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ONTARIO GEOLOGICAL SURVEY
MINERAL DEPOSITS CIRCULAR 18

Gold Deposits of ONTARIO

PART 2

Part of District of Cochrane, Districts of Muskoka,
Nipissing, Parry Sound, Sudbury, Timiskaming,
and Counties of Southern Ontario

by

J. B. Gordon, H. L. Lovell, Jan de Grijs, and R. F. Davie

1979



Ontario

Ministry of
Natural
Resources

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GOLD DEPOSITS OF ONTARIO

PART 2

by

J.B. Gordon¹, H.L. Lovell², Jan de Grijjs³, and R.F. Davie⁴

INTRODUCTION

This is the final part of the report on gold deposits of Ontario. It lists and briefly describes producers, past producers, prospects, and occurrences in the Territorial Districts of Muskoka, Nipissing, Parry Sound, Sudbury, and Timiskaming. Also included are deposits in the counties of Southern Ontario and in the part of the Cochrane District which was transferred from the Timiskaming District in May 1974. Gold Deposits of Ontario, Part 1 (Mineral Resources Circular 13), issued in 1971, dealt with deposits in the Districts of Algoma, Cochrane, Kenora, Rainy River, and Thunder Bay. Refer to Figure 1 for the location of these districts.

The format of Part 1 has been retained with only minor modifications. The deposits in which gold is the principal commodity are described, with emphasis on economic features. They are classified according to stage of development as producers, past producers, prospects, and occurrences. Definitions of each of these classes are given in the section on "Report Format". This report includes tables and charts showing statistics on gold production, prices, and earnings during the period 1969-1976.

This part of the circular reflects the change in one of the Territorial District boundaries, made in May 1974 and shown on ODM Map 2310, the Ontario Mineral Map (1974). Since Part 1 was issued in 1971, the boundary between the Territorial Districts of Cochrane and Timiskaming has been moved south one row of townships. The District of Cochrane now includes the townships of Adams, Benoit, Ben Nevis, Bisley, Black, Blackstock,

Clifford, Denton, Eldorado, Keefer, Langmuir, McEvay, Melba, Pontiac, Price, Thornehoe, Timmins and Tolstoi, all formerly in the District of Timiskaming. The deposits in these townships are thus dealt with in this report.

The information used in this circular has come mainly from Ontario Geological Survey publications and files; files of the Regional and Resident Geologists, Ontario Ministry of Natural Resources; Technical Survey Files and Diamond-Drilling Reports from the Assessment Files Research Office, Ontario Geological Survey, Toronto; Mineral Deposit Files of the Geoscience Data Centre, Ontario Geological Survey, Toronto; and mineral deposit files of the Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa. Additional information was obtained from the Northern Miner, the Canadian Mines Handbook, the Financial Post Survey of Mines and from private sources.

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The Mineral Development Sector, Department of Energy, Mines and Resources, Ottawa supplied copies of their files on gold deposits. Mr. E.E. Matten of the Mineral Resources Branch, Ontario Ministry of Natural Resources, Toronto, supplied statistical data on gold production in Ontario. D.G. Innes, formerly Resident Geologist, Ontario Ministry of Natural Resources, Sudbury⁵ and E.G. Bright, formerly Regional Geologist, Ontario Ministry of Natural Resources, Timmins⁶ contributed information on some gold deposits in the Sudbury District. Raimonds Balgalvis of the Surveys and Mapping Branch, Ontario Ministry of Natural Resources, Toronto and Jan Michalik of the Ontario Geological Survey, Toronto prepared the tables and charts showing gold production, price, and grade. Finally, the authors gratefully acknowledge the advice of S.A. Ferguson, formerly of the Ontario Geological Survey, Toronto and H.A. Groen of the Geoscience Data Centre, Ontario Geological Survey, Toronto.

1. Geologist, Mineral Deposits Section, Ontario Geological Survey, Toronto.

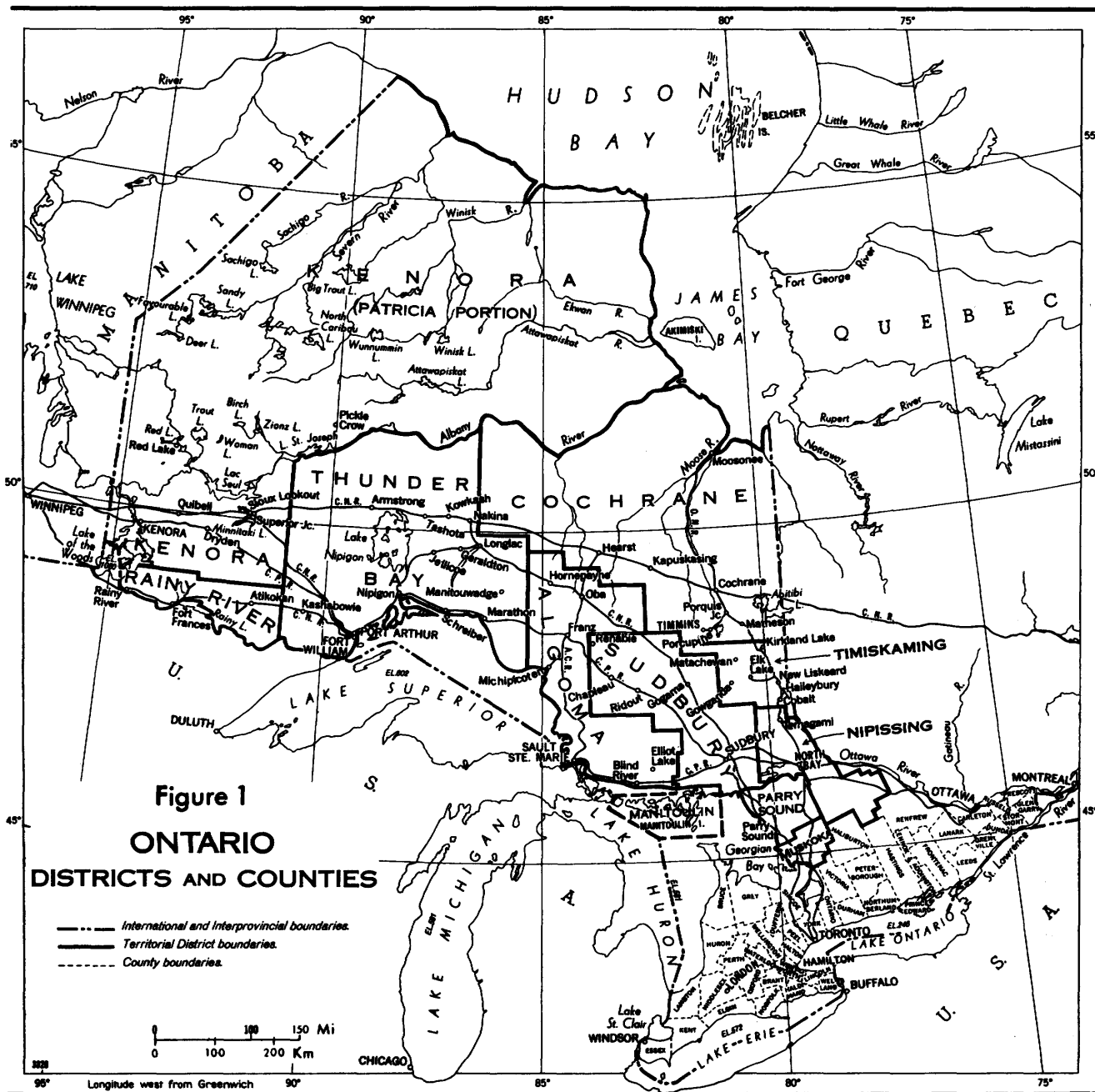
2. Resident Geologist, Ontario Ministry of Natural Resources, Kirkland Lake.

3. Formerly Geological Assistant, Resident Geologist's Office, Ontario Ministry of Natural Resources, Kirkland Lake.

4. Review Geologist, Scientific Review Office, Ontario Geological Survey, Toronto.

5. Now with the Mineral Deposits Section, Ontario Geological Survey, Sudbury.

6. Now with the Precambrian Geology Section, Ontario Geological Survey, Toronto.



REPORT FORMAT

The deposits are arranged alphabetically by county or territorial district. Within these large geographical areas, the deposits are arranged alphabetically by township, and within each township, alphabetically by deposit name.

Since the ownership of properties can change, the historical (i.e. most well known) names have been used wherever possible. For the same reason, no attempt has been made to include the current owners of prospects and occurrences.

For producers and past producers, it was possible to obtain only the name of the company or individual paying the taxes on the relevant patented claims. This is not necessarily the owner of the property. For information on ownership, past and present, the reader is referred to the Office of the Mining Recorder in the appropriate area. The area covered by, and address of, each office is given in Figure 2.

A National Topographic System (NTS) reference is given for each township to assist in locating the general area on maps using this system. The map reference is generally the best available Ontario Geological Survey geological map for the area in question. A less up-to-date geological map may be given if it is the only one which shows the location of the property. If the property is not shown on the map, or is shown on the map under a different name, a note is made to this effect in brackets after the map name. If the property is listed under a different name in any of the text references, this name is included in brackets after the reference.

Each deposit is classified according to its stage of development as a producer, past producer, prospect, or occurrence. A past producer or producer is defined as any deposit which has produced at least 100 ounces of gold. A producer is a mine which was still in operation in 1976. A prospect is a deposit where there has been at least 100 feet of underground lateral development, or at least 2,000 feet of diamond-drilling, or sufficient pitting and trenching to give at least two dimensions (length and width) to the mineralized zone. Also, records of the results obtained must be available. Deposits which have produced less than 100 ounces of gold are, for purposes of this inventory, classified as prospects. An occurrence is a deposit on which the amount of work done is less than the minimum requirements for a prospect and where gold is known to be present, either in an isolated pit, a trench, or a diamond-drill hole.

Generally, an assay value of 0.01 Troy ounce of Au per ton is the minimum criterion for an occurrence. Occasionally, in early publications, property descriptions did not include assay values for gold, but the amount of work performed was sufficient to indicate the presence of at least a small amount of (generally

visible) gold. Such properties are grouped with occurrences in this circular.

Throughout the report, the units of weight for gold and ore are Troy ounces and short tons respectively. Length is expressed exclusively in Imperial units in order to be consistent with Part 1. The appropriate metric equivalents are given in the Appendix.

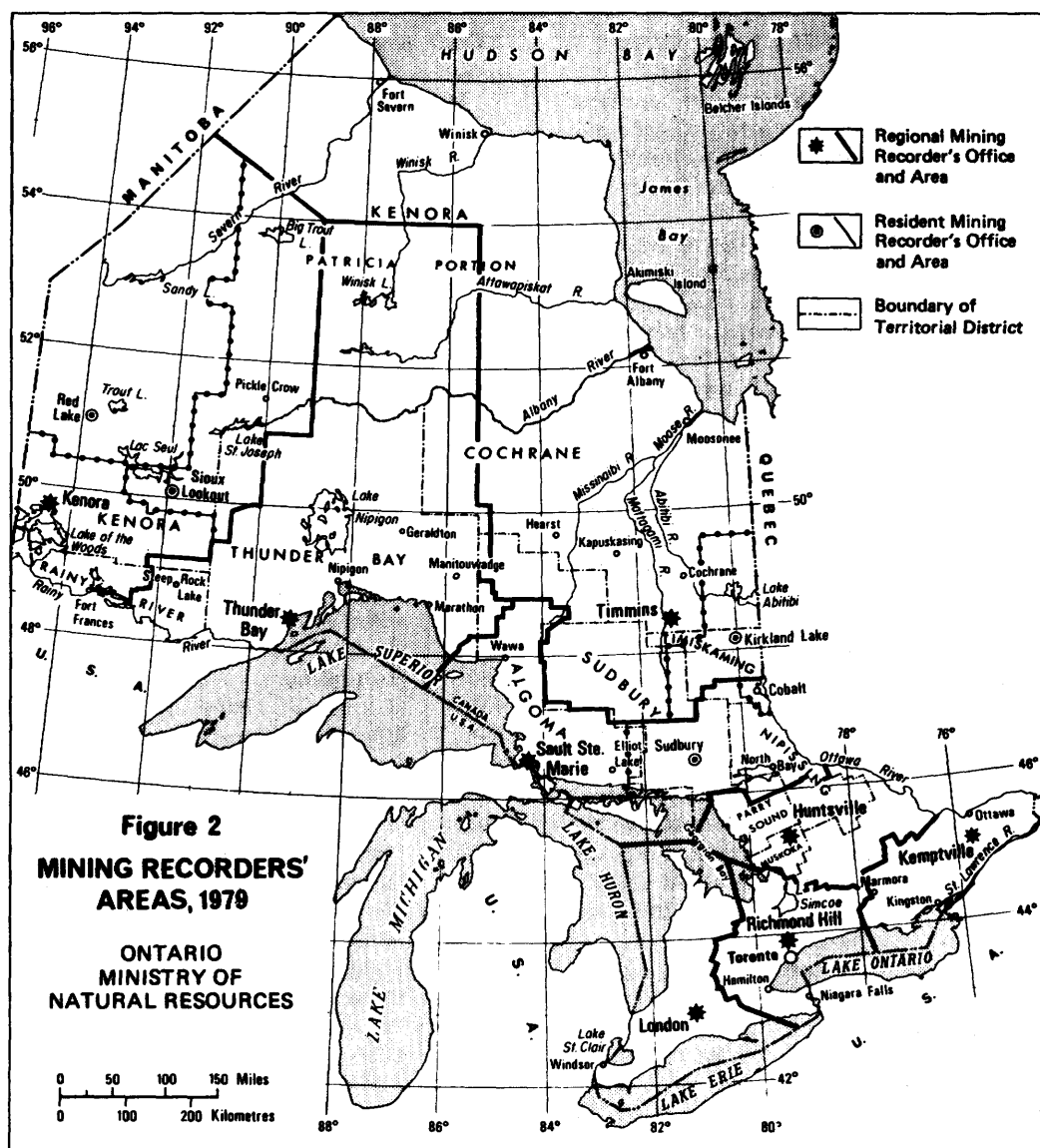
The following abbreviations appear frequently in both parts of the circular:

Ag	Silver
Au	Gold
Co	Cobalt
con. IV	Concession and number
Cu	Copper
DEMR	Department of Energy, Mines, and Resources
Fe	Iron
GC11	Geological Circular and number
GR51	Geological Report (after 1976, Geoscience Report) and number
GS17	Geoscience Study (succeeded Geological Circular) and number
GSC	Geological Survey of Canada
Mo	Molybdenum
MP69	Miscellaneous Paper and number
MRC3	Mineral Resources Circular and number
Ni	Nickel
NTS	National Topographic System
OBM	Ontario Bureau of Mines (until 1919)
ODM	Ontario Department of Mines (until 1970); Ontario Division of Mines (from 1972-1976)
ODMNA	Ontario Department of Mines and Northern Affairs (1970-1972)
OFR5221	Open File Report and number
OGS	Ontario Geological Survey (as of 1977)
OMNR	Ontario Ministry of Natural Resources
Pb	Lead
PR1947-2	Preliminary Report and number
Tp.	Township
U	Uranium
Zn	Zinc

ONTARIO GOLD PRODUCTION AND STATISTICS

Annual production from Ontario gold mines peaked at 2,666,533 ounces in 1960. Since then it has declined steadily so that production in 1976 was only 682,195 ounces. Because of the sharp rise in the price of gold during 1973 and 1974, the dollar value of gold produced in 1974 exceeded that of 1960 by 26 percent, although the amount of gold produced in 1974 was 72 percent less. Ten mines accounted for 92 percent of Ontario's gold production in 1976 (see Table 1).

Gold prices in 1973 and 1974 averaged \$97.41 and \$155.32 respectively, compared to \$36.56 in 1970. The



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Box 689, Sault Ste. Marie, P6A 5N2
Box 9000, Huntsville, P0A 1K0
Concession Rd., Kemptville, K0G 1J0
10670 Yonge St., Richmond Hill, L4C 3C9
1106 Dearness Dr., London, N6E 1N9

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(613) 258-3413
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174 Douglas St. W., Sudbury, P3E 1G1

(807) 727-2250
(807) 737-2100
(705) 567-9241
(705) 673-1111

TABLE 1 **ONTARIO GOLD PRODUCTION IN 1976.**

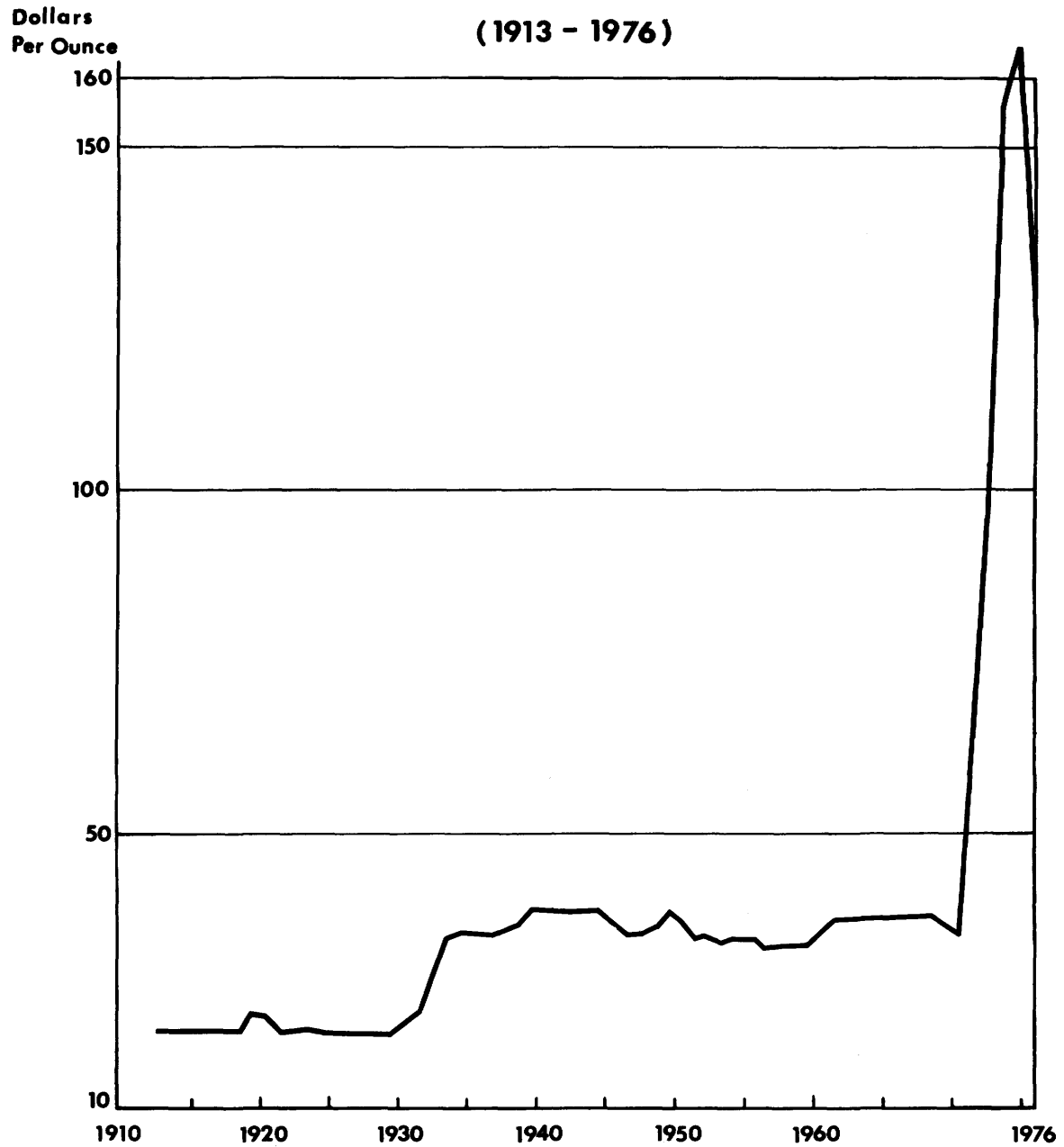
	Rated Daily Mill Capacity Tons	Daily Operating Average Tons	Ore Milled		Gold		Silver		Total \$
			Tons	ounces	ounces	\$	ounces	\$	
<i>Porcupine</i>									
Dome Mines Ltd.	1,985	1,984	708,300	119,367	14,694,913	20,651	88,758	14,783,671	
Pamour Porcupine Mines Ltd. (Sch.)	1,000	880	310,722	61,975	7,629,556	61,326	263,579	7,893,135	
Pamour Porcupine Mines Ltd.	3,000	2,628	959,398	87,019	10,712,648	9,268	39,834	10,752,482	
Hollinger Mines Ltd. (Ross Mine)	450	341	51,479	5,628	692,846	1,796	7,719	700,565	
Total	6,435	5,833	2,029,899	273,989	33,729,963	93,041	399,890	34,129,853	
<i>Kirkland Lake</i>									
Willroy Mines Ltd. (Macassa)	500	253	92,244	49,914	6,144,763	9,491	40,793	6,185,556	
<i>Larder Lake</i>									
Kerr Addison Mines Ltd.	1,800	722	264,226	108,908	13,407,337	5,591	24,030	13,431,367	
<i>Patricia Portion of Kenora</i>									
Bulora Corporation Ltd. (Madsen Div.)	760	380	57,590	8,662	1,066,353	1,238	5,321	1,071,674	
Campbell Red Lake Mines Ltd.	825	821	300,535	184,580	22,723,090	15,349	65,970	22,789,060	
Dickenson Mines Ltd.	490	321	117,459	31,084	3,826,658	3,286	14,123	3,840,781	
Robin Red Lake Mines Ltd. (Milled at Dickenson)				24,519	3,018,461	1,427	6,133	3,024,594	
Total	2,075	1,522	475,584	248,845	30,634,562	21,300	91,547	30,726,109	
<i>Miscellaneous</i>									
Total for Gold Mines	10,810	8,330	2,861,953	682,195	83,982,980	129,541	556,767	84,539,747	
<i>Other</i>									
Nickel-Copper Mines				46,898	5,773,472				
Base Metal Mines				10,454	1,286,960				
Gold Production				739,547	91,043,412				

Figure 3

ONTARIO GOLD MINES

PRICE OF GOLD IN CANADIAN DOLLARS

(1913 - 1976)



(Modified after Gold Mining in Ontario, Report of the Committee of Inquiry into the Economics of the Gold Mining Industry, 1955)

sharp increase in price reflected world monetary conditions, specifically the oil crisis, widespread recession, and inflationary pressures. Until such time as the role of gold in the world monetary structure is defined, the price of the metal will continue to be volatile, reacting to economic forces and political crises.

Discussions with industry personnel indicate that mining costs in Ontario gold mines range from just over \$100 to approximately \$145 per ounce of gold produced. This cost spread is a result of variations in size and type of deposits, mining methods employed, and efficiency of plant and labour. It appears certain that, as costs continue to rise, only large deposits suitable for highly mechanized operations will be mined.

The figures and tables accompanying this section up-date the statistics on gold in Ontario presented in Part 1. The price of gold in Canadian dollars is shown in Figure 3 and the average grade of ore mined in Figure 4. Figure 5 shows the total value of gold production and total dividends paid. The gold production from Ontario mines for the period 1969-1976 has been compiled in Table 2.

LOCATION OF ONTARIO GOLD DEPOSITS

The locations of Ontario's main gold-producing areas and their relative amounts of production are shown in Figure 6. The locations of all Ontario gold deposits have been compiled, at a scale of 1:1 013 760 (1 inch to 16 miles), on Ontario Geological Survey Preliminary Maps P.1226 to P.1229 (inclusive). All occurrences, prospects, and producers (past and present) have been plotted, using different shapes and sizes of symbols, on a generalized geological base. The historical names of all prospects, past producers, and producers are given. These maps are a very useful companion to both parts of this circular.

The locations of many of the deposits, together with the surrounding geology, are shown in more detail on the maps of the Geological Compilation Series, at a scale of 1:253 440 (1 inch to 4 miles). Figure 7 is an index to the maps of this series.

GUIDELINES TO PROSPECTORS

Since the early 1960s, development of new analytical methods (eg. atomic absorption spectrophotometry and neutron activation), together with technological advances in existing instrumentation, have made possible the accurate measurement of the small amounts of gold present in crustal rocks. This has contributed to our knowledge of the geochemistry of gold and hence to a better understanding of the genesis of gold deposits.

Analytical data published during the last few years indicates that the gold content of igneous rocks decreases with increasing silica content (i.e. from ultramafic, through mafic and intermediate, to felsic compositions) (Sobolev *et al.* 1973). In fact, the average gold content of ultramafic rocks appears to be three times that of felsic rocks. Also, limited data suggests that the gold content of volcanics is higher than that of their plutonic equivalents.

Gold deposits in many instances have a close spatial relationship with felsic intrusive rocks, particularly quartz-feldspar porphyry. The theory before the 1960s was that the deposits were genetically related to these intrusions. However, current research points to rocks of ultramafic and mafic composition as the ultimate source of gold in many Precambrian gold deposits. There is convincing evidence to support the theory that during dynamic and thermal metamorphism of ultramafic rocks in Precambrian 'greenstone' belts, gold was mobilized and transported hydrothermally to suitable depositional sites. It has been further postulated (Pyke 1975) that some auriferous carbonate zones represent altered ultramafic flows and that gold has been leached from the zone of alteration by hydrothermal processes and re-deposited in structural traps. Deposits which fit this model are present in the Red Lake, Porcupine, and Larder Lake camps, as well as other major Precambrian gold fields throughout the world (eg. Western Australia, South Africa, and India).

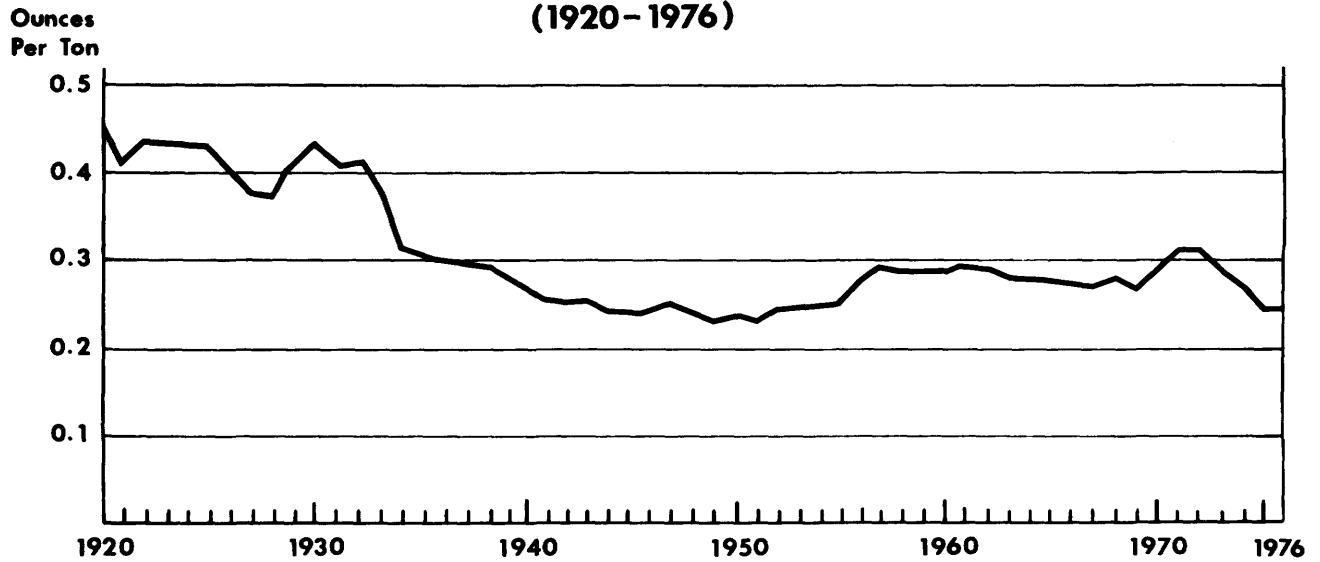
An alternate hypothesis (Ridler 1970) interprets the gold-bearing carbonate rocks in the Kirkland-Larder Lakes area as carbonate facies iron formation of volcanogenic origin and the gold deposits as being primarily syngenetic.

Consideration of these two models can help define favourable geological environments, within Archean 'greenstone' belts, in which to explore for gold deposits amenable to large scale-low cost mining methods. Prime prospecting areas should possess such features as:

1. Ultramafic flows, and/or iron formation which may represent distal exhalite; either or both of these rock types may exhibit intense and widespread carbonitization, and to a lesser extent silicification;
2. Strongly developed orogenic features including tight folding, extensive shearing, and major faulting; and
3. Stocks of felsic composition which are intrusive into the volcanic-sedimentary suite.

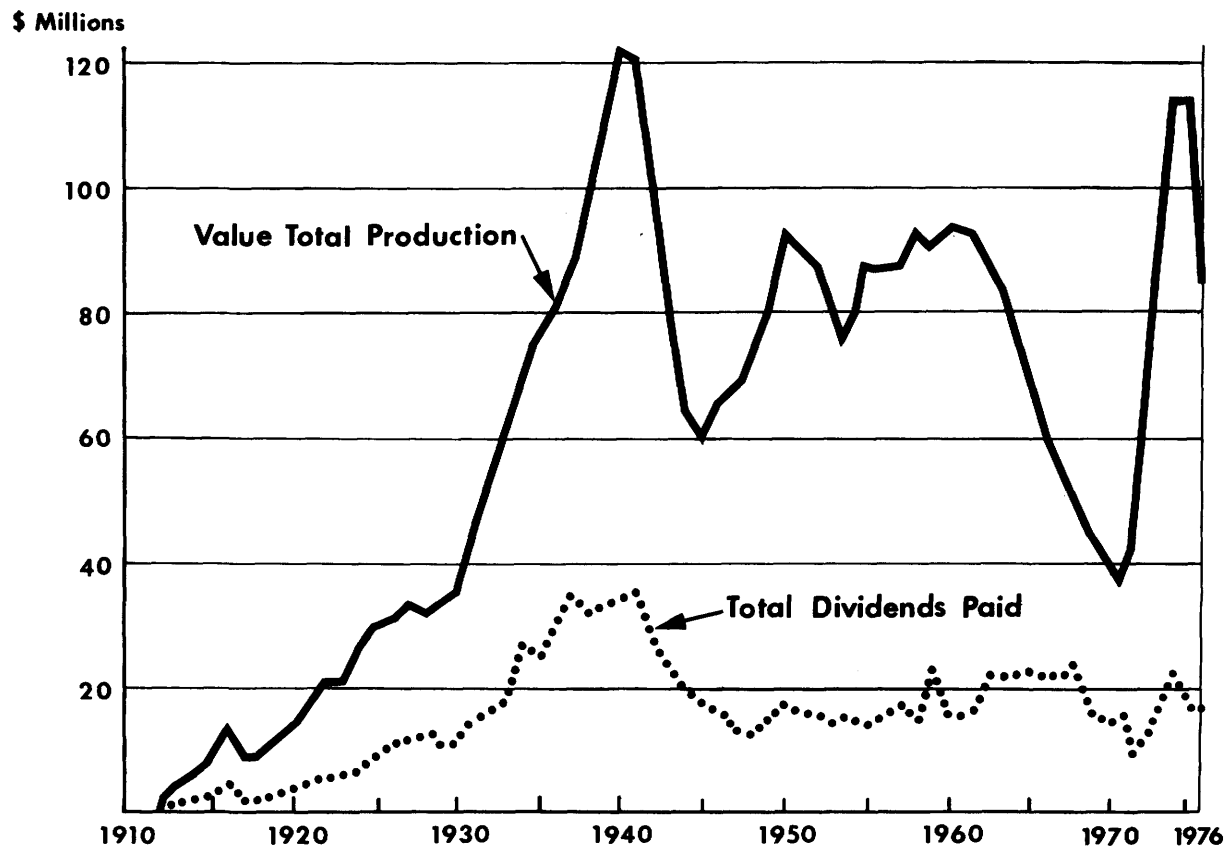
Gold released from ultramafic rocks or iron formation (the 'source rocks') during regional metamorphism would be mobilized by hydrothermal solutions driven by heat emanating from the felsic stock. The gold would then be deposited from these solutions in dilation structures in competent rocks (i.e. quartz-carbonate veins in fracture and stockwork systems).

Figure 4
ONTARIO GOLD MINES
AVERAGE GRADE OF ORE MINED
(1920-1976)



(Modified after Gold Mining in Ontario, Report of the Committee of Inquiry into the
Economics of the Gold Mining Industry, 1955)

Figure 5
ONTARIO GOLD MINES
PRODUCTION AND DIVIDENDS 1912-1976



(Modified after Gold Mining in Ontario, Report of the Committee of Inquiry into the Economics of the Gold Mining Industry, 1955)

TABLE 2 ONTARIO GOLD PRODUCTION 1969-1976.

