marne township; Township 24, range XI, concession I; mining locations W.D.220–227.

Metal Present Copper.

Development Up to 1907, six shafts were put down at the Superior copper mine. No. 6 shaft is 400 feet deep with levels at approximately 100-foot intervals; 875 feet of drifting is reported on these levels. Geophysical surveys, diamond-drilling, and underground sampling were done by Kristina Copper Mines, Limited, 1952–54. Diamond-drilling was done by Supercrest Copper Mines, Limited, in 1956, and underground work at No. 6 shaft was commenced.

Geology Quartz-chalcopyrite veins and lenses occur in a granite-diorite contact zone striking northwest. Mineralization is massive and disseminated chalcopyrite, with minor pyrite and galena.

Ore Reserves In shafts No. 1–5, vein material is low grade; to the third level at No. 6 shaft, 10,000 tons, averaging 4 percent copper and 75 percent silica. (C. H. Hitchcock, 1914.) 375,000 tons grading 2 percent copper (Northern Miner, Oct. 11, 1956.)

References O.B.M., Vol. XI, 1902, p. 274.
O.B.M., Vol. XVII, 1908, p. 79.
Northern Miner, Feb. 5, Nov. 19, Dec. 3, 1953; Jan. 7, 1954; Aug. 2, Sept. 6, Oct. 11, 1956.

Remarks Formerly known as the Superior copper mine. From 1952–56 the property was held by Kristina Copper Mines, Limited, renamed Coppercrest Mines, Limited, in 1956. Supercrest Copper Mines, Limited, is jointly owned by Frobisher, Limited, and Coppercrest Mines, Limited.

WHITE RIVER LEAD MINE

Ownership In 1942, Sudbury Basin Mines, Limited.

Location Township 169; claim S.S.M.5521.

Metals Present Lead, copper, silver.

Development Surface work; adit 175 feet long and 354 feet of crosscutting.

Geology The veins are located in Keweenawan diabase; main vein was traced 500 feet on surface and is 3–6 feet wide. It is well mineralized with pyrrhotite, chalcopyrite, and galena in a quartz gangue.

Dimensions and Grade Shoot in adit is 80 feet long, 7 feet wide, and averages 7.6 percent lead, 1 percent copper, and 2.3 ounces of silver per ton.

Reference O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 15–19.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Aweres tp., S. of Trout Lake	O.D.M., Vol. XXXV, 1926, pt. 2, p. 46	X	....	....	....
Day tp., lot 8, con. IV	O.D.M., Vol. XXIV, 1915, pt. 1, p. 237	X	....	....	....
Deroche tp., lot 10, con. III	O.D.M., Metal Resources Circ. No. 1, 1954, p. 43	....	....	X	X
Galbraith tp., lot 11, con. V	G.S.C., Summ. Rept., 1917, pt. E, pp. 7–8	X	....	....	....
Garden River, Indian reserve, Boss Lake	O.D.M., Vol. XXXV, 1926, pt. 2, p. 46	....	....	X	X
Gould tp., mining location 1, con. I	O.B.M., Vol. VIII, 1899, pt. 1, pp. 37–38	X	....	....	....
Gould tp., lot 4, con. V	O.D.M., Vol. XXIV, 1915, pt. 1, p. 235	X	....	....	....
Jarvis tp., lot 7, con. VI	O.D.M., Metal Resources Circ. No. 1, 1954, p. 42	....	....	X	X
Jarvis tp., lot 11, con. VI	O.D.M., Vol. XXXV, 1926, pt. 2, p. 46	X	....	X	X
Johnson tp., lots 7, 8, con. III	O.D.M., Vol. XVII, 1908, p. 80	X	....	....	....
McMahon tp., lot 5, con. I; lot 6, con. III	G.S.C., Mem. 143, 1925, p. 128	X	....	....	....
Morin tp., lot 9, con. II	O.B.M., Vol. XIII, 1904, pt. 1, pp. 79–80	X	....	....	....
Otter tp., lot 12, con. III	G.S.C., Mem. 143, 1925, pp. 128–29	X	....	....	....
Patton tp., NE. ¼, section 29	O.D.M., Geological Branch, files	X	....	....	....
Rose tp., lot 24	O.D.M., Vol. XXIV, 1915, pt. 1, p. 236	X	....	....	....
Rose tp., S. ½, lot 11	O.D.M., Vol. XXIV, 1915, pt. 1, p. 237	X	....	....	....
Thompson tp., section 1	O.D.M., Geological Branch, files	X	....	....	....
Tilley tp., Begley location	O.D.M., Vol. XXXV, 1926, pt. 2, p. 84	X	....	....	....
Township 22, range 10, Conway Lake	O.D.M., Metal Resources Circ. No. 1, 1954, p. 45	....	....	X	....
Township 23, range 10, west-central part	O.D.M., Metal Resources Circ. No. 1, 1954, p. 46	....	....	....	X
Township 27, range 26, Goudreau pyrite; claim J.L.15	G.S.C., Mem. 143, 1925, p. 62	X	X	....	X
Townships 27, 28, range XXVI	O.D.M., Vol. XXXVII, 1928, pt. 3, p. 78	X	....	X	X
Township 28, range XXVI, NW. of Murphy Lake	O.D.M., Vol. XXXVI, 1927, pt. 2, p. 70	X	....	....	....
Township 28, range XXVI, S. of Doherty Lake	O.D.M., Vol. XXXVI, 1927, pt. 2, p. 72	X	....	....	....
Township 29, range XXIV, N. of Wawa Lake	O.D.M., Vol. XL, 1931, pt. 4, pp. 41–42	....	....	X	X
Township 29, range XIV, Pointe-aux-Mines	O.D.M., Vol. XXXV, 1926, pt. 2, p. 81	X	....	....	....
Township 30, range XXII, S. of Michipicoten River	O.D.M., Vol. XL, 1931, pt. 4, p. 42	X	....	X	X
Township 48; claim S.S.M. 2838 (Joburke Gold Mines, Ltd.)	Northern Miner, July 26, 1956	X	....	....	....
Township 157, S. of Samreid Lake	O.D.M., Vol. XLVIII, 1939, pt. 11, p. 9	X	X	X	X
Township 168, NW. part	O.D.M., P.R. 1952-4, 1952, p. 8	X	....	....	....
Tupper tp., section 1, range II	O.D.M., Vol. XXXV, 1926, pt. 2, p. 46	X	X	....	....

Sudbury Mining Division

ANGLO-SUDBURY MINING AND METALS CORPORATION, LIMITED

Location Cunningham township, south of Peter Lake; claim S.9320.

Metals Present Zinc, lead.

Development Surface work and diamond-drilling, 1927; surface work and diamond-drilling, 1952.

Geology Sulphide mineralization in iron formation adjacent to contact with basalt to the south; maximum width of mineralization is 9 feet; sulphides are pyrite, sphalerite, galena, and some chalcopyrite.

Dimensions and Grade Sample of the best mineralization assayed, 5.79 percent zinc, 1.00 percent lead, and 0.21 percent copper over a width of 3 feet.

Reference O.D.M., Vol. LI, 1942, pt. 7, pp. 19–20.

Remarks Dormant since 1952.

ARCADIA NICKEL CORPORATION, LIMITED

Location Denison township, lots 12, concessions II and III.

Metals Present Nickel, copper, precious metals.

Development Geophysical survey and diamond-drilling. The shaft is 972 feet deep with six levels, the deepest being at the 950-foot horizon. Surface drilling and underground exploration by Arcadia Nickel Corporation, Limited, in 1955 and 1956.

Geology There are four mineralized areas in the Worthington offset. From southwest to northeast these are the Howland pit, Robinson zone (shaft location), Rosen zone, and Z zone. The dike contains inclusions of actinolite, surrounded by quartz diorite. Most of the sulphides are in the actinolite areas. The ore is typical Sudbury mineralization of the breccia type.

Production There has been no production from the shaft area. In 1915–16, 800 tons of ore was shipped from the Howland pit; this averaged 6.5–7.0 percent combined nickel and copper.

Ore Reserves "Combining the potential of these four zones, a total of 2,500,000 tons is indicated to the 1,000-foot level." (L. R. Simard, annual company report, Nov. 1956.) Grade not stated.

References O.D.M., map No. 43d, 1934.
G.S.C., map No. 292A, 1938.
Northern Miner, May 3, June 7, Aug. 16, Nov. 29, Dec. 27, 1956.

Remarks The property was formerly owned by North Denison Mines, Limited, which succeeded Denison Nickel Mines, Limited. It was taken over by Pacolund Mines, Limited, and then acquired by the Arcadia Nickel Corporation, Limited, late in 1955.

CENTRAL SUDBURY LEAD-ZINC MINES, LIMITED

Location Genoa township, northwest corner; claims W.D.717, S.62096.

Metals Present Lead, zinc.

Development Surface work; diamond-drilling; geophysical surveys in 1952 (for iron).

Geology Lenses of lead-zinc mineralization occur in and adjacent to a band of iron formation. Main lens has a length, indicated by diamond-drilling, of 350 feet. Drilling in the iron formation is said to have outlined a large tonnage of material grading 45 percent iron and 15 percent sulphur.

Ore Reserves General Engineering Company, Limited, estimated 49,500 tons grading 2.04 percent lead and 4.02 percent zinc in the main lens to a depth of 300 feet.

References

O.D.M., Vol. XXXV, 1926, pt. 2, pp. 94–96.
G.S.C., Economic Geol. Ser., No. 8, 1930, pp. 179–82.
Northern Miner, Feb. 28, Nov. 13, 1952; Jan. 21, 1954; May 31, 1956.

CONSOLIDATED SUDBURY BASIN MINES, LIMITED
(Errington and Vermilion Mines)

Location Errington mine: No. 1 shaft is on north half of lot 9, concession VI, Creighton township; No. 2 shaft is on north half of lot 8, concession VI, Creighton township; and No. 3 shaft is on south half of lot 4, concession I, Balfour township.

Vermilion mine: north half of lot 5, concession V, Fairbank township. The Vermilion mine is about four miles southwest of the Errington mine.

Metals Present Zinc, copper, lead, silver, gold.

Development Errington mine: To end of 1955, over 125,000 feet of surface drilling; No. 1 shaft extends to the 500-foot level; No. 2 shaft to the 1,500-foot level; No. 3 shaft is 409 feet deep. Underground work totals more than 41,000 feet on four levels.

Vermilion mine: A great deal of surface and underground drilling; shaft to 1,250 feet with lateral work at 450-, 600-, 750-, and 900-foot levels.

Geology The orebodies at the Errington mine are in a complexly folded and faulted zone within, or near, a major regional fault system. The bulk of the ore occurs on the crest and south limb of a south-dipping anticline. This structure is further complicated by south-dipping strike faults that slice the anticline and orebodies into at least four blocks. The ore is believed to be a replacement of a chert and carbonate horizon that lies between the overlying slate and underlying tuffs. The ore consists of very fine-grained pyrite, sphalerite, chalcopyrite, pyrrhotite, and galena in a carbonate matrix.

The geology at the Vermilion mine is more complex than that at the Errington mine. The strata dip about 40°S. The more steeply dipping thrust faults slice the flatter ore horizon causing repetition of orebodies in an imbricate structure.

Production In 1928–30, 142,994 tons of ore were treated at the Errington mine. From this, 2,156,626 pounds of copper, 1,079,167 pounds of lead, and 9,103,424 pounds of zinc were produced.

Ore Reserves The combined ore reserves of the Errington and Vermilion mines total 13,189,356 tons, averaging 1.14 percent copper, 0.90 percent lead, 3.85 percent zinc, 0.018 ounces of gold and 1.51 ounces of silver per ton. In addition there are 850,000 tons in No. 3 shaft area. (Annual company report, Dec. 31, 1955.) Additional tonnage was proved in 1956.