PRODUCTION FROM GOLD MINES							PRODUCTION FROM GOLD AND BASE METAL MINES					
Year	Gold ounces	Value dollars	Silver ounces	Value dollars	Total Value dollars	Ore milled tons	Gold per ton ounce	Value per ton dollars	Dividends dollars	Gold ounces	Value dollars	Price of Gold in dollars/ounce
1969	1,181,757	44,540,421	271,445	523,889	45,064,310	4,332,790	0.27	10.40	15,604,640	1,229,666	46,346,112	37.69
1970	1,103,735	40,352,552	266,761	493,508	40,846,060	3,770,350	0.29	10.83	15,381,576	1,162,042	42,484,255	36.56
1971	1,063,029	37,571,697	232,144	362,145	37,933,842	3,375,963	0.31	11.24	16,403,194	1,133,987	40,079,636	35.34
1972	953,134	54,908,143	177,809	296,941	55,205,084	3,026,728	0.31	18.24	9,362,133	1,019,303	58,720,007	57.61
1973	859,986	83,772,956	169,653	428,543	84,201,499	2,916,274	0.29	28.87	13,139,869	922,303	89,843,380	97.41
1974	736,188	114,344,720	131,722	609,741	114,954,461	2,980,569	0.25	38.56		801,105	124,427,629	
1975	700,378	114,708,610	138,202	622,738	115,331,348	2,976,314	0.24	38.74	17,324,000	755,148	123,678,894	163.78
1976	682,195	83,982,980	129,541	556,767	84,539,747	2,861,953	0.24	29.54	17,463,000	739,547	91,043,412	123.10

PRODUCTION FROM GOLD MINES 1885-1976

Gold ounces —	110,545,442
Gold Value Dollars —	3,969,313,442
Silver ounces —	25,813,568
Total Value Dollars —	3,790,285,860
Ore milled-tons —	382,600,968

PRODUCTION FROM GOLD AND BASE METAL MINES 1885-1976

Gold ounces —	113,216,390
Value Dollars —	4,089,627,462

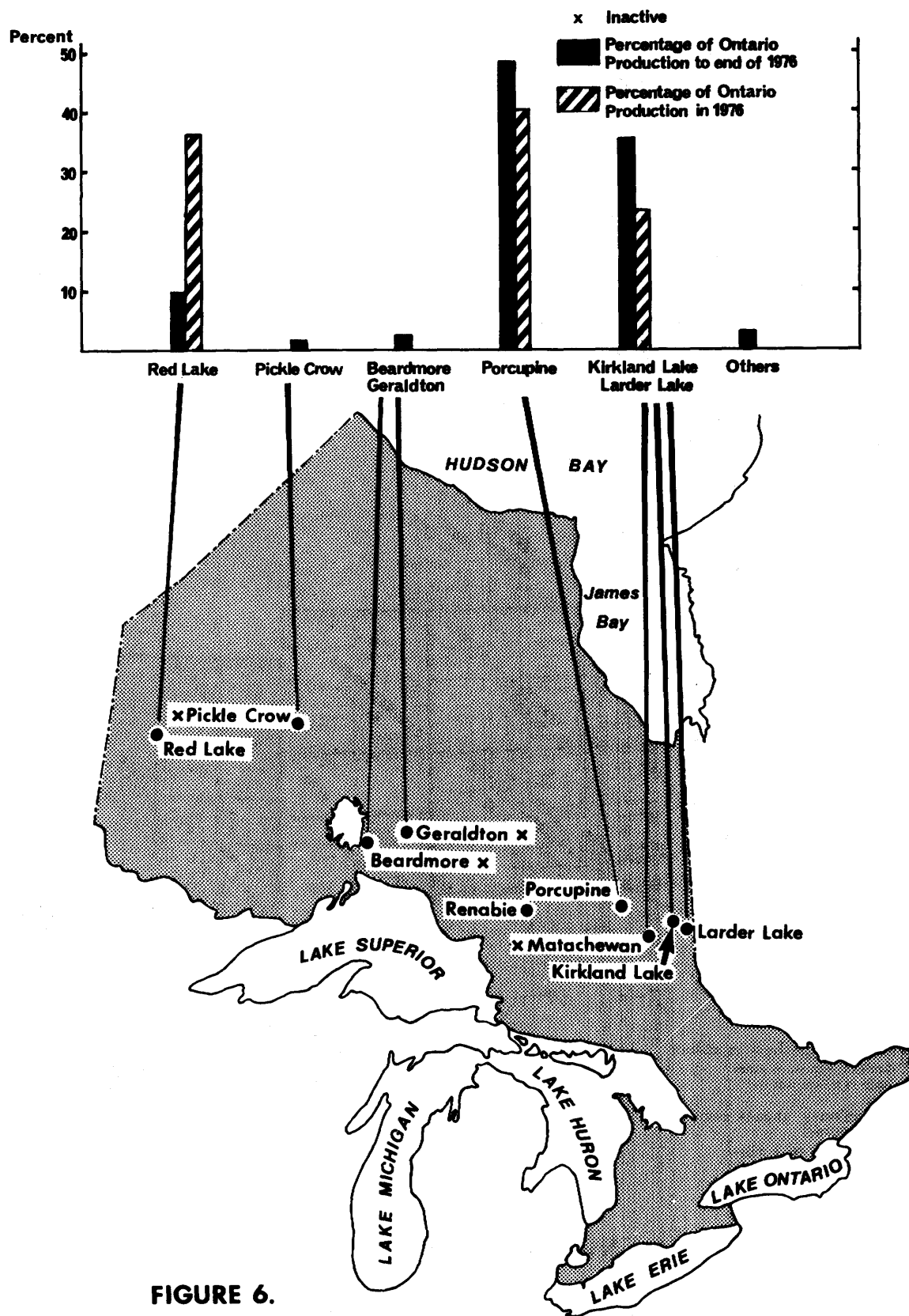
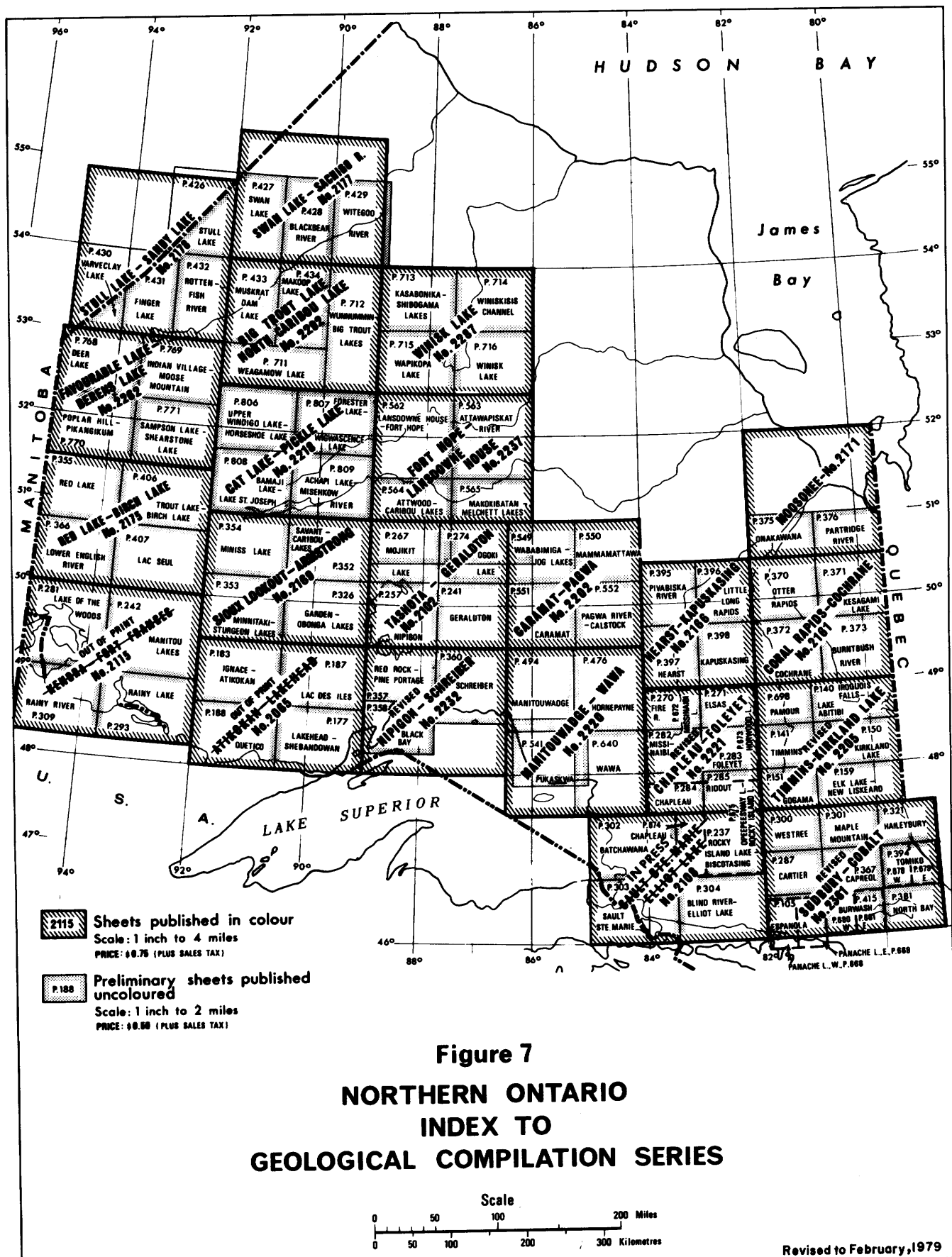


FIGURE 6.
ONTARIO GOLD MINING AREAS
 Their Location and Relative Importance



PROPERTY DESCRIPTIONS

COCHRANE DISTRICT

BENOIT TOWNSHIP (NTS 42A/8E)

Davidor Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 14 miles northwest of Kirkland Lake, in SW¼, S½, lot 9, concession II, Benoit Township. Shaft at Latitude 48.29°, Longitude 80.24°.

Map reference: ODM 2215, Benoit and Maisonville Townships.

GEOLOGY: Mafic metavolcanics are cut by felsic stringers and dikes, and by 3-foot wide shear zones containing quartz-carbonate veins and lenses with maximum widths of 1 foot. The main ore zone lies in a shear which strikes N30°W and dips vertically. Mineralization consists of pyrite, chalcopyrite, galena, molybdenite, and visible gold.

ECONOMIC FEATURES: The average recovered grade of the 1,298 tons of ore milled was 0.21 ounce of Au per ton. In 1947, more than 315 tons of ore was processed in a test mill and found to have a recovered grade of greater than 0.14 ounce of Au per ton.

OWNERSHIP: Open for staking as of January 1, 1971.

HISTORY: 1917: Gold discovered by Oscar Anderson on his farm.

1920: Two-compartment shaft to 400 feet, with levels at 80, 180, 280, and 380 feet and 1550 feet of drifting by Bourkes Mines Limited. In 1918, 5,331 pounds of ore milled at McIntyre mill, Timmins.

1933: Workings dewatered and sampled by Tellaurum Gold Mines Limited.

1936-1937: Ore mined by Bourkes Syndicate.

1938: Ore mined by Mesabi Gold Mines Limited.

1946-1947: More than 315 tons of ore processed in test mill by Davidor Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1918, 1936-1938	277	50	1,298	0.21

REFERENCES: OBM 1917, Vol. 26, p.249-251 (Anderson Farm).

ODM 1921, Vol.30, pt.6, p.53-55 (Bourkes Mines, Limited).

ODMNA 1971, GR92, p.17, 18.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Benoit Town-

ship, Bourkes Syndicate Gold Mine (1947).

BLACK TOWNSHIP (NTS 42A/8W)

White-Karry Prospect

MAIN METALS: Au

LOCATION: Approximately 18 miles northwest of Kirkland Lake, 1 mile northwest of Meyer Lake, in southern Black Township. Main showing in claim L46041. Latitude 48.28°, Longitude 80.32°.

Map reference: ODMNA 2213, Tolstoi and Black Townships.

GEOLOGY: Coarse- to fine-grained basalts, fragmentals, and agglomerates, striking N60-70°E, are cut by a feldspar porphyry dike. A zone of 2- to 6-inch wide quartz stringers strikes N10°W and has an indicated length of 120 feet. The stringers contain pyrite and free gold.

Assays of surface samples ranged from 0.5 to 1.0 ounce of Au per ton. Diamond-drill core intersections ranged from 0.01 to 0.31 ounce of Au per ton over an average width of 2 feet.

HISTORY: 1945: Rock trenching by G. Addison and associates. Nine diamond-drill holes by Wright-Hargreaves Mines Limited.

1947-1948: 30 diamond-drill holes (7,857 feet), three of which did not reach bedrock.

REFERENCES: ODMNA 1971, GR92, p.24, 25.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Black Township, McBean (1945) and Nelson (1948).

CLIFFORD TOWNSHIP (NTS 32D/5W)

Herrick Prospect

MAIN METALS: Au

LOCATION: Approximately 20 miles northeast of Kirkland Lake, ½ mile north-northwest of the 7-mile post on the Clifford-Ben Nevis township boundary, in southeastern Clifford Township. Latitude 48.30°, Longitude 79.75°.

Map reference: ODM 2283, Clifford and Ben Nevis Townships.

GEOLOGY: Northeast-trending Keewatin felsic and mafic metavolcanics are intruded by quartz-feld-

spar porphyry dikes and a northwest-trending diabase dike. East-striking brecciated and sheared zones are mineralized with chalcopyrite and some molybdenite and gold.

Samples of dacitic agglomerate yielded values ranging from trace to 2.67 ounces of Au per ton over widths of 5 feet.

HISTORY: 1920: Chalcopyrite and molybdenite discovered west of Verna Lake by Captain Snipe. Some trenching and diamond-drilling by Brett Trethewey Mines Limited.

1957: Geophysical survey, trenching, and diamond-drilling by Brilund Mines Limited.

1962: Property optioned to Hollinger Consolidated Gold Mines Limited by V. Herrick.

1963-1964: Geological and geophysical (magnetic, electromagnetic, and induced polarization) surveys, and 27 diamond-drill holes (10,174 feet) by Hollinger Consolidated Gold Mines Limited.

1972-1973: Surface and rock trenching by A.M. Hunter and D.A. Hunter.

REFERENCES: ODM 1975, GR132, p.46, 47.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Clifford Township, Herrick (1964).

DENTON TOWNSHIP

(NTS 42A/5E)

Aumo Prospect

MAIN METALS: Au

LOCATION: Approximately 17 miles southwest of Timmins, adjacent to the Carscallen-Denton township boundary, in northern Denton Township. Patented claims P8751, P10739, and P11152. Latitude 48.35°, Longitude 81.63°.

Map reference: ODM P.28, Denton Township.

GEOLOGY: A granitic stock intrudes Keewatin mafic metavolcanics; parts of the stock are cut by later porphyry dikes. Vein No.1, which occurs in granite on claim P8751, is a carbonatized zone containing quartz stringers. It is 150 feet long and up to 5 feet in width. Vein No.2 outcrops in granite near the southwest corner of claim P10739. It strikes east, dips steeply north, and is up to 8 feet in width.

ECONOMIC FEATURES: Results of diamond-drilling on the No.2 Vein are as follows (Financial Post Survey of Mines 1946, p.155):

	Length (feet)	Width (feet)	Depth (feet)	Tonnage	Grade (ounce of Au per ton)
No.1 lens	700	—	190	29,362	0.24
No.2 lens	460	—	170	13,163	0.21

No.3 lens 300 1.5 — — 0.82

HISTORY: 1918, 1925: Extensive trenching and diamond-drilling by James Hazelton, Hazelton Porcupine Gold Mines Syndicate, and Hazelton-Porcupine Gold Mines Limited.

1945-1946: 60 diamond-drill holes by Aumo Porcupine Mines Limited.

REFERENCES: Financial Post Survey of Mines 1945, p.125.

Financial Post Survey of Mines 1946, p.155.

ODM 1926, Vol.35, pt.6, p.33, 34 (Hazelton Porcupine Gold Mines, Ltd.).

MELBA TOWNSHIP

(NTS 42A/8E)

Melba Prospect

MAIN METALS: Au

LOCATION: Approximately 14 miles north of Kirkland Lake, in northwestern Melba Township. Shaft in patented claim L40670. Latitude 48.33°, Longitude 80.12°.

Map reference: ODM 2252, Melba and Bisley Townships (Pitchvein Mines Limited).

GEOLOGY: A small wedge of metavolcanics has been faulted into an area of metasediments. These rocks are intruded by a monzonite dike and several hornblende diorite dikes. Four gold-bearing veins were opened up by surface work. The most important of these, the Blue vein, occurs in greywacke and runs parallel to the faulted contact between the andesite and greywacke. The vein is 600 feet long, consists of sheared, altered and brecciated material, and contains visible gold.

ECONOMIC FEATURES: Diamond-drill core samples assayed from trace to 1.95 ounces of Au per ton. Underground on the 185-foot level, a 200 foot length of the Blue Vein averaged 0.371 ounce of Au per ton across a width of 3 feet. A bulk sample taken from this vein yielded 0.210 ounce of Au per ton across a mining width of 4.5 feet. The ore dump reportedly contains 2,000 tons of ore grading 0.20 ounce of gold per ton.

HISTORY: 1934: Gold discovered.

1936-1939: Trenching, 20 diamond-drill holes (4,371 feet), and a shaft, inclined at 55°NE, to a vertical depth of 200 feet. At a vertical depth of 185 feet, 900 feet of crosscutting and drifting was done, mainly on the Blue vein, by Melba Gold Mines Limited.

1939: Geological survey and sampling (channel and bulk) by The Teck-Hughes Gold Mines Limited.

1959: Stripping, surface and underground geological

survey, and dewatering and resampling of the shaft by Pitchvein Mines Limited.

1960: Shaft dewatered and 20 underground diamond-drill holes (1,771 feet) by Pitchvein Mines Limited.

1962: Three diamond-drill holes (1,705 feet) by Pitchvein Mines Limited.

REFERENCES: ODM 1972, GR103, p.19-22 (Pitchvein Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Melba Township, Gerrie (1959) and Moody (1961, 1962).

COCHRANE DISTRICT OCCURRENCES

BEN NEVIS TOWNSHIP

(NTS 32D/5E)

Name and Location	References	Metals	Remarks
Tremblay Occurrence: North of Verna Lake, in southwestern Ben Nevis Tp. Claims L42719 and L42720. Lat. 48.30°, Long. 79.74°.	ODM 1975, GR132, p.44,45. Resident Geologist's Files, OMNR, Kirkland Lake: Ben Nevis Tp., Tremblay (1948). ODM Map 2283, Clifford and Ben Nevis Townships.	Au Cu Zn	Quartz-carbonate stringers occur in felsic metavolcanics. Mineralization generally consists of finely disseminated pyrite, with variable but minor amounts of chalcopyrite and sphalerite. A grab sample from the No. 2 showing assayed 0.06 oz. Au/ton. Circa 1948: Stripping, pitting, and trenching by A. Tremblay.

BENOIT TOWNSHIP

(NTS 42A/8E)

Bergstrand Occurrence: SE¼, S¼, lot 11, con. IV, Benoit Tp. Lat. 48.32°, Long. 80.25°.	ODMNA 1971, GR92, p.16. ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Low gold values were reported from a feldspar porphyry dike and several quartz veins in Keewatin metavolcanics. 1920-1921: Pitting and trenching.
Carlson Occurrence: N¼, lots 1 and 2, con. I, Benoit Tp. Lat. 48.29°, Long. 80.16°.	ODMNA 1971, GR92, p.16. Resident Geologist's Files, OMNR, Kirkland Lake: Benoit Tp., Carlson (1946). ODMNA Map 2215, Benoit and Maisonville Townships.	Au Bi Ni Cu	Andesite cut by quartz-carbonate stockworks containing chalcopyrite, bismuth, niccolite, and 0.23 to 0.52 oz. Au/ton. Pre-1940: Shaft and lateral development of unspecified dimensions. 1944: 2 diamond-drill holes (700 feet); 3 x-ray diamond-drill holes by Avery, one of which encountered low gold values.
Chamandy Occurrence: Lot 10, con. V and VI, Benoit Tp. Lat. 48.35°, Long. 80.25°.	ODMNA 1971, GR92, p.17. Resident Geologist's Files, OMNR, Kirkland Lake: Benoit Tp., Chamandy (1948). ODMNA Map 2215, Benoit and Maisonville Townships.	Au Cu	Andesite and basalt intruded by granodiorite. Quartz stringers, 2 to 3 feet wide, occur in andesite and contain chalcopyrite. Assays ranged from trace to 0.1 oz. Au/ton. 1948: Pitting and trenching by Kelly Chamandy. 1967-1968: Geophysical surveys (magnetic, electromagnetic, induced polarization) and 1 diamond-drill hole by Mokta (Canada) Ltd.
Cotterill Occurrence: N¼, S¼, lot 7, con. I, Benoit Tp. Lat. 48.28°, Long. 80.23°.	ODMNA 1971, GR92, p.17. ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Quartz veins up to 6 feet in width occur in mafic metavolcanics and granitic rocks. Assays ranged from 0.15 to 1.20 oz. Au/ton.
Keefe Occurrence: W¼, N¼, lot 2, con. I, Benoit Tp. Lat. 48.29°, Long. 80.17°.	ODMNA 1971, GR92, p.19. Resident Geologist's Files, OMNR, Kirkland Lake: Benoit Tp., Onakee Mining Co. Ltd. (1962). ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Quartz veins occur in Keewatin metavolcanics. In one pit, 5 veins ranging in width from 1 to 3 inches were found. Assays ranged from trace to 1.02 oz. Au/ton. 1917: Pitting and 14-foot shaft. 1940: 3 diamond-drill holes.
Potter Occurrence: N¼, lot 4, con. I, Benoit Tp. Lat. 48.29°, Long. 80.19°.	ODMNA 1971, GR92, p.19. ODMNA Map 2215, Benoit	Au Cu	Quartz vein, 210 feet long and averaging 1 foot in width, cuts mafic

Name and Location	References and Maisonville Townships.	Metals Pb	Remarks
			metavolcanics. It contains chalcopryrite, galena, and visible gold. Circa 1920: Pitting, trenching, and 40-foot inclined shaft.
Scotvold-Nelson Occurrence: SW¼, N½, lot 5, con. I, Benoit Tp. Lat. 48.29°, Long. 80.20°.	ODMNA 1971, GR92, p.20. ODMNA Map 2215, Benoit and Maisonville Townships.	Au	An assay value of 0.15 oz. Au/ton was reported from a zone of pyrite mineralization in a lamprophyre dike. Circa 1921: Pitting.
Thompson-McLeod Occurrence: N½, lots 4 and 5, con. III, Benoit Tp. Lat. 48.32°, Long. 80.19°.	ODMNA 1971, GR92, p.20. ODMNA Map 2215, Benoit and Maisonville Townships.	Au	A quartz vein, 1.3 feet in width, cuts dacite. Free gold reportedly found in several places along vein. 1920: Adit and inclined shaft.

BLACK TOWNSHIP
(NTS 42A/8W)

Black Creek Occurrence: ¾ mile west of the northern end of Benoit Lake, in east-central Black Tp. Lat. 48.32°, Long. 80.30°.	ODMNA 1971, GR92, p.21. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Black Creek Gold Mines Ltd. (1946). ODMNA Map 2213, Tolstoi and Black Townships.	Au	Irregular masses of quartz and carbonate containing pyrite and gold occupy a 5- to 28-foot wide shear zone in mafic metavolcanics. Grab samples taken by Lake Shore Mines Ltd. in 1936 averaged 0.14 oz. Au/ton. An 8-foot vein width, tested by Black Creek Gold Mines Ltd., averaged 0.08 oz. Au/ton. 1936: Pitting by Mitchell; sampling by Lake Shore Mines Ltd. 1946: 16 diamond-drill holes (1,731 feet) by Black Creek Gold Mines Ltd. 1969: 5 diamond-drill holes (604 feet) by J.J. Gray.
Gipsy Occurrence: 1½ miles west-northwest of Meyers Lake, in southern Black Tp. Main showing in claim L31646. Lat. 48.28°, Long. 80.33°.	ODMNA 1971, GR92, p.21. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Gipsy Gold Mines Ltd. (1945). ODMNA Map 2213, Tolstoi and Black Townships.	Au	Silicified agglomerate and tuff are interbedded with porphyritic trachyte flows. Assays from a pyrite-rich zone ranged from 0.05 to 0.08 oz. Au/ton. 1945-1947: Pitting and trenching by Gipsy Gold Mines Ltd.
Hagen-McCrea Occurrence: At north end, and up to 1 mile west, of McVittie Lake, in north-central Black Tp. Lat. 48.33°, Long. 80.35°.	ODMNA 1971, GR92, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Van Clieaf (1936). ODMNA Map 2213, Tolstoi and Black Townships.	Au	Volcanics are cut by shear zones containing quartz veins. Assays ranged from trace to 0.23 oz. Au/ton. 1936: Pitting and trenching by W.E. Van Clieaf. 1948: 16 diamond-drill holes totaling 880 feet.
Henderson Occurrence: ¾ mile and 1 mile north of McVittie Lake, in northern Black Tp. Lat. 48.35°, Long. 80.34°.	ODMNA 1971, GR92, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Henderson (1946). ODMNA Map 2213, Tolstoi and Black Townships.	Au Cu Zn	Irregular quartz stringers occupy a 1- to 3-foot wide shear zone in andesite along the contact of a diabase dike. The stringers contain pyrite and assayed from 0.20 to 1.31 oz. Au/ton. In addition, a sample from a pyrite-rich zone in diorite contained minor chalcopryrite and sphalerite, and gave a value of 0.33 oz. Au/ton. 1946: Trenching, pitting, and sampling by S. Henderson.

Name and Location	References	Metals	Remarks
Hiskerr Occurrence: Approximately 1 mile west of Butler Lake, in northeastern Black Tp. Lat. 48.41°, Long. 80.30°.	DEMR Ottawa, Mineral Development Sector Files: Au 4, Ontario. ODMNA 1971, GR92, p.24 (W.P. Solmes and F.T. O'Connor). ODMNA Map 2213, Tolstoi and Black Townships (Solmes, W.P. and O'Connor, F.T.).	Au	1966: Geological and self-potential surveys by North Expo Mines Ltd. Surface work, diamond-drilling, 157-foot shaft, and underground development reported. Diamond-drill intersections assayed up to 0.39 oz. Au/ton over 7 feet.
Legend Occurrence: ¼ mile west of Errett Lake, in central Black Tp. Lat. 48.32°, Long. 80.33°.	ODMNA 1971, GR92, p.23. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Legend Gold Mines Ltd. (1946). ODMNA Map 2213, Tolstoi and Black Townships.	Au	Metavolcanics are intruded by dikes of granodiorite and feldspar porphyry. 2- to 3-foot wide quartz veins occupy shear zones in the metavolcanics. Assays ranged from 0.02 to 0.96 oz. Au/ton. 1945: 1 diamond-drill hole (450 feet) by J.J. Gray. 1946-1947: Trenching and pitting by Legend Gold Mines Ltd.
North Expo Occurrence: ½ mile northeast of Lower Hewitt Lake, in western Black Tp. Lat. 48.33°, Long. 80.38°.	ODMNA 1971, GR92, p.23. Resident Geologist's Files, OMNR, Kirkland Lake: Black Tp., Keller (1949). ODMNA Map 2213, Tolstoi and Black Townships.	Au Ag Pb Cu	Aplitic stringers cut shear zones in 'greenstone'. Mineralization consists of pyrite, chalcopyrite and galena. Assays ranged from trace to 0.07 oz. Au/ton and up to 5 oz. Ag/ton. 1948-1949: Stripping, pitting, and 8 diamond-drill holes (1,580 feet) by George Keller. 1953: Resistivity survey and 4 diamond-drill holes (1,940 feet) by North Denison Mines Ltd. 1968-1969: Stripping and trenching by Richard Bugow and Louis Mantha.

CLIFFORD TOWNSHIP (NTS 32D/5W)

Brazzoni Occurrence: Southeastern Clifford Tp. Lat. 48.28°, Long. 79.79°.	Resident Geologist's Files, OMNR, Kirkland Lake: Clifford Tp., Savage (1948). ODM 1975, GR132, p.47, 48 (Mining Corporation of Canada Prospect). ODM Map 2283, Clifford and Ben Nevis Townships (Mining Corporation of Canada prospect).	Au	Irregular rusty zones occur in felsic fragmental lava. Grab samples taken from a pyrite vein striking N34°E and dipping 70°E assayed from 0.09 to 0.11 oz. Au/ton. A sample from a silicified pyritized shear zone in andesite assayed 0.2 oz. Au/ton over 0.9 feet. Pre-1948: Pitting and trenching by Brazzoni. Pre-1956: Pitting and trenching by St. Pierre. 1962: 5 diamond-drill holes by The Mining Corporation of Canada Ltd. 1970: Electromagnetic survey by Canadex Mining Corporation Ltd. 1972: Magnetic survey by Canadex Mining Corporation Ltd.
Ehrhart-Costello Occurrence: ¼ mile northwest of the 8-mile post on the Clifford-Ben Nevis township boundary, in eastern Clifford Tp. Lat.	ODM 1975, GR132, p.45 (J. Campbell Property). Resident Geologist's Files, OMNR, Kirkland Lake.	Au Cu	The rocks along a basalt-rhyodacite breccia contact are altered and contain a few specks of chalcopyrite and gold.

Name and Location	References	Metals	Remarks
48.30°, Long. 79.77°.	ODM Map 2283, Clifford and Ben Nevis Townships (Campbell, J.).		1958: 3 diamond-drill holes (1,262 feet) by Cliff Copper Inc. 1959-1960: Geological survey by W. Gerrie.

DENTON TOWNSHIP

(NTS 42A/5E)

Jowsey-Denton Occurrence: South of Carlton Lake, on Cripple Creek, in northwest-central Denton Tp. Patented claims P643, P644. Lat. 48.35°, Long. 81.68°.	ODM 1938, Vol.47, pt.4, p.13. ODM Map P.28, Denton Township.	Au	Massive metavolcanics are intruded by granite and by diabase dikes. Two shear zones striking N30°E are mineralized with pyrite, and minor chalcopyrite and gold. Circa 1935: Diamond-drilling showed erratic gold values in both shear zones.
McCoshen Occurrence: 1 mile north-northeast of Godon Lake, in west-central Denton Tp. Lat. 48.32°, Long. 81.64°.	ODM 1938, Vol.47, pt.4, p.13. ODM Map 47d, Keefer-Eldorado Area.	Au	Quartz stringers occurring in highly schisted and drag-folded mafic metavolcanics have an erratic gold content. 1937: Sampling by Goldale Mines Ltd.
Reid, S. Occurrence: Adjacent to Cripple Creek, in central Denton Tp. Lat. 48.32°, Long. 81.63°.	ODM 1938, Vol.47, pt.4, p.12. ODM Map 47d, Keefer-Eldorado Area.	Au	Carbonatized greywacke contains pyrite and low gold values. 1936: 3,000 feet of diamond-drilling.
Sheehan P. Occurrence: North end of Godon Lake, in western Denton Tp. Lat. 48.31°, Long. 81.70°.	ODM 1938, Vol.47, pt.4, p.13. ODM Map 47d, Keefer-Eldorado Area.	Au	An irregular quartz-carbonate vein occupying a shear zone in granite contains low gold values.

ELDORADO TOWNSHIP

(NTS 42A/6E)

Kennedy Occurrence: Southeast-central Eldorado Tp. Claim TRP1566. Lat. 48.30°, Long. 81.10°.	ODM 1938, Vol.47, pt.4, p.22. ODM Map 2274, Adams and Eldorado Townships.	Au	Mafic and felsic metavolcanics cut by granite and diabase. Gold values reported from trenches and pits.
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KEEFER TOWNSHIP

(NTS 42A/5W)

Nixon-Bartleman Occurrence: Southwest corner of Keefer Tp. Patented claims P27780-P27782. Lat. 48.26°, Long. 81.83°.	Regional Geologist's Files, OMNR, Timmins: T-98. ODM Map P.27, Keefer Township (occurrence not shown on map).	Au Ag Cu Pb	Numerous quartz veins striking approximately N35°E occur in highly sheared and chloritized andesite. Mineralization consists mainly of pyrite, with minor chalcopyrite, galena, and gold. Assays ranged up to 0.01 oz. Au/ton and 0.70 oz. Ag/ton. Circa 1937: Diamond-drilling.
Simpson-Marcot Occurrence: Approximately 1½ miles east of Warren Lake, in southeastern Keefer Tp. Lat. 48.29°, Long. 81.74°.	ODM 1938, Vol.47, pt.4, p.12. ODM Map 47d, Keefer-Eldorado Area.	Au Cu	A small quartz vein occupying a shear zone in basic lava contains pyrite, magnetite, and chalcopyrite. Low gold values reported.