References O.D.M., Vol. XXXVIII, 1929, pt. 3, pp. 41–46; Vol. LXV, 1956, pt. 3 (in press).

Structural Geology of Canadian Ore Deposits, Vol. 2, Can. Inst. Min. Met., 1956. (In preparation.)

Northern Miner, Mar. 1, Apr. 26, July 19, Nov. 22, 1956; Jan. 17, 1957. Annual and interim reports of the company.

Remarks Name of the company was changed from Ontario Pyrites, Limited, in 1954.

A concentrating plant at the property is expected to commence operations in 1957 at the rate of 1,000 tons daily and will initially use ore from the Vermilion mine. The company has announced that sufficient ore is developed to justify the eventual treatment of 3,000 tons daily.

CONSOLIDATED THOR MINES, LIMITED

Location Sewell township; company holds a large group of claims extending from the east boundary of the township to Crawford River.

Metal Present Copper.

Development Geophysical survey and 3,137 feet of diamond-drilling. Drilling was on claims S.91673–91674.

Geology The volcanic rocks are mainly andesite and trend in an east-west direction. Low copper values were encountered.

References Northern Miner, May 10, 1956, p. 652.

D'ELDONA GOLD MINES, LIMITED

Location Turner township; claim W.R.90.

Metals Present Lead, copper, silver.

Development Surface-trenching; old shaft; nine drill holes, totalling 1,021 feet, by The Coniagas Mines, Limited, in 1949. 19 holes, totalling 3,179 feet, by D'Eldona Gold Mines, Limited, in 1956.

Geology A vein lies along the contact between Cobalt sediments and Keweenawan diabase and has been traced for 950 feet along strike. The vein material contains galena and chalcopyrite and carries silver values.

Dimensions and Grade A surface shoot, 320 feet long, averaging 14.7 feet wide, contains an average of 4.2 percent lead, 1.1 percent copper, and 6.6 ounces of silver per ton. (E. W. Todd, 1929.) Low values in drill holes in 1949.

Remarks: Drilling in 1956 by D'Eldona Gold Mines, Limited, in the vicinity of the old workings failed to reveal any mineralization of commercial interest in all holes, and the property was dropped. Property was once held by Silver Chief Mines, Limited.

DOLMAC MINES, LIMITED

Location Rathbun township, lot 9, concession IV.

Metals Present Copper, nickel, platinum metals.

Development Prospect shaft about 50 feet deep. 11 drill holes in 1956 on claims S.72011 and S.72006.

Geology A mineralized zone occurs at the contact of diabase and quartzite and is elongated in a northeasterly direction. The surface showing is apparently small but is poorly exposed. In the shaft there are massive sulphides across 1–2 feet, and disseminated sulphides occur in the walls.

Grade Selected grab samples are rich in copper with small amounts of nickel and have a high content of platinum metals. (T. Koulomzine, Dec. 1953.)

DONALDA MINES, LIMITED
(Massey Property)

Location Salter township, southeast quarter of section 16 and southwest quarter of section 15.

Metal Present Copper.

Development Shafts and adit of old Massey mine; seven levels to a depth of 700 feet with considerable lateral work and some stoping. 30 drill holes, totalling 10,729 feet, by Donalda Mines, Limited, in 1956.

Geology Chalcopyrite occurs in quartz veins and silicified zones at intervals for 1½ miles. The zones strike N.75°–90°E. and dip steeply north. The country rock is largely sediments with diorite and breccia. Three main copper-bearing zones, about 2,000 feet apart, had been delineated by the end of 1956.

Dimensions and Grade In No. 1 shaft area seven holes over a length of 900 feet gave intersections of 1–25 feet assaying 1.00–2.60 percent copper. In the central zone four holes gave intersections of 3–10 feet with 1.5–7.7 percent copper. In the western zone the north lens was cut in eight holes that averaged 1.85 percent copper across 7.7 feet for a strike length of 320 feet. In the south lens five holes gave intersections averaging 1.96 percent copper across 7.5 feet for a strike length of 700 feet. (L. S. Trenholme, Dec. 31, 1956.)

Production 1904–6 and 1915–17: 633,264 pounds of copper, valued at $34,853.

References
O.B.M., Vol. XXII, 1913, pt. 1, pp. 150–60.
G.S.C., Mem. 143, 1925, pp. 129–30.
O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 28–30.
Northern Miner, Oct. 11, Oct. 18, Dec. 13, 1956.

Remarks The property was originally known as the Massey copper mine. It was acquired by Donalda Mines, Limited, in 1956. Exploration is being continued in 1957.

DUNVEGAN MINES, LIMITED

Location Kenogaming township; 104 claims adjoining Norduna Mines, Limited, on the south and west.

Metal Present Nickel.

Development Surface prospecting, diamond-drilling, 1956.

Geology A wide band of serpentinized peridotite crosses the property in an easterly direction. One drill hole showed continuous mineralization that averaged 0.25 percent nickel. The copper content is low.

References Northern Miner, Aug. 2, Sept. 26, Dec. 13, 1956.

EL PEN-REY OIL AND MINES, LIMITED

Location Township 130, concessions III and IV, adjoining the east boundary of the township; claims S.95583–95609.

Metals Present Nickel, copper.

Development Surface work; geophysical survey; 14 drill holes, totalling 7,819 feet, in 1956.

Geology Disseminated sulphide mineralization (chalcopyrite and nickeliferous pyrrhotite), associated with zones of alteration in the East Bull Lake gabbro mass.

Dimensions and Grade No concentration of sulphides was found. The best assay obtained in drilling was 0.49 percent copper and 3.93 percent nickel over 1.5 feet of core. (L. S. Trenholme, Dec. 1956.)

Reference O.D.M., Vol. LII, 1943, pt. 6.

EMTWO MINES, LIMITED

Location Falconbridge township, mining location M.2.

Metals Present Nickel, copper.

Development Geological and geophysical surveys; 16,476 feet of diamond-drilling in 1954–55.

Geology Typical Sudbury sulphide mineralization replaces the contact phase of the norite and inclusions of the adjacent altered siliceous volcanic and granitic rocks. The deposit is located on the east range where the contact is irregular in strike and dip; the dip is generally quite steep.

Ore Development Approximately 300,000 tons, averaging 1.40 percent nickel and 0.60 percent copper. (Annual report, the Mining Corporation of Canada, Limited, 1955.)

Remarks Exploration was under the direction of The Mining Corporation of Canada, Limited.

EVENLODE GOLD MINES, LIMITED

Location Curtin township; Iroquois Bay of Lake Huron, Island No. 2198; claim S.74210.

Metal Present Copper.

Development Surface work and diamond-drilling, 1954–55.

Geology Chalcopyrite and arsenopyrite occur erratically in quartz veins and quartzite in steeply dipping sedimentary rocks.

Dimensions and Grade Main showing is in a rockcut 105 feet long, averaging 0.36 percent copper and 0.09 percent cobalt. A 1,500-pound bulk sample contained 1.18 percent copper, 0.20 percent nickel, and 0.15 percent cobalt.

Reference Northern Miner, Dec. 9, 1954.

FALCONBRIDGE NICKEL MINES, LIMITED

Properties Falconbridge mine; Falconbridge East mine; McKim mine; Mount Nickel mine; Hardy mine; Boundary mine; Onaping mine; Fecunis Lake mine; Longvack mine; Strathcona property; and others.

Location Sudbury area (see O.D.M., map No. 1957-A, 1957).

Metals Present Nickel, copper, cobalt, platinum metals, gold, silver.

Development The producing mines are Falconbridge, Falconbridge East, Mount Nickel, and McKim on the south range, and Hardy and Longvack on the north range. Fecunis, Boundary, and Onaping mines, also on the north range, are under development.

The Falconbridge mine has levels to a depth of 4,025 feet, and the shaft is being deepened to the 6,050-foot level; Falconbridge East mine has levels to 1,750 feet; McKim to 1,350 feet; Hardy to 1,000 feet; Mount Nickel to 306 feet; Longvack has an inclined shaft to a slope depth of 597 feet; Boundary is developed by a winze from an extension of the 1,000-foot level of the Hardy mine, Fecunis Lake shafts are 3,985 and 3,325 feet deep. The Onaping shaft will be 3,500 feet deep.

In 1956 the company did over 92,000 feet of surface drilling in the Sudbury area to a depth of 4,000 feet.

Geology The Falconbridge and Falconbridge East mines contain ore shoots located in fault zones along the norite-greenstone contact at the southeast margin of the Sudbury basin. The rocks along the ore zone are altered and mineralized, mainly with pyrrhotite, pentlandite, and chalcopyrite. Breccia ore is the main type, but there are also massive and disseminated ores.

The McKim and Mount Nickel mines lie at the south rim of the nickel irruptive; the Hardy, Boundary, Onaping, Fecunis Lake, Longvack and Strathcona deposits are located along the north rim.

Production

		1955	1930–55
Ore shipped	tons	1,681,875	17,553,544
Nickel	lb.	37,357,523	470,495,813
Copper	lb.	21,290,712	247,277,176
Cobalt	lb.	603,007	1,904,074
Platinum metals	oz.	22,930	141,954
Gold	oz.	3,966	36,118
Silver	oz.	106,145	816,735
Total value		$32,853,578	$213,500,133

Ore Reserves 45,259,450 tons averaging 1.43 percent nickel and 0.75 percent copper (annual company report, Dec. 31, 1956).

References
G.S.C. maps Nos. 292A, 1938; 871A; 1947; 872A, 1947.
O.D.M., map No. 1956-1, 1956.
Can. Inst. Min. Met., *Structural Geology of Canadian Ore Deposits,* Symposium Volume, 1948, pp. 618–26.
Economic Geol., Vol. 50, No. 1, 1955, pp. 42–50.
Trans., Can. Inst. Min. Met., Vol. LIX, 1956, pp. 37–43.
Annual company reports.

Remarks The company operates a concentrator and smelter at Falconbridge and a refinery for the recovery of nickel, copper, cobalt, and precious metals at Kristiansand, Norway. A concentrator for north range ores is operated at the Hardy mine. A commercial-sized pilot plant for the treatment of pyrrhotite concentrates is operated at Falconbridge.

FALCONBRIDGE SHAKESPEARE PROPERTY

Ownership Falconbridge Nickel Mines, Limited.

Location Shakespeare township, northeast half lot 2, concession V.

Metals Present Nickel, copper, precious metals.

Development Geophysical surveys; 15 drill holes in 1942 and 1946; 12 drill holes, totalling 6,000 feet, in 1951.

Geology This is a mineralized zone in quartz diorite. Several sheared zones occur in the mineralized rock. The rusty surface exposure of the deposit covers an area 2,600 feet long by 25–50 feet wide. The mineralization consists of disseminated pyrrhotite, pentlandite, and chalcopyrite. Precious metals are present in about the same proportion as in the ores of the Sudbury camp.

Ore Reserves 3,000,000–4,000,000 tons averaging 0.34 percent nickel and 0.40 percent copper. (Company report, 1952.)

References
O.D.M., Vol. XXXVIII, pt. 7, 1929, pp. 25–26.
G.S.C., map No. 291A, 1938.

FEDERAL KIRKLAND MINING COMPANY, LIMITED

(Baldwin Property)

Location Baldwin township, lot 7, concession VI; claims S.95320, S.89405, S.89406.

Metals Present Copper, nickel.

Development Surface work and ten drill holes in 1929. Sixteen drill holes, totalling 6,409 feet, from Sept. 1956, to Jan. 1957, over a zone length of 2,000 feet.

Geology Chalcopyrite, pyrite, and pyrrhotite occur as stringers and disseminations in bluish vein quartz and silicified wall rock. The country rock is quartzite with interbedded conglomerate and greywacke. The mineralized zone lies within a strong sheared zone striking about S.70°W. and dipping steeply to the south.

Dimensions and Grade 637,436 tons averaging 1.79 percent copper over an average width of 17.3 feet within a length of 1,200 feet and to an average vertical depth of 500 feet. Low, erratic, nickel values were obtained in some of the drill holes. (W. P. Murdock, Jan., 1957.)

References O.D.M., Vol. LXI, 1952, pt. 4, p. 30.
Northern Miner, Oct. 4, 1956.

FEDERAL KIRKLAND MINING COMPANY, LIMITED

(Esten Property)

Location Esten township, sections 26 and 27. Most of the development work has been done on claim S.91631.

Metal Present Copper.

Development Surface work on 25 drill holes totalling 7,780 feet in 1956.

Geology Chalcopyrite occurs in stringers and disseminations in highly silicified schists and breccias within a strong northwest-trending sheared zone. Talc and chloritic schists and diabase are present within the sheared zone and within the adjacent rocks, which are predominantly granitic. The better concentrations of chalcopyrite were obtained within a few hundred feet of the intersection of the main sheared zone and a strong subparallel zone of shearing and silicification.

Dimensions and Grade A large number of good grade intersections were obtained in the drilling over a length of 380 feet and to a depth of 400 feet. More intensive drilling of this area would have to be done in order to more accurately determine the grade and tonnage. However, an estimate of probable ore is as follows: tons, 76,900; grade, 1.73 percent copper; average width, 8.04 feet. (W. P. Murdock, Jan., 1957.)

Remarks Further development of the zone is contemplated.

GENEX MINES, LIMITED

Location Hess township, lot 8, concession VI.

Metals Present Lead, zinc.

Development A shaft and winze to depth of 640 feet with lateral work on five levels; surface drilling in 1950–51.

Geology The mineralization is partly replacement and partly fracture filling in sediments. The ore is chiefly sphalerite with lesser galena, pyrite, etc. The ore is cut by diabase dikes. The average grade of 80,588 tons ore milled from 1941–44 was 9.21 percent zinc and 3.34 percent lead with 22 ounces of silver per ton in the lead concentrate. The ore zone is 700 feet long, averages 5 feet in width, and has been tested to a depth of 1,000 feet.

Production In 1941–44, 10,389,646 pounds of zinc and 3,598,411 of lead, valued at $528,003.

Ore Reserves 114,000 tons averaging 10 percent zinc and 3 percent lead across an average width of 5.3 feet, plus 24,000 tons containing 8 percent combined metals over an average width of 4 feet, plus 32,000 tons averaging 6 percent combined metals over a width of 3 feet. (S. L. MacDonald, May, 1951.)

References
O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 61–63.
Can. Inst. Min. Met., *Structure of Canadian Ore Deposits,* Symposium volume, 1948, pp. 590–96.
Northern Miner, Jan. 18, May 10, 1951; Mar. 13, Apr. 1, May 10, Oct. 30, 1952; Apr. 19, 1956.

Remarks The mine was developed by Bidgood Kirkland Gold Mines, Limited, from 1949 to 1952. A 100-ton mill was installed in 1952, but production was deferred because of the decline in the market price of lead and zinc.
Genex Mines, Limited, succeeded Geneva Lake Mines, Limited, in 1956.

HERMINA MINE

Location Salter township, sections 7, 17, 18.

Metal Present Copper.

Development Three shafts; No. 3 is 435 feet deep with four levels; total lateral work was 700 feet in 1907; two drill holes in 1951 by Teck Exploration Company, Limited.

Geology The main vein lies in granite and diabase. It is a strong vein for over 2,000 feet along strike with a maximum width of 30 feet but is not well mineralized. Two samples from the 3rd and 4th levels are reported to have assayed 6.4 and 15.5 percent copper. In 1907 a 70-ton smelter sample yielded 13.10 and 9.7 percent copper.

Production In 1903–10, 13,134 tons of ore were raised from which 1,015,950 pounds of copper, valued at $87,226, were produced.

References
Can. Dept. Mines, *Report on the Mining and Metallurgical Industries of Canada,* 1907–8, p. 396.
O.B.M., Vol. XXII, 1913, pt. 1, pp. 155–60.
O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 30–31.

THE INTERNATIONAL NICKEL COMPANY OF CANADA, LIMITED

Properties Creighton mine; Frood-Stobie mine; Garson mine; Levack mine; Murray mine; Crean Hill mine; Blezard mine; Little Stobie mine; Copper Cliff mine; Evans mine; Vermilion mine; Victoria mine; Worthington mine; Whistle mine; Shepherd mine; and others.

Location Sudbury area. (See O.D.M. map No. 1957-A, 1957.)[1]

Metals Present Nickel, copper, platinum metals, selenium, tellurium, gold, silver, cobalt, iron.

Development The producing mines are the Creighton, Frood-Stobie, Garson, Murray, Levack, and the Frood open pit. Underground development is being carried on at the Crean Hill mine, and production is planned for 1958 or 1959. There are 13 operating shafts, and total underground development in the operating mines at the end of 1956 amounted to about 410 miles. The deepest workings are at Creighton mine, where development was started in 1955 for mining below the 68 level, which is 5,425 feet below surface. In recent years the company has done a great deal of exploratory surface drilling on their holdings around the Sudbury nickel irruptive. In 1955, 522,836 feet of surface drilling was done on non-operating properties at Sudbury.

Geology The ore deposits are located at the outer contact of the nickel irruptive and along offsets from this intrusive. There are a variety of host rocks for the ore, such as quartz-diorite, norite, granite, quartzite, andesite, gabbro, and breccias. The structures, which have provided channelways for the ore, are faults, regular breccia zones, and less definite areas of shattering and brecciation. The ores are of the sulphide type and consist mainly of pyrrhotite, chalcopyrite, and pentlandite; pyrite and the arsenides of nickel, cobalt, and platinum are also present. The main types of ore are breccia sulphides, massive sulphides, disseminated sulphides, and sulphide stringers.

Production

	1955	1887–1955[2]
Ore shipped ..... tons	14,247,591	239,396,885
Nickel ..... lb.	279,664,452	6,602,885,521
Copper ..... lb.	265,344,869	6,988,535,250
Cobalt ..... lb.	1,479,477	6,312,587
Selenium ..... lb.	94,465	2,349,906
Tellurium ..... lb.	6,455	153,227
Platinum metals ..... oz.	361,816	6,897,312
Gold ..... oz.	42,167	1,408,370
Silver ..... oz.	1,374,583	44,490,119
Total value	$299,345,535	$3,621,801,798

Ore Reserves 264,223,823 tons with a nickel-copper content of 7,948,246. (Annual company report, Dec. 31, 1956.)

[1] In preparation.

[2] Includes subsidiary and predecessor companies.

Sudbury—Continued

References

O.D.M., map No. 1956-1, 1956.
G.S.C., maps Nos. 292A, 1938; 871A, 1947; 872A, 1947.
Can. Min. Jour., Vol. 67, No. 5, May, 1946, pp. 322–31; Vol. 71, No. 11, Nov., 1950, pp. 134–43.
Can. Inst. Min. Met., *Structural Geology of Canadian Ore Deposits,* Symposium volume, 1949, pp. 596–617.
Annual company reports.

Remarks

The International Nickel Company of Canada, Limited, produces most of the world's nickel requirements, is one of the world's largest producers of platinum metals, and is the largest copper and cobalt producer in Canada.

The company operates concentrators at Copper Cliff and Creighton; smelters at Copper Cliff and Coniston; a copper refinery at Copper Cliff; nickel refineries at Port Colborne, Ontario, and Clydock, Wales; precious metal refineries at Copper Cliff, Ontario, and London, England; also rolling mills, a foundry, research laboratories, etc.

Shipments of sintered pellets of iron ore from a recovery plant near Copper Cliff were commenced early in 1956.

A 6,000-ton-per-day concentrator is being built at the Levack mine.

JESS-MAC GOLD MINES, LIMITED

Location Huffman township; east end of Opeepeesway Lake.

Metals Present Lead, zinc.

Development Surface work; geophysical survey; considerable diamond-drilling.

Geology North of Opeepeesway Lake, diamond-drilling has indicated narrow, discontinuous zones of sulphide mineralization in fractured porphyry, adjacent to contact with sediments; sulphides are galena, sphalerite, and traces of chalcopyrite; low gold-copper values on east claims.

Dimensions and Grade Best drill intersections are 4.97 percent lead, 3.78 percent zinc, and 4.39 ounces of silver and 0.21 ounces of gold per ton in a 4-foot core; 1.03 percent lead, 2.61 percent zinc, and 0.51 ounces of silver and 0.02 ounces of gold per ton in a 5-foot core.

References

O.D.M., Vol. XLIV, 1935, pt. 7.
Northern Miner, Mar. 26, 1953.

JONSMITH MINES, LIMITED

Property Milnet mine.

Location Parkin township, north half of lot 5, concession II; claims S.5265, S.42676.

Metals Present Nickel, copper, platinum metals.

Development Surface drilling 1947 and 1950–51; shaft sunk to 477 feet with levels at 190, 300, and 465 feet by Milnet Mines, Limited. Jonsmith Mines, Limited, extended the workings on the 465-foot level and drilled the diorite dike to a depth of about 1,500 feet in 1955–56.

Sudbury—Continued

Geology Massive and disseminated sulphides occur in a diorite dike that may be an offset from the Sudbury nickel irruptive (Parkin offset). Two orebodies were located and mined out; typical Sudbury mineralization.

Production 1952–54; 4,724,427 pounds nickel and 4,861,458 pounds copper, valued at $4,266,621, by Milnet Mines, Limited.

Reference Northern Miner, June 25, 1953; Dec. 23, 1954; Jan. 19, Apr. 19, 1956.

Remarks The lessee, Milnet Mines, Limited, mined out the two orebodies and shipped the ore to Falconbridge smelter. Jonsmith Mines, Limited, continued underground work until July, 1956.

KEBA PROPERTY

Location Hymen township, parts of lots 7–10, concession I; Nairn township, lots 9, 10, concession VI.

Metals Present Nickel, copper.

Development Surface work; geophysical surveys by Falconbridge Nickel Mines, Limited, 1953–54.

Geology Two small sulphide zones in quartz-diabase are exposed along the Nairn-Hymen township line. These zones are less than half a mile apart with intervening low ground. The sulphides contain copper and nickel.

Reference G.S.C., map No. 291A, 1938.

Remarks Listed as the Gauthier property in O.D.M., P.R.1952-4, 1952, p. 5; optioned to Falconbridge Nickel Mines, Limited, in 1954.

MANEAST URANIUM CORPORATION, LIMITED

Location Cunningham township, northwest-central part; claim S.57672.

Metals Present Zinc, lead.

Development Surface work and diamond-drilling by former owners, Ridout Cunningham Mines, Limited, 1928–29. Surface work and diamond-drilling by Page-Harley Mines, Limited, 1952–53.

Geology Sulphides occur in iron formation; sphalerite, galena, pyrrhotite, and chalcopyrite are found in small, discontinuous veins and stringers and disseminated in bands of chert.

Dimensions and Grade Best drill intersections: 1.63 percent lead and 5.02 percent zinc in 60 feet of core; 0.86 percent lead and 2.51 percent zinc in 50.5 feet of core.