Name and Location	References	Metals	Remarks
LANGMUIR TOWNSHIP (NTS 42A/6E, 42A/7W)			
La Salle Occurrence: Approximately 3 miles west of St. Peter Bay of Nighthawk Lake, in western Langmuir Tp. Patented claims P5899½ and P6218. Lat. 48.33°, Long. 81.06°.	ODM 1970, GR86, p.43. ODM Map 2206, Langmuir and Blackstock Townships.	Au	An irregular pyritized quartz vein occurs in a north-trending shear zone lying along an inclusion of 'greenstone' in granite. Gold values reported from a shallow shaft and diamond-drill holes.
MELBA TOWNSHIP (NTS 42A/8E)			
High Falls Occurrence: East-central Melba Tp. Patented claims L8891 and L2953. Lat. 48.32°, Long. 80.06°.	ODM 1972, GR103, p.18. QDM Map 2252, Melba and Bisley Townships.	Au Cu	Pillowed and agglomeratic intermediate metavolcanics cut by a vertical quartz-carbonate vein. The vein is 500 feet long and 1 foot wide, strikes N20°W, and contains small specks of chalcopyrite and gold. Pits and 3 prospect shafts put down at unknown dates.
PRICE TOWNSHIP (NTS 42A/6W)			
Mullen-Turmel-Bernier Occurrence: West of the Grassy River, in western Price Tp. Lat. 48.34°, Long. 81.44°.	ODM 1938, Vol.47, pt.4, p.21. Au ODM Map 47d, Keefer-Eldorado Area.		Timiskaming greywacke and slate contain iron formation horizons. Low gold values reported.
THORNELOE TOWNSHIP (NTS 42A/5E, 42A/6W)			
Swanson Occurrence: East of the Mattagami River, near Wawaitin Falls, in northeastern Thorneloe Tp. Claims TRP22974-TRP22976 and TRP24248. Lat. 48.34°, Long. 81.49°.	Regional Geologist's Files, OMNR, Timmins. ODM Map P.29, Thorneloe Township.	Au	Timiskaming metasediments, striking N80°W and dipping north, contain a shear zone which is highly carbonatized and silicified. It is 58 feet in width, contains pyrite, and yielded a value of 0.08 oz. Au/ton over 7.2 feet. Circa 1938: Pitting and trenching.
Thibeault, J. Occurrence: Approximately ½ mile west of the dam on the Mattagami River, near Wawaitin Falls, in northeast-central Thorneloe Tp. Main showing in patented claim P7538. Lat. 48.34°, Long. 81.51°.	ODM 1938, Vol.47, pt.4, p.17. Au Regional Geologist's Files, OMNR, Timmins: Thorneloe Tp., T-82. ODM Map P.29, Thorneloe Township.		Timiskaming metasediments, trending N60-90°W and dipping steeply north, are intruded by quartz porphyry dikes. A highly altered, 40-foot wide shear zone, striking approximately N70°E contains sulphide and gold mineralization. Assays of grab samples ranged from 0.1 to 4.2 oz. Au/ton.
Vizina, A. Occurrence: On west bank of the Mattagami River, at Wawaitin Falls, in northeastern Thorneloe Tp. Lat. 48.35°, Long. 81.49°.	ODM 1938, Vol.47, pt.4, p.19. Au ODM Map P.29, Thorneloe Township.		Low gold values reported from pyrite-bearing quartz veins cutting conglomerate, greywacke, and slate.

Name and Location	References	Metals	Remarks
TIMMINS TOWNSHIP (NTS 42A/7)			
Blanchette-Porcupine Occurrence: Northeastern corner of Timmins Tp. Lat. 48.36°, Long. 80.69°.	ODM 1940, Vol.49, pt.4, p.18. Au ODM Map 49h, Langmuir- Sheraton Area.		Several parallel quartz veins striking N6°E lie along a contact between hornblende syenite porphyry and chlorite schist. Visible gold reported; representative grab sample assayed 0.5 oz. Au/ton. Circa 1920: 25- to 30-foot shaft. 1937: Considerable diamond-drilling.

MUSKOKA DISTRICT

CHAFFEY TOWNSHIP

(NTS 31E/6)

**Chaffey Tp., Con. V, Lot 32
Occurrence.**

ODM 1942, Vol.51, pt.2, p.40. Au
ODM 1967, GR52, p.49.
ODM Map 2118, Parry Sound-
Huntsville Area.

Metasediments cut by pegmatite.
Low gold values reported by owners.

STEPHENSON TOWNSHIP

(NTS 31E/3, 31E/6W)

**Stephenson Tp., Con. XIII, Lot 24
Occurrence.**

ODM 1942, Vol.51, pt.2, p.40. Au
ODM 1967, GR52, p.49.
ODM Map 2118, Parry Sound-
Huntsville Area.

Granite gneiss with a seam of bio-
tite-hornblende gneiss. Low gold
values reported by owner.

NIPISSING DISTRICT

BRIGGS TOWNSHIP

(NTS 31L/13W, 31M/4W, 41I/16E, 41P/1E)

Sturdy Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 8 miles southwest of Temagami, in south-central Briggs Township. Latitude 46.98°, Longitude 79.96°.

Map reference: ODM 2324, Briggs and Strathcona Townships (Niemetz, H. (Nickel Rim Mines Ltd., option)).

GEOLOGY: Felsic to intermediate lavas, with breccias and some sedimentary rocks, strike northeast and have near-vertical dips. Diorite and porphyry dikes cut the metavolcanics. Gold is associated with shear zones and quartz veins.

Best drill core assays were 0.12 percent Cu and 0.05 ounce of Au per ton over 4 feet and 0.03 ounce of Au per ton over 2.5 feet.

HISTORY: 1965: Five diamond-drill holes (1,611 feet) by Nickel Rim Mines Limited.

1971: Eight diamond-drill holes (2,178 feet) by Sturdy Mines Limited.

REFERENCES: ODM 1978, Report 163, p.108 (H. Niemetz (Nickel Rim Mines Limited, option)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Briggs Township, Nickel Rim Mines Limited (1965) and Sturdy Mines Limited (1971).

CHAMBERS TOWNSHIP

(NTS 31M/4W, 41P/1E)

Blake Prospect

MAIN METALS: Au, Pb, Zn, Cu

LOCATION: Approximately 9 miles west of Temagami, in central Chambers Township. Latitude 47.10°, Longitude 79.97°.

Map reference: ODM 2323, Chambers and Strathy Townships (occurrence not shown on map).

GEOLOGY: Quartz veins cut a 1,200-foot long pyrite-pyrrhotite zone which is interbedded with andesite and dacite tuffs and agglomerates, and some coarse diorites and quartz monzonites.

A grab sample of sulphide mineralization assayed 0.13 ounce of Au per ton; other assays were: 0.13 ounce of gold per ton, 6.4 percent Pb, 8 percent Cu and 17 percent Zn.

HISTORY: Pre-1934: Numerous old pits and trenches.

1934: Trenching by The Consolidated Mining and

Smelting Company of Canada Limited.

1956-1963: Geological and geophysical surveys, and ten diamond-drill holes (2,004 feet) by Canadian Astoria Minerals Limited.

1963: Three diamond-drill holes (2,681 feet) by Goldray Mines Limited.

REFERENCES: Northern Miner, July 26, 1956.

ODM 1942, Vol.51, pt.6, p.38, 39 (F.W. Thomson).

ODM 1969, MRC12, p.198, 199 (Canadian Astoria Prospect).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury.

CLEMENT TOWNSHIP

(NTS 41I/16)

Onotsky Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 27 miles southwest of Temagami, in the northwest corner of Clement Township, and in the neighbouring corners of Afton, Macbeth, and Scholes Townships. Claim T51911. Latitude 46.88°, Longitude 80.29°.

Map reference: ODM 2386, Macbeth and Clement Townships.

GEOLOGY: Steeply-dipping Keewatin mafic metavolcanics and iron formation, and Timiskaming calcareous quartzite are intruded by dikes and sills of Nipissing Diabase. Gold and silver are associated with chalcopyrite in fissure-type quartz veins. Chalcopyrite, galena, and sphalerite occur in the quartzite. The iron formation consists of pyrite, pyrrhotite, magnetite, and chert.

Grab samples assayed from trace to 3.90 ounces of Au per ton and up to 1.60 ounces of Ag per ton. Average gold content across mineable widths was reported to be low, the best assay, 0.54 ounce of Au per ton over 27 inches, being obtained from a trench.

HISTORY: Circa 1900: Two drill holes.

1935-1936: Pitting and trenching.

1955-1956: Geological, magnetic, and electromagnetic surveys, and two diamond-drill holes (660 feet) by Noranda Mines Limited. Pitting by Leger Mines Limited.

1959: Geological survey and three diamond-drill holes (200 feet) by Claude Cook.

1964: Geological, geochemical, and magnetic surveys. Six diamond-drill holes (1,650 feet) by Leger Mines (1964) Limited.

REFERENCES: ODM 1969, MRC12, p.199, 200

(Leger (Noranda) "Manitou Lake" Prospect).
ODM 1977, Report 170, p.53-55.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Clement Township, Manitou Lake (1964).

CYNTHIA TOWNSHIP
(NTS 41P/1E)

Hardie Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 15 miles northwest of Temagami, in northern Cynthia Township. Claim T61491. Latitude 47.14°, Longitude 80.07°.

Map reference: ODM 2057, Northwestern Timagami Area (Coppersand Lake).

GEOLOGY: Cobalt conglomerates and greywackes are intruded by a flat-lying sill of Nipissing Diabase. A quartz-carbonate mass at the contact between the diabase and greywacke contains sulphide mineralization. Quartz veins occur in the greywacke.

A chip sample assayed 0.02 ounce of Au per ton, 1.42 percent Cu, and trace Co, Ni, and Ag. A quartz-carbonate drill intersection assayed 0.14 ounce of Au per ton, 0.14 ounce of Ag per ton, and 2.15 percent Cu over 1 foot.

HISTORY: 1915: Pits and trenches.

1930s: Stripping, trenching, and one diamond-drill hole by D. Derosier.

1957: One diamond-drill hole (26 feet) by D. Derosier.

1959: Two diamond-drill holes (58 feet) by D. Derosier.

1960: Stripping and six diamond-drill holes (436 feet) by Mayer Mining Company Limited.

1963: Six diamond-drill holes (482 feet) by D. Derosier.

1965: Magnetic and electromagnetic surveys by Keevil Mining Group Limited.

1969: Pits and trenches by A. Hardie.

1970: 21 diamond-drill holes (2,500 feet) by Gunnex Limited.

REFERENCES: ODM 1964, GR28, p.21-23 (Coppersand Lake).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Cynthia Township, Gunnex Limited (1970).

PARDO TOWNSHIP
(NTS 41I/9, 41I/16)

Pickle Crow Prospect

MAIN METALS: Au, U

LOCATION: Approximately 30 miles southwest of Temagami, in west-central Pardo Township. Latitude 46.78°, Longitude 80.28°.

Map reference: ODM P.367, Capreol Sheet (marked as a uranium occurrence).

GEOLOGY: A broad syncline strikes N20°E, plunges 5° south, and the flanks dip 30°. The lowest member is the Matinenda Formation, 2,000 to 3,000 feet thick, which is unconformably overlain by the Gowganda Formation. The basal bed of the Matinenda Formation is pyritic pebble conglomerate, 2 to 40 feet thick, which lies unconformably on basement 'greenstone' and sedimentary rocks.

Gold and uranium are associated with the pyritic pebble conglomerate. Assays of drill core ranged from trace to 0.05 ounce of Au per ton and from 0.002 to 0.028 percent U₃O₈. The best intersection for gold was 0.05 ounce per ton over 5 feet.

HISTORY: 1956: Geological survey and 13 diamond-drill holes (6,917 feet) by Pickle Crow Gold Mines Limited.

REFERENCES: ODM 1968, MRC9, p.63.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Pardo Township, Pickle Crow Gold Mines Limited (1956).

STRATHY TOWNSHIP
(NTS 31M/4W)

Beanland Prospect

MAIN METALS: Au

LOCATION: Approximately 2½ miles northwest of Temagami, in central Strathy Township. Claims JS62, TRT4249, TRT4250; shaft in claim TRT4257. Latitude 47.10°, Longitude 79.83°.

Map reference: ODM 2324, Chambers and Strathy Townships (Perron, A.E.).

GEOLOGY: Mafic metavolcanics are cut by a quartz vein network striking N50-70°W and dipping vertically. The network is approximately 560 feet long and has a maximum width of 5 feet. Mineralization consists of pyrite, chalcopyrite, and gold.

ECONOMIC FEATURES: Reserves are estimated to be 8,778 tons averaging 0.31 ounce of Au per ton across a 5.6-foot mining width, and 24,000 tons averaging 0.21 ounce of Au per ton across a 5.2-foot mining width.

HISTORY: 1929: Staked by S. Beanland.

1934: Main showing discovered by P.D. Hermiston and R. McCauley.

1934-1935: Surface work and diamond-drilling by The Consolidated Mining and Smelting Company of Canada Limited.

1936: 2,000 feet of surface trenching by Goodfish

Mining Company Limited.

1937-1938: Three-compartment shaft sunk to 505 feet with levels at 175, 325 and 475 feet, 2,374 feet of crosscutting and drifting, 340 feet of raising, 2,835 feet of underground diamond-drilling, and 2,112 feet of surface diamond-drilling by Beanland Mining Company Limited.

1946: Nine diamond-drill holes (3,720 feet) by Perron Gold Mines Limited.

REFERENCES: ODM 1942, Vol.51, pt.6, p.27-30.

ODM 1978, Report 163, p.101-103 (A.E. Perron).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Strathy Township, Beanland (1947).

Big Dan Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 2½ miles north of Temagami, in east-central Strathy Township. Shaft in patented claim WD271. Latitude 47.09°, Longitude 79.78°.

Map reference: ODM 2323, Chambers and Strathy Townships (United Reef Petroleums Ltd.).

GEOLOGY: The mineralized zone, striking north for 2,000 feet, consists of blebs and veinlets of arsenopyrite and pyrrhotite within basalt and quartz porphyry.

ECONOMIC FEATURES: Samples assayed: 0.23 ounce of Au per ton, 2.5 ounces of Ag per ton and 14.4 percent As; 0.59 ounce of Au per ton and 1.3 ounces of Ag per ton. The ore averaged \$5.72 per ton in Au and Ag (Au at approximately \$16.00 per ounce). Assays of drill core ranged from trace to 0.6 ounce of Au per ton and from trace to 4 ounces of Ag per ton.

HISTORY: 1899: Test pits by "Big" Dan O'Connor.

Circa 1906: Adits, trenches, an inclined shaft, and a 50-foot vertical shaft with 28 feet of crosscutting. Mining and milling equipment installed by Temagami Milling and Mining Company.

1948-1949: Resistivity survey and 11 diamond-drill holes (2,644 feet) by Big Dan Mines Limited.

1965: Geological and magnetic surveys by United Reef Petroleums Limited.

PRODUCTION: No data available, though ore was shipped circa 1906.

REFERENCES: OBM 1900, Vol.9, pt.1, p.173.

ODM 1920, Vol.29, pt.1, p.214-217.

ODM 1921, Vol.30, pt.2, p.20.

ODM 1942, Vol.51, pt.6, p.26.

ODM 1978, Report 163, p.104, 105 (United Reef Petroleums Limited).

Resident Geologist's Files, Ontario Ministry of

Natural Resources, Sudbury: Strathy Township, Big Dan Mines Limited (1949).

Cominco Prospect

MAIN METALS: Au

LOCATION: Approximately 3 miles northwest of Temagami, in central Strathy Township. Claim TRT4411; shaft in claim TRT4412. Latitude 47.09°, Longitude 79.83°.

Map reference: ODM 2323, Chambers and Strathy Townships.

GEOLOGY: Two quartz veins occur in a quartz diorite sill which cuts felsic metavolcanics. The main quartz vein trends N40°E and has a length of 250 feet and maximum width of 5 feet. The second vein, about 270 feet north of the main vein, trends N60°E and has a maximum width of 1.5 feet. The mineralization in the veins consists of scattered veinlets and blebs of pyrite with chalcopyrite and gold.

ECONOMIC FEATURES: Reserves are estimated to be 8,998 tons averaging 0.50 ounce of Au per ton across a 3.0-foot width.

HISTORY: 1934: Staked by P.D. Hermiston and R. McCauley.

1935-1940: Stripping, trenching, and three-compartment shaft to 378 feet with levels at 150 and 350 feet, 6,080 feet of underground lateral development, 11,316 feet of underground and surface diamond-drilling by The Consolidated Mining and Smelting Company of Canada Limited.

REFERENCES: ODM 1942, Vol.51, pt.6, p.33, 34 (Hermiston-McCauley).

ODM 1978, Report 163, p.84-86.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Strathy Township, Beanland (1947).

Penrose Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 2 miles north of Temagami, at the east end of Arsenic Lake, in central Strathy Township. Claim WD598 and patented claim WS14; shaft in patented claim WS13. Latitude 47.09°, Longitude 79.83°.

Map reference: ODM 2323, Chambers and Strathy Townships.

GEOLOGY: An altered and sheared zone, striking N14°W and dipping 50-60°W in intermediate to mafic metavolcanics, contains discontinuous arsenide-bearing quartz veins for a distance of 2,000

feet. Three showings are present on the property. The showings on WS13 and WS14 at the east end of Arsenic Lake were part of the "Little Dan" Prospect. A grab sample from the ore dump at the No.1 Showing in claim WS13 assayed 1.14 ounces of Au per ton, 1.16 ounces of Ag per ton, and 0.92 percent Cu. Assays from the No.2 showing in claim WS14 ranged from 0.02 ounce of Au per ton to 4.2 ounces of Au per ton over widths of 0.5 foot to 4 feet. Showing No.3 in claim WD598 assayed 0.02 to 0.6 ounce of Au per ton over widths of 1 foot to 5 feet.

HISTORY: Pre-1920: Numerous pits and trenches. On No.2 Showing, a 56-foot shaft with 90 feet of lateral development. On No.3 Showing, a 50-foot inclined shaft with 50 feet of lateral development.

Circa 1930-1937: On No.1 Showing, a two-compartment shaft with levels at 200 and 300 feet and 1,800 feet of lateral development.

1934: 11 diamond-drill holes (footage unknown) by Manitoba and Eastern Mines Limited.

1936: One diamond-drill hole (footage unknown) by Manitoba and Eastern Mines Limited.

PRODUCTION: 270 tons of ore shipped circa 1909, but no other figures available.

REFERENCES: ODM 1920, Vol.29, pt.1, p.217-219 (Little Dan Auriferous Mispickel Deposit).

ODM 1921, Vol.30, pt.2, p.20 (Little Dan).

ODM 1935, Vol.44, pt.7, p.52-54 (Manitoba and Eastern Mines Limited).

ODM 1942, Vol.51, pt.6, p.35 (Manitoba and Eastern Mines Limited).

ODM 1978, Report 163, p.98-100.

ECONOMIC FEATURES: Assays of quartz-pebble conglomerate obtained from diamond-drill holes are as follows:

	Length of Sample (feet)	Gold (ounces per ton)	U ₃ O ₈ (percent)
Aubay No.4	3	0.30	0.038
Aubay No.5	2	0.40	0.052
Proscow Wedged No.4	—	—	low
Proscow Wedged No.5	—	0.06	—
Proscow Best	—	0.08	0.025

Four 10-pound samples of quartz-pebble conglomerate averaged 0.021 ounces of Au per ton and 0.006 percent U₃O₈.

HISTORY: 1955: Four diamond-drill holes (2,110 feet) by D'Eldona Gold Mines Limited.

1955-1957: Magnetic survey and six diamond-drill holes (1,416 feet) by Aubay Uranium Mines Limited.

1958: Nine diamond-drill holes (2,149 feet) by Proscow Limited.

1964: One diamond-drill hole (308 feet) by Ristimaki.

1969: Geological, magnetic, electromagnetic and radiometric (scintillometer) surveys by Keevil Mining Group Limited.

REFERENCES: ODM 1960, GR1, p.36, 37.

ODM 1964, GR22, p.21.

ODM 1968, MRC9, p.63, 64.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Vogt Township, Wrights (1970).

VOGT TOWNSHIP

(NTS 411/16E)

Wright Prospect

MAIN METALS: Au, U

LOCATION: Approximately 22 miles southwest of Temagami, at the south end of Lake Temagami, in south-central Vogt Township. Latitude 46.83°, Longitude 80.09°.

Map reference: ODM 2048, Vogt-Hobbs Area.

GEOLOGY: East-striking, steeply-dipping, Keewatin-type metavolcanics and iron formation, overlain by Huronian sedimentary rocks, are folded into a syncline which plunges about 10°N. At the base of the Huronian a 50- to 70-foot thickness of Matinenda uraniferous quartz-pebble conglomerate occurs. The Matinenda is overlain unconformably by the Gowganda Formation.

NIPISSING DISTRICT OCCURRENCES

ASKIN TOWNSHIP

(NTS 31L/13E)

Name and Location	References	Metals	Remarks
Rabbit Lake Occurrence: Northeastern Askin Tp. Claim JS56. Lat. 46.96°, Long. 79.67°.	ODM 1925, Vol.34, pt.3, p.32, 33 (J.S.56, Askin Tp.). Resident Geologist's Files, OMNR, Sudbury. ODM Map 34b, Matabitchuan Area.	Au Co Ni	Metamorphosed conglomerate-greywacke contains an 18-inch fracture zone with Co-Ni mineralization. Sample assayed 0.44 oz. Au/ton.

BEST TOWNSHIP

(NTS 31M/4)

Mortimer Occurrence: South-central Best Tp. Lat. 47.15°, Long. 79.74°.	ODM 1968, OFR5016, p.53 (Danlou Mines Ltd.). Resident Geologist's Files, OMNR, Sudbury: Best Tp., MacDonald (1961) and Ogden (1961). ODM Map P.321, Haileybury Sheet (occurrence not shown on map).	Au Ag	A 7-foot wide shear zone in granite is intruded by diabase dikes containing quartz stringers. The zone strikes N80°E and dips 70°N. Pit samples assayed 0.73 oz. Au/ton and 5.9 oz. Ag/ton. Samples from drill holes gave values of nil or trace. 1961: Pit, 3 diamond-drill holes (349 feet) by Danlou Mines Ltd.
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CASSELS TOWNSHIP

(NTS 31M/4E)

Claim ED161 Occurrence: South of Sauve Lake, in central Cassels Tp. Lat. 47.11°, Long. 79.69°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 34b, Matabitchuan Area.	Au	Vein material fills a 4-inch fracture in a diabase dike trending S20°E. Sulphides and arsenides are present and an assay value of 1.08 oz. Au/ton was obtained.
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PHYLLIS TOWNSHIP

(NTS 41I/16E)

Billfield Occurrence: Northwest corner of Denedus Point, in northeastern Phyllis Tp. Lat. 46.96°, Long. 80.03°.	ODM 1942, Vol.51, pt.6, p.30,31. ODM Map 51e, The Northeastern Portion of the Temagami Lake Area.	Au	Rhyolitic agglomerate encloses a mineralized zone of shearing and fracturing which strikes N75-87°W and dips almost vertically. It was drilled by The Mining Corporation of Canada Ltd. and by Arntfield Gold Mines Ltd. Assays indicated up to 0.18 oz. Au/ton over 1.4 feet.
Niemetz, C.J. Occurrence: Southwest corner of Denudus Point, in northeastern Phyllis Tp. Principal workings in claim TRT5193. Lat. 46.94°, Long. 80.03°.	ODM 1942, Vol.51, pt.6, p.36,37. ODM Map 51e, The Northeastern Portion of the Temagami Lake Area.	Au	Quartz porphyry dikes trending roughly east cut sheared and carbonatized tuff and lava. Dikes can be partly or wholly silicified and sheared, with pyrite yielding 0.02 oz. Au/ton. Shear zones, which have a maximum width of 5 feet and carry 0.02 oz. Au/ton, cut massive to pillowed lavas.

Name and Location	References	Metals	Remarks
SCHOLES TOWNSHIP			
(NTS 411/16)			
Eagle Rock Occurrence: East side of the outlet of Eaglerock Lake, in western Scholes Tp. Lat. 46.94°, Long. 80.27°.	ODM 1936, Vol.45, pt.6, p.45. ODM Map 2385, Afton and Scholes Townships.	Au	A band of arkose and impure quartzite carries some gold associated with pyrite.
STRATHCONA TOWNSHIP			
(NTS 31L/13W, 31M/4W)			
Copperfields Occurrence: North-central Strathcona Tp. Lat. 47.02°, Long. 79.84°.	ODM 1978, Report 163, p.110, 111. Resident Geologist's Files, OMNR, Sudbury: Strathcona Tp., Copperfields Mining Corp. Ltd. (1967). ODM Map 2324, Briggs and Strathcona Townships.	Au Cu	A pyritic zone occurs at the base of sericitic dacite in felsic metavolcanics. Drill hole intersection assayed 0.22 oz. Au/ton and 0.12% Cu. 1967: 2 diamond-drill holes (27 feet) by Copperfields Mining Corp. Ltd.
Jessie Lake Occurrence: East side of Hwy.11, about 2500 feet south of Jessie Lake, in northeast-central Strathcona Tp. Lat. 47.04°, Long. 79.80°.	Marginal Notes, ODM Map P.596, Strathcona Township. ODM Map 2324, Briggs and Strathcona Townships (marked on map as sulphide mineralization).	Au Ag Cu Zn	Two east-striking seams of pyrite and chalcopyrite, about 1 inch wide and 1 foot long, occur in volcanic breccia. Grab sample assayed 0.9 oz. Au/ton, 0.15 oz. Ag/ton, 1.52% Cu and 0.05% Zn.
Pingue Lake Occurrence: North-eastern Strathcona Tp. Lat. 47.05°, Long. 79.79°.	ODM 1978, Report 163, p.113, 114. ODM Map 2324, Briggs and Strathcona Townships.	Au Ag Cu Pb	Carbonate and felsic metavolcanics contain disseminated fine-grained pyrite. Grab sample assayed 0.07 oz. Au/ton, 0.48 oz. Ag/ton, 0.05% Cu, and 0.04% Pb.
STRATHY TOWNSHIP			
(NTS 31M/4W)			
Bousell Occurrence: Central Strathy Tp. Lat. 47.11°, Long. 79.83°.	ODM 1942, Vol.51, pt.6, p.34 (Iris Gold Mines Ltd.). Resident Geologist's Files, OMNR, Sudbury. ODM Map 2323, Chambers and Strathy Townships.	Au	Quartz veins occur in a quartz diorite sill which cuts felsic metavolcanics. Erratic gold values reported by S. Beanland. 1938: 1 diamond-drill hole by Iris Gold Mines Ltd. failed to reach bedrock.
Caldwell Occurrence: Central Strathy Tp. Lat. 47.09°, Long. 79.82°.	Resident Geologist's Files, OMNR, Sudbury: Strathy Tp., Beanland (1947). ODM Map 2323, Chambers and Strathy Townships (occurrence not shown on map).	Au	Quartz veins in felsic to mafic metavolcanics assayed 0.48 oz. Au/ton over 3 feet. 1938: 653 feet of trenching and 5,521 feet of diamond-drilling by The Consolidated Mining and Smelting Co. of Canada Ltd.
Cominco Occurrence: Central Strathy Tp. Lat. 47.10°, Long. 79.81°.	Resident Geologist's Files, OMNR, Sudbury: Strathy Tp., Beanland (1947). ODM Map 2323, Chambers and Strathy Townships (occurrence not shown on map).	Au	Quartz veins occur in a quartz diorite stock which cuts mafic metavolcanics. Bulk sample assayed 0.18 oz. Au/ton. 1938: 2,504 feet of trenching and 1,860 feet of diamond-drilling by The Consolidated Mining and Smelting Co. of Canada Ltd.

Name and Location	References	Metals	Remarks
Long Lac Adair Occurrence: South of Cooke Lake, in southwestern Strathy Tp. Claims TRT4444 and TRT4445. Lat. 47.07°, Long. 79.84°.	ODM 1935, Vol.44, pt.7, p.55. ODM Map 51e, The Northeastern Portion of the Temagami Lake Area.	Au	Mafic metavolcanics enclose a 5-foot wide band of cherty iron formation which is intersected by a 1-foot wide quartz vein. The vein strikes N20°E, dips 60°E and is reported to give "encouraging" values in gold.
MacVeigh Occurrence: Central Strathy Tp. Lat. 47.10°, Long. 79.81°.	Resident Geologist's Files, OMNR, Sudbury: Strathy Tp., Beanland (1947). ODM 1978, Report 163, p.93, 94 (E.L. MacVeigh). ODM Map 2323; Chambers and Strathy Townships (MacVeigh, E.L.).	Au	Quartz veins occur in intermediate and mafic metavolcanics. Assays ranged from 0.06 to 0.63 oz. Au/ton.
Milne and Son Occurrence: South-central Strathy Tp. Patented claim JS107. Lat. 47.09°, Long. 79.81°.	ODM 1942, Vol.51, pt.6, p.35, 36. ODM 1978, Report 163, p.95. ODM Map 2323, Chambers and Strathy Townships.	Au Ag	Felsic metavolcanics contain a vein 200 feet long, up to 1 foot wide, and striking N30°E. Samples rich in arsenopyrite assayed up to 1.30 oz. Au/ton and 20.04 oz. Ag/ton.
Oslund-Hurst Occurrence: East end of Vermilion Lake, in southwestern Strathy Tp. Claim P6. Lat. 47.09°, Long. 79.84°.	ODM 1942, Vol.51, pt.6, p.37, 38. ODM 1978, Report 163, p.91, 92 (Keevil Consultants Limited). ODM Map 2323, Chambers and Strathy Townships (Keevil Consultants Ltd.).	Au	Claim underlain by Keewatin metavolcanics and iron formation. The iron formation is drag-folded and intruded by a 'greenstone' dike. Pyrite has replaced the magnetite of the iron formation only on the west side of the dike. Trenching and drilling by The Coniagas Mines Ltd. yielded 0.02 oz. Au/ton.
Sey-Bert Occurrence: Approximately 1¼ miles due west of Outlet Bay, in east-central Strathy Tp. Claims TRT5019 and TRT5020. Lat. 47.11°, Long. 79.79°.	ODM 1978, Report 163, p.103, 104. ODM Map 2323, Chambers and Strathy Townships.	Au	Narrow quartz veins (6 to 14 inches wide), striking approximately north-east, parallel a contact between 'greenstone' and granite. Circa 1939: Trench samples yielded 0.36 oz. Au/ton and up to 1.8 oz. Au/ton in shear zones.
Strathy Basin Occurrence: South of Kanichee Lake, in north-central Strathy Tp. Lat. 47.12°, Long. 79.83°.	ODM 1942, Vol.51, pt.6, p.38. ODM Map 51e, The Northeastern Portion of the Temagami Lake Area.	Au	Metavolcanics enclose mineralized fracture zones. A vein, 4 to 6 inches wide, striking N63°E and dipping 25°N, reportedly contains native gold.
Timagami Occurrence: Near the southern end of Kanichee Lake, in west-central Strathy Tp. Claims TRT4413, TRT4426 and TRT4427. Lat. 47.10°, Long. 79.84°.	ODM 1942, Vol.51, pt.6, p.39-41. ODM Map 51e, The Northeastern Portion of the Temagami Lake Area.	Au Ag	Felsic metavolcanics and mafic intrusive rocks are cut by silicified zones and veins. A zone in diorite, striking N80-87°E with a maximum width of 2.5 feet, assayed up to 0.34 oz. Au/ton. A sulphide-rich vein striking N85°W assayed 1.72 oz. Au/ton and 14.80 oz. Ag/ton.

VOGT TOWNSHIP

(NTS 411/16E)

Krefeld Occurrence: South of Austin Bay, in central Vogt Tp. Lat. 46.83°, Long. 80.07°.	Resident Geologist's Files, OMNR, Sudbury: Vogt Tp., Krefeld (1956). ODM Map 2048, Vogt-Hobbs Area.	Au	Intermediate to felsic metavolcanics and associated iron formation are overlain by Cobalt Group sedimentary rocks. Assays from drill core (rock type not specified) range from 0.05 to 0.21 oz. Au/ton over
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Name and Location	References	Metals	Remarks
Malartic Occurrence: Southeast of Austin Bay, in east-central Vogt Tp. Lat. 46.84°, Long. 80.05°.	Resident Geologist's Files, OMNR, Sudbury: Vogt Tp., Malartic Gold Fields Ltd. (1956). ODM Map 2048, Vogt-Hobbs Area.	Au Ag Cu	an average width of 5 feet. Circa 1956: Stripping, trenching, and 9 diamond-drill holes (footage unknown) by Krefeld Graphite Gold Mines Ltd. Two siliceous mineralized zones, 40 feet wide and 1,000 feet long, occur in tuff and andesite. A 5-foot section of core consisting of siliceous material assayed 0.035 oz. Au/ton, 0.43 oz. Ag/ton and 0.20% Cu. 1955-1956: Geological, geochemical, self-potential, and magnetic surveys, and 6 diamond-drill holes (351 feet) by Malartic Gold Fields Ltd.

PARRY SOUND DISTRICT

BETHUNE TOWNSHIP

(NTS 31E/6E, 31E/11E)

Name and Location	References	Metals	Remarks
Bethune Tp., Con. VIII, Lot 14 Occurrence.	ODM 1942, Vol.51, pt.2, p.36. ODM Map 51a, Portions of the Districts of Parry Sound and Muskoka.	Au Ag	Metasediments are cut by pink biotite pegmatite. Sparse pyrrhotite mineralization occurs in the metasediments. 1939-1940: Tiffany Mining Syndicate Ltd. did some pitting and reported gold values.

COWPER TOWNSHIP

(NTS 41H/1E, 41H/8E)

Beatty and Wilcox Occurrence: Lot 10, con. V, Cowper Tp.	OBM 1898, Vol.7, pt.1, p.88,89. ODM Map 2118, Parry Sound-Huntsville Area (occurrence not shown on map).	Au Ag	Metasediments enclose a vein on which a 25-foot shaft was sunk. Samples assayed 1.64 oz. Au/ton with 1.16 oz. Ag/ton, and 0.47 oz. Au/ton.
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HAGERMAN TOWNSHIP

(NTS 31E/12W, 41H/9E)

Hagerman Tp., Con. A, Lot 61 Occurrence.	ODM 1942, Vol.51, pt.2, p.36. ODM Map 51a, Portions of the Districts of Parry Sound and Muskoka.	Au	Calcareous metasediments, granitic gneiss and pegmatite. Minor sulphide mineralization occurs in the gneiss and pegmatite. Low gold values were reported from two pits northwest of the road in the village of Dunchurch.
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McMURRICH TOWNSHIP

(NTS 31E/5E, 31E/6W, 31E/11W, 31E/12E)

McMurrich Tp., Con. I, Lot 18 Occurrence.	ODM 1942, Vol.51, pt.2, p.37. ODM 1967, GR52, p.49. ODM Map 2118, Parry Sound-Huntsville Area.	Au	Garnet-hornblende gneiss with pegmatite lenses. Low gold values reported from pit.
McMurrich Tp., Con. XIV, Lot 13 Occurrence.	ODM 1942, Vol.51, pt.2, p.37. ODM Map 51a, Portions of the Districts of Parry Sound and Muskoka.	Au	Quartz-rich pegmatite. No sulphides. Low gold values reported.

MONTEITH TOWNSHIP

(NTS 31E/5E)

Monteith Tp., Con. IX, Lot 17 Occurrence: At edge of Seguin River.	ODM 1942, Vol.51, pt.2, p.37. ODM 1967, GR52, p.49. ODM Map 2118, Parry Sound-Huntsville Area.	Au	Biotite gneiss. Low gold values reported.
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Name and Location	References	Metals	Remarks
NIPISSING TOWNSHIP			
(NTS 31L/3W, 31L/4E)			
Nipissing Tp., Con. X, Lots 28 and 29 Occurrence.	ODM 1942, Vol.51, pt.2, p.38. ODM Map 51a, Portions of the Districts of Parry Sound and Muskoka.	Au	Diabase. Grab samples failed to show Au when assayed, although W.T. King, the owner, claimed up to 0.10 oz. Au/ton.

SOUTHERN ONTARIO

Frontenac County

BARRIE TOWNSHIP (NTS 31C/14E, 31C/15W)

Big Dipper Prospect

MAIN METALS: Au

LOCATION: Lots 4 to 21, concession X, Barrie Township. Shafts in S½, lot 16, concession X.

Map reference: ODM 51d, Grimsthorpe-Kennebec Area.

GEOLOGY: An east-trending quartz vein occurs at the contact between limestone and granite. Associated minerals are pyrite, magnetite, and minor sphalerite.

HISTORY: 1904: Adit driven 300 feet.

1905-1909: The Big Dipper Mining and Milling Company Limited sank two shafts, 100 feet apart; eastern and western shafts were 62 and 30 feet deep respectively. A third shaft located to the southwest. A ten-stamp mill produced some gold.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1907, 1909	17	52	0.33

REFERENCES: GSC 1936, Memoir 192, p.115.

ODM 1942, Vol.51, pt.4, p.47.

Ore Chimney Prospect

MAIN METALS: Au

LOCATION: Lots 34 to 36, concession I, Barrie Township. Shaft in NW¼, N½, lot 35, concession I.

Map reference: ODM 51d, Grimsthorpe-Kennebec Area.

GEOLOGY: Mafic metavolcanics, trending northeast and dipping vertically, contain, near the contact with conglomerate and quartzite, an auriferous quartz vein with associated pyrite, galena, sphalerite, and chalcopryrite mineralization.

HISTORY: 1912-1926: The Ore Chimney Mining Company Limited dug pits and sunk a 400-foot shaft. From the 400-foot level, a winze was sunk to the 525-foot level. Approximately 2,500 feet of lateral development done on the 108-, 150-, 250-, 300-, 332- and 400-foot levels. Twenty-stamp mill installed.

1932: Underground and surface diamond-drilling by The Bey Mines Limited.

1950-1951: Surface work by Eastwebb Mines Limited.

1956-1957: Surface diamond-drilling totalling 4,681 feet by Cavalier Mining Corporation Limited.

REFERENCES: Canadian Mines Handbook 1950, p.70 (Eastwebb Mines Limited).

Canadian Mines Handbook 1957, p.55 (Cavalier Mining Corporation Limited).

ODM 1942, Vol.51, pt.4, p.42-44 (The Bey Mines Limited).

Star of the East Mine (Past Producer)

MAIN METALS: Au

LOCATION: Lot 25, concession IX, lots 25, 26 and S½, lot 24, concession X, Barrie Township. Shaft in SW¼, lot 24, concession X.

Map reference: ODM 51d, Grimsthorpe-Kennebec Area.

GEOLOGY: Dolomitic marble contains, about 200 feet south of the contact with mafic metavolcanics, two lenticular quartz veins parallel to the bedding which strikes N60-75°E and dips 85°N. Associated metallic minerals are pyrite, chalcopryrite, and sparse scheelite.

OWNERSHIP: Unknown.

HISTORY: 1903-1907: Star of the East Gold Mining and Milling Company Limited did trenching and sunk a shaft which was inclined 80°N for 100 feet and then vertical to a depth of 213 feet. Levels at 35, 74, 108 and 200 feet, with drifting and cross-cutting totalling about 250 and 325 feet respectively. Ten-stamp mill installed.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1905, 1907	134	976	0.14

REFERENCES: ODM 1942, Vol.51, pt.4, p.44-47 (Star Gold Mine).

CLARENDON TOWNSHIP (NTS 31C/14E, 31C/15W, 31F/2W)

Boerth Prospect

MAIN METALS: Au

LOCATION: E½, lot 29, concession VIII, Clarendon Township.

Map reference: ODM 1956-4, Clarendon-Dalhousie-Darling Area.

GEOLOGY: Paragneiss interbanded with limestone

is cut by steeply-dipping quartz veins containing arsenopyrite and tourmaline. Thirteen channel samples of seven different veins up to 3 feet in width averaged 0.67 ounce of Au per ton.

HISTORY: 1898-1900: "Hattie B" Shaft, inclined 65°SW, sunk to 120 feet, with a level at 120 feet and 53 feet of drifting by The Boerth Mining Company of Ontario. "Uncle Sam" Shaft sunk to 35 feet. Ten-stamp mill erected.
1952: Three diamond-drill holes totalling 547 feet

by Bruce Robson.

1963-1964: 47 diamond-drill holes totalling 7,054 feet by Ganda Silver Mines Limited.

PRODUCTION: In 1900, 13 ounces of gold was produced from an unknown amount of ore.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Boerth Mine.

OBM 1900, Vol.9, p.93, 94.

ODM 1956, Vol.65, pt.7, p.38, 39.

Hastings County

GRIMSTHORPE TOWNSHIP

(NTS 31C/11W, 31C/12E, 31C/13E, 31C/14W)

Gilmour Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 5 miles east of Gilmour, in S½, lot 30, concession XIX, Grimsthorpe Township.
Map reference: ODM 51d, Grimsthorpe-Kennebec Area.

GEOLOGY: Mafic metavolcanics are cut by veins with strikes ranging from N60°E to N70°W and almost vertical dips.

OWNERSHIP: Eric Greer

HISTORY: Circa 1909: No.1 Shaft sunk to a depth of 75 feet with 210 feet of drifting. Five-stamp mill in operation. Work by Gilmour Mining Company Limited.

1909-1935: Pitting and trenching. No.4 Shaft, inclined 60°NW, sunk to approximately 260 feet, with 1,075 feet of lateral development on levels at 75, 125, and 250 feet. Work by unknown operators, but some is probably attributable to Gilmour Mining Company Limited.

1935: Station established at 75 foot level in No.1 Shaft. 100-ton mill erected by Gilmour Gold Mines Limited.

1936-1940: Shafts dewatered and investigated but allowed to refill. Diamond-drilling from the surface totalling 1,200 feet. Work by Cataraqui Gold Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1909-1910	172	550	0.31

REFERENCES: OBM 1909, Vol.18, pt.1, p.133.

ODM 1936, Vol.45, pt.1, p.109, 110.

ODM 1939, Vol.48, pt.1, p.89, 90 (Cataraqui Gold Mines, Limited).

ODM 1942, Vol.51, pt.4, p.48, 49 (Cataraqui Gold Mines, Limited).

MADOC TOWNSHIP

(NTS 31C/5E, 31C/6W, 31C/11W, 31C/12E)

Bannockburn Prospect

MAIN METALS: Au

LOCATION: Approximately ¼ mile west of Bannockburn, in lot 28, concession V, Madoc Township.
Map reference: ODM 2154, Madoc Township.

GEOLOGY: The contact between a felsic intrusion and schistose metasediments is cut by a vein, striking N78°E, dipping almost vertically, and up to 3 feet wide, which has been stripped for a continuous length of 700 feet. A grab sample of vein material assayed 0.17 ounce of Au per ton.

HISTORY: Circa 1894: Stripping, trenching, and pitting. Four shafts sunk to depths of 26, 30, 30, and 45 feet, and from one of the shafts 17 feet of drifting done. Ten-stamp mill in operation. Work by F. Straith Miller and F.S.P. Fanchot under option from owners (not recorded).

1897: The shaft on which the drifting had been done was deepened to 75 feet, and later a new 35-foot shaft was put down by Bannockburn Gold Mining Company Limited.

PRODUCTION: In 1895, approximately 3.5 ounces of gold was produced from an unknown amount of ore.

REFERENCES: OBM 1895, Vol.5, p.264, 265.

ODM 1943, Vol.52, pt.3, p.32.

ODM 1968, GR73, p.21.

Sophia Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately ½ mile west of Queensborough, in lots 14 and 15, concession X, Madoc Township.

Map reference: ODM 2154, Madoc Township.

GEOLOGY: Hornblende and chloritic schists are cut by two veins. The "Free-milling Vein" is a long

vein of massive quartz which strikes northwest and is up to 5 feet wide. The "Mispickel Vein" strikes north and is a narrow arsenopyrite vein containing a rich gold showing.

OWNERSHIP: Old Diamond Gold Mines Limited.

HISTORY: 1897-1900: Three shafts, Nos. 1, 2, and 3, sunk to depths of 60, 105, and 60 feet respectively. Lateral development totalled 98 feet. Ten-stamp mill installed. Some trenching. Work by D.E.K. Stewart, under option from Old Diamond Gold Mines Limited, and then P. McLaren, L. Meyer, and C. Meyer.

1901-1935: Shafts Nos. 1 and 3 continued to 100 feet. 140-foot crosscut to connect Shafts Nos. 2 and 3.

1936-1941: Trenching and pitting, No.1 Shaft deepened to 156 feet, 400 feet of lateral development, 2,950 feet of diamond-drilling, and 15-ton mill installed by Old Diamond Gold Mines Limited and Mayboro Milling Company Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1900	50	—	1500	0.03
1941	60	7	300	0.20
Total	110	7	1800	0.06

REFERENCES: OBM 1898, Vol.7, pt.1, p.92, 93.

OBM 1899, Vol.8, pt.1, p.41.

OBM 1901, Vol.10, p.117.

OBM 1913, Vol.22, pt.2, p.111, 112.

ODM 1937, Vol.46, pt.1, p.186 (Old Diamond Gold Mines, Limited).

ODM 1940, Vol.49, pt.1, p.173 (Mayboro Milling Company, Limited).

ODM 1942, Vol.51, pt.1, p.160, 161 (Mayboro Milling Company, Limited).

MARMORA TOWNSHIP

(INTS 31C/5E, 31C/12)

Cook Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately ¼ mile southeast of Deloro Mine, in lots 7 to 9, concession IX and lots 10 to 12, concession X, Marmora Township. No.1 Shaft in lot 9, concession IX.

Map reference: ODM 1957b, Haliburton-Bancroft Area.

GEOLOGY: Dioritic masses contain quartz-carbonate veins ranging from 1 to 6 feet in width. Associated minerals are arsenopyrite, pyrite, and chalcopyrite.

OCCURRENCE: Open for staking as of January 1, 1951.

HISTORY: 1901-1902: Shaft No.1, inclined 25°S, was sunk to 179 feet with levels at 70 and 80 feet, and

55 feet of drifting. A winze, inclined 45°W, was sunk 35 feet from 139-foot level. Shaft No.4, 1,500 feet northeast of No.1 and inclined 25°S, was sunk 120 feet with a level at 90 feet and 45 feet of drifting. Pitting, trenching, and drilling. Old ten-stamp mill at Dean and Williams Mine renovated. All work by The Cook Land Company Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1901, 1902, 1904	389	1483	0.26

REFERENCES: OBM 1902, Vol.11, p.102, 103, 234.

OBM 1903, Vol.12, p.110, 111.

Dean and Williams Mine (Past Producer)

MAIN METALS: Au

LOCATION: SE¼, lot 7, concession IX, Marmora Township.

Map reference: ODM 1957b, Haliburton-Bancroft Area (mine not shown on map).

GEOLOGY: Felsic rocks contain quartz lenses which strike N25°W and dip 45°E. Associated minerals are arsenopyrite, pyrite, and chalcopyrite.

OWNERSHIP: Unknown.

HISTORY: 1870: Pitting and 160-foot shaft. Ten-stamp mill erected.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1870	500	1000	0.5

REFERENCES: GSC 1927, Economic Geology Series No.4, p.104.

GSC 1936, Memoir 192, p.116 (Cook Mine).

OBM 1902, Vol.11, p.103 (Cook property).

ODM 1936, Vol.45, pt.1, p.13 (Cook Mine).

Deloro Mine (Past Producer)

MAIN METALS: Au

LOCATION: Lot 10, concession VI, lot 9, concession VIII, W½, lot 10 and NE¼, lot 8, concession IX, Marmora Township.

Map reference: ODM 1957b, Haliburton-Bancroft Area.

GEOLOGY: Mafic rocks, cut by felsic dikes, enclose quartz veins which are 100 to 1,000 feet long, 1 foot to 5 feet wide, dip 20-55°W, and contain up to 10 percent arsenopyrite. Most extensively worked veins were the Gatling, dipping 40°W, and the Tuttle, dipping 55°W, which unite below a depth of 230 feet. Gold is mostly associated with arsenopyrite.

OWNERSHIP: Unknown.

HISTORY: Prior to 1871: Worked by unrecorded operators.

1871-1896: At least three shafts: Gatling (No.1) Shaft, inclined 55°, was sunk to 154 feet with 494 feet of drifting on levels at 70 and 125 feet; Tuttle (No.2) Shaft (inclined) was sunk to 70 feet with 172 feet of drifting; Timber Shaft (inclined) was sunk to 70 feet. Developers included: 1872-1880, Gatling Gold and Silver Mining Company; 1880-1884, Canada Consolidated Gold Mining Company (who erected original mill); 1892-1894, The Hastings Mining and Reduction Company.

1896-1903: Gatling Shaft continued to 347 feet and new levels established at 233 and 333 feet; a winze was sunk from the 333-foot level to an approximate depth of 500 feet. Tuttle Shaft deepened to 127 feet. Timber Shaft deepened to 100 feet. Shafts were interconnected by drifts and winzes. Total drifting was approximately 1,600 feet, and crosscutting, 780 feet. Eight other shafts were sunk, for a total depth of 517 feet; 219 feet of drifting was done from these shafts. Some diamond-drilling. Twenty-stamp mill and works for arsenic recovery constructed. Work by Canadian Gold Fields Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1897-1902	10,360	39,143	0.26

Some gold was produced prior to 1884 (ODM 1936, Vol.45, pt.1, p.13).

In addition, 2,112 tons of arsenic was produced between 1899 and 1903 (OBM 1904, Vol.13, p.18).

REFERENCES: GSC 1927, Economic Geology Series No.4, p.101-103.

OBM 1892, Vol.2, p.238.

OBM 1898, Vol.7, p.90-92.

OBM 1899, Vol.8, pt.1, p.39, 40.

OBM 1900, Vol.9, p.90, 91.

OBM 1901, Vol.10, p.52, 115.

OBM 1904, Vol.13, pt.1, p.18.

ODM 1936, Vol.45, pt.1, p.13.

Gatling Five Acre Mine (Past Producer)

MAIN METALS: Au

LOCATION: Lot 10, concession IX, Marmora Township. Surrounded by Deloro Mine.

Map reference: ODM 1957b, Haliburton-Bancroft Area (mine not shown on map).

GEOLOGY: Felsic and mafic intrusions. The two veins on the property are auriferous, carry arsenopyrite and are continuations of the Gatling and Air Veins at the Deloro Mine.

OWNERSHIP: Unknown

HISTORY: 1899-1903: Shaft, inclined 60°NW, was sunk

to greater than 200 feet, with levels at 78, 100, and 190 feet. Drifting and crosscutting, amounting to 466 and 20 feet respectively, were done on the continuation of the Air Vein. Shaft, inclined 55°W, was sunk to 60 feet on the continuation of the Gatling Vein. Ten-stamp mill installed by the Atlas Arsenic Company Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1900, 1902, 1903	2,353	6,114	0.38

REFERENCES: GSC 1927, Economic Geology Series 4, p.103 (Atlas or Five Acres).

OBM 1900, Vol.9, p.91, 92 (The Atlas Arsenic Co., Ltd.).

OBM 1903, Vol.12, p.110 (Atlas Arsenic Company).

Pearce Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Southeast of Deloro Mine in E½, lot 8, concession VIII, Marmora Township.

Map reference: ODM 1957b, Haliburton-Bancroft Area.

GEOLOGY: A felsic intrusion encloses a 1- to 8-foot wide quartz vein which dips 25-40°SW and contains gold and arsenopyrite.

OWNERSHIP: Unknown

HISTORY: Circa 1893: Shaft sunk to 90 feet with a level at 42 feet on which 27 feet of drifting was done by The Hastings Mining and Reduction Company under option from Mr. Pearce.

Circa 1901: Possible that a new shaft, inclined 26°, was sunk to a depth of 165 feet, although it may be that the previous shaft was deepened. Levels established at 65 and 150 feet on which approximately 240 feet of drifting was done by Atlas Gold and Arsenic Mining Company.

Circa 1904: Some work by The Cleveland Mining Company of Ontario.

Circa 1907: Shaft deepened to 173 feet and approximately 40 feet of drifting done by H.E. Lawson, who was leasing from The Cleveland Mining Company of Ontario.

1936: 70 feet of shaft-sinking and 86 feet of lateral development by Centaur Mining Company Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1893, 1908	302	60	239	1.26

REFERENCES: GSC 1927, Economic Geology Series No.4, p.103 (Pearce or Severn).

GSC 1936, Memoir 192, p.118, 119 (Pearce or Severn Mine).

OBM 1893, Vol.3, p.53 (The Pearce Mine).
 ODM 1937, Vol.46, pt.1, p.111 (Centaur Mining Company Limited).

Sovereign Mine (Past Producer)

MAIN METALS: Au

LOCATION: East of hamlet of Malone, in lots 16 and 17, concession XI, Marmora Township.

Map reference: ODM 1957b, Haliburton-Bancroft Area.

GEOLOGY: Calcareous metasediments are intruded by felsic rocks. The latter are cut by north-striking veins of irregular width, one of which dips 75° W and was traced for a distance of 1,400 feet.

OWNERSHIP: Unknown

HISTORY: 1866-1878: Work by unrecorded operators. Circa 1878: Pits and shallow shafts by D.E.K. Stewart under lease.

1890-1892: Sinking of shafts, one of which, the Mackenzie or A Shaft, was 65 feet deep. Ten-stamp mill. Work by Crescent Gold Mining Company of Marmora Limited.

Circa 1903: Reworking of old pits and openings by The Sovereign Gold Mining and Development Corporation of Ontario Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1891-1892	~328	1,700	0.19
1900	42	262	0.16
Total	370	1,962	0.19

Approximately 970 ounces of gold was reportedly recovered in 1878 from both the Sovereign Mine and the Gladstone Occurrence (ODM 1936, Vol.45, pt.2, p.13).

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Powell.

GSC 1927, Economic Geology Series No.4, p.105, 106 (Cameron-Feigle Group).

OBM 1891, Vol.1, p.223, 224 (Crescent Mine).

OBM 1892, Vol.2, p.238, 239 (Crescent Mine).

OBM 1904, Vol.13, p.93.

ODM 1936, Vol.45, pt.1, p.13 (Gladstone and Feigle Mine).

Royal Commission 1890, p.110 (Feigle and Gladstone Mines).

TUDOR TOWNSHIP

(NTS 31C/11W, 31C/12E, 31C/13E)

Craig Mine (Past Producer)

MAIN METAL: Au

LOCATION: Approximately 5 miles northeast of Bannockburn station, in S½, lots 4 and 5, concession III, Tudor Township.

Map reference: ODM 52b, North Hastings Area.

GEOLOGY: Massive mafic lava of probable Keewatin age is cut by discontinuous quartz veins and stringers striking northwest. Vein material is exposed for a distance of 1,000 feet with widths ranging from a few inches to 6 feet.

OWNERSHIP: Open for staking as of January 1, 1951.

HISTORY: 1896: 100-foot shaft financed by a group from Toronto.

1903-1907: 165- and 200-foot shafts and 1,800 feet of lateral development by Craig Gold Mining and Reduction Company.

1934-1936: Shafts deepened to 200 and 245 feet, and 1,260 feet of lateral work on the 50-, 100-, and 225-foot levels carried out by Craig Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1905, 1906	248	1,850	0.13

REFERENCES: GSC 1936, Memoir 192, p.116.

OBM 1898, Vol.7, p.92.

ODM 1943, Vol.52, pt.3, p.32, 33.

Lennox and Addington County

KALADAR TOWNSHIP

(NTS 31C/11, 31C/13E)

Golden Fleece Prospect

MAIN METALS: Au, Ag

LOCATION: W½, lots 24 and 25, concession VI, Kaladar Township.

Map reference: ODM P.1563, Kaladar Area (Addington Mines Limited (Golden Fleece Deposit)).

GEOLOGY: Along a contact between metavolcanics

and metasediments is an auriferous ore zone which strikes north for more than 3,000 feet, dips approximately 70°E and has a maximum width of 35 feet. Accessory sulphide mineralization, including arsenopyrite, occurs in the zone.

ECONOMIC FEATURES: 250,000 tons of marginal grade ore was reportedly developed as a result of the work carried out during the period 1935-1939.

HISTORY: 1881: Discovered.

Circa 1887-1913: Two shallow shafts sunk and a ten-stamp mill erected. Work done by Adelaide Min-

ing Company Limited and, towards the end, by A.B.P. Mining Company Limited under option. 1915-1922: One of original shafts continued to 60 feet. Shaft, inclined 63°E, sunk to 100 feet with a level at this depth from which a winze was sunk 66 feet. Drifting and crosscutting totalled 350 feet and 402 feet respectively. Work by The Cobalt-Frontenac Mining Company Limited.

1932: Sampled by C.N. Thompson under option from Rich Rock Gold Mines Limited.

1935-1939: Inclined shaft continued to 535 feet with additional levels at vertical depths of 168, 254, 356, and 458 feet. From the bottom level a winze was sunk 273 feet with levels at 625 and 750 feet. Drifting and crosscutting totalled 7,096 feet and 3,033 feet respectively. Diamond-drilling included

eight surface holes totalling 2,393 feet and 68 underground holes totalling 6,463 feet. Work by The Consolidated Mining & Smelting Company of Canada Limited and its subsidiary, Addington Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1919, 1922	65	26	—	—

REFERENCES: OBM 1902, Vol.11, p.200.

OBM 1907, Vol.16, pt.1, p.76.

OBM 1913, Vol.22, pt.1, p.135.

OBM 1919, Vol.28, pt.1, p.154 (Cobalt-Frontenac).

ODM 1939, Vol.48, pt.1, p.98 (Addington Mine).

ODM 1940, Vol.49, pt.1, p.103 (Addington Mine).

ODM 1942, Vol.51, pt.4, p.70-72 (Addington Mines, Limited).

Peterborough County

BELMONT TOWNSHIP

(NTS 31C/5, 31C/12W)

Cordova Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 2 miles northeast of Belmont Lake, in E½, lot 20, concession I, Belmont Township.

Map reference: ODM 52a, Haliburton Area.

GEOLOGY: Shear zones, averaging 6 feet in width, occur near the western margin of a mafic intrusion. These enclose ore bodies which, near Shaft No.1, strike N60-70°E and N80°W and dip 60-70°SE; those near Shaft No.3 strike N70-85°E to N85°W and have an average dip of 65°S. Native gold is not visible; the gold is probably confined to pyrite.

OWNERSHIP: Cominco Limited.

HISTORY: Circa 1890: Discovered by H.T. Strickland.

1891-1892: Three shafts: No.1 to 132 feet with levels at 70 and 120 feet; No.2 to 34 feet; and No.3 to 32 feet. Work by South African General Exploring and Mining Company of London, England.

1898-1902: No.1 Shaft continued to 410 feet with levels at 200 and 400 feet; No.2 continued to 185 feet with levels at 50 and 90 feet; No.3 continued to 325 feet, with levels at 185 and 258 feet, and a 72 foot winze from the 185-foot level. Shafts Nos.1 and 2 interconnected on the 185-foot level. An additional five shallow shafts were sunk, generally 80 to 100 feet deep. Drifting totalled 4,321 feet. A ten-stamp mill was in operation. Work by Cordova Exploration Company Limited.

Circa 1912: No.3 Shaft deepened with new levels at 385 and 485 feet. Thirty-stamp mill in operation.

Work by Cordova Mines Limited.

1935-1939: No.3 Shaft continued, on an incline, to 1,050 feet, and an additional 4 levels were established at 625, 750, 875, and 1,000 feet; 152-foot inclined winze connected 1,000-foot and 1,125-levels. Drifting and crosscutting totalled 10,543 feet and 2,733 feet respectively. Underground diamond-drilling from more than 13 holes totalled 6,850 feet. 125-ton mill erected. Work by The Consolidated Mining and Smelting Company of Canada Limited.

1965: Diamond-drilling and sampling of tailings dump by Orvana Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1892-1893, 1898-1903,				
1912-1915, 22,774	687	120,670	0.19	
1917, 1939-1940				

REFERENCES: Canadian Mines Handbook 1965, p.244 (Orvana Mines Ltd.).

OBM 1891, Vol.1, p.224 (Belmont Mine).

OBM 1903, Vol.12, p.111, 112 (Belmont Mine).

ODM 1940, Vol.49, pt.1, p.104.

ODM 1943, Vol.52, pt.2, p.36-40.

Ledyard Prospect

MAIN METALS: Au

LOCATION: E½, lot 19, concession I, Belmont Township.

Map reference: ODM 52a, Haliburton Area.

GEOLOGY: Mafic igneous rock cut by a quartz vein which strikes east and dips 45°S.

HISTORY: 1893-1896: 100-foot shaft with 26 feet of

drifting and 85 feet of crosscutting. Mill capacity of 20 tons per day. Work by Ledyard Gold Mines Company Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1893-1894	~ 13	55	0.24

REFERENCES: ODM 1943, Vol.52, pt.2, p.36.

SOUTHERN ONTARIO OCCURRENCES

Frontenac County

BARRIE TOWNSHIP

(NTS 31C/14E, 31C/15W)

Name and Location	References	Metals	Remarks
Cobalt-Frontenac Occurrence: Lot 13, con. I, Barrie Tp.	ODM 1942, Vol.51, pt.4, p.42. ODM Map 51d, Grimsthorpe- Kennebec Area.	Au Zn	Quartz vein, occurring in a shear zone in mafic metavolcanics, strikes N75°E and dips 80°S. Vein has a maximum width of 30 inches and contains pyrite, pyrrhotite, sphalerite, and gold.
Gough Occurrence: S½, lots 3-5, con. X, Barrie Tp.	ODM 1942, Vol.51, pt.4, p.41. ODM Map 51d, Grimsthorpe- Kennebec Area.	Au Zn Pb	A 1-foot wide quartz vein, striking N58°E and dipping vertically in dolomite of similar attitude, contains pyrite, arsenopyrite, bournonite, sphalerite, and gold. Grab sample assayed 0.02 oz. Au/ton. 1938: Pitting and trenching.
Helena Occurrence: Lots 19 and 20, con. VI, and lot 20, con. VII, Barrie Tp. Shafts in N½, lot 20, con. VI.	ODM 1942, Vol.51, pt.4, p.47, 48. ODM Map 51d, Grimsthorpe- Kennebec Area.	Au Cu	Quartz veins in carbonate rocks contain chalcopyrite and gold. 1900: Two shafts, each 125 feet deep, and a third shaft, 185 feet deep.
Kashawakamak Occurrence: S½, lot 14, con. VI, Barrie Tp.	ODM 1942, Vol.51, pt.4, p.40. ODM Map 51d, Grimsthorpe- Kennebec Area (Camgar Mining Syndicate Ltd.).	Au	Dolostone, striking N35°E and dipping north, is intruded by feldspar porphyry and lamprophyre dikes. A quartz vein, 4 to 18 inches wide and running parallel to the bedding, contains visible gold. 1939: Surface work by Camgar Mining Syndicate Ltd.
Mill Occurrence: N½, lot 36, con. II, Barrie Tp.	ODM 1942, Vol.51, pt.4, p.39, 40. ODM Map 51d, Grimsthorpe- Kennebec Area (Camgar Mining Syndicate Ltd.).	Au Cu	Intersecting porphyry dikes in dolostone. Quartz vein along dike contains tetrahedrite, arsenopyrite, pyrite, and chalcopyrite. Sample assayed 0.12 oz. Au/ton. 1939-1940: Pitting and stripping by Camgar Mining Syndicate Ltd.
Natto Occurrence: Lots 28 and 30-32, con. III and lot 32, con. IV, Barrie Tp.	DEMR Ottawa, Mineral Development Sector Files: Natto. ODM Map 2053, Madoc Area (occurrence not shown on map).	Au	Two parallel quartz veins, 60 feet apart, striking east and dipping 65°N, cut carbonate rocks and 'greenstone'. Pit and trench samples varied in gold content from 0.02 oz. Au/ton across 4.5 feet to 1.76 oz. Au/ton across 3.1 feet.
Pay Rock Occurrence: S½, lot 16, con. I, Barrie Tp.	ODM 1942, Vol.51, pt.4, p.42. ODM Map 51d, Grimsthorpe- Kennebec Area.	Au	Discontinuous quartz stringers near a mafic dike in dolomite. Gold observed in rusty dolomite in a pit. 1936: Trenches and shallow pits.