References O.D.M., Vol. LI, 1942, pt. 7, pp. 20–22.
Northern Miner, Mar. 1, 1956.

Remarks Diamond-drilling, 1956.

NEW DELHI MINES, LIMITED

Location Delhi township; claim T.R.4090.

Metals Present Lead, silver, gold.

Development Surface work; diamond-drilling; 880 feet of drifting on adit level in 1951.

Geology Argentiferous galena and native gold occur in a system of quartz-carbonate veins in diabase.

Dimensions and Grade Four ore shoots with combined lengths of 381 feet and widths of 2.8–4.5 feet were developed on the adit level. The grade of these shoots ranges from 6.4 to 12.1 percent lead, 1.6 to 3.6 ounces of silver per ton, and 0.04 to 0.26 ounces of gold per ton. To 200 feet below the adit level, 54,000 tons with a recoverable net value of $20.25 per ton. (L. R. Simard, June, 1951.)

Reference O.D.M.. Vol. LXIII, 1954, pt. 4, pp. 15–19.

NEW DOMINION NICKEL MINES, LIMITED

Location Norman township, south quarter of lot 8, concession V.

Metals Present Nickel, copper.

Development Eight drill holes, totalling 3,464 feet, in 1946. 74 holes, totalling 36,725 feet, in 1955, by Jonsmith Mines, Limited.

Geology Sulphide mineralization occurs along the contact at the north boundary of the Sudbury nickel irruptive. There are two mineralized bodies, referred to as the hanging wall and footwall ore zones. These dip 50°S.

Dimensions and Grade 45,000 tons averaging 0.9 percent nickel and 0.75 percent copper. (Northern Miner, June 21, 1956.)

Reference Northern Miner, Apr. 30, 1953; Jan. 27, Feb. 3, Feb. 24, Mar. 17, Mar. 31, 1955; June 21, 1956.

Remarks The company succeeded Dominion Nickel Mining Corporation, Limited, in 1953. In 1956 the company was controlled by Jonsmith Mines, Limited.

NICKEL OFFSETS, LIMITED
(Nickel Offsets Mine)

Location Foy township, north half of lots 5, 6, concession III.

Metals Present Nickel, copper, platinum metals, cobalt.

Development At No. 1 shaft there are ten levels, the deepest of which is at 1,550 feet; at No. 2 shaft there are seven levels, the deepest is at 1,056 feet. Much surface and underground drilling.

Geology The mine is located on the Foy offset from the north margin of the Sudbury nickel irruptive. Sulphides occur in a band of quartz-diorite breccia that averages 200 feet wide; ore shoots show typical Sudbury mineralization of massive and disseminated sulphides.

Production 1943–44, 1953–55: 3,310,928 pounds nickel; 2,613,432 pounds copper; total value, $2,517,455.

Ore Reserves At February 29, 1956, 41,365 tons averaging 0.92 percent nickel and 0.59 percent copper, after allowing for dilution. (Annual company report, June, 1956.)

References Northern Miner, June 17, July 15, 1954; Jan. 13, 1955; June 21, 1956. Annual company reports.

Remarks A concentrator of 300 tons daily capacity commenced production of concentrates in 1953; mining and milling operations were discontinued in January, 1957, when ore reserves were exhausted.

NICKEL RIM MINES, LIMITED

Location McLennan township, lot 11, concession IV.

Metals Present Nickel, copper, precious metals.

Development No. 1 shaft is 265 feet deep; No. 2 shaft is being deepened to 1,500 feet, and levels will be opened to the 1,300-foot horizon. About 34,000 feet of surface drilling has been done.

Geology This mine is located on the east margin of the Sudbury nickel irruptive. Sulphides occur in a zone of quartz diorite and quartz-diorite breccia that lies between the norite and footwall granite. The orebodies contain typical Sudbury mineralization, which may be massive, disseminated, or breccia-type ore. Narrow diabase dikes cut the ore.

Production 1943, 1952–55: 8,350,917 pounds nickel, 3,330,018 pounds copper; total value, $5,722,271.

Ore Reserves 1,924,216 tons averaging 0.28 percent copper and 0.72 percent nickel, before dilution. (Annual report, Dec. 31, 1956.)

Reference Northern Miner, May 31, Aug. 30, Sept. 20, 1956.

Remarks The mine was originally developed by Ontario Nickel Mines, Limited. Ore shipments to the Falconbridge smelter commenced in October, 1952. A mill of 500 tons daily capacity commenced production in November, 1953. In 1955 average daily tonnage milled was 730. In 1954 the name of the company was changed from East Rim Nickel Mines, Limited.

NORANDA MINES, LIMITED
(Shakespeare Property)

Location Shakespeare township, lot 2, concession V, south half.

Metal Present Copper.

Development Surface work; geological and geophysical surveys; diamond-drilling.

Geology The mineralized rock occurs in a fault zone striking N.68°E. and dipping vertically to steeply north. The northwest wall of the fault is quartzite and greywacke, the latter sheared to sericite schist near the fault; the southeast wall seems to be of quartzite. The zone of brecciation and silicification ranges from 5 to 30 feet in width, striking into Agnew Lake to the southwest, and into drift to the northeast, with 1,900 feet of the zone exposed. The metallic minerals are chalcopyrite, pyrrhotite, and pyrite, with minor chalcocite and galena. Assays disclosed low values of gold in some samples and traces of cobalt, silver, and zinc.

Dimensions and Grade The zone averages 0.967 percent copper across 10 feet for a length of 1,900 feet.

NORDUNA MINES, LIMITED

Location Kenogaming township; claims S.49021–49022, S.49025–49026, S.58335–58342, S.58367–58370, S.58376–58381, S.58573–58574, S.58578–58582, S.60461–60466.

Ownership Controlled by Falconbridge Nickel Mines, Limited.

Metal Present Nickel.

Development Geological mapping, geophysical survey, geochemical survey, aeromagnetic survey, 11,500 feet of diamond-drilling 1952–54.

Geology The nickel mineralization is associated with large basic dikes or sills, which trend in a northwesterly direction. The country rocks are volcanic with a small amount of sediments.

Dimensions and Grade At one locality a band of massive sulphides about 1 foot in width is reported to have been found. Fine disseminated pentlandite is present in the basic intrusive, and at one locality there are globules of sulphide about a ¼ inch in diameter scattered throughout the rock.

NORTHBRIDGE MINES, LIMITED

Location Norman and Parkin townships; the claims are located about 2 miles north of the northeast corner of the Sudbury nickel irruptive and adjacent to Milnet Mines, Limited.

Metals Present Nickel, copper, precious metals.

Development Surface exploration by Falconbridge Nickel Mines, Limited, in 1934; geological and geophysical surveys and diamond-drilling in 1952-53; geochemical survey in 1954.

Geology Quartz diorite dikes strike northeast across the property. These form part of the Parkin offset, which may extend from the Sudbury nickel irruptive to the Milnet mine. Sulphides occur in the dikes and contain values in nickel and copper.

Dimensions and Grade Surface sampling returned copper values ranging from 0.18 to 9.5 percent and from traces to 3.35 percent nickel; no tonnage estimates to date.

References Northern Miner, Nov. 20, 1952.
Company prospectus.

Remarks Company was incorporated by Falconbridge Nickel Mines, Limited, and Fallmac Nickel Mines, Limited. Exploration was under the direction of Falconbridge Nickel Mines, Limited. The property has been idle since 1954.

OWEN NICKEL PROPERTY

Ownership S. J. Owen, Espanola.

Location Mongowin township, lot 11, concession VI; claim 16448.

Metals Present Nickel, copper.

Development Surface work; geological surveys; four drill holes by Falconbridge Nickel Mines, Limited, in 1951; two drill holes by Ontario Nickel Mines, Limited, in 1952.

Geology Pyrrhotite and chalcopyrite are disseminated throughout the margin of a peridotite body. The grade ranges from 0.21 percent nickel and 0.44 percent copper in very disseminated material to 3.82 percent nickel and 2.38 percent copper in massive ore.

Reference O.D.M., Vol. XLVIII, 1939, pt. 10, p. 27.

PALSTON MINING AND DEVELOPMENT COMPANY

Location McNish township, lots 9–12, concessions V and VI. 34 contiguous claims.

Metals Present Copper, nickel, lead, zinc, gold, silver.

Development Surface work, geophysical survey.

Geology Mineralized zones occur in the Gowganda formation.

Dimensions and Grade 15 separate mineralized showings are reported, the best showing on claim S.91914. Six grab samples from the stockpile at the shaft averaged 0.75 percent copper, 6.79 percent lead, 13.53 percent zinc and 1.37 ounces of silver per ton. (R. H. Pemberton, Nov. 1956.)

References O.D.M., map No. 41f, 1932.
Northern Miner, Aug. 2, 1956.
Company prospectus.

ROCKWIN MINES, LIMITED

Location Marshay township, southwest corner; Shelley township, southeast corner; claims S.6812, S.6813, S.6817, S.59850.

Metals Present Zinc, lead.

Development Surface work; 12 drill holes, totalling 3,000 feet, were drilled in 1952 by Zinc Lake Mines, Limited; geophysical survey. 15 drill holes by Rockwin Mines, Limited, in 1955.

Geology A belt of metamorphosed sedimentary rocks, striking N.60°E., crosses the property. Scattered outcrops of granite and diabase are also found. The mineralization consists of sphalerite, galena, pyrite, and pyrrhotite, which replace siliceous sediments. The width of the main zone ranges from 2 to 18 feet. Two parallel zones were intersected by drilling.

Dimensions and Grade Drilling indicated a shoot 550 feet long, 6.2 feet wide, with an average content of 5.02 percent zinc, 1.91 percent lead, and 0.31 ounces of silver per ton. One intersection in a parallel zone, 50 feet north, showed 10 feet assaying 5.92 percent zinc, 1.51 percent copper, 1.76 percent lead, and 0.67 ounces of silver per ton. (I. C. Christopher, Nov., 1952.)

References G.S.C., Economic Geol. Ser., No. 8, 1930, p. 182.
Northern Miner, Dec. 4, 1952; Aug. 20, 1953; Aug. 4, Sept. 22, 1955.

Remarks Formerly held by Zinc Lake Mines, Limited. Rockwin Mines, Limited, acquired a 50 percent interest in a working option on the property in 1955.

SILCROSS COPPER MINES, LIMITED

Location Township 123, northwest quarter.

Metals Present Nickel, copper.

Development Surface work; geophysical survey.

Geology Numerous small replacement bodies of massive and disseminated sulphides occur in gabbro; sulphides carry copper and nickel values and are found throughout an area of 2,500 by 1,000 feet.

Dimensions and Grade Most assays range from 0.10 to 1.60 percent copper and 0.10 to 1.50 percent nickel.

Reference O.D.M., Vol. LII, pt. 6, 1943, pp. 14–16.

SOOTHERAN-PAUL PROPERTY

Ownership Earle Sootheran and Hiram Paul, Chapleau, Ontario.

Location Cunningham township, central part; claim S.34947.

Metals Present Copper, zinc.

Development Geophysical survey and 3 short diamond-drill holes by the Consolidated Mining and Smelting Company of Canada, Limited, 1954. Over 12,000 feet of diamond-drilling, 1956.

Geology Chalcopyrite and sphalerite mineralization replacing the matrix of brecciated bands of chert, which are interbedded with tuff and argillite. These sediments occur in shallow tightly folded synclinal structures in greenstone. Large masses of diorite have intruded both the greenstone and the sediments.

Dimensions and Grade Copper confined to small and relatively low-grade shoots. Well over 100,000 tons indicated of an estimated 1 percent grade. (Northern Miner, Sept. 6, 1956.)