Name and Location	References	Metals	Remarks
CLARENDON TOWNSHIP			
(NTS 31C/14E, 31C/15W, 31F/2W)			
Cook Occurrence: Approximately 2 miles southeast of Fernleigh, probably in lot 23, con. IX, Clarendon Tp.	OBM 1901, Vol.11, p.105. OBM 1913, Vol.22, pt.2, p.105. ODM 1956, Vol.65, pt.7, p.39. ODM Map 1956-4, Clarendon-Dalhousie-Darling Area (shown on map as an arsenic occurrence).	Au As	Quartz veins up to 2 feet wide occur in diorite within limestone. Pit sunk to 40 feet. Assays varied between 0.19 and 0.87 oz. Au/ton and averaged 14% As.
Webber Occurrence: Approximately 2 miles northeast of Fernleigh, probably in lot 28, con.VIII, Clarendon Tp.	ODM 1956, Vol.65, pt.7, p.39. ODM Map 1956-4, Clarendon-Dalhousie-Darling Area. ODM 1951, PR1951-3, p.5.	Au	Quartz vein, 1 foot wide, in paragneiss near a contact with limestone, trends N65°E and dips vertically. Minor arsenopyrite and "good values in gold" reported (ODM 1951, PR1951-3, p.5). Trenching and shaft.
KENNEBEC TOWNSHIP			
(NTS 31C/10W, 31C/11E, 31C/14E, 31C/15W)			
Dome Mines Occurrence: Main showing in N½, lot 32, con. II, Kennebec Tp.	ODM 1942, Vol.51, pt.4, p.73. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	A 15-foot band of dolostone striking east and dipping north contains stringers of quartz with associated sulphides and gold. Surface samples contained "substantial values in gold". (ODM 1942, Vol.51, pt.4, p.73). 1936: 3,000 feet of diamond-drilling by Dome Mines Ltd. Low gold values obtained.
Emery Occurrence: W½, lot 11, con. II, Kennebec Tp.	DEMR Ottawa, Mineral Development Sector Files: Emery. ODM 1942, Vol.51, pt.4, p.74 (West Half Lot 11, Concession II). ODM Map 51d, Grimsthorpe-Kennebec Area (shown on map as a copper occurrence).	Au	Metavolcanics and metasediments cut by two veins in a shear zone which strikes east and dips north. Assays varied from 0.23 oz. Au/ton across 5.5 feet to 1.57 oz. Au/ton across 9 feet. Trenching and pitting carried out. 1963: Natto Mining Corp. Ltd. optioned the property.
Gold Base Occurrence: Lot 30, con. V, Kennebec Tp.	ODM 1942, Vol.51, pt.4, p.73. ODM Map 2053, Madoc Area.	Au	At the contact between a felsic intrusion and mafic metavolcanics, a vein strikes east and dips steeply northward. Grab sample assayed 0.38 oz. Au/ton. 1939: Gold Base Mining Corp. Ltd. optioned the property from D. Veley and did some surface work.
OSO TOWNSHIP			
(NTS 31C/10E, 31C/15E)			
Bourke, R.T. Occurrence: Southeast part of lot 23, con. I, Oso Tp.	ODM 1947, Vol. 56, pt.6, p.58. ODM Map 1947-5, Olden-Bedford Area.	Au	Beds of Precambrian limestone, striking approximately east and dipping south, are cut by a dike of granite. Dike is in part composed of sulphide-bearing quartz. Low gold values found.
Morrow, A. Occurrence: E½, lot 15,	ODM 1947, Vol. 56, pt.6,	Au	A 2-foot quartz vein cuts across

Name and Location	References	Metals	Remarks
con.II, Oso Tp.	p.58. ODM Map 1947-5, Olden-Bedford Area.		flat-lying Precambrian quartzite. Circa 1941-1944: Pitting showed pyrite and gold mineralization which yielded a value of 0.01 oz. Au/ton.
Oso Tp., Con. IV, Lot 8, W½ Occurrence.	ODM 1947, Vol.56, pt.6, p.58. ODM Map 1947-5, Olden-Bedford Area (shown on map as a pyrite occurrence).	Au	A 2-foot granitic dike, lying parallel to limestone beds, contained minor pyrite and gold. 1937: 13-foot deep pit.
Tysick Occurrence: Western part of lot 27, con. VI, Oso Tp.	ODM 1947, Vol.56, pt.6, p.60. ODM Map 1947-5, Olden-Bedford Area.	Au	Small lenses of crystalline limestone enclosed in a gabbro-diorite rock. Both are cut by a granitic dike. 1938: 5-foot deep pit revealed disseminated pyrite and low gold values.

Haliburton County

SNOWDON TOWNSHIP

(NTS 31D/15E, 31D/16W)

McCluney, John Occurrence: Lot 19, con. III, Snowdon Tp.	Regional Geologist's Files, OMNR, Huntsville. ODM Map 52a, Haliburton Area.	Au	Assays ranging from 0.17 to 0.33 oz. Au/ton obtained from gossan cap.
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Hastings County

CASHEL TOWNSHIP

(NTS 31C/13E, 31C/14W, 31F/3W, 31F/4E)

Cashel Copper Occurrence: Lot 31, con.I Cashel Tp.	ODM 1968, GR71, p.39. ODM Map 2142, Cashel Township.	Au Ag Cu	A trondhjemite stock in contact with carbonate metasediments has three 1-foot wide, flat-lying quartz veins near the contact. Mineralization consists of disseminated chalcopyrite and pyrite with associated silver and gold. Circa 1916-1918: A shaft was sunk. Values of 0.01 oz. Au/ton and 0.87 oz. Ag/ton were obtained.
Cashel Tp., Con.I, Lot 20 Occurrence: Near the south boundary of the township.	ODM 1968, GR71, p.39. ODM Map 2142, Cashel Township (Gold and silver occurrence).	Au Ag Pb	Mafic metavolcanics enclose galena-bearing quartz vein. Quartz from the dump assayed 0.04 oz. Au/ton and 9.56 oz. Ag/ton.

DUNGANNON TOWNSHIP

(NTS 31C/13, 31F/4)

Dungannon Tp., Con. II, Lots 16 and 17 Occurrence.	ODM 1943, Vol.52, pt.3, p.31. ODM Map 52b, North Hastings Area.	Au	Metasediments enclose two rusty mineralized zones. Southern zone strikes N70°E, dips 70°S, and assayed 0.01 oz. Au/ton.
Dungannon Tp., Con. X, Lot 1 Occurrence.	ODM 1943, Vol.52, pt.3, p.31. ODM Map 52b, North Hastings Area.	Au	Metasediments are cut by a vein, 30 inches wide and striking N70°E for distance of 725 feet, which assayed 0.02 oz. Au/ton.

Name and Location	References	Metals	Remarks
Dungannon Tp., Con.III, Lot 26 Occurrence.	ODM 1943, Vol.52, pt.3, p.31. ODM Map 52b, North Hastings Area.	Au Cu	Three test pits sunk in metasediments along a line trending N70°E. A grab sample from the easternmost pit assayed 0.02 oz. Au/ton and 0.25% Cu.

ELZEVIR TOWNSHIP

(NTS 31C/11)

Barry Occurrence: Lot 5, con. II, Elzevir Tp.	GSC 1936, Memoir 192, p.115. ODM Map 2053, Madoc Area (occurrence not shown on map).	Au	1869: Native gold reported and shallow shaft sunk.
James, Joseph Occurrence: Lot 3, con.IV, Elzevir Tp.	GSC 1927, Econ. Geol. Series No. 4, p. 107-109. OBM 1902, Vol. 11, p.102, 200. ODM Map 2053, Madoc Area.	Au	Metavolcanics enclose irregular aggregates of quartz containing arsenopyrite within an area 400 feet wide and 0.5 mile long. Sample from dump assayed 0.04 oz. Au/ton. Circa 1872 and circa 1900: Numerous pits and shafts up to 40 feet deep by Flint and Joseph James respectively.

GRIMSTHORPE TOWNSHIP

(NTS 31C/11W, 31C/12E, 31C/13E, 31C/14W)

Cobalt Frontenac Occurrence: Lots 28 and 29, con. XVII and XVIII, Grimsthorpe Tp.	ODM 1942, Vol.51, pt.4, p.49. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	The main showings consist of some surface trenching in 'greenstone' schist cut by a gently-folded aplite sill. Low gold values reported from the aplite.
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LIMERICK TOWNSHIP

(NTS 31C/13)

McMurray Occurrence: Lot 1, con.I, Limerick Township.	ODM 1969, GR67, p.65-67. ODM Map 2167, Limerick Township.	Au	North-northeast-trending, rusty-weathering schist encloses partly-altered remnants of felsic and mafic metavolcanics, and quartz veins which are less than 1 foot wide. Local concentrations of arsenopyrite. Assays of both schist and veins gave mostly traces of Au and Ag. 1958-1960: Pitting and diamond-drilling by V.A. McMurray; drill-core assayed up to 0.27 oz. Au/ton.
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MADOC TOWNSHIP

(NTS 31C/5E, 31C/6W, 31C/11W, 31C/12E)

Empire Occurrence: Lot 1, con. VI, Madoc Tp.	GSC 1936, Memoir 192, p.117. ODM Map 2154, Madoc Township (occurrence not shown on map).	Au Ag	Samples taken in 1868 said to assay over \$400 per ton in Au and Ag. (Au at approximately \$20.70 per ounce).
Fox Occurrence: Immediately south of the Richardson Occurrence in E½, lot 1, con.V, Madoc Tp.	GSC Memoir 192, p.117. ODM Map 2154, Madoc Township (occurrence not shown on map).	Au	1866: Shaft sunk on vein; gold found in non-economic quantities.

Name and Location	References	Metals	Remarks
Richardson Occurrence: E½, lot 18, con.V, Madoc Township.	OBM 1893, Vol.3, p.53-55. ODM 1936, Vol.45, pt.1, p.12. ODM Map 2154, Madoc Township.	Au	Metasediments enclose a gold-bearing seam 6 inches wide. Recovery for 1866 is recorded at \$1,500 or \$2,000 (Au at approximately \$20.70 per ounce). 1866: Discovered by Powell and Berryman. 1866-1868: Worked by Lombard and Hardin of Chicago.
St. Joe Occurrence: 1,000 feet west of the Hastings Road, in lot 25, con. V, Madoc Tp.	ODM 1968, GR73, p.20. ODM Map 2154, Madoc Township (occurrence not shown on map).	Au	30-foot shaft sunk on an east-striking vein. Approximately 300 tons of ore was mined. Assays said to range from 0.1 to 3.0 oz. Au/ton.

MARMORA TOWNSHIP

(NTS 31C/5E, 31C/12)

Ackerman Occurrence: Approximately 2 miles east of the town of Marmora, in lots 6-8, con. VIII, Marmora Tp.	Canadian Mines Handbook 1951, p.211. ODM 1939, Vol.48, pt.1, p.72. no map available	Au	Surface sampling of one vein yielded 0.32 oz. Au/ton over a length of 150 feet and width of 5.6 feet. Circa 1938: Ackerman Gold Mines Ltd. sank a 270-foot shaft at a 45° incline; 600 feet of drifting done at the 170-foot level. Circa 1951: 3200 feet of diamond-drilling.
Campbell-Blomfield Occurrence: E½, lot 6, con. VIII, Marmora Tp.	OBM 1902, Vol.11, p.104. no map available	Au	Quartz vein in a felsic intrusion trends northwest, dips 30°SW, has a width of at least 6 feet, and contains arsenopyrite and gold. 1901: 12- and 60-foot shafts.
Demars Occurrence: Lot 24, con. V, Marmora Tp.	DEMR Ottawa, Mineral Development Sector Files: Demars. OBM 1893, Vol.3, p.53. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Metasediments and felsic intrusions containing auriferous arsenical ore. 1893: Test pits.
Gawley No.1 Occurrence: E½, lot 18, con. IX, Marmora Tp.	OBM 1902, Vol.11, p.104. ODM Map 1957b, Haliburton-Bancroft Area.	Au	Calcareous metasediments enclose a 10-foot wide quartz vein containing approximately 0.34 oz. Au/ton and 14% As. 100-foot shaft by Atlas Arsenic Co. Ltd.
Gawley No.2 Occurrence: Lot 9, con. X, Marmora Tp.	OBM 1902, Vol.11, p.104. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Assays average 0.37 oz. Au/ton and 15% As.
Gillen Occurrence: NE¼, lot 6, con. VIII, Marmora Tp.	GSC 1936, Memoir 192, p.117. no map available	Au	Quartz vein in a felsic intrusion is about 3 feet wide. 1870-1871: 5-stamp mill operated. 100-ton sample averaged 0.30 oz. Au/ton.
Gladstone Occurrence: W½, lot 17, con. XI, Marmora Tp.	GSC 1927, Econ. Geol. Series No.4, p.106 (Cameron-Feigle Group). Royal Commission 1890, p.28 (Gladstone and Feigle Mine). ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Felsic intrusions cut by a continuation of the veins at the Gatling Five Acre Mine. Some pitting. Approximately 1000 oz. of Au produced from both Sovereign Mine and Gladstone Occurrence.

Name and Location	References	Metals	Remarks
Hawkeye Occurrence: East part of lot 10, con. VIII, Marmora Tp.	GSC 1927, Memoir 192, p.118. OBM 1902, Vol.11, p.197. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Metasediments and intrusive rocks enclose auriferous veins containing arsenopyrite. 1870: Two shallow shafts sunk and some ore taken out.
Malone Occurrence: SE¼, lot 6, con. VIII, Marmora Tp.	OBM 1895, Vol.5, p.263, 264. no map available	Au	1894: 60-foot shaft from which 100 tons of auriferous arsenical ore was treated by Crescent Gold Mining Co. of Marmora Ltd. The average yield was 0.60 oz. Au/ton.
Neill, Bob Occurrence: W½, lot 14, con.X, Marmora Tp.	GSC 1871-1872, Progress Report of Exploration and Surveys in the Counties of Leeds, Frontenac, and Lanark, p.139, 140. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Vein situated near contact between granite and country rock. Circa 1867: Vein discovered. Surface samples assayed upwards of 0.25 oz. Au/ton. 1870-1871: Opening made by Bob Neill.

TUDOR TOWNSHIP

(NTS 31C/11W, 31C/12E, 31C/13E)

Quinlan Lake Occurrence: Approximately 500 feet north of Quinlan Lake, in S½, lot 2, con. II, Tudor Tp.	ODM 1969, GR67, p.68. ODM Map 2168, Tudor Township.	Au	Mafic metavolcanics are cut by northeast-striking vein which is up to 10 feet wide and assayed 0.08 oz. Au/ton.
Sheppard Occurrence: Lot 12, con. II, Tudor Tp.	ODM 1969, GR67, p.70. ODM Map 2168, Tudor Township.	Au	Quartz vein, 11 feet wide and 200 feet long in granite, reportedly assayed up to 5 oz. Au/ton.
Tudor Tp., Con. X, Lot 7 Occurrence.	ODM 1943, Vol.52, pt.3, p.33. ODM Map 52b, North Hastings Area.	Au	Quartz vein, striking north in gneiss and diorite, reportedly contains a little arsenopyrite and assayed 0.1 oz. Au/ton.
Tudor Tp., Con.XIII, Lot 5, N¼ Occurrence.	ODM 1969, GR67, p.68. ODM Map 2168, Tudor Township.	Au	Potassic rhyolite is cut by a 2-foot wide vein with associated arsenopyrite stringers. Vein material assayed 0.01 oz. Au/ton; arsenopyrite from the rhyolite assayed 0.03 oz. Au/ton.

WOLLASTON TOWNSHIP

(NTS 31C/13)

Rollins Occurrence: North end of lot 16, con. XIV, Wollaston Tp.	GSC 1936, Memoir 192, p.119. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	1901: 25-foot shaft sunk on an arsenopyrite vein. Two carloads of ore shipped to Deloro.
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Lanark County

DARLING TOWNSHIP

(NTS 31F/1W, 31F/2E, 31F/7E, 31F/8W)

Ranworth (Boulder) Occurrence: Northwest corner of Darling Tp.	Northern Miner, June 7, 1962, p.9. ODM Map 1956-4, Clarendon-	Au Ag Cu	Large limestone boulders in considerable thickness of overburden contained 1.5 oz. Au/ton, 12 oz.
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Name and Location	References	Metals	Remarks
	Dalhousie-Darling Area.		Ag/ton, and high but erratic values in Cu.
LAVANT TOWNSHIP			
(NTS 31F/2)			
Robertson, H.S. Occurrence, E½, lot 4, con.X, Lavant Tp.	ODM 1956, Vol.65, pt.7, p.33,41. ODM Map 1956-4, Clarendon-Dalhousie-Darling Area.	Au Ag	Interbedded calcareous metasediment and amphibolite enclose quartz stringers which assayed up to 0.11 oz. Au/ton over a 5.6-foot core length. 1938, 1944: 3,000 feet of diamond-drilling by the Consolidated Mining and Smelting Co. of Canada Ltd.
RAMSAY TOWNSHIP			
(NTS 31F/1, 31F/8)			
Ramsay Occurrence: Lot 5, con.IV, Ramsay Tp.	Royal Commission 1890, p.146. no map available	Au Ag Pb	Calcareous metasediments enclose an east-striking vein which was traced for more than ½ mile and assayed 3 to 4 oz. Au/ton, approximately 20 oz. Ag/ton and 60% Pb. Circa 1890: Worked by W.H. Wylie.
SOUTH SHERBROOKE TOWNSHIP			
(NTS 31C/9W, 31C/10E, 31C/15E, 31C/16W)			
South Sherbrooke Tp., Con.II, Lot NE½ Occurrence.	OBM 1902, Vol.11, p.204. ODM Map 2054, Gananoque Area.	Au Ag	Auriferous quartz with associated sulphides assayed 3.50 oz. Au/ton and 0.41 oz. Ag/ton.
Lennox and Addington County			
ANGLESEA TOWNSHIP			
(NTS 31C/11, 31C/14)			
O'Donnell Occurrence: N½, lot 7, con. III, Anglesea Tp.	ODM 1942, Vol.51, pt.4, p.38. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au Ag Cu	A 1.5- to 3.0-foot wide, north-trending quartz vein crosscuts 'greenstone'. Trenching revealed some pyrite, chalcopyrite, silver, and gold.
O'Donnell North Occurrence: N½, lot 6, con. III, Anglesea Tp.	ODM 1942, Vol.51, pt.4, p.38. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	Metavolcanics are cut by a vein which strikes N3°W to N6°E, ranges in dip from 80°E to vertical, and is said to have good gold values.
O'Donnell South Occurrence: Lot 8, con. II, Anglesea Tp.	ODM 1942, Vol.51, pt.4, p.38, 39. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	Metavolcanics are cut by a vein which strikes N5°E for 160 feet and contains sulphides. Sample assayed 0.2 oz. Au/ton.
KALADAR TOWNSHIP			
(NTS 31C/11, 31C/13E)			
Ewing Occurrence: SE¼, W½, lot 20, con. IV, Kaladar Tp.	ODM 1942, Vol.51, pt.4, p.72. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	Northeast-trending metavolcanics and metasediments enclose a mineralized zone up to 10 feet wide containing sulphides. Sample assayed 0.07 oz. Au/ton. 1935-1937: Worked by J. Ewing.

Name and Location	References	Metals	Remarks
Stone, J.H. Occurrence: W½, lot 23, con. V, Kaladar Tp.	ODM 1942, Vol.51, pt.4, p.72, 73. ODM Map 51d, Grimsthorpe-Kennebec Area.	Au	Metavolcanics are overlain by meta-sediments, the contact being marked by a mineralized zone containing visible disseminated gold and accessory sulphides. 1939: Discovered by W. Lessard.

Peterborough County

HARVEY TOWNSHIP

(NTS 31D/8W, 31D/9, 31D/10E)

Harvey Tp., Con. I, Lots 5 and 6 Occurrence.	OBM 1899, Vol.8, p.213. ODM Map 1957b, Haliburton-Bancroft Area (occurrence not shown on map).	Au	Schist encloses a body of quartz which assayed 0.1 oz. Au/ton.
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Renfrew County

ADMASTON TOWNSHIP

(NTS 31F/7, 31F/10W)

Admaston Tp., Con. XII, Lot 3 Occurrence.	ODM 1944, Vol.53, pt.3, p.40. ODM Map 53b, Renfrew Area (occurrence not shown on map).	Au	Gabbro encloses auriferous calcite stringers which assayed approximately 0.1 oz. Au/ton.
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McNAB TOWNSHIP

(NTS 31F/7E, 31F/8W, 31F/9W, 31F/10E)

McNab Tp., Con. XI, Lot 9, E½ Occurrence.	ODM 1944, Vol.53, pt.3, p.41. ODM Map 53b, Renfrew Area (occurrence not shown on map).	Au	Rusty greywacke occurs as an interbed in limestone. Crosscutting this, and as <i>lit par lit</i> stringers and lenses, are masses of rusty quartz. Quartz reportedly yielded from a trace to 0.05 oz. Au/ton.
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WILBERFORCE TOWNSHIP

(NTS 31F/10W, 31F/11E)

Wilberforce Tp., Con. II, Lots 2 and 3 Occurrence.	ODM 1944, Vol.53, pt.3, p.42. ODM Map 53b, Renfrew Area (occurrence not shown on map).	Au	A red to grey granite gneiss is cross-cut by narrow quartz veins containing pyrite and low gold values. Samples from a small pit assayed 0.02 oz. Au/ton.
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SUDBURY DISTRICT

AFTON TOWNSHIP (NTS 41I/16E)

New Golden Rose Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 40 miles northeast of Sudbury, on the east shore of Emerald Lake, in N½, lot 3, concession II, Afton Township. Shaft located in claim S91249. Latitude 46.93°, Longitude 80.32°.

Map reference: ODM 2385, Afton and Scholes Townships.

GEOLOGY: A sequence of Early Precambrian metavolcanics and metasediments, isoclinally folded into a syndinal structure, trend east across the north end of Emerald Lake. The mine is located on the north limb of the syncline within a band of steeply dipping, highly contorted iron formation near feldspar porphyry dikes which have been intruded along an iron formation-conglomerate contact.

ECONOMIC FEATURES: The ore is found as lenses and veins of quartz, pyrite, and ankerite scattered along the strike length of the iron formation. The attitude of the mineralized zones for the most part follows the strike of the iron formation, but in a few places the zones cross the strike direction. Gold is present in the pyrite crystal lattice and is readily separated by grinding.

Reserves to the fifth level were mined out. There was no production from the sixth and seventh levels, the grade of which is unreported. The mine operated at a loss throughout the production period (1937-1944).

OWNERSHIP: Highland-Crow Resources Limited.

HISTORY: 1897: Gold discovered in weathered iron formation on the shore of Emerald Lake.

1915-1919: Considerable surface trenching and a 100-foot adit with 150-foot winze. Small amalgamation mill built and minor amount of gold recovered. All work by Golden Rose Mining Company Limited.

1927-1928: Adit lengthened to 240 feet, winze deepened to 238 feet and seven diamond-drill holes (more than 2,303 feet) by Afton Mines Limited. 1935-1941: Extensive surface and underground exploration and development by the Consolidated Mining and Smelting Company of Canada Limited. Vertical shaft to 749 feet, an inclined shaft winze to a vertical depth of 577 feet, and lateral development totalling 15,795 feet on seven levels and five sub-levels. 100-ton mill operated continuously during 1937-1941 at a capacity of 35 to 110 tons

per day. In 1941, reserves were exhausted and the mine was closed.

Circa 1955: Geological, magnetic and electromagnetic surveys by Abex Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1937-1941	45,360	8,296	144,237	0.31
1943-1944	54	3	—	—
Total	45,414	8,299	144,237	0.32

Prior to 1937, the only report of gold production was in the 1915-1916 period when a small, but unspecified amount of gold was recovered from surface pits and trenches.

The mine was closed late in 1941; the figures for 1943 and 1944 represent gold and silver recovered from the mill circuit.

REFERENCES: Cominco 1928-1941, Diamond Drill Logs.

GSC 1936, Memoir 192, p.131-133.

ODM 1936, Vol.45, pt.6, p.46-48.

ODM 1977, Report 170, p.46-50 (Abex Mines Limited).

BEULAH TOWNSHIP (NTS 41P/3W, 41P/6W)

Meteor Lake (Placer) Prospect

MAIN METALS: Au

LOCATION: Approximately 32 miles southeast of Gogama, at the south end of Meteor Lake, in north-central Beulah Township. Latitude 47.28°, Longitude 81.38°.

Map reference: ODM 2188, Sudbury-Cobalt Sheet (prospect not shown on map).

GEOLOGY: Gold is apparently confined to sands and gravels in old channels of the ancient Vermilion River which once flowed across this area. A channel of this river has been traced across the property for a continuous distance of 16.5 miles. The gravels on Meteor Lake are derived chiefly from Archean basement rocks, although green Huronian schists and eruptives occur and a few boulders of jaspery iron ore are present. The grain size of the sediments ranges from sand to bouldery gravel. The gold is presumed to have been concentrated from a nearby esker by the ancient Vermilion River.

Testing by Provincial Geologists gave values of about 0.009 ounce of Au per ton or 0.014 ounce of Au per cubic yard.

HISTORY: Circa 1900: Small sluicing operations

begun by the Onaping Mining Company.

1959-1964: Drilling and test-pitting by Cancor-Chibougamau Mines Limited. Similar programs conducted by Kamis Uranium Mines and Cargoran Mines. These 3 companies amalgamated in 1961 to form Ver-million Gold Placer Mining Limited.

REFERENCES: OBM 1901, Vol.10, p.156-158.

ODM 1949, PR 1949-2, 8p.

DEMR Ottawa, Mineral Development Sector Files: Au 1, Sudbury Area 41P/3, September, 1961.

BRACKIN TOWNSHIP

(NTS 42B/5W)

Baltic Prospect

MAIN METALS: Au

LOCATION: Approximately 4 miles southeast of the Renabie Mine, in northern Brackin Township. Drilling in patented claims S35147, S35148 and S35272. Latitude 48.35°, Longitude 83.83°. Map reference: ODM 2380, Stover and Brackin Townships (Braminco Mines Ltd.).

GEOLOGY: This prospect is located within a large syn-tectonic body of pink and grey, mainly massive Algoman granite and tonalite, intrusive into Early Precambrian mafic metavolcanics.

The Baltic quartz veins are in gneissic granite and are located in four main groups which vary in distance from 1,000 to 4,000 feet from the granite-metavolcanic contact. The trend of the vein systems ranges from north to southeast. One quartz vein, exposed for 50 feet by trenching, is reportedly up to 20 feet in width and yielded good gold values. Surface sampling done in 1947 yielded erratic gold values (up to 0.88 ounce of Au per ton from grab samples). Diamond-drilling done in 1948 indicated that the veins vary in width from 1 foot to 3 feet and yielded gold values which were mainly less than 0.01 ounce of Au per ton (with one high value of 2.86 ounces of Au per ton).

HISTORY: 1947: Geological survey, stripping, trenching, sampling, and 27 "X"-ray diamond-drill holes by Baltic Mines Limited.

1948: Seven diamond-drill holes (1,810 feet). Erratic gold values (0.01 ounce to 2.86 ounces of Au per ton over 2-foot widths in quartz veining) were encountered in three intersections.

1949-1950: Nine claims surveyed and patented.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Brackin Township, Diamond-Drilling Report 12. Canadian Mines Register, First Supplement, 1966, p.11.

Financial Post Survey of Mines 1954, p.160.

ODM 1978, Report 172, p.32, 33.

Regional Geologist's Files, Ontario Ministry of Natural Resources, Sault Ste. Marie: Brackin Township, E.E. Campbell.

Braminco Prospect

MAIN METALS: Au

LOCATION: Approximately 1/10 mile southeast of the Renabie Mine, in southern Leeson Township and northern Brackin Township. Main occurrences in patented claims S34467, S34468, S34799, S34822, and S35123. Latitude 48.36°, Longitude 83.85°. Map reference: ODM 2380, Stover and Brackin Townships.

GEOLOGY: The main ore-bearing structures, the 21 Vein, the 7 Vein, and the C Vein, are within the granodiorite batholith, 1,000 to 1,500 feet east of the northwest-trending granodiorite-metavolcanic contact.

Bruce (ODM 1942, Vol.51, pt.8, p.24) described the Canbrae C Vein as follows:

"It strikes N60°W and dips 80°S. At the southeast end, where the vein disappears beneath the swamp, the width of quartz is approximately 3 feet. The vein narrows slightly to the northwest and curves to a more nearly east-west strike. Where the vein is widest, its south wall is a pinkish gneissic granite and the north wall is a grey massive type. A short distance northwestward the vein leaves the contact and lies entirely in the gneiss."

Parts of the vein contain considerable quantities of pyrite and, in certain places, some galena and chalcopyrite. Fairly high gold values are reported from the wider part of the vein for a length of more than one hundred feet."

The Campbell Vein occurs within the metabasalt and is exposed mainly in the northeast corner of claim S34467. Gardiner and Low (Assessment Files Research Office, Ontario Geological Survey, Toronto: Brackin Township, Technical Survey File 63A.27) have described the Campbell Vein as follows:

"... the original find was made by R.J. Campbell ... Lenses of quartz up to 40 feet in width are found in the andesite near the contact with a tuff band. Encouraging values were found over fair widths at this point but it appears that the veins are lenticular along the strike as the width of the vein material decreases rapidly to the south."

ECONOMIC FEATURES: Reported ore reserves are as follows (Canadian Mines Handbook 1948, p.32):

Location	Ore Reserve		Grade	Remarks
	(tons)	(ounces of Au per ton)		
No.21 Vein	100,000		0.15	37,000 tons have a grade of 0.26
No.7 Vein	23,400		0.13	ounce of Au
B Vein	5,000		0.26	per ton

HISTORY: 1941: Large amount of surface work and some diamond-drilling by Canbrae Exploration Company Limited.

1946-1947: 12,800 feet of diamond-drilling (which outlined the reserves listed above) by Braminco Mines Limited. The company has been idle since 1949.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Leeson Township, Technical Survey File 63A.27.

Canadian Mines Handbook 1942, p.36 (Canbrae Exploration Company Limited).

Canadian Mines Handbook 1948, p.32.

Canadian Mines Handbook 1974-1975, p.50.

Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.

Marginal Notes, ODM Map P.791, Brackin Township.

ODM 1942, Vol.51, pt.8, p.24 (Canbrae Claims).

ODM 1978, Report 172, p.32-34.

Macabie Prospect

MAIN METALS: Au, Ag

LOCATION: ¼ mile north (North Showing) and ½ mile southeast (South Showing) of the narrows in Crooked Lake, in central Brackin Township. North showing at Latitude 48.34°, Longitude 83.84°. South showing at Latitude 48.33°, Longitude 83.83°.

Map reference: ODM 2380, Stover and Brackin Townships.

GEOLOGY: The showings occur in a large syngenetic body with a composition ranging from biotite trondhjemite to quartz diorite which is intrusive into Early Precambrian mafic metavolcanics. The showings consist of south-southeast-trending quartz veins which vary in width from 1 inch to 12 feet and dip roughly 50°W.

Most assays of diamond-drill core were between nil and 0.2 ounce of Au per ton with a few values as high as 0.63 ounce of Au per ton.

The north showing is located approximately ¼ mile north of the narrows in Crooked Lake. Diamond-drilling revealed that the gold-bearing quartz veins have been cut off by a parallel-striking diabase dike at a shallow depth and that the veins contain no gold values west of the dike.

Diamond-drilling on the south showing, situated

¼ mile southeast of the narrows, yielded gold values of up to 2.17 ounces of Au per ton.

HISTORY: 1947: Geological survey, prospecting, and sampling of the south showing by Canbrae Exploration Company Limited and Macassa Mines Limited. 1964-1965: 21 diamond-drill holes (4,378 feet) on north showing and five diamond-drill holes (1,429 feet) on south showing by Macabie Mines Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Brackin Township, Diamond-Drilling Reports 13 and 14.

Marginal Notes, ODM Map P.791, Brackin Township.

ODM 1978, Report 172, p.37, 38.

Regional Geologist's Files, Ontario Ministry of Natural Resources, Sault Ste. Marie: Brackin Township, R.A. Crouse and C.C. Houston.

CABOT TOWNSHIP

(NTS 41P/11W)

Canadian Johns-Manville Prospect

MAIN METALS: Au, Cu, Mo

LOCATION: Approximately 21 miles west of Gowganda, west of Claw Lake, in southern Cabot Township. Latitude 47.74°, Longitude 81.27°.

Map reference: ODM P.1104, Cabot Township.

GEOLOGY: Keewatin-type mafic to felsic metavolcanics and interbedded metasediments strike N70°E and dip steeply north. These rocks are intruded by a quartz diorite stock 2,000 feet in diameter. All of the above rocks are cut by porphyritic granite and diabase dikes.

Numerous quartz veins and zones of silicification and carbonatization are mineralized with gold, pyrite, chalcopyrite, galena and molybdenite. Gold occurs either alone or associated with molybdenite. Assays from pits and trenches where gold is associated with molybdenite range up to 1.39 percent MoS₂ and 0.07 ounce of Au per ton. Assays from pits and trenches where gold is not associated with molybdenite range up to 0.54 ounce of Au per ton. The best diamond-drill hole intersection was 0.16 ounce of Au per ton across 2 feet.

HISTORY: 1919: Gold first discovered near west arm of Claw Lake.

1929: Diamond-drilling (footage and number of holes unknown) by Porcupine-Kirkland Gold Mines Limited.

Circa 1930: Trenching by Ventures Limited.

1946: Geological survey and 17 diamond-drill holes (5,217 feet) by Paymaster Consolidated Mines Limited.

1965: One diamond-drill hole (805 feet) by Claw

Lake Molybdenum Mines Limited.

1970: Geological, geochemical, geobotanical, magnetic and electromagnetic surveys by Canadian Johns-Manville Company Limited.

REFERENCES: ODM 1934, Vol.43, pt.3, p.69 (Porcupine-Kirkland Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Cabot Township, Graham (1965).

Jonsmith-Glenburk Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 21 miles west of Gowganda in central Cabot Township. Latitude 47.74°, Longitude 81.28°.

Map reference: ODM P.1104, Cabot Township.

GEOLOGY: Keewatin-type metavolcanics, striking north-east and dipping steeply south, are interbedded with a 300-foot wide band of metasediments, including slate, greywacke, and conglomerate. Feldspar porphyry, mafic diorite, and north-trending diabase cut the metavolcanics and metasediments. Gold is associated with massive pyrite, chalcopryrite, bornite and magnetite mineralization which follow joint planes in and near the sedimentary rocks. Assays of drill core ranged from trace to 0.03 ounce of Au per ton and from trace to 0.52 ounce of Ag per ton.

HISTORY: 1960: 12 diamond-drill holes (986 feet).

1963: Geological, magnetic and electromagnetic surveys, and 37 diamond-drill holes (9,221 feet) by Jonsmith Mines Limited and Glenburk Mines Limited.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Cabot Township, MacVeigh (1960 and 1963).

CHAMPAGNE TOWNSHIP

(NTS 41P/5E, 41P/12E)

Makwa-Champagne Prospect

MAIN METALS: Au

LOCATION: Approximately 9 miles south of Gogama, in northwest-central Champagne Township. Claims S290840 and S290843. Latitude 47.55°, Longitude 81.70°.

Map reference: ODM 43c, Makwa-Champagne Area.

GEOLOGY: The area is underlain predominantly by a granitic batholith of Kenoran age, which in the vicinity of this occurrence is chiefly granodiorite grading locally to diorite.

The showing consists of two parallel quartz veins

striking N35°E and dipping west, which are 2 and 3 feet wide and are exposed for a distance of 30 feet. The veins are terminated by a fault at the east end and pinch out at the west end. The quartz is a glassy white and contains pyrite, chalcopryrite, and visible specks of pale yellow gold.

HISTORY: 1933-1934: Unspecified amount of stripping and trenching by Makwa-Champagne Gold Mines Limited.

1936: 50-foot shaft and four diamond-drill holes (1,200 feet) by Makwa-Champagne Gold Mines Limited.

1937: Shaft deepened to 125 feet and a new zone, 27 feet wide, stripped and trenched for 500 feet.

1971: Seven diamond-drill holes (1,007 feet) on claims S290840 and S290843 by Molly River Mining Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Champagne Township, Diamond-Drilling Report 10.

Canadian Mines Handbook, 1937, p.157.

ODM 1934, Vol.43, pt.3, p.64.

CHESTER TOWNSHIP

(NTS 41P/12W)

Beaverbridge Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 11 miles southwest of Gogama, between Bagsverd and Three Duck Lakes, in north-central Chester Township. Claims S120321-S120327 and S125063-S125065. Latitude 47.56°, Longitude 81.91°.

Map reference: ODM 41d, Three Duck Lakes Area.

GEOLOGY: Underlying the property is a narrow east-trending belt of Early Precambrian siltstones and mafic metavolcanics in contact with a large body of Kenoran granodiorite to the south.

Gold occurs in narrow quartz veins occupying well-defined fractures and is commonly associated with pyrite and chalcopryrite.

Drilling results were mainly low. However two sections assayed 0.57 ounce of Au per ton and 0.49 ounce of Ag per ton over 10 feet, and 1.23 ounces of Au per ton and 1.71 ounces of Ag per ton over 0.5 foot.

HISTORY: 1965-1967: Geological and electromagnetic surveys, stripping, and trenching by Beaverbridge Mines Limited.

1966-1970: Nine diamond-drill holes (3,508 feet) by Beaverbridge Mines Limited.

1973: Surface and geophysical exploration by Rockzone Mines Limited. Geophysical surveys, surface exploration and diamond-drilling were

planned.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Chester Township, Technical Survey File 63.1903, Diamond-Drilling Reports 11 and 22.
DEMR Ottawa, Mineral Development Sector Files: Au 7, 41P/12, Beaverbridge, August, 1972.
Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Rockzone Mines Limited (1973).

Chester Shannon Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 11 miles southwest of Gogama, at the north end of Clam Lake, in west-central Chester Township. Patented claim S8995. Latitude 47.56°, Longitude 81.96°.

Map reference: ODM 41d, Three Duck Lakes Area.

GEOLOGY: The property is underlain mainly by fine-grained felsic rocks, ranging from dacite to rhyolite in composition, with some andesite, quartz porphyry, and granodiorite.

The main Point Showing consists of a shear zone, striking N60°W and dipping 45-60°N, which is exposed for more than 200 feet on the northeast shore of Clam Lake. Pyrite and chalcopryite with gold values occur over widths of up to 24 feet. A section of the zone averaged as much as 0.14 ounce of Au per ton and 5.32 percent Cu over 9 feet. Vein material consists of crushed granodiorite carrying 1 percent or more of chalcopryite, pyrite, bornite, and pyrrhotite over widths of 5 to 10 feet. Quartz stringers up to several inches in width within the zone carry native gold and tellurides.

The West Vein, thought to be either an extension of the Main Showing or a parallel vein, is present on the west shore of the lake. It consists of irregular quartz lenses within a sheared zone, 6 to 10 feet wide, striking N78°W and dipping 54°N. It lies at the contact between quartz porphyry and lamprophyre, and has been exposed for 440 feet. Mineralization is heavy and consists of siderite or ankerite, quartz, biotite, pyrite, chalcopryite, and native gold.

ECONOMIC FEATURES: Two bulk samples from the Point Showing gave the following results (Assessment Files Research Office, Ontario Geological Survey, Toronto: Chester Township, Technical Survey File 63.2957):

	400 pound sample	10 ton sample
Gold	5.20 ounces per ton	3.40 ounces per ton
Silver	3.00 ounces per ton	3.40 ounces per ton
Copper	4.18%	4.68%

HISTORY: 1927: Prospecting and discovery of gold in

the area now covered by patented claim S8995.

1931: Stripping, trenching, and diamond-drilling (footage and number of holes unknown) by Chester Shannon Syndicate.

1932: Main Vein traced for 200 feet and four diamond-drill holes put down to test vein to a depth of 500 feet. Ten-ton sample taken for metallurgical testing.

1933: Stripping and test pits exposed vein on west shore of lake for a distance of 440 feet by Chester Shannon Syndicate.

1938: 11 diamond-drill holes (1,776 feet).

1965: Geological and electromagnetic surveys.

1971: Induced polarization and some diamond-drilling.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Technical Survey File 63.2957.

DEMR Ottawa, Mineral Development Sector Files: Au4, 41P/12, August, 1972.

ODM 1932, Vol.41, pt.3, p.31-33.

ODM 1934, Vol.43, pt.3, p.77,78.

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Clam Lake Gold Mines Limited (1938), Sylvanite Gold Mines Limited (1939).

Kingbridge (Gomak) Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 11 miles southwest of Gogama, in north-central Chester Township. Shaft located in patented claim S20009. Latitude 47.56°, Longitude 81.89°.

Map reference: ODM 41d, Three Duck Lakes Area (Labbe).

GEOLOGY: With the exception of a narrow belt of Early Precambrian metasediments and mafic metavolcanics trending easterly along the north boundary, Chester Township is underlain by a granitic batholith complex, which in the area of Three Duck Lake has a granodiorite-diorite composition. Diamond-drilling on the property revealed mafic metavolcanics with minor granodiorite.

A network of fractures, many of which carry erratic amounts of native gold, are present on the property. The mineralized zones are up to 24 feet wide and have been traced for several hundred feet. Sulphides, chiefly pyrite, pyrrhotite and chalcopryite, occur within the mineralized zones. In addition to the native gold, a low gold content is present in the sulphide minerals.

ECONOMIC FEATURES: On the No.3 Vein, Kingbridge Mines Limited outlined a zone, 3 feet wide, 95 feet long, and 65 feet in depth, which has an indicated

average grade of 2.88 ounces of Au per ton.

HISTORY: 1932-1935: 2000 feet of trenching and 2500 feet of diamond-drilling.

1935-1936: Two-compartment shaft inclined 65° to a depth of 85 feet, with 215 feet of lateral development and 68 feet of raising on the 65-foot level. A 35 ton mill operated intermittently in 1936. All work by Gomak Mines Limited.

1937-1938: Substantial amount of trenching and 5000 feet of diamond-drilling by Gomak Mines Limited.

1945-1948: Two shafts (16 and 20 feet deep), 900 feet of stripping on No.1 Vein, 300 feet of stripping on No.2 and No.3 Veins, and a total of 8000 feet of diamond-drilling. All work by Chesgo Mines Limited.

1970-1972: Trenching, stripping, and sampling by Kingbridge Mines Limited in preparation for a 5- to 10-ton per day production schedule.

PRODUCTION: Intermittent production during which 1,387 tons of ore yielded 98 ounces of gold and 23 ounces of silver. The average recovered grade was 0.07 ounce of Au per ton and 0.02 ounce of Ag per ton.

REFERENCES: Canadian Mines Handbook 1937, p.105 (Gomak Mines Limited).

Canadian Mines Handbook 1948, p.48 (Chesgo Mines Limited).

Canadian Mines Handbook 1974-1975, p.181 (Kingbridge Mines Limited).

DEMRR Ottawa, Mineral Development Sector Files: Au5, 41P/12.

Northern Miner, March 8, 1975.

ODM 1932, Vol.41, pt.3, p.28 (A. Labbe).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Bridge Hill Mines Limited (1971), Kingbridge Mines Limited (1971).

Shannon Island Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 14 miles southwest of Gogama, on a small island near the south end of Clam Lake, in western Chester Township. Patented claim S16304. Latitude 47.54°, Longitude 81.95°. Map reference: ODM 41d, Three Duck Lakes Area (Young).

GEOLOGY: A narrow belt of isoclinally folded, steeply dipping Early Precambrian metasediments and meta-volcanics trends eastward along the north boundary of Chester Township. Intrusive into these rocks is a large granitic batholith complex which occupies the greater part of the township.

The rocks which underlie the property are mainly

diorite, pink to grey granite, and a quartz porphyry phase of this granite.

The quartz vein on the island occurs in a well-defined fracture which has been traced several hundred feet to the mainland. It is approximately 3 feet wide and consists of dark smoky quartz heavily mineralized with arsenopyrite, pyrite, and chalcopyrite.

Assays of material from the discovery pit ranged from 0.02 ounce to 5.94 ounces of Au per ton. Values obtained in the shaft to a depth of 22 feet ranged from 0.32 ounce to 1.82 ounces of Au per ton and from 1.61 to 6.66 percent Cu. From 22 feet the southward dip of the vein takes it out of the vertical shaft. Possible assays from this vein in the drift on the 100-foot level were inadequately identified in the records.

HISTORY: 1933: Trenching and 26-foot pit on discovery vein by Young-Shannon Gold Mines Limited.

1934: Two-compartment shaft to a depth of 100 feet, 100 feet of lateral development on the 100-foot level, and 3,000 feet of diamond-drilling by Young-Shannon Gold Mines Limited.

1973: Geophysical surveys, follow-up diamond-drilling, old shaft dewatered and underground workings resampled by Park Precious Metals Incorporated.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Chester Township, Technical Survey File 63.3063.

ODM 1934, Vol.43, pt.3, p.79, 80 (Young-Shannon Gold Mines Limited).

ODM 1935, Vol.44, pt.1, p.154 (Young-Shannon Gold Mines Limited).

Strathmore Prospect

MAIN METALS: Au

LOCATION: Approximately 11 miles southwest of Gogama, in east-central Chester Township. Claim S21613. Latitude 47.55°, Longitude 81.88°.

Map reference: ODM 41d, Three Duck Lakes Area.

GEOLOGY: The property is underlain principally by granodiorite and quartz porphyry phases of a Kenoran granitic batholith complex. A channel sample of vein material is reported to have assayed 0.51 ounce of Au per ton over 2 feet.

"Most of the work done seems to be confined to the northwest quarter of claim S21613. Three shear zones have been exposed by surface trenching. They are roughly parallel with an average strike of N62°W." (Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Kingbridge Mines Limited (1970)).

ECONOMIC FEATURES: *"Apparently the drilling*

results were favourable enough to sink an inclined, two-compartment shaft to the 100-foot level and to explore this shearing by drifting on this horizon. Data on underground back sampling of the drifts indicated a calculated average value of nearly 0.86 ounce of Au per ton over an average width of 26 inches for the northwest drift and lower values for the southeast drift." (Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Kingbridge Mines Limited (1970)).

HISTORY: 1937: Two-compartment shaft, inclined 65°, sunk to 116 feet with 286 feet of lateral development on the 100-foot level by Strathy Basin Mines Limited.

1970-1972: Property included in an area which was explored by an EM16 and induced polarization program followed by diamond-drilling by Kingbridge Mines Limited.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au5, 41P/12, August, 1972.

ODM 1938, Vol.47, pt.1, p.209 (Strathy Basin Mines Limited).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Kingbridge Mines Limited (1970).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Bridge Hill Mines Limited (1971).

Young Shannon Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 12½ miles southwest of Gogama, on the east and west shores of the northern part of Three Duck Lake, in northwest-central Chester Township. Shaft located in patented claim S19971. Latitude 47.55°, Longitude 81.92°.

Map reference: ODM 41d, Three Duck Lakes Area (Three Ducks Syndicate).

GEOLOGY: A narrow belt of Early Precambrian meta-sediments and metavolcanics is present on the north boundary of Chester Township, and elsewhere as isolated small inclusions within a Kenoran granitic batholith complex which occupies the greater part of the township. The property is underlain mainly by granite and granodiorite with small inclusions of mafic metavolcanics.

The vein is approximately 3 feet wide and has been traced for 400 feet on surface. It consists of white quartz with some carbonate. The metallic minerals, in order of abundance, are: pyrrhotite, pyrite, arsenopyrite, chalcopryrite, sphalerite, and native gold. Pyrrhotite and pyrite occur as coarse-textured masses and irregular stringers and grains in the

quartz. Arsenopyrite, chalcopryrite, and sphalerite occur as small grains.

ECONOMIC FEATURES: A zone, 70 feet long, 3 feet wide and 250 feet deep, contains 3,680 tons of ore averaging 0.46 ounce of Au per ton. It has been blocked out by underground development on two levels and by diamond-drilling. A two-ton bulk sample assayed 0.30 ounce of Au per ton, 0.09 ounce of Ag per ton and 0.10 percent Cu.

HISTORY: 1930-1931: Stripping and trenching by Three Ducks Syndicate.

1932: Diamond-drilling (no details available) by Martin Syndicate.

1935: Pitting, trenching, and 600 feet of diamond-drilling.

1936: Two-compartment shaft, inclined 70°, sunk to 200 feet with 172 feet of lateral development on the 100-foot level. 2,196 feet of diamond-drilling. All work by Young-Shannon Gold Mines Limited.

1937: 160 feet of drifting on the 200-foot level, 500 feet of diamond-drilling, and 20-ton mill installed by Young-Shannon Gold Mines Limited.

1941: Diamond-drilling for assessment credits by Young-Shannon Gold Mines Limited.

1944: Geophysical survey by Young-Shannon Gold Mines Limited.

1946: Diamond-drilling (no details).

1964: Geologic mapping by Chester Minerals Limited.

1965: Geophysical survey by Robert S. Nelson.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Chester Township, Technical Survey Files 63A.470 and 63.1866.

ODM 1932, Vol.41, pt.3, p.28-30 (Three Ducks Syndicate).

ODM 1934, Vol.43, pt.3, p.78 (Martin Syndicate).

ODM 1937, Vol.46, pt.1, p.220 (Young-Shannon Gold Mines Limited).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Chester Township, Park Precious Metals Incorporated (1973).

CHURCHILL TOWNSHIP

(NTS 41P/11)

Churchill Prospect

MAIN METALS: Au

LOCATION: Approximately 4 miles northeast of Shining Tree, at the southwest corner of Michiwakenda Lake, in southeastern Churchill Township. Claims TRS3741, TRS3773, TRS3774 and TRS-4044. Latitude 47.61°, Longitude 81.21°.

Map reference: ODM 43c, Makwa-Churchill Area.

GEOLOGY: Quartz veins, 2 to 3 feet in width, cut rusty pillow lava schist. The veins strike N65-70°E, dip 75°S, and have been traced for 350 feet. Towards the east the veins have been faulted, and towards the west they pass into light-coloured rhyolite or quartz porphyry.

Gold has been "seen" in various parts of the quartz veins, usually occurring in fractures, with pyrite and other sulphides. Channel samples averaged 0.86 and 0.80 ounce of Au per ton over 4 feet for No.1 and No.3 Veins respectively.

HISTORY: Circa 1919: Gold discovered and surface work done by J.A. Knox.

1928: Surface work and 40-foot shaft by Churchill Mining and Milling Company Limited.

1934-1936: Surface work, two-compartment shaft to 109 feet with at least 224 feet of lateral development, and ten-ton mill installed by Churchill Mining and Milling Company Limited.

REFERENCES: ODM 1920, Vol.29, pt.3, p.41.
ODM 1934, Vol.43, pt.3, p.70-72.

Herrick Prospect

MAIN METALS: Au

LOCATION: Approximately 4½ miles northeast of Shining Tree, on the west shore of Michiwakenda Lake, in eastern Churchill Township. Claims TRS-4096-TRS4098 and TRS4105-TRS4107. Latitude 47.63°, Longitude 81.21°.

Map reference: ODM 43c, Makwa-Churchill Area (Consolidated Ontario Gold Mines).

GEOLOGY: Keewatin-type felsic lavas, and pyroclastic and sedimentary rocks are cut by lamprophyre, quartz porphyry, and diabase dikes. The main Kingsley Vein strikes north, consists of quartz lenses connected by stringers, and has been traced for 1,000 feet.

Visible gold occurs in dark seams in the quartz. Channel samples averaged 0.77 ounce of Au per ton over 1.5 feet and from trace to 2.2 ounce of Au per ton, over unknown widths.

HISTORY: 1918: Gold discovered by J.A. Knox.

1920: 50-foot shaft and three diamond-drill holes (450 feet) by Herrick Gold Mines Limited.

1921-1924: Two-compartment shaft to 308 feet with levels at 50, 100, 200 and 300 feet, at least 990 feet of lateral development, and diamond-drilling (footage and number of holes unknown) by Herrick Gold Mines Limited.

1933-1934: Surface work by Consolidated Ontario Gold Mines Limited.

1940: Trenching and sampling by Sylvanite Gold Mines Limited.

1954: Nine diamond-drill holes (333 feet) by Grant-

land Gold Limited.

REFERENCES: ODM 1920, Vol.29, pt.3, p.43.

ODM 1934, Vol.43, pt.3, p.72, 73 (Consolidated Ontario Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Churchill Township, Kindle (1933) and Rogers (1919).

CONNAUGHT TOWNSHIP (NTS 41P/11W)

Coniston Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 8 miles northwest of Shining Tree, north of Mataris Lake, in north-eastern Connaught Township. Claim TRS3556. Latitude 47.66°, Longitude 81.37°.

Map reference: ODM 43c, Makwa-Churchill Area (Mataris).

GEOLOGY: Property straddles the contact between Timiskaming-type metasediments and Keewatin-type metavolcanics. There is a small diorite plug near the east boundary of the property and a granodiorite plug along the north boundary. All the above rocks are cut by quartz porphyry and diabase dikes.

Mineralization consists of disseminated sulphides. Assays of drill core ranged from trace to 0.06 ounce of Au per ton, from trace to 1.88 ounces of Ag per ton, and from 0.81 to 12.35 percent Cu.

HISTORY: 1913: Copper sulphide mineralization discovered by John Mataris.

1916: Test pits by John Mataris.

1927: One diamond-drill hole (200 feet) by Noah Timmins.

1956: Nine diamond-drill holes (footage unknown) by E. Kelly. Airborne magnetic survey and follow-up ground survey by Lundberg Explorations Limited.

1957: Seven diamond-drill holes (3,812 feet) by Badyke Mines Limited.

1965: Magnetic surveys.

1970: Airborne electromagnetic and magnetic surveys by Y. Collins, R. Collins, L. Marino, D. McKinnon and B. Todd.

1972: Electromagnetic and geochemical surveys, and six diamond-drill holes (1,674 feet) by Coniston Explorations and Holdings Limited.

REFERENCES: ODM 1934, Vol.43, pt.3, p.67.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Connaught Township, Robertson (1970).

CREIGHTON TOWNSHIP

(NTS 411/6, 411/11)

Creighton Prospect

MAIN METALS: Au

LOCATION: Shaft approximately 6 miles southwest of Chelmsford, on the boundary between lot 11, concession IV and lot 11, concession V, Creighton Township. Latitude 46.51°, Longitude 81.29°.

Map reference: ODM 2170, Sudbury Mining Area (prospect not shown on map).

GEOLOGY: The area is underlain by Middle Precambrian (Whitewater Group) metasediments which trend northeasterly and dip steeply south. Geologic maps show that the prospect is underlain by Onaping Formation rocks. An early report (ODM 1893, Vol.3, p.45-47) described the occurrence as a quartz vein, striking north and dipping 45°E in metasediments. The quartz vein is conformable with the enclosing schist and has a width of 17 feet. It consists of bluish quartz, flecked with pink feldspar and banded in part with hornblende schist. The gold is reportedly very fine. Samples assayed from 0.21 ounce to 1.02 ounces of Au per ton.

HISTORY: 1892-1893: Inclined shaft to 160 feet with 12 and 25 feet of drifting on the 80- and 130-foot levels respectively. A 40-ton mill was erected and operated unsuccessfully for a short period.

1895: Eight diamond-drill holes.

1929: Geological and electrical surveys, trenching, and diamond-drilling under supervision of E.S. Moore.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 1, 411/11, September, 1962.

OBM 1893, Vol.3, p.45-47.

CUNNINGHAM TOWNSHIP

(NTS 410/10E)

Swayze-Huycke Prospect

MAIN METALS: Au

LOCATION: Approximately 10½ miles west of Gogama, on the east shore of Allen Lake, in northeastern Cunningham Township. Shaft located in claim S23828. Latitude 47.75°, Longitude 81.63°.

Map reference: ODM 51f, Cunningham-Garnet Area (Olive Gold Mines).

GEOLOGY: The area is occupied by an east-trending belt of Early Precambrian mafic metavolcanics and clastic metasediments. Within the claim area, metasediments, terminated by a north-trending fault (the Allen Lake Fault), impinge against mafic metavolcanics in which the shaft is collared. On the

west side of Allen Lake, the bedrock consists of Timiskaming-type metasediments (greywackes and quartzites). On the east side of the lake the rocks are Keewatin-type andesites. Reportedly, the favourable gold values obtained in surface exploration of the mineralized "break" (a north-trending fault?), which was traced for ¾ mile, were not encountered underground. On the east end of an island approximately 1,700 feet south of the shaft, a few shallow pits are now filled with water. At the north end of the property, immediately west of Allen Creek, outcrops and a few shallow pits indicate the presence of low grade iron formation.

HISTORY: 1933: Surface trenching, stripping, and diamond-drilling by Swayze-Huycke Gold Mines Limited.

1934: Shaft to 150 feet with a level at 125 feet on which 131 feet of lateral development was done by Swayze-Huycke Gold Mines Limited.

1962-1963: Diamond-drilling (number of holes and footage unknown).

REFERENCES: Canadian Mines Handbook 1935, p.239.

ODM 1935, Vol.44, pt.1, p.142; pt.7, p.38, 39.

ODM 1942, Vol.51, pt.7, p.22, 23 (Olive Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Cunningham Township, Flint Rock Mines Limited (1961).

CURTIN TOWNSHIP

(NTS 411/4E)

Bousquet Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 10 miles southeast of Espanola, between Lang and Grace Lakes, in east-central Curtin Township. Latitude 46.15°, Longitude 81.66°.

Map reference: ODM 2312, Mongowin and Curtin Townships.

GEOLOGY: Huronian metasediments of the Cobalt and Quirke Lake Groups, with sills of Nipissing Diabase, form an east-trending belt through Curtin Township. North-trending faults with right-hand displacement are prominent and are cut by the Charlton Lake Fault which strikes easterly across the township about ½ mile south of the property. Gowganda Formation quartzite and Nipissing Diabase are the host rocks of the Bousquet vein system. The Rivers or Main Vein follows the south contact between a Nipissing Diabase sill and the quartzite. It strikes almost due east with a near vertical dip. It is traceable on surface for 420 feet and has widths of up to 4 feet. The vein con-

sists mainly of quartz, with arsenopyrite, pyrite, chalcopryite, and visible gold mineralization. Siderite, ankerite, and calcite are abundant in some sections.

ECONOMIC FEATURES: An ore shoot on the Main Vein had a width of 1.3 to 2.5 feet and a length ranging from 384 feet on surface to 344 feet on the 300-foot level. Immediately below the 300-foot level, the Main Vein reportedly ranged from 0.34 to 0.55 ounce of Au per ton over widths of 2.8 feet. On the 450-foot level the vein became too small in size and too low in grade to be mined profitably. Quartz veining associated with the main shear zone extending into the diabase on the 450-foot level averaged 0.09 ounce of Au per ton over 7 inches.

OWNERSHIP: Not known. Ground staked but not patented.

HISTORY: 1933-1937: Vertical shaft to 468 feet on Main Vein, with 1,883 feet of lateral development on levels at 150, 300 and 450 feet. 50-ton amalgamation-cyanide mill installed in 1936; it operated until July 1937 when it was dismantled and sold. All work by Bousquet Gold Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1936-1937	4,655	194	17,393	0.27
1938,1946,1949	43	2	—	—
Total	4,698	196	17,393	0.27

The figures for the period 1938, 1946, 1949 represent gold and silver recovered during clean-up of the mill circuit.

REFERENCES: Marginal Notes, ODM Map P.392, Curtin Township.

ODM 1921, Vol.30, pt.1, p.104, 105.

ODM 1935, Vol.44, pt.7, p.60.

ODM 1939, Vol.48, pt.10, p.16, 17.

ODM 1976, GR131, p.51, 52.

Bridger, J.R. (Pond) Prospect

MAIN METALS: Au

LOCATION: Approximately 11 miles southeast of Espanola, mid-way between Howry Creek and Whitefish River, in eastern Curtin Township.

Latitude 46.15°, Longitude 81.57°.

Map reference: ODM 2312, Mongowin and Curtin Townships.

GEOLOGY: Tightly-folded metasediments of the Cobalt and Quirke Lake Groups trend easterly across the area and are cut by prominent east- and northwest-trending faults. About ¼ mile south of the showing, a large sill of Nipissing Diabase has an easterly trend.

Gowganda conglomerates, argillites, and sandstones are silicified and intruded by numerous small quartz-carbonate veins along a vertical east-striking shear zone which can be traced for about 600 feet. The veins are generally less than 1 inch in width, but a few are up to 6 inches. Pyrite and arsenopyrite with associated gold are sparsely disseminated in quartz veins and in the silicified host rock.

Sampling on 100-foot level reportedly yielded values of 0.19 ounce of Au per ton over a vein width of 18 feet. Diamond-drilling has indicated only low gold values. A grab sample of heavily-mineralized vein material assayed 0.07 ounce of Au per ton (Geoscience Laboratories, Ontario Geological Survey, Toronto).

HISTORY: 1910-1911: Stripping, trenching, and inclined shaft to 44 feet.

1920: Surface plant, and two-compartment shaft to 107 feet with 280 feet of lateral development on the bottom level.

1953: Four diamond-drill holes (1,071 feet) to test the zone along a strike length of 400 feet.

1959: One diamond-drill hole (103 feet).

REFERENCES: ODM 1976, GR131, p.52, 53.

Howry Creek Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 12 miles southeast of Espanola, ½ mile west of Murray Lake, in eastern Curtin Township. Claims S2279, S2782, S2783 and S3673. Latitude 46.15°, Longitude 81.58°. Map reference: ODM 2312, Mongowin and Curtin Townships.

GEOLOGY: A belt of east-trending Huronian meta-sediments of the Cobalt and Quirke Lake Groups occupy the central part of Curtin Township. A narrow Nipissing Diabase sill trends easterly across this area. Northwest-trending right-lateral faults with horizontal movement of several hundred feet are cut by the east-trending Charlton Lake Fault, on which movement was in the order of several thousand feet.

Gold occurs in an erratically mineralized quartz vein in brecciated, sheared and silicified sandstones and argillites of the Gowganda Formation, approximately 500 feet south of a large Nipissing Diabase sill.

The main vein strikes east, is about 600 feet long, and at the surface has widths of between 1 foot and 6 feet (average width of 2.5 feet). The vein pinches out to the west and is cut off by a fault on the east. Arsenopyrite and pyrite are irregularly and sparsely disseminated throughout the vein, although locally massive arsenopyrite is present. A chip sample taken

across 1.5 feet of the vein (largely arsenopyrite), at a depth of 56 feet in the shaft, assayed 0.51 ounce of Au per ton and 0.08 ounce of Ag per ton.

HISTORY: 1911-1921: Trenching, 70-foot shaft, and a 528-foot long adit which did not intersect the vein.

REFERENCES: GSC 1925, Memoir 143, p.122-124.
GSC 1927, Economic Geology Series No.4, p.113-115.
ODM 1921, Vol.30, pt.1, p.105, 106.
ODM 1929, Vol.38, pt.7, p.49, 50.
ODM 1976, GR131, p.55 (D. Ewing).

DAVIS TOWNSHIP (NTS 411/9W, 411/10E)

Mac-Auer Prospect

MAIN METALS: Au

LOCATION: Approximately 17 miles northeast of Sudbury, between Ashigami and Kukagami Lakes, in western Davis Township. Shaft located in patented Mining Location WR35. Latitude 46.68°, Longitude 80.56°.

Map reference: ODM 2037, Kelly and Davis Townships (Mining Location WR35).

GEOLOGY: Middle Precambrian metasediments of the Cobalt Group, intruded by post-Huronian gabbro, occupy the greater part of the area.

Underlying the property are beds of greywacke and conglomerate of the Gowganda Formation. A body of gabbro lies approximately 3,000 feet north of the showing.

Quartz stringers containing small amounts of pyrite and chalcopyrite occur in a shear zone in the conglomerates and greywackes. The shear is approximately 6 feet wide and strikes N50°W.

ECONOMIC FEATURES: Indicated reserves in 1935 were 7,692 tons of ore averaging 0.87 ounce of Au per ton (Canadian Mines Handbook 1935, p.147).

HISTORY: 1897: 35-foot shaft. Later a second shaft, 200 feet from the first, was sunk to 100 feet.

1934-1935: Shaft dewatered and 30 feet of drifting carried out on 50-foot level. Ten-ton amalgamation mill erected and operated for a few days.

PRODUCTION: In 1935, 45 tons of ore yielded 8.1 ounces of Au for an average recovered grade of 0.18 ounce of Au per ton.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 411/10.
GSC 1936, Memoir 192, p.144.
ODM 1939, Vol.48, pt.10, p.14.
ODM 1963, GR15, p.18 (Mining Location WR35).

McLeod Prospect

MAIN METALS: Au

LOCATION: Approximately 16 miles northeast of Sudbury, in SW¼, S½, lot 9 and SE¼, S½, lot 10, concession II, Davis Township. Showing in patented claim S3302. Latitude 46.64°, Longitude 80.50°.

Map reference: ODM 2037, Kelly and Davis Townships.

GEOLOGY: Extending across Davis Township, near the south boundary, is a narrow belt of pre-Huronian metasediments in faulted contact with Cobalt Group metasediments to the north and the Killarney metamorphic complex to the south.

The rocks in the vicinity of the showing are north-east-trending pre-Huronian quartzite and conglomerate. A large body of post-Huronian gabbro outcrops 500 feet northwest of the main showing.

The No.1 Vein occupies a sheared silicified zone which strikes east and dips steeply north. It contains massive arsenopyrite over a width of 1.5 feet. Sampling by Cominco Limited indicated an average gold content of 0.50 ounce per ton over a width of 4 to 5 feet and a length of 45 feet. Drilling on two nearby veins gave either nil or erratic gold values.