References O.D.M., Vol. LI, 1942, pt. 7, p. 22.
Northern Miner, Nov. 3, 1955; May 10, 1956.

Remarks Under option to Shunsby Mines, Limited, 1955–56.
1956 diamond-drilling financed by Nipiron Mines, Limited.

SPRINGER PROPERTY

Location Baldwin township, lot 11, concession IV; lots 8–10, concession V.

Metal Present Copper.

Development Surface work; small amount of diamond-drilling.

Geology Quartz veins and small sulphide bodies are exposed in workings at intervals across lots 8–10, concession V. Small exposures are rich in chalcopyrite. On the north half of lot 11, concession IV, a quartz-chalcopyrite vein is traced 850 feet and is up to 15 feet wide. It carries 0.5–3.0 percent copper and low gold values. On the south half of lot 11, concession IV, a "giant" quartz vein, up to 100 feet wide, is exposed for 1,600 feet along strike and contains patches of disseminated chalcopyrite.

Reference O.D.M., Vol. XLI, 1952, pt. 4, p. 29.

SPRINGER PROPERTY
(Richmond Development Option)

Location Porter township, lot 10, concession III, north half.

Metal Present Copper.

Development Extensive surface trenching.

Geology The mineralization occurs in one of a series of parallel faults striking about S.55°E. It ranges from 10 to 40 feet in width. The ore mineral is chalcopyrite, with native copper, galena, sphalerite, and ilmenite present in minor amounts, and is associated with blue quartz in brecciated zones. Silicification is extreme. Copper is present in minor amounts or is absent in parts of the fault occupied by massive quartz.

The mineralized fault zone has been traced for 2,000 feet, disappearing under drift at either end. Assays available in September, 1956, range from 0.3 to 1.1 percent copper.

In 1956, a working option was held by Richmond Development Company, North Bay.

STRALAK ZINC PROPERTY

Ownership J. A. Dawson, A. Burton, and others. (1954.)

Location Craig township, near Stralak station on the Canadian Pacific railway; claims S.5043, S.51307, S.51319.

Metal Present Zinc.

Development Surface-trenching; nine holes drilled by Bankfield Consolidated Mines, Limited, and associates in 1949. 18 holes drilled by Preston East Dome Mines, Limited, in 1952.

Geology There are two zones of massive and disseminated sulphides about a mile apart. These lie in gneiss near a granite contact. The east zone is 800 feet long, open to the west; 1- to 6-foot core widths were obtained in drill holes. The west zone has been traced 400 feet, and core lengths of 1 to 7 feet were obtained. Drilling showed an average of about 5 percent zinc with 1.5 ounces of silver per ton, plus small amounts of copper and lead.

Reference O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 63–65.

STURDY MINES, LIMITED

Location Creighton and Fairbank townships, between the Errington and Vermilion properties of Consolidated Sudbury Basin Mines, Limited.

Metals Present Copper, lead, zinc, silver.

Development 103 holes, comprising 69,586 feet of diamond-drilling about half of which was done in 1927–28, the remainder in 1952–53 by Sudbury Midzone Mines, Limited.

Sudbury—Continued

Geology Mineralization occurs in a slate-tuff contact zone along which some faulting has occurred. Both eastward and westward along this contact, orebodies have been developed at the Errington and Vermilion mines of Consolidated Sudbury Basin Mines, Limited. The sulphides are believed to be replacements of a limestone bed adjacent to an argillite horizon and consist of an intimate dissemination of sphalerite, chalcopyrite, galena, and pyrite in a carbonate matrix. The deposits are associated with thrust-faulting and anticlinal folds in the slate-tuff contact.

Dimensions and Grade Intersections of commercial-grade copper-lead-zinc ore were obtained at two places, but close drilling failed to establish orebodies at either locality; 23 holes showed 47 intersections, ranging from 0.5 to 24.3 feet of core length, that assayed over 1 percent in any one metal. Eight intersections, ranging from 1.0 to 9.0 feet of core length, contained over 10 percent combined copper-lead and zinc. (Philip Eckman, Dec., 1953.)

References O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 47; Vol. LXV, 1956, pt. 3 (in preparation).
Northern Miner, Apr. 29, 1954.

Remarks Drilled by National Lead Company in 1927, by Creighton Fairbanks Mines, Limited, in 1928, and by Sudbury Midzone Mines, Limited, in 1952–53. In 1955 Sudbury Midzone Mines, Limited, was merged into Midrim Mining Company, Limited, and a wholly owned subsidiary company, named Sturdy Mines, Limited, was formed to develop the property.

WABICO MINES, LIMITED

Location Afton township; Emerald Lake property.

Metals Present Copper, cobalt.

Development Geophysical and geological surveys, trenching, diamond-drilling.

Geology Sulphide occurrences in Timiskaming-type sediments: (1) Large area of disseminated pyrrhotite with minor pyrite and chalcopyrite. Assays up to 0.5 percent copper from diamond-drill core. (2) Small lens of heavy cobalt and copper mineralization exposed by trenching.

References O.D.M., Vol. XLV, pt. 6, p. 41, 1936.
Northern Miner, Sept. 6, 1956.

Remarks Exploration and diamond-drilling are being continued in 1957.

WHISKEY LAKE COPPER SHOWINGS

Location Townships 137, 138.

Metal Present Copper.

Development Surface work; shaft 50 feet deep on claim W.R.92.

Geology On claim W.R.92 a zone of disseminated chalcopyrite and quartz-chalcopyrite veinlets, 200 feet by 20 feet on surface, and possibly extending 500–600 feet, occurs in altered sediments along the footwall of a diabase sill. Estimated grade is 1.5–2.0 percent copper.

Sudbury—Continued

On claims W.R.91, W.R.113, and W.R.114 a quartz-chalcopyrite vein, up to 5 feet wide, has been traced for a mile. The best sections average 1.5 percent copper.

On claim Y.401 copper mineralization occurs in talus blocks at intervals for 500 feet.

On claim Y.352 lenticular mineralized zones occur in diorite.

Reference G.S.C., Summ. Rept., 1917, pt. E, pp. 8–10.

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Afton tp., central part, (Geo-scientific Prospectors, Ltd.)	O.D.M., Vol. XLV, 1934, pt. 3, p. 27	X	....	....	....
Aylmer tp., NW. ¼	O.D.M., Geological Branch, files	X	....	....	....
Baldwin tp., lots 1, 2, con. I; lot 1, con. II; lot 8, con. III	O.D.M., Vol. LXI, 1952, pt. 4, pp. 30, 31	X	X	....	....
Baldwin tp., lot 11, con. III	O.D.M., Vol. LXI, 1952, pt. 4, p. 31	X	....	....	....
Baldwin tp., N. ½ lot 7, con. VI	O.D.M., Vol. LXI, 1952, pt. 4, p. 30	X	....	....	....
Balfour tp., lot 7, con. VI	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 47	X	....	X	X
Blezard tp., S. ½ lot 3, con. V	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 49	X	....	X	X
Botha tp., Venetian Lake; claim S.32002	O.D.M., P.R. 1952-4, 1952, p. 16	X	....	X	X
Bowell tp., mining location, W.D. 252	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 49	X	....	X	X
Cascaden tp., (Eastview Mines, Ltd.)	Northern Miner, Aug. 9, 1956	X	X	....	....
Chester tp., north-central part, (Beaver Bethnal Gold Mines, Ltd.)	O.D.M., Vol. XLI, 1932, pt. 3, p. 27	X	....	....	....
Chester tp., SE. part (Cyderman prop.)	O.D.M., Vol. XLI, 1932, pt. 3, p. 30	X	....	X	X
Chester tp., NE. part (Lawrence prop.)	O.D.M., Vol. XLI, 1932, pt. 3, p. 26	X	....	....	....
Chester tp., NE. part (Young-Shannon Gold Mines, Ltd.)	O.D.M., Vol. XLI, 1932, pt. 3, p. 32	X	....	....	....
Creighton tp., lot 4, con. V	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 49	....	....	X	X
Cunningham tp., central part	O.D.M., Vol. LI, 1942, pt. 7, p. 22	....	....	X	X
Cunningham tp., claim S.57672	O.D.M., Metal Resources Circ., No. 1, p. 59	....	....	X	X
Davis tp., lot 13, con. II	O.D.M., Vol. XLI, 1932, pt. 4, p. 48	X	....	X	....
Davis tp., (Alba Explorations, Ltd.)	Northern Miner, Jan. 5, 1956	X	X	....	....
Delhi tp., Lahay Lake	O.D.M., Vol. LXIII, 1954, pt. 4, p. 20	X	....	....	....
Denyes tp., E. part (Derraugh prop.)	O.D.M., Vol. XLIII, 1934, pt. 3, p. 27	X	....	....	....
Dieppe tp., (Chellew Mines, Ltd.)	Northern Miner, Sept. 27, 1956	X	X	....	....
Dowling tp., lots 12, 13, con. II	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 49	X	....	X	X
Drury tp., lot 7, con. I	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 37	X	X	....	....
Enid tp., NE. part; claim S.19519	O.D.M., Vol. XL, 1931, pt. 3, p. 37	X	X	....	....
Fairbanks tp., con. II	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 49	....	....	X	X
Fraleck tp., SE. corner; claim S.51471	O.D.M., Geological Branch, files	X	....	X	....
Frechette Island, Georgian Bay	O.D.M., Geological Branch, files	X	....	....	....
Greenlaw tp., NW. part (Lee Gold Mines, Ltd.)	O.D.M., Vol. XLIII, 1934, pt. 3, p. 33	X	....	....	....
Hammer tp., lots 1, 2, con. II	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 48	X	....	X	X
Hart tp., lots 7, 8, con. V	O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 65–66	....	....	X	X
Hess tp., lots 1, 2, con. IV	O.D.M., Vol. XXXVIII, 1929, pt. 7, pp. 66–67	X	X	....	....
Hess tp., lot 5, con. IV	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 67	X	....	....	....
Hutton tp., lot 12, con. II	O.D.M., Vol. XLI, 1932, pt. 4, p. 38	....	X	....	....
James tp., lots 1, 2, cons. III, IV	O.D.M., Vol. XLI, 1932, pt. 4, p. 27	X	....	X	....
Lorne tp., lot 10, con. II	O.D.M., Metal Resources Circ. No. 1, p. 51	....	....	....	X

Sudbury—Continued

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
May tp., N. ½ lot 1, con. VI	O.D.M., P.R. 1950-4, 1950, p. 5	X	....	....	....
May tp., lots 3, 5, con. VI	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 27	X	....	....	....
McKim tp., lot 6, con. II	O.D.M., Geological Branch, files	X	X	....	....
Mongowin tp., Wallace mining location	Rept. Royal Ont. Nickel Comm., 1917, pp. 24–26	X	X	....	....
Montcrieff tp.,	Rept. Royal Ont. Nickel Comm., 1917, p. 209	....	X	....	....
Nairn tp., (Mogul Mining Corp., Ltd.)	Northern Miner, May 10, 1955	X	X	....	....
Nairn tp., lots 8, 9, con. V	O.D.M., Vol. XXXVII, 1929, pt. 7, p. 33	X	....	....	....
Neelon tp., lot 12, con. III, lot 4, con. IV	G.S.C., Rept. No. 961, 1907, p. 67	....	X	....	....
Neville tp. (Beaver Lake prop.)	O.D.M., Vol. XXXV, 1926, pt. 6, p. 76	X	....	....	....
Norman tp., (Cleveland Copper Corp.)	Northern Miner, Oct. 11, 1956	X	X	....	....
Parkin tp., lot 6, con. III	O.D.M., Vol. XLI, 1932, pt. 4, p. 38	....	....	X	....
Parkin tp., lot 12, con. III	O.D.M., P.R. 1952-4, 1952, p. 5	X	....	....	X
Porter tp., lot 3, con. II	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 35	X	....	....	....
Rayside tp., N. ½ lot 2, con. III	O.D.M., Vol. XXXVIII, 1929, pt. 3, p. 48	X	....	X	X
Roosevelt tp., Little Bear Lake	O.D.M., Metal Resources Circ. No. 1, p. 52	....	X	....	....
Scadding tp., lot 1, con. V	O.D.M., Vol. XLI, 1932, pt. 4, p. 45	X	....	X	....
Scadding tp., NE. ¼, S. ½ lot 7, con. VI	O.D.M., P.R. 1952-4, 1952, p. 4	X	....	....	....
Shakespeare tp., lot 5, con. I	O.D.M., Geological Branch, files	X	....	....	....
Shakespeare tp., lot 2, con. III	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 24	X	....	....	....
Shakespeare tp., lots 1, 2, con. V	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 27	X	....	....	....
Spragge tp., ½ mile east of Spragge village	O.D.M., P.R. 1953-2, 1953, p. 7	X	....	....	....
Street tp., lots 9, 10, con. III	O.D.M., Vol. XLI, 1932, pt. 4, p. 47	X	....	....	....
Ulster tp., near Stralak station, C.P.R.	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 65	X	....	....	X
Victoria tp., Sugar Lake area	O.D.M., Vol. XXXVIII, 1929, pt. 7, p. 31	X	....	....	....
Yeo tp., south of Schist Lake (Cryderman prop.)	O.D.M., Vol. XLI, 1932, pt. 3, p. 30	X	....	....	....