HISTORY: Pre-1940: Unrecorded amount of pitting and trenching.

1940: Sampling of showings and at least 11 diamond-drill holes by Cominco Limited who had taken an option on the property.

REFERENCES: ODM 1963, GR15, p.16.

Norstar Lake Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 26 miles northeast of Sudbury, in lots 10 and 11, concession II, and lots 9 and 10, concession III, Davis Township. Shaft in NE¼, S½, lot 10, concession III. Latitude 46.66°, Longitude 80.52°.

Map reference: ODM 2037, Kelly and Davis Townships.

GEOLOGY: The area is underlain by interbedded conglomerate, quartzite, and argillite of the Huronian Gowganda Formation. Sulphide mineralization occurs in a major shear zone within the metasediments, about ½ mile south of a large post-Huronian gabbro sill or dike which trends northwest across the northern part of the property. Conglomerate in the shaft area grades transitionally, towards the south, into bedded cherty argillite in the adit area.

At the No.2 Shaft, the mineralized zone consists of brecciated argillite cemented by quartz-carbonate stringers and sulphides. The mineralized zone is associated with a narrow gabbro dike striking N50°E.

Sulphide mineralization consists of pyrite, chalcopyrite, and arsenopyrite. The sulphides are erratically distributed throughout the breccia, although some massive sections do occur. Gold is present as very fine grains; some is free or associated with chalcopyrite, but the greater proportion is in arsenopyrite.

ECONOMIC FEATURES: In 1958, diamond-drilling indicated that the northern ore zone had a length of 225 feet and a width of 25 feet. Underground development has outlined an ore zone, approximately 125 feet by 25 feet on the 125-foot level, and two ore zones, 110 feet by 10 to 35 feet and 65 feet by 20 feet, on the 250-foot level. Ore has been indicated by diamond-drilling to a depth of 400 feet.

At the end of 1958 reserve estimates for the north zone indicated 275,000 tons grading 0.41 ounce of Au per ton and 1.5 percent Cu. A reappraisal of reserves in 1972 indicated 64,765 tons blocked out between the 63- and 313-foot levels, which had an average grade of 0.23 ounce of Au per ton and 1.10 percent Cu. Total indicated tonnage in 1972 was 111,129 tons grading 0.16 ounce of Au per ton and 0.85 percent Cu between the 63- and 375-foot levels.

Gold and copper values have been reported from diamond-drilling in the adit area, about 1 mile to the south, but no details are known.

HISTORY: Pre-1916: Shaft No.1 to 87 feet.

1917: Shaft dewatered and deepened by The International Copper Company Limited.

1927-1930: Shaft deepened to 135 feet on the main zone. Adit driven 100 feet on another deposit approximately 1 mile to the southwest by Mount Aetna Gold Mine.

1941: 31 surface diamond-drill holes (13,000 feet) by Wright-Hargreaves Mines Limited.

1955: Some surface exploration (details unknown) by Bracemac Mines Limited.

1957-1959: Shaft No.2 sunk to 277 feet with 900 feet of lateral development on levels at 125 and 250 feet. Approximately 2,300 tons of ore was hoisted and stockpiled. Sixty-nine underground diamond-drill holes (7,937 feet) put down to investigate ore potential to the 400-foot level. Work by Norstar Lake Mines Limited through Sulmac Exploration Services Limited.

1964: Magnetic and electromagnetic surveys, and further diamond-drilling by Sulmac Exploration Services Limited for Berkeley Mines Limited.

1972: Plans to dewater mine and carry out underground sampling indicated by Combined Metal Mines Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Davis Town-

ship, Technical Survey File 63.3018.

DEMR Ottawa, Mineral Development Sector Files: Au 3, 411/10, December, 1963.

ODM 1963, GR15, p.14-16.

ODM 1969, MRC12, p.239.

Taylor Prospect

MAIN METALS: Au

LOCATION: Approximately 17 miles northeast of Sudbury, ½ mile east of the south end of Kukagami Lake, in northwest-central Davis Township. Claim S16093. Latitude 46.65°, Longitude 80.54°.

Map reference: ODM 2037, Kelly and Davis Townships (Former Lot 12, Concession V, Davis Township).

GEOLOGY: Gowganda Formation metasediments, consisting principally of conglomerate, quartzite and argillite, and post-Huronian gabbro occupy approximately 75 percent of Davis Township. A large body of gabbro trends southeast across the west half of the township and underlies the prospect.

A quartz-carbonate vein occurs in a sheared portion of this gabbro dike. The vein, which strikes N80°W and dips 60°S, has an average width of 15 inches over an exposed length of 50 feet. It reappears at intervals for another 400 feet. A second quartz vein, approximately 70 feet southwest of first, strikes N70°E and dips 40°W. It has a width of 20 inches over an exposed length of 175 feet. The veins consist of quartz with minor pyrite and carbonate, and reportedly carry high gold values.

HISTORY: Circa 1930: Pitting and trenching. Inclined shaft to 35 feet and vertical shaft to 40 feet on No.1 Vein. Work reportedly done by J. Taylor.

REFERENCES: ODM 1933, Vol.41, pt.4, p.48 (Claim S16093).

ODM 1963, GR15, p.17, 18 (Former Lot 12, Concession V, Davis Township).

DELHI TOWNSHIP

(NTS 41P/1W)

Delhi Pacific Prospect

MAIN METALS: Au, Ag, Pb

LOCATION: Approximately 25 miles west of Temagami, on the southwestern side of Wakimika Lake, in north-central Delhi Township. Adit located at Latitude 47.14°, Longitude 80.35°.

Map reference: ODM 2259, Diamond Lake.

GEOLOGY: Southeast-striking and gently dipping Gowganda Formation metasediments are intruded by a large sill of Nipissing Diabase, which on the

Delhi Pacific property has near-vertical dips and appears to be a dike.

A quartz-carbonate vein system is located primarily in the diabase, but also extends into thinly bedded Gowganda greywacke. The veins fill fractures within, and adjacent to, a shear zone striking N60°W. They are irregular in width, strike variably northeast to east, and dip 30-55°NW. Mineralization consists of argentiferous galena, and a little pyrite and chalcopryite; native gold is erratically distributed throughout the veins.

ECONOMIC FEATURES: New Delhi Mines Limited estimated there to be 54,000 tons of ore from surface to 200 feet below adit level (ODM 1954, Vol. 63, pt.4, p.8). The dimensions and grade of the ore shoots developed on the adit level are as follows:

Vein	Average		Gold	Silver	Lead
	Length (feet)	Width (feet)	(ounce per ton)	(ounces per ton)	
Lahay	102	2.87	0.084	3.65	7.29
No.1, south, A	74	4.20	0.040	2.08	6.35
No.1, south, B	21	3.92	0.007	1.65	12.17
No.4, south	184	4.52	0.262	2.76	8.69

A 21,692 pound bulk sample, taken from the Lahay Vein, gave the following values:

Lead 7.13 percent
Silver 5.58 ounces per ton
Gold 0.25 ounce per ton

HISTORY: 1907: Ten test pits, 200 feet of trenching, and 240-foot adit.

1949: Geological mapping and 1,500 feet of diamond-drilling.

1950: Seven diamond-drill holes and a 21,692 pound bulk sample taken. Underground exploration of the vein system, begun from adit level, comprised 880 feet of drifting on five veins. In addition, four diamond-drill holes below drift level confirmed the persistence of these veins to a depth of at least 200 feet below the drift. All work by New Delhi Mines Limited.

REFERENCES: GSC 1936, Memoir 192, p.134.

ODM 1954, Vol.63, pt.4, p.15-19.

ODM 1973, GR106, p.98, 99.

DENYES TOWNSHIP

(NTS 410/15)

Derraugh, J.E. Prospect

MAIN METALS: Au

LOCATION: Approximately 31 miles east of Chapleau, in eastern Denyes Township. Claim S131915. Latitude 47.82°, Longitude 82.73°.

Map reference: ODM 2120, Halcrow and Denyes Townships.

GEOLOGY: An east-trending belt of Early Precambrian metavolcanics and metasediments underlies Denyes Township. In the vicinity of the showings the rocks are mainly arkose, greywacke, trachyte, tuff, and flows, all of which are cut by dikes of quartz porphyry.

The No.1 Vein (main showing) lies along a north-striking fault which dips 75°E and is occupied by a sheared and altered lamprophyre dike. The quartz is in lenses up to 6 feet wide and has been traced for 400 feet. Of this, 220 feet is continuous quartz vein with small quartz veinlets in the footwall. The quartz is mineralized with pyrite, chalcopryite, some galena, and carbonates. Lenses of vein material with considerable chalcopryite carry high values in gold.

Two other quartz veins (No.2 and No.3 Veins) to the northwest have been traced for distances of 125 and 400 feet and have maximum widths of 20 and 15 feet respectively. Both veins trend generally north and carry mineralization similar to that of the main showing.

A chip sample, taken continuously from west to east across a wide part of the best looking section of the main vein and assayed in sections, gave the following values:

ounce Au per ton
8 inches, quartz with heavy sulphides 2.22
24 inches, chiefly quartz. 0.15
36 inches, altered wall rock 0.03
56 inches, quartz. 0.24
24 inches, quartz. 0.32

Veins 2 and 3 reportedly yielded low gold values.

HISTORY: 1932-1933: No.1 Vein trenched for 400 feet, No.2 Vein stripped, and 13 diamond-drill holes (2,000 feet) on the two veins by Kirkland-Hudson Bay Gold Mines Limited.

1933: No.3 Vein stripped by J.E. Derraugh.

REFERENCES: ODM 1934, Vol.43, pt.3, p.27, 28.

ODM 1968, GR63, p.39, 40.

Dyment Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 29 miles east of Chapleau, ¼ mile south of Dyment Lake, in central Denyes Township. Latitude 47.81°, Longitude 82.78°. Map reference: ODM 2120, Halcrow and Denyes Townships.

GEOLOGY: An east-trending belt of Early Precambrian metavolcanics and metasediments underlies the area.

On the property there is a band of schistose quartz porphyry and tuff which strikes S80°E and has a maximum width of 300 feet. A series of quartz

lenses, trending S60°E and forming an almost continuous vein for 150 feet, occur in this schist. The maximum width of vein quartz is 2 feet, but locally two parallel lenses are separated by 10 feet of heavily pyritized and carbonatized schist. The quartz is milky white and well-fractured, with native gold occurring along the fractures. Galena, specularite, and a little chalcopyrite are also present.

High gold and silver values have been reported from the quartz veins. A 100-pound test sample assayed 18.25 ounces of Au per ton and 3.08 ounces of Ag per ton. The quartz veinlets and mineralized schist show erratic or very low gold values. Diamond-drilling results were not encouraging.

HISTORY: 1932-1934: Considerable surface trenching and stripping, and 1,000 feet of diamond-drilling by Dymont Mining and Investments Limited.

1953: Bulk sample (101 pounds) tested for gold and silver by the Canada Centre for Mineral and Energy Technology, Ottawa.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 9, 410/15, Dymont, April, 1965. ODM 1932, Vol.41, pt.3, p.53
ODM 1934, Vol.43, pt.3, p.29, 30.
ODM 1968, GR63, p.40.

EDEN TOWNSHIP

(NTS 41I/6E)

Long Lake Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 20 miles southwest of Sudbury, in west-central Eden Township. Shaft in patented claim WD601. Latitude 46.30°, Longitude 81.16°.

Map reference: ODM 2299, Louise-Eden Area (Copper-Man Mines Limited).

GEOLOGY: The property is in the Southern Structural Province, immediately north of the Grenville Front. It is underlain mainly by metasediments of the Huronian Supergroup. These are intruded by Nipissing-type gabbro, the Eden Lake mafic and felsic plutons, sills and dikes of the Chief Lake granitic batholith, and late northwest-trending diabase dikes. Regional northeast-trending faults parallel the Grenville Front.

The mine is located in the contact zone between the Mississagi Formation and the Nipissing Diabase and Eden Lake intrusions. A wedge-shaped salient of Mississagi sandstone is enclosed in Nipissing-type metagabbro and Eden Lake diorite and trondhjemite. These rocks are cut by late diabase dikes. There are several faults in the area

and one, the Wallingford Fault, forms the west boundary of the sandstone salient. In the mine area, the Wallingford Fault strikes N30°E and dips approximately 45°SE.

The orebody consisted of impregnations of fine-grained, gold-bearing arsenopyrite and pyrite in Mississagi sandstone. It was a pipe-shaped mass, elliptical in cross-section and measuring about 150 feet by 250 feet, which pitched steeply southeast to a depth of 340 feet where it terminated against the Wallingford Fault. The orebody had no sharply defined contacts and only minor amounts of vein quartz, mainly in the lower level. The main ore minerals, gold-bearing arsenopyrite and pyrite, apparently replaced feldspars in the sandstone. Minor amounts of chalcopyrite, pyrrhotite, galena, and native arsenic were also noted during mining operations.

The relationship between faulting and mineralization is obscure. Baker (ODM 1917, Vol.26, pt.1, p.162) considered that the ore was faulted, mainly on the evidence of dragged ore in the fault plane. Phemister (ODM 1939, Vol.48, pt.10, p.27), however, noted that broken and cracked rock passing into fault gouge was apparently mineralized after movement. Neither is the relationship between mineralization and the various intrusions well defined. Baker (ODM 1917, Vol.26, pt.1, p.161) and Collins (GSC 1925, Memoir 143, p.122) thought there was a genetic connection between mineralization and one of the felsic intrusions. However, the mineralization is spatially more closely related to Nipissing-type intrusions. It is similar to numerous other arsenical gold occurrences in the region, such as the Bousquet and McMillan Mines (ODM 1968, Open File Report 5017, p.12-15, 18, 19), which are apparently related to Nipissing gabbro.

ECONOMIC FEATURES: Primary ore zone was mined out in 1939. Tailings pond estimated to contain 250,000 tons averaging 0.072 ounce of Au per ton. Diamond-drilling in 1973 indicated the possible presence of a second gold-bearing zone.

OWNERSHIP: Hartland Mines Limited

HISTORY: 1909-1916: Large glory hole, vertical two-compartment shaft to 225 feet, and underground workings to a depth of 345 feet. A complicated system of drifts and stopes was driven into the orebody from the 80-, 180-, 260-, and 330-foot levels. The ore was treated in a 20-stamp mill and cyanide plant with a capacity of 140 tons per day. When the known orebody was exhausted, underground diamond-drilling was performed with little success, and the plant was dismantled. All work by The Canadian Exploration Limited.

1937: Property reactivated by Lebel Oro Mines

Limited, and 80 feet of drifting, 176 feet of raising, and 2,256 feet of diamond-drilling were carried out. A crushing plant and cyanide mill were installed.

1938: 68-foot crosscut to connect No.2 Shaft with the open pit.

1939: 1,250 feet of diamond-drilling. Plant was dismantled.

1972: Geological and geophysical surveys and sampling by Copper-Man Mines Limited.

1973: Minimum of 475 feet of diamond-drilling by Hartland Mines Limited, under option from Copper Man Mines Limited. Additional holes planned.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1910-1911	1,373	12	5,044	0.27
1913-1916	40,492	451	137,221	0.30
1932, 1934	169	1	29	5.83
1937-1939	14,708	183	78,776	0.19
Total	56,742	647	221,070	0.26

REFERENCES: GSC 1925, Memoir 143, p.120-122.

Northern Miner, January 18, 1973, p.9.

OBM 1917, Vol.26, pt.1, p.157-162.

ODM 1939, Vol.48, pt.10, p.25-27 (Lebel Ore Mines Limited).

ODM 1940, Vol.49, pt.1, p.17, 150, 151 (Lebel Ore Mines Limited).

ODM 1968, OFR5017, p.12-15, 18, 19.

ODM 1971, OFR5065, p.76-78 (Copper-Man Mines Limited (Long Lake gold mine)).

ODM 1975, GR124, p.56, 57 (Copper-Man Mines Limited (Long Lake Mine)).

ENGLISH TOWNSHIP

(NTS 42A/3)

Boychuk Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 24 miles northwest of Matachewan, at the south end of Muskasenda Lake, in western English Township. Latitude 48.08°, Longitude 81.32°.

Map reference: ODM 2290, English and Zavitz Townships (Boychuk, F (South Muskasenda Group)).

GEOLOGY: Early Precambrian mafic to felsic meta-volcanics are intruded by a north-trending meta-gabbroic sill complex. At the south end of the lake, these rocks are sheared and cut by quartz-feldspar porphyry dikes, granitic to dioritic dikes, aplite and lamprophyre dikes, and numerous veins, stringers and stockworks of quartz, quartz-carbonate and epidote-carbonate.

The main gold-bearing, quartz-carbonate vein system trends north in the metagabbro. The veins con-

tain sulphides and the wallrocks are strongly altered and mineralized with pyrite and minor pyrrhotite and chalcopyrite. A selected grab sample taken in 1967 assayed 13.4 ounces of Au per ton, 13.1 ounces of Ag per ton and 1.66 percent Cu. The best assay from diamond-drill core was 0.32 ounce of Au per ton over 2 feet.

HISTORY: 1965: Five diamond-drill holes (1,800 feet) by Transterre Exploration Limited.

1967: Trenching and sampling by F. Boychuk.

1968: Geological, magnetic, and electromagnetic surveys by Cyprus Exploration Corporation Limited.

1969: Two diamond-drill holes (1,219 feet) by F. Boychuk.

REFERENCES: ODM 1978, OFR5221, p.74-77 (Boychuk, F. (South Muskasenda Group)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: English Township, Hanson (1965).

FALCONBRIDGE TOWNSHIP

(NTS 411/10)

Falcon Prospect

MAIN METALS: Au

LOCATION: Approximately 13½ miles east-northeast of Sudbury, in lot 5, concession III, Falconbridge Township. Patented claims S36791, S56852, S78376, S78377. Shaft in SW¼, S½, lot 5, concession III. Latitude 46.57°, Longitude 80.74°.

Map reference: ODM 1957-5, Falconbridge Township.

GEOLOGY: Huronian metasediments and Nipissing-type gabbro form a northeast-trending belt about 5 miles wide between the Sudbury Irruptive on the north and the Grenville Front to the south. The orebody lies within impure calcareous metasediments, approximately 65 feet from the contact with the gabbro.

The ore zone is a talc-actinolite shear which strikes northwest, dips steeply south, and is approximately 20 feet wide. The zone consists of small discontinuous quartz and calcite veins which parallel the schistosity and contain pyrite. The higher gold values seem to be associated with coarse anhedral pyrite. The orebody has an average width of 6.2 feet, a length of approximately 150 feet, and a depth of 200 feet. It is terminated by the gabbro which dips at a lower angle to the south.

ECONOMIC FEATURES: In 1936, reserves were estimated to be 18,000 tons grading 0.32 ounce of Au per ton.

HISTORY: Circa 1890: Staked by R. McConnell. Shaft

sunk by Beckley to a depth of 46 feet and a cross-cut driven 59 feet from the bottom level.

1934: Five diamond-drill holes to depths of between 100 and 200 feet over strike length of 150 feet by L. Brook and C. Hitchcock.

1935: Shaft dewatered and 2,000 feet of diamond-drilling by South Tiblemont Mines Limited.

1936-1937: Shaft deepened to 215 feet, levels established at 100 and 200 feet, and some diamond-drilling by Falcon Gold Mines Limited.

REFERENCES: ODM 1936, Vol.45, pt.1, p.106.

ODM 1939, Vol.48, pt.10, p.16-21.

GREENLAW TOWNSHIP

(NTS 410/10)

Lee Prospect

MAIN METALS: Au

LOCATION: Approximately 27 miles southeast of Chapleau, on the west side of Lee Lake, in northwestern Greenlaw Township. Shaft in claim S23938. Latitude 47.75°, Longitude 82.83°.

Map reference: ODM 2121, Tooms and Greenlaw Townships (New Athona Mines Ltd.).

GEOLOGY: East-trending and steeply dipping Early Precambrian mafic metavolcanics are intruded by small bodies of diorite and later quartz porphyry dikes.

The contacts between a quartz porphyry dike striking S60°E and the diorite host rock have been sheared, replaced by quartz and carbonate, and heavily mineralized with pyrite and streaks of chalcopyrite. The mineralization is confined to highly schistose rock which dips 80°N. The mineralized schist reportedly yielded good gold values. Four grab samples of the schist assayed up to 0.10 ounce of Au per ton. Four of 11 diamond-drill holes put down along an 800-foot strike-length were reported to have sections assaying from 0.25 to 0.64 ounce of Au per ton. The ore shoot is displaced by a fault below the 250-foot level.

HISTORY: 1932-1934: Seven trenches extending over a length of 300 feet and 11 short diamond-drill holes (2,000 feet) over 800 feet of strike-length. Shaft to 250 feet with 1,539 feet of lateral development on levels at 125 and 250 feet. All work by Lee Gold Mines Limited.

1972: Electromagnetic and magnetic ground surveys by Cana Exploration Consultants Limited and Broad Scope Developments Limited.

REFERENCES: Financial Post Survey of Mines 1954, p.352.

ODM 1934, Vol.43, pt.3, p.33, 34.

ODM 1935, Vol.44, pt.7, p.39.

ODM 1968, GR63, p.42.

Newbec Prospect

MAIN METALS: Au

LOCATION: Approximately 28 miles southeast of Chapleau, west of Hotstone Lake, in west-central Greenlaw Township. Patented claim S36344. Latitude 47.72°, Longitude 82.82°.

Map reference: ODM 2121, Tooms and Greenlaw Townships (Hotstone Minerals Ltd.).

GEOLOGY: Tightly folded and steeply dipping Early Precambrian metasediments and mafic to felsic metavolcanics trend easterly across the area. The metasediments form an arcuate belt about ½ mile wide in central Greenlaw Township. A major north-west fault passes through Hotstone Lake.

The main showing is a quartz-carbonate vein in an east-trending shear zone in schistose greywacke. The vein strikes S80°E, dips 70°N and has a maximum width of 2 feet. The quartz is glassy to white with little sulphide mineralization and no visible gold. The quartz-carbonate veins occur in *en echelon* lenses with plan dimensions ranging from 2 by 8 feet to 4 by 200 feet.

Sampling of the veins has indicated high but erratic gold values. Grab samples from the main showing ranged from 0.01 to 0.29 ounce of Au.

A zone of green carbonates, 40 to 120 feet wide and lying 150 feet north of the main showing, has numerous quartz veinlets and is well-mineralized with pyrite. Diamond-drilling results on this zone were not encouraging.

HISTORY: 1932-1945: Trenching and stripping operations and 5,000 feet of diamond-drilling by Newbec Mines Limited.

1946-1947: Geological mapping, three new trenches, work in 11 of the old trenches, 26 diamond-drill holes (9,952 feet), and later an electromagnetic survey by Newbec Mines Limited.

REFERENCES: ODM 1934, Vol.43, pt.3, p.34.

ODM 1968, GR63, p.41 (Hotstone Minerals Limited).

HALCROW TOWNSHIP

(NTS 410/15W)

Halcrow-Swayze Prospect

MAIN METALS: Au

LOCATION: Approximately 23 miles east of Chapleau, in west-central Halcrow Township. Shaft in patent-

ed claim S22151. Latitude 47.80°, Longitude 82.94°.

Map reference: ODM 2120, Halcrow and Denyes Townships (Belcher Mining Corporation Ltd.).

GEOLOGY: Northwest-trending and steeply dipping Early Precambrian mafic and felsic metavolcanics with intercalated metasediments are terminated on the west by massive Kenoran granite and migmatites of the Kapuskasing Tectonic Belt.

The principal showing is a mineralized shear zone in greywacke and quartzite which strikes S60°E and dips 80°NE. The shear is bounded on the north by a quartz diorite dike and on the south by a fault. The shearing varies in intensity across the zone which has maximum width of 200 feet. In zones of more intense shearing, the quartzite-greywacke and quartz diorite have been mineralized with pyrite and carbonates with associated gold values. Quartz veining occurs only in cross-fractures in the shear zone, and in places contains considerable pyrite and some chalcopyrite with above average gold values.

ECONOMIC FEATURES: All of the mineralized schist in the shear zone carries gold values ranging from 0.01 to 0.03 ounce per ton. The testing of the three main ore zones on the surface gave the following results (ODM 1935, Vol.44, pt.7, p.39):

Vein	Length (feet)	Width (feet)	Gold Content (ounce per ton)
No.1	100	1.3	0.235
No.2	900	7.0	0.120
No.4	30	1.0	0.857

It has been estimated (ODM 1935, Vol.44, pt.7, p.39) that, in the No.2 Vein, there are 82,500 tons of ore, with a grade of 0.11 ounce of Au per ton, above the 200-foot level, and a further 45,000 tons of the same grade between this and the bottom level. It is stated that, by a process of selective mining, 35,000 tons of ore with a grade of 0.171 ounce of Au per ton could be extracted down to the 354-foot level.

HISTORY: 1932-1935: Extensive trenching and pitting, followed by 2,000 feet of diamond drilling. Two-compartment vertical shaft to 371 feet with levels at 200 and 354 feet, and a sublevel at 270 feet. The development work accomplished by the end of 1935 was as follows:

Level	Drifting (feet)	Crosscutting (feet)	Raising (feet)
200-foot	1,198	420	65
270-foot (sub-)	40	40	30
354-foot	306	170	77
Total	1,544	630	172

Underground diamond-drilling totalled 2,328 feet. A 25-ton test mill was installed and 211 tons of ore was treated. All work by Halcrow-Swayze Mines

Limited.

1937: Some diamond-drilling reported.

PRODUCTION Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1935	40	15	211	0.18

REFERENCES: ODM 1934, Vol.43, pt.1, p.71, 72.

ODM 1934, Vol.43, pt.3, p.31-33.

ODM 1935, Vol.44, pt.1, p.98.

ODM 1935, Vol.44, pt.7, p.39.

ODM 1936, Vol.45, pt.1, p.111.

ODM 1968, GR63, p.38, 39 (Belcher Mining Corporation Limited).

HANMER TOWNSHIP

(NTS 411/10W, 411/11E)

Jenkins, H. (Placer) Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles west-southwest of Capreol, in lots 1 and 2, concessions V and VI, Hanmer Township. Latitude 46.71°, Longitude 80.93°. Map reference: ODM 2170, Sudbury Mining Area (prospect not shown on map).

GEOLOGY: On both sides of the Vermilion River, large beds of gravel carry gold in varying quantities. The area is largely drift-covered; overburden includes stratified clays, sands, peat, and moss. The gold is quite fine, the largest grains weighing 5 milligrams. An average panning from this area gave a value of 0.0006 ounce of Au per cubic yard. The Onwatin Syndicate took samples to depths of 65 feet beneath Onwatin Lake and reported results ranging from 0.004 ounce to 0.025 ounce of Au per cubic yard.

Hugh Craig put down six holes during the break-up period of 1946 and obtained assays that substantiated the above. Apparently the gold is very fine. Coarser colours may well be expected toward the north shore.

Drilling around Fraser Lake showed some encouraging results. In the best hole, the gravels were encountered beneath 76 feet of water and muds. The upper 15 feet of gravels constituted high-grade placer ground. Bedrock was encountered at 116 feet. Upstream from the mouth of the Roberts River, poor results were obtained, though the gravels and bedrock were encountered at similar depths.

Farther south and near the west bank of Fraser Lake, the gravels were encountered at less than 60 feet. According to Prest (ODM 1949, Preliminary Report 1949-2, p.8), "The writer did not personally witness any of the drilling from which the valuable and informative results were obtained

from Onwatin Lake, Fraser Lake, and the channel east of Ross Lake, but taken at their face value they are most encouraging. Workable placer ground is now an indicated possibility. Testing of the various types of deposit for their gold content is needed, as well as extensive work in the channels proper".

HISTORY: 1896: Gold discovered by N. Jenkins.

1900: Prospecting and test pitting on 320 acres of leased land by The Great Northern Mining Company.

1905-1908: Small amalgamation-cyanide mill erected and operated by R. Ahn.

1939-1942: Test-pitting and diamond-drilling in the vicinity by Onwatin Placer Mining Syndicate Limited.

1946: Six drill holes near Onwatin Lake by Hugh Craig.

1947-1948: Eight widely spaced drill holes by Brewis and White Limited.

REFERENCES: OBM 1898, Vol.7, pt.3, p.256-259.

OBM 1901, Vol.10, p.151-159.

OBM 1902, Vol.11, p.17, 18.

ODM 1949, PR 1949-2, 8p.

HORWOOD TOWNSHIP

(NTS 410/16, 428/1)

Deburmac Prospect

MAIN METALS: Au

LOCATION: Approximately 58 miles southwest of Timmins, in south-central Horwood Township. Main showing in claim S25369. Latitude 47.96°, Longitude 82.31°.

Map reference: ODM 2329, Horwood Lake.

GEOLOGY: Early Precambrian mafic metavolcanics with minor amounts of intercalated felsic flow rocks strike northwest in this area and are intruded by quartz and feldspar porphyry dikes of Kenoran age and late diabase dikes with northwesterly trends. The Horwood Lake and Hardiman Bay Faults trend north and northeast respectively through the area. The main showing is a silicified shear zone in massive pillowed andesite intruded by a few tongues of quartz porphyry. It strikes N70°W and dips 70°N. It has been exposed by trenching for a distance of 450 feet, averages 3 feet in width and has a maximum width of 4.5 feet. The best mineralization is confined to a zone 100 feet long and consists of considerable quantities of fine-grained pyrrhotite, chalcopyrite, and visible gold. The mineralization does not appear to be related to quartz lenses within the shear zone.

Values up to 0.40 ounce of Au per ton were obtained in surface sampling, but the results of system-

atic surface diamond-drill hole sampling were not encouraging.

HISTORY: 1933-1936: A group of claims covering the showing was staked in 1933 by A.E. Jerome for G.A. Thorne. Ten test pits were sunk and a systematic sampling program carried out.

1946: Surface sampling and at least 2,788 feet of diamond-drilling (seven holes to a maximum depth of 696 feet) by Deburmac Gold Mines Limited.

1950: Surface work and shallow diamond-drilling by Deburmac Gold Mines Limited.

REFERENCES: ODM 1935, Vol.44, pt.7, p.35 (G.A. Thorne).

ODM 1937, Vol.46, pt.2, p.18 (Smith-Thorne).

ODM 1968, Report 169, p.45.

Gifford Prospect

MAIN METALS: Au

LOCATION: Approximately 22 miles southeast of Foleyet, on the west side of the south arm of Horwood Lake, in south-central Horwood Township. Claims S25282, S25284, and S25289. Latitude 47.95°, Longitude 82.33°.

Map reference: ODM 2329, Horwood Lake (prospect not shown on map).

GEOLOGY: A sulphide-bearing shear zone in mafic metavolcanics is exposed intermittently over a distance of 2,000 feet and has widths ranging from a few feet to 100 feet. The zone, which is conformable with the host rocks, strikes N60°E and dips steeply northwest. It contains lenses of thinly bedded sediments in which quartz veining forms stockworks. Drag folding has apparently played an important part in localizing the quartz lenses. Variation in the strike and dip of the shearing is a notable feature in all the trenches where quartz lenses occur.

The principal zone of shearing with quartz lenses and mineralization has been exposed in 13 trenches for a distance of 600 feet. The continuity of individual lenses is questionable, but since three or four lenses are exposed in every trench, the volume of vein material is relatively constant. Wall rock alteration consists mainly of carbonatization, accompanied by sericitization and chloritization. The wider veins of quartz are milky and barren, but the narrow gold-bearing stringers are grey due to the inclusion of finely-divided chloritic material. Pyrite in cubes and crushed grains occurs in the quartz near the margins of stringers, and also in the sheared wall rock close to quartz stringers. Chalcopyrite and pyrrhotite, in fine fractures, occur more rarely.

The following samples were taken from the trenches and assayed for gold by each of two companies:

Trench	Width in Inches	Prospectors	Teck-Hughes Gold
		Airways Company (ounce of Au per ton)	Mines Limited (ounce of Au per ton)
2	30	0.12	0.13
	26	0.10	0.02
	28	0.34	0.10
3	36	0.22	0.40
	18	0.24	trace
	36	0.22	0.02
4	35	0.39	0.12
	27	0.94	0.04
5	40	0.18	0.06
	18	—	0.18
6	9	2.59	3.49
	33	0.20	0.76
			0.71
7	14	0.44	0.22
	36	0.44	0.27
10A	36	0.19	0.26
10B	36	0.20	0.05
	36	0.18	0.06
	36	0.19	0.18
11	36	0.20	trace

HISTORY: 1934: Trenching and pitting by Connell Mining and Exploration Company Limited, and by C.S. Gifford for the Maramo Gold Syndicate.

1936: Systematic sampling by Prospectors Airways Company Limited.

1937: Diamond-drilling by The Teck-Hughes Gold Mines Limited.