Timiskaming Mining Division

ARJON GOLD MINES, LIMITED

Location Barr township.

Metal Present Copper.

Geology Chalcopyrite in veins in Nipissing diabase.

Reference Northern Miner, Feb. 23, 1956. (Gives location erroneously as Klock township.)

AUBAY URANIUM MINES, LIMITED

Location Vogt township, south of the McLean Peninsula, Lake Timagami; claim T.37009.

Metal Present Copper.

Development Surface work and diamond-drilling, 1955–56.

Geology Pyrrhotite, pyrite, and chalcopyrite occur in a schisted complex of rusty sediments and volcanics of Keewatin age, which can be seen at the south tip of Island No. 364 when the water level is low in Lake Timagami. Diamond-drilling from the ice has shown this mineralized zone and associated iron formation to continue to the east where they are overlain by sediments of the Cobalt series.

References O.D.M., Geological Branch, files.
Northern Miner, Aug. 16, 1956.

Remarks Gold and uranium values elsewhere on the property.

BRUNEAU PROPERTY

Location Gillies Limit, block 60; claim T.33936.

Metals Present Lead, copper.

Development Old pits; minor diamond-drilling, 1954.

Geology Galena with smaller amounts of chalcopyrite, pyrite, and pyrrhotite occur in a quartz vein with some calcite and red feldspar. Quartz vein dips 20 degrees and is lenticular; it traverses Keewatin rocks.

CAMERON PROPERTY
(Trethewey-Ossian Mine)

Ownership C. Cameron, Kirkland Lake.

Location Pacaud township, north half of lot 3, concession V; adjoins Patterson mine.

Metal Present Copper.

Development Shaft sunk to 140 feet; 167 feet of lateral work done on 125-foot level in 1929; surface diamond-drilling in 1951; shaft deepened to 220 feet; 190 feet of lateral work on 200-foot level; underground diamond-drilling, in 1953.

Geology Main sulphide band in Keewatin tuffs continues parallel to the granite contact from the Patterson into the Trethewey-Ossian property and has been traced 2,000 feet across the latter; shaft is located at the intersection of a quartz vein and the sulphide band; parallel band (No. 2 zone) indicated by 1951 diamond-drilling. Replacement of iron formation by chalcopyrite.

Production 1955, 43,411 pounds copper, valued at $16,008, by Cam Copper Mines, Limited.

Dimensions and Grade Best intersections (No. 2 zone); 19.6 percent copper in 3.1 feet of core; 23.1 percent copper in 4.6 feet of core.

References O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 102.
Northern Miner, Feb. 26, Aug. 6, 1953.

Remarks Under option to Consolidated Golden Arrow Mines, Limited, in 1953. Optioned by Cam Copper Mines, Limited, in 1955 and Mirla Exploration, Limited, in 1956.

CANADIAN ASTORIA MINERALS, LIMITED

Location Chambers township, south of Chambers Lake; claim T.35003.

Metals Present Copper, lead, zinc.

Development Numerous old pits and trenches; geological and geophysical surveys; diamond-drilling, 1956.

Geology Zone of sulphide mineralization associated with quartz veins and stringers. Pyrite is the predominant sulphide, with pyrrhotite, sphalerite, galena, and chalcopyrite. The host rocks are schisted andesites and tuffs intruded by quartz porphyry and diorite.

References O.D.M., Vol. LI, 1942, pt. 6, p. 38. (F. W. Thompson.)
Northern Miner, July 26, 1956.

Remarks Parts of the property previously held by: Consolidated Mining and Smelting Company of Canada, Limited, 1934; F. W. Thompson, 1941; Halkin Mines, Limited, 1952.

CHESKIRK MINES, LIMITED

Location Best township.

Metals Present Copper, nickel.

Development Small pits, diamond-drilling, magnetometer and resistivity surveys.

Geology On claim T.31705 pyrrhotite, pyrite, and chalcopyrite with nickel mineralization occur in a sheared diabase dike intruding granite; on claims T.31703, T.R.T.6904, and T.R.T.5165 similar mineralization occurs at five places in Keewatin volcanics.

COBALLOY MINES AND REFINERS, LIMITED

Location Gillies Limit; claim A.1.

Metal Present Lead.

Development A 200-foot shaft and drifting, made in prospecting for silver.

Geology Galena is largely replacement of cherty Keewatin sedimentary band between lava flows.

COBALT CONSOLIDATED MINING CORPORATION
(Penn-Cobalt Silver Mines Property)

Location Coleman township, lot 4, concession IV, the former Foster property.

Metals Zinc, lead, copper, nickel.

Development Shaft with levels at 140 and 210 feet; extensive drilling (11,500 feet) to a vertical depth of 500 feet.

Geology The mineralization is a replacement of a nearly vertical Keewatin chert bed below silver-cobalt veins, which occur in overlying sediments of the Cobalt series.

Production 1952–55: 460,277 pounds of nickel and 307,983 pounds of copper as a by-product of mining silver-cobalt ore.

Ore Reserves and Grade Penn-Cobalt Silver Mines, Limited, reported, from underground work and diamond-drilling, a reserve in excess of 300,000 tons of 3 percent zinc, 1.5 percent lead, 0.5 percent copper, and 0.75 ounces per ton of silver. (Progress report, 1951.) An independent report made for the company gave an ore estimate of 200,000 tons grading: zinc, 2.42 percent; lead, 1.62 percent; copper, 0.38 percent; and silver, 0.85 ounces per ton. (Information supplied by the company, Jan., 1957.)

Remarks The base-metal ore occurs on the former Foster Mine property, which produced silver and cobalt. In 1951 Penn-Cobalt Silver Mines, Limited, undertook exploration of the zinc-lead-copper occurrences, and in 1952 a mill building was erected, with the intention of installing equipment to treat 300–500 tons per day. A decline in the price of base metals in 1952 contributed to the decision to stop further work on zinc-lead-copper production. In 1953 the company was merged into the Cobalt Consolidated Mining Corporation.

CROSS LAKE MINING COMPANY, LIMITED

Location Torrington township, island in Cross Lake; claim T.35527.

Metals Present Copper, lead.

Development Inclined shaft sunk on vein for 76 feet down the dip (about 1908). Shaft dewatered and sampled; four diamond-drill holes from surface, 1955.

Geology The vein in the shaft has a northwest strike and dips to the southwest at 40 degrees. It consists almost entirely of quartz, erratically mineralized with sulphides, and ranges from 4 to 24 inches in width. A short heading in the hanging wall of the shaft exposes two parallel veins of similar magnitude. The wall rock throughout is Cobalt greywacke cut by carbonate stringers and showing pronounced north-south shearing. There is a small outcrop of diabase (Nipissing(?)) on the south shore of the island.

Dimensions and Grade Heavy mineralization of pyrite, chalcopyrite, and galena was noted at two points at the bottom of the shaft, and samples from these assayed as follows: copper, 5.03 percent; lead, 2.39 percent; gold, 0.03 ounces per ton; and silver, 2.26 ounces per ton across 15 inches: copper, 0.35 percent; lead, 4.99 percent; gold, 0.01 ounces per ton; and silver, 2.12 ounces per ton across 18 inches. (S. A. Pain, June, 1955.)

References
O.B.M., Vol. XIX, 1910, pt. 2, p. 131.
Northern Miner, Dec. 1, 1955.

DIADEM MINES, LIMITED

Location Strathcona township, 2 miles southwest of Timagami; claim T.36589.

Metal Present Copper.

Development A number of pits and trenches by previous owners; geological and geophysical surveys; 4,500 feet of diamond-drilling in 13 holes, 1956.

Geology Sulphide mineralization occurs within the border phase of a diorite sill in contact with dacitic lava to the south. The sill, which dips steeply to the south, strikes south of west across the neighbouring Milestone property where the old O'Connor showings are located. Pyrite is the predominant sulphide, with minor chalcopyrite and traces of nickel.

Dimensions and Grade No ore to date. In the eastern part there is indicated a fairly continuous sulphide-impregnated zone of some 700 feet in length with a probable width of 15 feet. To a vertical depth of 400 feet (500 feet down the dip) these figures would indicate a possible potential of 500,000 tons grading 0.5 percent copper and 0.1 percent nickel. (W. J. Hylands, 1956.)

References O.D.M., Vol. LI, 1942, pt. 6, pp. 14, 24.
Northern Miner, August 23, 1956.

Remarks A program of deeper drilling is planned.

ELITE COBALT MINES

Location South Lorrain, near Oxbow Lake; claim T.35918.

Metals Present Lead, copper.

Development Old pits; diamond-drilling in 1956.

Geology Disseminated galena, chalcopyrite, and pyrite mineralization in slightly sheared Keewatin tuffs.

FIRBY PROPERTY

Ownership L. C. Firby, Timagami.

Location Strathcona township, 3½ miles south of Timagami; claim T.R.T.6986.

Metal Present Copper.

Development Surface work; geophysical surveys and 5 diamond-drill holes for the Newkirk Mining Corporation, Limited, 1955.

Geology Several small showings, in which sulphides are erratically distributed, occur in blocky, jointed altered andesite to the east of a large granite mass. The mineralization consists of pyrite, pyrrhotite, and minor chalcopyrite.

Dimensions and Grade Best diamond-drill intersection 0.45 percent copper in 8.6 feet of core.

Reference O.D.M., Vol. LI, 1942, pt. 6.

Remarks Optioned for examination by Sylvanite Gold Mines, Limited, 1955. The Newkirk Mining Corporation, Limited, optioned the property later in the same year.

HALKIN MINES, LIMITED

Location Clement township, northeast corner; claim T.31242.

Metal Present Copper.

Development Exploration by trenching and pack-sack diamond-drill.

Geology The showing is a flat-dipping quartz-carbonate vein, which has been partially brecciated and erratically mineralized with chalcopyrite and pyrite. It occurs in Nipissing diabase that shows marked alteration and variation in composition.

Dimensions and Grade Work to date outlines a quartz-carbonate mass 150 feet long by 75 feet wide with thickness up to 30 feet. A surface area, 80 by 30 feet, has been mineralized (estimated 1—2 percent copper), but drilling does not suggest that the mineralization continues down from surface. (L. J. Cunningham, 1956.)

Reference Northern Miner, Oct. 18, 1956.

MARALGO MINES, LIMITED

Location Strathy township, 1 mile north of Timagami; claim T.R.T.6923.

Metals Present Copper, zinc.

Development Geological and geophysical surveys; 5,000 feet of diamond-drilling, 1956. Further drilling planned.

Geology Sulphides with associated arsenopyrite are localized in subsidiary shear zones north of a wide regional carbonatized shear that strikes parallel to the local formational trend. The country rocks are Keewatin greenstones and rhyolites striking N.70°E. and dipping steeply to the south. Intrusive into the lavas are Haileyburian diorite and peridotite and Keweenawan olivine diabase.

Dimensions and Grade Interesting copper and zinc values with associated gold and silver intersected in the diamond-drilling, but no ore outlined. Mineralized zone of interest shows an average width of 20 feet. (E. L. MacVeigh, 1956.)

References O.D.M., Vol. LI, 1942, pt. 6.
Northern Miner, May 24, 1956.

Remarks The property is held under option from several vendors by Maralgo Mines, Limited.

MATHIAS PROPERTY

Ownership Alex. and Isaac Mathias, Larder Lake.

Location Rattray township, ¾ mile west of the Quebec border at mileage 28.5.

Metal Present Copper.

Development Old surface work; six diamond-drill holes, 1956.

Geology Showing is in old pit under water close to west shore of small lake. The diamond-drill holes went from the conglomerate of the Cobalt series into Pontiac schists, which have been intruded by porphyritic granite. Low copper values occur in small quartz veins, which are more numerous in the conglomerate.

Dimensions and Grade	No sulphide intersections of economic grade in the cores.
Reference	O.D.M., Geological Branch, files.
Remarks	Optioned and diamond-drilled by Kerr-Addison Gold Mines, Limited, 1956.

MAYFAIR MINES, LIMITED

Location	Strathy township, Vermilion Lake; claim T.34314.
Metals Present	Iron, copper.
Development	Several old diamond-drill holes in gold-bearing quartz vein in iron formation. Rock trenches blasted across wide pyrite zone. Iron formation bulk sampled for metallurgical tests. Geological and geophysical surveys, 1954–55.
Geology	Sulphide mineralization, occurring in a zone of fracturing parallel to an iron-formation band, is indicated for 1 mile underlying Vermilion Lake. In this zone, which is 30–50 feet wide, pyrite is the predominant sulphide accompanied by minor chalcopyrite and traces of sphalerite.
Dimensions and Grade	Exploration chance for base metal and gold ore for which low values are found. The iron formation shows grade and tonnage of interest. (E. L. MacVeigh, 1956.)
References	O.D.M., Vol. LI, 1942, pt. 6. Northern Miner, Sept. 13, 1956.
Remarks	Diamond-drilling program planned.

MILESTONE MINES, LIMITED

Property	In part the old O'Connor pyrite deposit.
Location	Strathcona township, 2 miles southwest of Timagami; claim T.R.T.6979.
Metal Present	Copper.
Development	Pyrite shipped for sulphur from small open pits during World War I (?); some diamond-drilling, 1927–28 (?); geological and geophysical surveys and four diamond-drill holes in 1952 by the Candela Development Company, Limited, (subsidiary of Freeport Sulphur, Limited).
Geology	Sulphide mineralization composed chiefly of pyrite occurs as a replacement in the chloritized border phase of a diorite sill in contact with acid volcanics to the south. The sill dips steeply to the north, but changes to a south dip on the adjoining Diadem property to the east. Minor chalcopyrite is present with traces of pyrrhotite and sphalerite.
Dimensions and Grade	No ore has been found to date. Hole No. T-2 by Candela Development Company, Limited, averaged 0.5 percent copper over 37 feet.
References	O.D.M., Vol. LI, 1942, pt. 6, pp. 14, 24. Northern Miner, June 21, 1956.
Remarks	A program of closely spaced diamond-drilling has been recommended.

MINING GEOPHYSICS COMPANY, LIMITED

Location Scholes township, Gull Lake; claim T.37812.

Metals Present Copper, iron.

Development Geophysical surveys and diamond-drilling.

Geology About half the property consists of water claims in Gull Lake. The country rocks are Huronian sediments, overlain by Nipissing diabase on the south claims. Two vertical diamond-drill holes ½ mile apart went from conglomerate of the Cobalt series into Keewatin iron formation at depths of 57 and 306 feet. The drill cores show erratic distribution of disseminated pyrite with traces of chalcopyrite.

Dimensions and Grade No copper mineralization of ore grade has been found to date.

References O.D.M., Vol. XLV, 1936, pt. 6, p. 38.
Northern Miner, June 7, 1956.

Remarks Similar geological conditions exist to the east of the adjoining property of Abex Mines, Limited.

MITCHELL-CALLAHAN PROPERTY

Location Gillies Limit, block 2, claim T.19492.

Metal Present Lead.

Development Old pits and trenches.

Geology Galena, chalcopyrite, and some sphalerite and pyrite occur in a gently dipping calcite vein with Nipissing diabase as host rock. Assays of galena give 25–35 ounces silver per ton.

MONTGOMERY PROPERTY

Location Gillies Limit, block 91; claim T.37386, T.37387.

Metals Present Nickel, copper.

Development Geophysical survey and diamond-drilling, 1955.

Geology Nickel is associated with pyrrhotite and chalcopyrite mineralization in sheared gabbroic rock and adjacent Keewatin volcanics. There are two showings.

Remarks In 1956 The Coniagas Mines, Limited, took an option on the property, which has been dropped.

NEW ATHONA MINES, LIMITED

Location Cassels township, southwest of Pishabo Lake; claim T.40274.

Metal Present Copper.

Development Stripping and trenching; diamond-drilling in 1956.

Geology Several silicified rusty shear zones in massive basaltic lavas are being investigated by diamond-drilling. Sulphides are pyrite, pyrrhotite, and chalcopyrite. The schistosity (N.60°E.) is parallel to the contact of the greenstones with a granite mass to the north.

References O.D.M., Vol. XXXIV, 1925, pt. 3.
Northern Miner, Sept. 13, 1956.

NEW MINDA-SCOTIA MINES, LIMITED

Location Joan township, west of Lake Timagami; claim T.38225.

Metal Present Copper.

Development Surface work; geological and geophysical surveys; diamond-drilling, 1956.

Geology Erratic sulphide mineralization, chiefly chalcopyrite, occurs in flat-dipping quartz-carbonate veins that were intruded on, or close to, the lower contact of the Nipissing diabase sill with locally schisted Cobalt sediments. The vein zone has been exposed in several pits along the contact for a distance of more than 2,000 feet.

Reference Northern Miner, June 7, 1956.

NEW TELLURIDE GOLD MINES OF CANADA, LIMITED

Location Skead township, north of Skidoo Lake; claim L.8846.

Metals Present Gold, copper.

Development Shaft to 375 feet, and 2,000 feet of lateral work on three levels, 1927–28; mill built in 1929, closed down in 1932; 7,000 feet of surface diamond-drilling in 1946.

Geology In the vicinity of the shaft the country rocks are Keewatin andesite, dacite, and dacite breccia, which have been intruded by small lamprophyre dikes. The structure appears to consist of a series of weak, parallel northeast-southwest shears mineralized irregularly with stringers and veinlets of massive chalcopyrite, pyrite, and specularite.

References O.D.M., Vol. LVIII, 1949, pt. 6, p. 35.
Northern Miner, Jan. 3, 1957.

Remarks The property was formerly owned by Telluride Gold Mines of Canada, Limited, and later by Minaura Mines, Limited, and Hughmar Gold Mines, Limited.

A 75-ton-per-day mill was installed, and the shaft dewatered to the first level in 1956.

NORANDA MINES, LIMITED, EAGLE ROCK LAKE

Location Scholes township; claim T.36989.

Metal Present Copper.

Development Test pits and trenches; geological and geophysical surveys.

Geology Mineralized zones in siliceous iron formation in Keewatin-type greenstones. Main zone is 300 feet long and 2–30 feet wide. Sulphides are pyrite, pyrrhotite, low chalcopyrite, and minor sphalerite.

Dimensions and Grade Best channel sample is 0.51 percent copper over 3 feet. At the north end, channel sample averaged 0.20 percent copper over 28 feet. (R. S. Woolverton, 1956.)

References O.D.M., Vol. XLV, 1936, pt. 6, p. 38.
Northern Miner, Feb. 23, 1956.

Remarks The company plans to diamond-drill electromagnetic anomalies.

NORANDA MINES, LIMITED, MANITOU LAKE

Location Clement township; claim T.36497.

Metals Present Iron, copper.

Development Test pits and trenches; geological and geophysical surveys. Some diamond-drilling by previous owners. Two holes put down by Noranda Mines, Limited, 1956.

Geology Lenses of magnetite and massive sulphides are exposed on a prominent hill of Huronian sediments, which has been intruded by dikes of feldspar porphyry. Mineralization consists of magnetite, pyrite, pyrrhotite, and minor chalcopyrite. Zone is cut off at the base of the hill by flat-lying Nipissing diabase dike at least 350 feet thick.

Dimensions and Grade No ore-grade copper mineralization encountered to date. Magnetite zone is 1,300 feet long with lenses up to 20 feet in width. (R. S. Woolverton, 1956.)

References Northern Miner, Feb. 23, 1956.

Remarks Zone below the diabase dike not reached by drilling. Further exploration planned.

NORRIE PROPERTY

Ownership L. B. Norrie, New York.

Location Strathy township, east shore of Net Lake, northeast of Goward; claim W.D.269.

Metals Present Copper, nickel.

Development 10 pits and a number of diamond-drill holes before 1920; 225 feet of diamond-drilling in 1941.

Geology The country rock is a variable, fine- to coarse-grained hornblendic rock, which is designated by Knight as diabase or gabbro. It is injected by granite and quartz veins and is much silicified. Sulphides, which occur as irregular impregnations, consist predominantly of pyrrhotite with veinlets and seams of chalcopyrite

Dimensions and Grade	Picked samples from the old dumps yielded 0.05–0.15 percent nickel and as much as 3.5 percent copper. (R. A. Percy, 1941.)
References	O.D.M., Vol. XXIX, 1920, pt. 1, p. 213. O.D.M., Vol., LI, 1942, pt. 6, p. 24.

OBABIKA MINES, LIMITED

Location	Belfast township, southeast of Allan Lake; claim T.36546.
Metal Present	Copper.
Development	Trenching and pitting; geological and geophysical surveys; six diamond-drill holes, 1956.
Geology	Chalcopyrite and pyrite erratically distributed in a wide quartz-carbonate vein, which has been exposed in pits at intervals over a strike length of more than 4,000 feet. The vein, which dips about 30°SE. occurs on, or close to, the lower contact of the Nipissing diabase sill with the underlying Cobalt sediments. The drill holes were put down at 100-foot intervals along strike.
References	O.D.M., Geological Branch, files. Northern Miner, Nov. 29, 1956.
Remarks	Exploration and diamond-drilling are being continued.

PERRON GOLD MINES, LIMITED

Location	Strathcona township; claim T.35485.
Metal Present	Copper.
Development	Trenching and pitting; geological and geophysical surveys; five diamond-drill holes in 1956.
Geology	Sulphide mineralization occurs in altered and sheared Keewatin andesites and tuffs cut by numerous small dikes of feldspar porphyry. Some massive streaks, but chiefly an erratic dissemination of pyrite, pyrrhotite, with minor chalcopyrite and traces of galena and sphalerite.
References	O.D.M., Vol. LI, 1942, pt. 6. Northern Miner, Dec. 1, 1955.
Remarks	Under option to Trebor Mines, Limited, 1955–56.

PERRON-RAINFORD PROPERTY
(Amity Copper Mine)

Ownership	A. E. Perron and F. Rainford, Kirkland Lake.
Location	Pacaud township, south half, lot 5, concession VI; adjoins the Patterson mine.
Metal Present	Copper.
Development	Shaft sunk to 965 feet; 2,238 feet of lateral work, mostly on the 250-foot level; unwatered to the 250-foot level for resampling late 1951.

Timiskaming—Continued

Geology	Mineralization is sulphide replacement of a narrow band of iron formation in Keewatin tuffs. Ore is principally chalcopyrite, but bornite is abundant in places; section of the copper-bearing zone said to have 7–8 percent copper across 11 feet.
Production	1955; 65,526 pounds of copper and 41 ounces of gold, valued at $25,578.
Dimensions and Grade	Four ore shoots, 50–100 feet long, totalling 270 feet, 5 feet wide; average grade, 4–6 percent copper. (S. A. Pain, 1942.)
References	O.D.M., Vol. XXXVII, 1928, pt. 3, pp. 41–43. O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 101. Northern Miner, Nov. 29, 1951.
Remarks	Under option to Consolidated Golden Arrow Mines, Limited, 1953. 1955–56 production by Mirla Exploration, Limited.

PERRON-RAINFORD PROPERTY
(Patterson Mine)

Ownership	A. E. Perron and F. Rainford, Kirkland Lake.
Location	Pacaud township; south half lot 4, concession VI; adjoins Amity copper mine.
Metal Present	Copper.
Development	2,655 feet of lateral work on four levels to a depth of 500 feet.
Geology	Several narrow sulphide bands replacing iron formation in Keewatin tuffs; main chalcopyrite-bearing band traced across the property parallel to adjacent granite contact; pre-ore cross-faults filled with quartz veins or lamprophyre dikes.
Production	(See Amity copper mine above.)
Dimensions and Grade	Ore shoots are 32 feet or less in length and up to 4 feet in width. (S. A. Pain.)
Reference	O.D.M., Vol. XXXVIII, 1929, pt. 6, p. 102.
Remarks	Under option to Consolidated Golden Arrow Mines, Limited, in 1953. 1956 production by Mirla Exploration, Limited.

PRICE PROPERTY

Location	Coleman township, lot 19, concession IV; claim C.268.
Metal Present	Copper.
Development	Old shaft some 24 feet deep with stope adjacent.
Geology	Chalcopyrite with some pyrite occur in a calcite vein with some quartz. The vein, in Nipissing diabase, dips 30–40 degrees.
Production	20 tons cobbed ore, with 7.95 percent copper content, shipped in 1916.

REEF EXPLORATIONS, LIMITED
(Granite Lake Group)

Location Best township at south tip of Gillies Limit.

Metals Present Nickel, copper.

Development Old pits; diamond-drilling and geophysical survey.

Geology On claim T.31459 (formerly J.S.59), near middle of east line, a pit, estimated depth 35 feet, shows pyrrhotite, pyrite, chalcopyrite, and nickel mineralization with minor sphalerite and galena in Keewatin lavas. About 500 feet south and 800 feet north of this are similar occurrences. These replacements are believed to be related to gabbroic rock occurring nearby.

Reference Northern Miner, Dec. 13, 1956; Jan. 17, 1957.

Remarks These occurrences were discovered about 30 years ago.

RIB LAKE COPPER MINES

Location Gillies Limit, block 90; claim T.32374.

Metal Present Nickel.

Development Diamond-drilling in 1952.

Geology Nickel is associated with disseminated pyrrhotite in sheared gabbroic rock.

SHEROOMAC MINING CORPORATION

Location Pacaud township, northwest corner; claim L.57487.

Metals Present Copper, zinc.

Development Old pits and trenches; diamond-drilling, 1952; geophysical survey, 1956.

Geology Showings in Pacaud township occur in a peripheral zone of Keewatin tuffs and fragmental flow rocks, which lies to the north of the Round Lake granite. The mineralization occurs with small quartz stringers and disseminated in the adjacent rock; sulphides are chalcopyrite, pyrite, and sphalerite.

Dimensions and Grade Grab samples assayed: east showing, 1.46 percent copper, 1.5 percent zinc, and 0.84 ounces of silver and 0.18 ounces of gold per ton; west showing, 3.07 percent copper, no zinc, and 1.23 ounces of silver and 0.02 ounces of gold per ton.

References O.D.M., map No. 30d, 1921.
Northern Miner, June 19, 1952, Mar. 22, 1956.

Remarks Formerly Round Lake Copper Mines, Limited; later Taroomac Prospecting Syndicate. Part of the property in Boston township, Larder Lake mining division.

SILVER MILLER MINES, LIMITED
(La Rose Mine)

Location Coleman township, concession VI, mining location J.S.14.

Metal Present Copper.

Development Underground development on three levels at 62, 157, and 240 feet.

Geology Chalcopyrite accompanied by galena and sphalerite occurs in Keewatin chert formation. The structure is the downward extension of the La Rose No. 1 vein, which was mined in the overlying sediments of the Cobalt series for silver and cobalt.

Production 1950–55: 816,755 pounds of nickel and 307,983 pounds of copper as by-products of mining silver-cobalt ore.

Ore Reserves and Grade 30,000 tons averaging 1.75 percent copper. (L. J. Cunningham, Dec. 1956.)

References Northern Miner, Oct. 6, 1955; Apr. 26, Sept. 20, Dec. 13, 1956.

Remarks Silver, cobalt, and a little associated nickel, were the main metals produced by this mine. The copper production has come from copper ore, and is not a by-product of mixed ores.

J. SUTHERLAND PROPERTY

Location Gillies Limit, block 95; claim T.27817.

Metal Present Copper.

Development Minor X-ray diamond-drilling.

Geology Chalcopyrite splashes occur in a quartz vein in conglomerate of the Cobalt series.

TEMAGAMI MINING COMPANY, LIMITED

Location Phyllis, Briggs, Yates, and Joan townships.

Metals Present Copper, nickel, cobalt.

Development Geophysical surveys; over 300 diamond-drill holes; three-compartment shaft to 575 feet; lateral work proceeding on two levels.
Two pits producing from lenses of massive chalcopyrite.

Geology Pyrite mineralization, with associated copper and nickel sulphides and traces of cobalt, has shown up in diamond-drill holes along 5 miles of the footwall contact of a diorite sill with rhyolite. Ore grade material has been indicated in five lenses, totalling about 4,000 feet in length, centred on Timagami Island.
Chalcopyrite mineralization, practically free of other sulphides, occurs in the footwall rhyolite south of the pyrite zone as disseminations, veins, and replacement bodies.

Ore Reserves Pyrite-type ore: estimated 2,500,000 tons averaging 1 percent copper, 0.6 percent nickel, and 0.1 percent cobalt. (J. C. Frantz, Nov., 1956.)
Copper ore: estimated 50,000 tons averaging 20 percent copper and 0.1 ounce of gold per ton. (J. C. Frantz, Nov. 1956.)

Timiskaming—Continued

Production 1955: 2,620,833 pounds of copper, 549 ounces of gold, 4,681 ounces of silver; total value $989,578.

References O.D.M., Vol. LI, 1942, pt. 6, p. 25.
Northern Miner, Oct. 21, 1954, July 19, 1956.

Remarks Derosier section drilled by H. W. Knight, Jr. in 1951. Extensive drilling by Frontenac Exploration and Development Company, Limited, 1952–53. Temagami Mining Company, Limited, was incorporated in 1954.

TREBOR MINES, LIMITED

Location Strathy township; claim T.R.3187; 4 miles northwest of Timagami.

Metals Present Copper, nickel.

Development Shaft to 240 feet; 2,000 feet of lateral work on two levels; geophysical surveys; extensive surface diamond-drilling.

Geology Sulphide mineralization in a basin-shaped body of serpentinized peridotite intruded into Keewatin andesite. Disseminated chalcopyrite and pyrrhotite and veins of massive sulphides; values in copper, nickel, gold, silver, platinum group metals, and cobalt.

Production 1936: 99,284 pounds of copper, 65,434 pounds of nickel, 37.0 ounces of gold, 910.0 ounces of silver, 82.7 ounces of platinum, and 196.3 ounces of palladium, from 3,318 tons milled.

Ore Reserves About 1,000,000 tons near shaft available for open pit mining. Of this amount, 385,000 tons are calculated to average 0.84 percent copper and 0.5 percent nickel; 510,000 tons are estimated to contain 0.61 percent copper and 0.37 percent nickel. In addition, about 4,000,000 tons lower-grade material. Also values in cobalt, platinum, gold, and silver. (J. C. Dumbrille, 1953.)

References O.D.M., Vol. XLIV, 1935, pt. 7, pp. 54–55.
O.D.M., Vol. LI, 1942, pt. 6, p. 24.
Northern Miner, Apr 9, 1953, Dec. 1, 1955.

Remarks Main part of property formerly owned by Cuniptau Mines, Limited, and later by the Ontario Nickel Corporation, Limited.

Timiskaming—Continued

MISCELLANEOUS OCCURRENCES

Location	References	Metals Present			
		Copper	Nickel	Lead	Zinc
Belfast tp., NE. part (Normalloy prop.)	O.B.M., Vol. X, 1901, Map 10a Northern Miner, Dec. 20, 1956	X	....	....	....
Best tp., south-central part (Northland Pyrites prop.)	O.D.M., Vol. XXXV, 1926, pt. 3, p. 104	X	....	....	....
Ingram tp., NE. corner (Martin prop.)	O.D.M., Vol. XXXI, 1922, pt. 3, p. 16	X	....	X	....
Joan tp., central part, Island No. 1104, Lake Timagami	Geol. Surv. Can. Pub. No. 962, 1907	X	....	....	....
Pense tp., east-central part (Shortt prop.)	O.D.M., Vol. XXXI, 1922, pt. 3	....	X	X	X
Pense tp., north-central part (Osborne prop.)	O.D.M., Vol. XXXI, 1922, pt. 3	X	....	....	X
Phyllis tp., Island No. 725, (Abex Mines, Ltd.)	O.D.M., Vol. LI, 1942, pt. 6, Northern Miner, May, 17, 1956	X	....	....	....
Strathcona tp., SE. part (Byberg-Wilkinson prop.)	O.D.M., Vol. LI, 1942, pt. 6	X	....	....	....
Strathy tp., (International Nickel Co. of Can., Ltd.)	O.D.M., Vol. LI, 1942, pt. 6, p. 24 (claim W.D.264)	X	X	....	....
Strathy tp., central part (Clenor Mining Co., Ltd.)	O.D.M., Vol. LI, 1942, pt. 6, p. 34	X	X	....	....
Strathy tp., east-central part (Sey-Bert prop.)	O.D.M., Vol. LI, 1942, pt. 6, p. 38	....	....	X	X
Strathy tp., west-central part (Timagami Gold Mines, Ltd.)	O.D.M., Vol. LI, 1942, pt. 6, p. 39	X	....	....	....
Strathy tp., SE. part (Big Dan Mines, Ltd.)	O.D.M., Vol. LI, 1942, pt. 6, p. 26	X	....	....	....
Vogt tp., (Malartic prop.)	O.B.M., Vol. X, 1901, Map 10a	X	....	....	....

Index

(Townships, Mining Companies, Mines, and Properties)