1965: Property restaked as part of a larger block of claims and ground electromagnetic and magnetic surveys by Donalda Mines Limited.

1973: Property restaked as part of a 25-claim block and ground electromagnetic survey by Proto Explorations and Holdings Incorporated.

REFERENCES: ODM 1935, Vol.44, pt.7, p.35, 36 (Maramo Gold Syndicate).

ODM 1937, Vol.46, pt.2, p.21,22.

ODM 1978, Report 169, p.46 (Donalda Mines Limited).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Horwood Township, File T-269.

Groundhog Prospect

MAIN METALS: Au

LOCATION: Approximately 18 miles south-southeast of Foleyet, on the east shore of Horwood Lake, in central Horwood Township. Patented claim S9806. Latitude 48.00°, Longitude 82.33°.

Map reference: ODM 2329, Horwood Lake (Charlebois, J.).

GEOLOGY: Folded east-trending Early Precambrian mafic metavolcanics are cut by Early Precambrian metagabbro and Middle to Late Precambrian diabase dikes.

The showing consists of a quartz vein in a northwest-trending shear zone in schistose chloritic andesite. Exposures of pillow lava immediately northeast of the vein strike N10°W and dip west. These flows gradually swing to the east as they continue south, indicating a rather open anticlinal structure in the vicinity of the vein which dips steeply to the north. An extensive diamond-drilling program indicated that the vein is 1 to 2 feet in width, with some sheared andesite in both walls. Pyrite is the dominant sulfide mineral, but in places where quartz is abundant, there is generally some chalcopyrite and pyrrhotite. Gold values are associated with the sulphide mineralization.

ECONOMIC FEATURES: Diamond-drilling and surface-trenching have indicated a zone, 1,000 feet long by 3.4 feet wide, averaging 0.31 ounce of Au per ton.

HISTORY: 1927-1929: Stripping, blasting, and channel-sampling by the Nipissing Mining Company Limited which held the ground under option from the Jessup-Serry Group. In 1929 the property was flooded. 1934-1936: Additional claims staked, stripping, and diamond-drilling by Groundhog Gold Mines Limited. Further diamond-drilling during the winter by Hollinger Consolidated Gold Mines Limited. 1947-1948: Geological and geophysical surveys, and an additional 8,000 feet of diamond-drilling by Groundhog Gold Mines Limited.

REFERENCES: Financial Post Survey of Mines 1949, p.170.

ODM 1935, Vol.44, pt.7, p.36.

ODM 1937, Vol.46, pt.2, p.27.

ODM 1978, Report 169, p.44, 45 (J. Charlebois (Groundhog Mine)).

Kerr Addison (Main Showing) Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 17 miles southeast of Foleyet, on the island southeast of Blueberry Island, in north-central Horwood Township. Claim S380033. Latitude 48.03°, Longitude 82.32°.

Map reference: ODM 2329, Horwood Lake.

GEOLOGY: East-trending Early Precambrian mafic metavolcanics are cut by small stocks of metagabbro, granite, and diorite of Kenoran age, and late diabase dikes.

The Main Showing comprises a series of east-striking, steeply dipping, narrow quartz-carbonate veins and stringers, varying in width from 4 to 20 inches, in mafic metavolcanics and metagabbro. Mineraliza-

tion consists of variable amounts of disseminated to massive pyrrhotite, chalcopyrite, and pyrite, with associated gold and silver values. A 2.4-inch wide stringer assayed 1.12 ounces of Au per ton. Geological structures encountered in drilling included a series of narrow, discontinuous quartz-carbonate stringers with disseminated sulfide mineralization giving nil or very low gold values. There may be a barren depth projection of the "main vein" structure at approximately 400 feet. Similar veins associated with a contact between diorite and intermediate volcanics were also explored.

ECONOMIC FEATURES: Diamond-drilling has delineated a vein system 250 feet in length by 150 feet in depth. Gold values ranged from 0.43 ounce to 3.46 ounces per ton and silver values from nil to 0.80 ounce per ton over widths ranging from 4 to 20 inches.

HISTORY: Circa 1935: Property staked by P.H. Silams. 1948-1959: Extensive trenching, sampling, and diamond-drilling (including three holes (240 feet) to investigate the Main Showing) in the general area by J.E. Lefever.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood Township, Diamond-Drilling Reports 12 and 17. ODM 1937, Vol.46, pt.2, p.25 (P.H. Silams). ODM 1968, Report 169, p.48 (J.E. Lefever). Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Horwood Township, File T496.

Kerr Addison (Stack Vein) Prospect

MAIN METALS: Au

LOCATION: Approximately 17 miles southeast of Foleyet, 1.1 miles east of Blueberry Island on Horwood Peninsula, in north-central Horwood Township. Claim S380263. Latitude 48.03°, Longitude 82.31°.

Map reference: ODM 2329, Horwood Lake.

GEOLOGY: Northeast-trending Early Precambrian mafic metavolcanics are intruded by small stocks of metagabbro, larger bodies of Kenoran diorite, and diabase dikes of Keeweenawan age.

The Stack Showing is a system of quartz-carbonate veins, striking S57°E and dipping 84°S in mafic metavolcanics and quartz diorite. It is exposed for a distance of 150 feet and has widths varying from 4 to 36 inches. Mineralization consists of disseminated to massive pyrrhotite, chalcopyrite, and pyrite.

Chip samples yielded values of up to 0.30 ounce of Au per ton. Diamond-drilling encountered a

series of very narrow discontinuous quartz-carbonate stringers containing disseminated sulfide mineralization. Gold values ranged from nil to 0.67 ounce of Au per ton. There is little indication of the "vein" structure visible at surface.

HISTORY: 1935: Staked by P.H. Silams. No record of any development work.

1936-1959: The prospect received intermittent attention, the details of which are unknown. Considerable blasting has been done along a diorite outcrop cut by the Stack Vein.

1960: Three diamond-drill holes (764 feet) along a 200-foot strike length of the Stack Vein by Kerr-Addison Gold Mines Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood Township, Diamond-Drilling Report 17.

ODM 1937, Vol.46, pt.2, p.25.

ODM 1978, Report 169, p.48 (J.E. Lefever).

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Horwood Township, File T496.

Labbe Prospect

MAIN METALS: Au

LOCATION: Approximately 17 miles southeast of Foleyet, on the west side of Hardiman Bay, in north-eastern Horwood Township. Latitude 48.03°, Longitude 82.24°.

Map reference: ODM 2329, Horwood Lake (Queensway Mines Ltd.).

GEOLOGY: The area is underlain by Early Precambrian rocks, including east-trending mafic metavolcanics, small bodies of metagabbro, and the quartz-diorite Horwood Peninsula Pluton. The Hardiman Bay Fault trends northeasterly through the belt.

Three mineralized shear zones have been delineated. Zones 1 and 2 consist of pyrite, chalcopyrite, and rare arsenopyrite disseminated throughout grey feldspar porphyry dikes which intrude chloritic schistose mafic metavolcanics. The dikes are often silicified and cut by quartz veins. Zone 3 mineralization is confined to narrow pyritized quartz veins in quartz diorite of the Horwood Peninsula Pluton. No visible gold has been reported from any of these occurrences.

ECONOMIC FEATURES: Extensive trenching and diamond-drilling done during the period 1961-1963 have indicated the following:

Zone	Strike length of	Width of	Average Grade (ounce of Au per ton)
	Mineralization (feet)	Mineralization (feet)	
1	250	3.0	0.51
2	200	1.7	0.25
3	222	unknown	0.31

HISTORY: 1936: Some stripping and trenching, and a 90-foot diamond-drill hole under the direction of A.E. Jerome and W. Labbe.

1951: Stripping, trenching, and a small amount of diamond-drilling (119 feet) by Gor-Smith Gold Syndicate Limited.

1952: 17 shallow diamond-drill holes (1,043 feet) by Horlak Mines Limited.

1961-1963: Trenching and 22 diamond-drill holes (4,247 feet) by Queensway Mines Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood Township, Diamond-Drilling Reports 16 and 18. ODM 1937, Vol.46, pt.2, p.27-29. ODM 1978, Report 169, p.55, 56 (Queensway Mines Limited).

Landry Prospect

MAIN METALS: Au

LOCATION: Approximately 22 miles south-southwest of Foleyet, immediately southwest of Stangiff Lake, in southwestern Horwood Township. Claims S24925, S24927 and S27761. Latitude 47.94°, Longitude 82.36°.

Map reference: ODM 2329, Horwood Lake (Hardiman Bay Mines Ltd.).

GEOLOGY: Northeast-trending Early Precambrian mafic metavolcanics with intercalated metasediments are intruded by small stocks of diorite and granite, and by quartz-feldspar porphyry dikes of Kenoran age.

Quartz-carbonate veins with associated sulphide mineralization occur (i) in silicified shear zones parallel to the schistosity of the volcanic host rocks, (ii) as stockworks in a 5-foot wide, fine-grained, highly altered dike, and (iii) as a bleached silicified zone in altered diorite. Sulphide mineralization consists of pyrite and locally some chalcopyrite. Gold values are reported from vein material.

One showing is described as a network of quartz-carbonate stringers, striking N45°E, which occupy a zone 10 feet wide and 60 feet long. The zone is weakly mineralized with pyrite. The best chip sample assayed 0.38 ounce of Au per ton over a 4-foot width.

HISTORY: 1933: Staked as part of a large group of claims and some trenching by H. Landry.

1963: Ground magnetic survey and ten diamond-drill holes (2,196 feet) by Hardiman Bay Mines Limited.

1965: Geological and magnetic surveys by Sulmac Exploration Services.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood

Township, Technical Survey File 63.1817 and Diamond-Drilling Report 19.

Corporation Files, Mineral Resources Branch, Ontario Ministry of Natural Resources, Hardiman Bay Mines Limited.

ODM 1937, Vol.46, pt.2, p.23.

ODM 1978, Report 169, p.46 (Hardiman Bay Mines Limited).

Tionaga (Smith-Thorne) Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 21 miles south-southeast of Foleyet, on the east shore of Horwood Lake south of Hardiman Bay, in south-central Horwood Township. Shaft in patented claim S25425. Latitude 47.95°, Longitude 82.32°.

Map reference: ODM 2329, Horwood Lake (Lefever, Mrs. F. and J. Jr.).

GEOLOGY: Northeast-trending, folded, Early Precambrian mafic lava is the dominant rock type underlying the area. Intrusive into the volcanic rocks are Early Precambrian metagabbro and porphyritic diorite, the felsic Hardiman Lake Pluton and quartz-feldspar porphyry dikes of Kenoran age, and late northeast- and northwest-trending diabase dikes. The Horwood Lake Fault and the Hardiman Bay Fault trend, respectively, north and northeast through the area.

On the property, the rocks are mainly andesite and basalt which strike northeast and dip 50°NW. They are cut by quartz-feldspar porphyry dikes which, for the most part, have a strike parallel to the lavas.

ECONOMIC FEATURES: The main showing is a gold-bearing, quartz-carbonate vein which cuts the basic lavas and the quartz-feldspar porphyry. Mineralization consists of visible gold, pyrite, chalcopyrite, pyrrhotite, galena, sphalerite, stibnite, and tourmaline. The vein strikes N80°E, and dips 45°N at surface and 58°N at the 230-foot level. On the 400-foot level it is 300 feet long and has widths ranging from 2.5 to 6 feet. The vein has been developed to a depth of 700 feet.

OWNERSHIP: J.E. Lefever

HISTORY: 1933-1935: Property staked, and trenching and diamond-drilling operations carried out under the direction of G.A. Thorne and W. Smith.

1935-1936: Two-compartment shaft, inclined at 45 degrees, sunk by Hollinger Consolidated Gold Mines Limited to a vertical depth of 434 feet. Levels established at 140, 230, and 400 feet.

1937-1939: Shaft dewatered and deepened to 520 feet with additional levels established at 320 and 500 feet. In 1938 a 50-ton amalgamation mill was

installed. The following table is a summary of underground development:

Level (feet)	Drifts (feet)		Crosscuts (feet)		Raises (feet)	
	1939	Total	1939	Total	1939	Total
140	74	650	—	90	95	95
230	—	136	—	75	—	—
320	—	284	—	39	125	125
400	48	827	20	380	48	63
500	—	272	—	169	101	141

Some diamond-drilling done from underground in 1939. Mining and milling operations, being carried out by Tionaga Gold Mines Limited, ceased in May, 1939 when ore reserves were exhausted.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1938, 1939	2299	404	6653	0.35

REFERENCES: DEMR Ottawa, Mineral Development Sector Files.

ODM 1935, Vol.44, pt.7, p.34, 35 (G.A. Thorne).

ODM 1937, Vol.46, pt.2, p.17, 18.

ODM 1940, Vol.49, pt.1, p.17, 207.

ODM 1978, Report 169, p.46, 47 (Mrs. F. Lefever and J. Lefever Jr. (Smith-Thorne Mine)).

KEITH TOWNSHIP

(NTS 42B/1)

Hoodoo Prospect

MAIN METALS: Au

LOCATION: Approximately 12 miles southeast of Foleyet, in east-central Keith Township. Latitude 48.14°, Longitude 82.26°.

Map reference: ODM 1950-4, Parts of Keith and Muskego Townships.

GEOLOGY: Early Precambrian rocks, consisting mainly of mafic metavolcanics, with lesser amounts of felsic metavolcanics, metasediments and iron formation, are tightly folded and trend easterly. Intrusive into these rocks are Early Precambrian mafic and ultramafic sills, granitic rocks of Kenoran age, and late north-trending diabase dikes. Strike faults, mainly parallel to the regional trend, and northeast cross-faults are prominent.

The rocks underlying the property are mainly andesitic and rhyolitic lavas. Serpentinite occurs as a sill-like body in andesite. A large mass of granite, the Kukatush Pluton, is intrusive into the southern margin of the metavolcanics.

The main showing consists of quartz veins and quartz-carbonate stringers, 1 foot to 3.5 feet wide, in sheared and crenulated dacite. Some encouraging gold values have been obtained from surface sam-

pling and diamond-drilling, but no ore shoots have been outlined and the veins are narrow and appear to be discontinuous.

HISTORY: 1946-1948: Geological survey, sampling, and 19 diamond-drill holes (7,700 feet) by Hoodoo Lake Mines Limited.

1969: A comprehensive base metal exploration program, including an airborne geophysical survey and diamond-drilling, by Dome Exploration (Canada) Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Keith Township, Diamond-Drilling Reports 17 and 23.

ODM 1950, Vol.59, pt.7, p.37.

Joburke Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 11 miles southeast of Foleyet, in east-central Keith Township. Shaft located in patented claim S43254. Latitude 48.14°, Longitude 82.28°.

Map reference: ODM 1950-4, Parts of Keith and Muskego Townships.

GEOLOGY: The area is underlain by east-trending mafic metavolcanics, lesser amounts of felsic metavolcanics and interlayered iron formation, and mafic to ultramafic sills. Intrusive into these formations are quartz and feldspar porphyry dikes of Kenoran age and late diabase dikes. Prominent strike faults, the Joburke and Palomar Lake Faults, roughly parallel the trend of the metavolcanics. The Joburke Fault, which passes approximately 500 feet north of this deposit, has a left lateral displacement of more than 3,000 feet.

The ore zone is an intricate network of quartz stringers and veins in variously silicified, albitized, and carbonatized andesite and dacite. Vein material is largely quartz, albite, carbonate, and pyrite, with minor chalcopryrite and occasional visible gold. The presence of chalcopryrite is an indicator of gold values, but the better values are usually found where marked concentrations of pyrite are also present.

The veins occur in drag folds, and the ore shoots, arranged *en echelon* to the north, rake eastward. The occurrence of veins and ore shoots is believed to be related to movement on the Joburke Fault, with attendant tensional openings providing channels for vein-forming solutions.

ECONOMIC FEATURES: It has been estimated (Northern Miner, June 7, 1973, p.8) that ore reserves total 172,000 tons grading approximately 0.25 ounce of Au per ton.

In 1974 production was taking place on the main

No.1 Zone, in which two blocks of ore had been outlined to a depth of 60 feet. One of these was 60 feet square and the other was 80 feet long with widths ranging from 20 to 40 feet. The total tonnage in these two blocks was about 60,000 tons. Ore shoots on the 250-foot level totalled 838 feet in length, averaged 6.3 feet in width, and had a cut grade of 0.25 ounce of Au per ton.

OWNERSHIP: Noranda Exploration Limited.

HISTORY: 1946-1947: Property acquired by Joburke Gold Mines Limited and a three-compartment vertical shaft sunk to a depth of 408 feet, with levels at 125, 250, and 375 feet. Lateral development consisted of 130 feet of crosscutting on the 250- and 375-foot levels. Diamond-drilling in 1947 totalled 24,600 feet in 60 surface holes and 774 feet in five underground holes.

1948: Joburke Gold Mines Limited did 2,394 feet of drifting and 190 feet of crosscutting, as well as 2,462 feet of underground diamond-drilling in 60 holes. Work ceased in 1948.

1949-1950: McIntyre Porcupine Mines Limited took an option on the property, and dewatered and sampled the 250 and 375-foot levels.

1964: 5,000 feet of diamond-drilling was done under an agreement with Denison Mines Limited.

1973: Property optioned by Noranda Exploration Limited and the mine put into production. Old ore dumps were shipped and a decline was sunk on a 17° slope to the 60-foot level.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1973-1975	16,467	182,292	0.09

Operations at the mine were suspended in December, 1975.

REFERENCES: Northern Miner, June 7, 1973, p.8; October 25, 1973, p.1, 13.

ODM 1948, Vol.57, pt.7, p.42, 43.

ODM 1949, Vol.58, p.35.

ODM 1950, Vol.59, pt.7, p.34-37.

LEESON TOWNSHIP

(NTS 42B/5W)

Frontenac Prospect

MAIN METALS: Au

LOCATION: Approximately 43 miles northwest of Chapleau and ¾ mile northeast of the Renabie Mine, in southwestern Leeson Township. Patented claims S35241, S35394 and S35397. Latitude 48.38°, Longitude 83.86°.

Map reference: ODM P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties

(Anaconda).

GEOLOGY: A large body of Kenoran granodiorite is intrusive into Early Precambrian mafic metavolcanics along its western margin. The strike of the metavolcanics is arcuate, curving from northwest in the southern part of the area to northeast in the northern part, with dips of 60°W to vertical. North-trending late diabase dikes are abundant.

The Frontenac Vein, which strikes S75°E and dips 75°S, is located in a shear zone in gneissic grey granodiorite. A strong and continuous quartz vein has been exposed for more than 1,000 feet. In places there are two principal veins separated by up to 30 feet of granodiorite. The width of the vein varies up to 25 feet. It consists of fine-grained bluish white quartz which in places is streaked with chlorite. Pyrite and molybdenite are common but not abundant; in places there is a little chalcopyrite and galena.

The Frontenac Extension Vein, 1,100 feet east of the main Frontenac Vein, is a relatively strong stockwork of quartz veining up to 10 feet in width. It strikes east and dips 70°S.

Persistent but extremely low gold values are present in both veins.

HISTORY: 1947-1948: Trenching and six diamond-drill holes (1,133 feet) by E.E. Campbell.

1964: Eight diamond-drill holes (3,370 feet) on Frontenac Vein by Anaconda American Brass Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Leeson Township, Technical Survey Files 63A.18 and 63A.55, and Diamond-Drilling Report 11.

Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties (Anaconda American Brass Limited). ODM 1942, Vol.51, pt.8, p.24.

Jenner Prospect

MAIN METALS: Au

LOCATION: Approximately 43 miles northwest of Chapleau and 2¼ miles northeast of the Renabie Mine, in central Leeson Township. Claim S35251. Latitude 48.40°, Longitude 83.83°.

Map reference: ODM P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties (Macassa 1940 Group).

GEOLOGY: The property is underlain by grey foliated biotite granodiorite of Kenoran age. On its western margin, the granodiorite is in contact with Early Precambrian mafic metavolcanics. Late, southeast-trending diabase dikes are abundant in the area.

The Jenner Vein is located in a shear zone striking

N60°W. It has been exposed by trenching for a distance of 600 feet and has widths of up to 30 feet. Mineralization consists of seams and fine scattered grains of pyrite and galena, and reportedly contains fair gold values. In one place, the vein assayed 0.23 ounce of Au per ton over a 2-foot width. Diamond-drilling has yielded only low gold values.

HISTORY: 1947-1948: Geological survey, stripping and trenching, and 11 diamond-drill holes (1,471 feet) by Macassa Mines Limited. Two diamond-drill holes (205 feet) under the direction of R. Campbell.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Leeson Township, Technical Survey Files 63A.18 and 63A.55. Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties (Macassa 1940 Group).

Mickelson-Hutchison Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles north-northeast of the Renabie Townsite, in western Leeson Township. Main showing in claim S35552. Latitude 48.40°, Longitude 83.87°.

Map reference: ODM P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjacent Properties (Macassa 1941 Group).

GEOLOGY: Most of the area is underlain by a large granodioritic batholith of Kenoran age which intrudes Early Precambrian mafic metavolcanics along an arcuate northeast- to southeast-trending contact. North-northwest-trending late diabase dikes are abundant in the area and cut all other formations.

The Mickelson and Hutchison Veins are adjacent but have divergent strike direction, northwest and northeast respectively.

Diamond-drill hole intersections on the Mickelson Vein have yielded 0.04 to 0.72 ounce of Au per ton over widths of 1.7 to 30 feet.

The Hutchison Vein comprises two lenses which vary in width from 1.5 to 4.0 feet, and have an average gold content of less than 0.07 ounce per ton.

HISTORY: 1947-1948: Geological survey, stripping, trenching, and two diamond-drill holes (519 feet) in claim S35552 by Macassa Mines Limited. The drilling intersected the Mickelson Vein, owned by Macassa Mines Limited, and the Hutchison Vein which was owned by The Coniagas Mines Limited and located in claim S35170. Under an agreement between the two companies, an additional 12 holes were diamond-drilled in claim S35170.

REFERENCES: Assessment Files Research Office, On-

tario Geological Survey, Toronto: Leeson Township, Technical Survey Files 63A.18 and 63A.55, and Diamond-Drilling Report 12.

Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties (Macassa 1941 Group).

Nudulama Prospect

MAIN METALS: Au

LOCATION: Approximately 43 miles northwest of Chapleau, and ¾ mile east of the Renabie Mine, in southwestern Leeson Township. No.1 Vein and shaft in patented claim S34819; No.2 Vein in patented claim S34818. Latitude 48.38°, Longitude 83.84°.

Map reference: ODM P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.

GEOLOGY: A band of Early Precambrian mafic metavolcanics has an arcuate, northeast- to southeast-trending contact with a granodioritic batholith of Kenoran age. The contact between the metavolcanics and granodiorite dips approximately 50°W in this area. Cutting all other formations, including the vein structure, is a series of late diabase dikes striking N10°W and dipping steeply.

The ore zone on the property is located entirely within granodiorite, and in particular the border phase of the batholith. The batholith consists of an outer zone of gneissic granodiorite, 1,000 feet wide, and an inner zone, up to 1 mile wide, of gneissic tonalite. The Nudulama No. 1 Vein lies within the tonalite zone and is approximately 3,000 feet northeast of the metavolcanic-granodiorite contact. The vein strikes east, is approximately 400 feet long, and has been explored to a depth of 1,025 feet. It is considered to be an extension of the Renabie C Zone, the mineralization of which has been described by Ferguson (Marginal Notes, ODM Map P.492) as follows:

"The ore zones are mainly granular white quartz cut by finer grained, whiter quartz. The sulphide content is less than one percent and consists of pyrite in tiny cubes and irregular grains with small amounts of galena and chalcopyrite. Visible gold is rare as the gold is present in very fine particles. Gold is recovered by cyanidation after grinding the mill feed so that 70 percent is minus 200 mesh and grinding the flotation concentrate so that 99 percent is minus 325 mesh."

The gold is believed to be associated with the sulphide minerals.

ECONOMIC FEATURES: Proven ore reserves are 579,325 tons to a depth of 750 feet averaging 0.194 ounce of Au per ton (Northern Miner, Au-

gust 12, 1971, p.17).

HISTORY: 1947: 27 diamond-drill holes (7,766 feet) by Dulama Gold Mines Limited. Ken-Bay Gold Mines Limited held an interest in two claims (S35127 and S35130) to the east of the Dulama property and put down nine diamond-drill holes (3,000 feet).

1948: Vertical three-compartment shaft to 3,000 feet with 496 feet of lateral development on levels at 150 and 275 feet.

1949: 579 feet of lateral development and 160 feet of raising on the same two levels, and three surface diamond-drill holes (2,068 feet) by Dulama Gold Mines Limited.

1950: Shaft deepened to 775 feet with new levels at 425, 575 and 725 feet, 2,130 feet of lateral development, five surface diamond-drill holes (840 feet), and 35 underground diamond-drill holes (1,689 feet) by Ladulama Gold Mines Limited.

1951: Shaft deepened to 1,065 feet with new levels at 875 and 1,025 feet, and 210 feet of lateral development by Ladulama Gold Mines Limited. Underground development to 1952 totalled 2,323 feet of drifting, 1,093 feet of crosscutting, and 160 feet of raising. Work ceased in 1951 but mine is being maintained.

REFERENCES: American Institute of Mining Engineers, New York, Gold Deposits of the Renabie Area by M.H. Froberg (unpublished paper), February, 1948.

Assessment Files Research Office, Ontario Geological Survey, Toronto: Leeson Township, Diamond-Drilling Report 14.

DEMR Ottawa, Mineral Development Sector Files: Au 2, 42B/15, October, 1965.

Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.

Northern Miner, August 12, 1971, p.17.

ODM 1942, Vol.51, pt.8, 26p.

Renabie Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 43 miles northwest of Chapleau, in southwestern Leeson Township. No.1 Shaft in patented claim S34314 and No.2 Shaft in patented claim S34317. Latitude 48.38°, Longitude 83.87°.

Map reference: ODM P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.

GEOLOGY: An east-trending belt of Early Precambrian rocks has an arcuate, northeast-to-southeast-trending contact with a granodiorite batholith of Kenoran

age lying to the east. In the area of the Renabie Mine, the Early Precambrian rocks are mainly mafic metavolcanics. A series of late diabase dikes, trending slightly west of north and dipping steeply, intersect all other rock types and cut the gold deposits without displacement. The contact between the metavolcanics and the granodiorite dips approximately 50°W. All the gold occurrences in the area are located within the border phase of the granodiorite, which consists of an outer zone of gneissic granodiorite, 1,000 feet wide, and an inner zone, up to 1 mile wide, described as tonalite gneiss.

The ore zones at the Renabie Mine are entirely within the granodiorite, with the more persistent zones situated 350 to 1,000 feet stratigraphically below the metabasalt-granodiorite contact. These ore zones are generally conformable with the enclosing rocks and maintain their position in relation to the boundary of the batholith. Individual orebodies are thick lenses or pipes of quartz up to 200 feet in length and 50 feet in width, and may persist down the dip or plunge for hundreds of feet. The shapes of the pipes in plan may be thick blunt regular lenses, or they may be folded. The mineralized zones consist almost entirely of quartz; some zones consist of quartz lenses enclosed in schistose granodiorite, but gold mineralization is restricted to the quartz.

There is evidence suggesting that the vein structures occur in complementary sets. The A, B, and C Zones strike nearly due west and have steep southerly dips. The complementary direction, exemplified by the D Zone, is S10°E with a dip of 55°W.

The A, B, C, and E Zones are present only in the upper three of four levels of the mine. However, the D Zone persists throughout the mine and increases in size and grade with depth. This orebody is called the D Zone from surface to below the 1,100-foot level where it is intersected by the D Fault. The faulted extension between the D Fault and the Shaft Fault is called the J Zone. The extension beyond the Shaft Fault to the West Fault is called the N Zone, and the portion beyond the West Fault is called the Q Zone. Thus, the D Zone and its faulted extensions, the J, N, and Q Zones, were originally one continuous orebody.

The ore zones consist mainly of granular white quartz cut by finer grained whiter quartz. The sulphide content is less than 1 percent and consists of pyrite in tiny cubes and irregular grains, with small amounts of galena and chalcopyrite. Visible gold is rare since the gold is present as very fine particles.

ECONOMIC FEATURES: Indicated reserves (Northern Miner, September 5, 1974, p.1, and February 6, 1975, p.1) are as follows:

Above 2,600-foot level: 359,000 tons averaging 0.15 ounce of Au per ton.

Below 2,600-foot level: 236,500 tons averaging 0.27 ounce of Au per ton.

Production at a rate of 300 tons per day was expected to begin in mid to late 1975 (Northern Miner March 13, 1975, p.10). However, for financial reasons, production has not been resumed.

OWNERSHIP: Willroy Mines Limited.

HISTORY: 1939: Surface prospecting and diamond-drilling by the Sawdust Syndicate.

1940: Surface exploration and diamond-drilling by Macassa Mines Limited.

1941-1970: No.1 Shaft to 281 feet with two levels and No.2 Shaft to 3,514 feet with 20 levels. Lateral development amounted to 47,081 feet of drifting, 25,007 feet of crosscutting, and 30,467 feet of raising. Extensive surface and underground diamond-drilling. A 550-ton mill was operating when the mine ceased operations in July, 1970.

1974-1975: Dewatering of mine workings, diamond-drilling, and rehabilitation of mill in preparation for production at an initial rate of 300 tons-per-day. To date, production has not resumed.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1947-1970	779,958	246,255	3,685,992	0.212

REFERENCES: American Institute of Mining Engineers, New York, Gold Deposits of the Renabie Mine Area by M.H. Froberg (unpublished paper), February, 1948.

Canadian Institute of Mining and Metallurgy 1948, Jubilee Volume, p.436-438.

Northern Miner, September 5, 1974, p.1; February 6, 1975, p.1; March 13, 1975, p.10.

ODM 1942, Vol.51, pt.8, p.15-23.

McKINNON TOWNSHIP

(NTS 411/4W)

Bob Tough (Evangeline Lake) Prospect

MAIN METALS: Au

LOCATION: Approximately 7 miles southwest of Espanola, on the north shore of Evangeline Lake, in lot 5, concession III, McKinnon Township. Shaft located in claim S345771, Latitude 46.14°, Longitude 81.86°.

Map reference: ODM P.794, McKinnon Township.

GEOLOGY: East-trending folded metasediments of the Huronian Supergroup underlie the area. Cutting the metasediments are Late Precambrian olivine diabase dikes which trend southwesterly.

There are two showings in east-trending Serpent

Formation feldspathic quartzites. The showings consist of shear zones containing quartz veins and stringers with some sulphide mineralization.

The west showing is an east-striking shear zone with quartz stringers containing some pyrite. Assays of diamond-drill hole samples ranged up to 0.17 ounce of Au per ton over 8.5 feet. The east zone consists of a quartz vein with some chalcopyrite and arsenopyrite in an east-trending shear. Low values (up to 0.02 ounce of Au per ton) were reported from diamond-drill hole intersections.

HISTORY: 1934: Test-pitting and sampling, followed by seven diamond-drill holes (2,500 feet). Vertical shaft to 30 feet on east showing.

1935: Shaft deepened to 150 feet with 118 feet of crosscutting on the 150-foot level by Bob Tough Gold Mines Limited.

1954-1956: Surface work and eight diamond-drill holes (approximately 1,000 feet) under the direction of B. Day.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: McKinnon Township, Diamond-Drilling Report 10.

ODM 1935, Vol.44, pt.7, p.61.

ODM 1936, Vol.45, pt.1, p.83, 84.

MACLENNAN TOWNSHIP

(NTS 411/10)

Bonanza Prospect

MAIN METALS: Au

LOCATION: Approximately 12 miles east-southeast of Capreol, in lot 2, concession IV, Maclennan Township. Claim S140462. Latitude 46.67°, Longitude 80.71°.

Map reference: ODM 2009, Maclennan and Scadding Townships.

GEOLOGY: A large body of altered Nipissing-type olivine gabbro contains, within its boundaries, a narrow strip of brecciated quartzite of the Mississagi Formation. A wide fissure-type quartz vein lies along the contact between the gabbro and the quartzite; it strikes N80°W and dips steeply south. The average width of the vein is 60 feet and it has been traced for 1,800 feet. Vein material is white crystalline quartz and carbonate. Chip samples from the surface assayed nil to 0.04 ounce of Au per ton, but diamond-drilling failed to intersect gold values.

HISTORY: 1895-1897: Shaft to 60 feet, approximately 50 feet of drifting on the 35-foot level, and several drill holes (of unknown type) by the Bonanza Nickel Mining Company of Sudbury Limited.

1956: Two diamond-drill holes by Falconbridge Nickel Mines Limited.

1968: Two diamond-drill holes (325 feet) by E. Blanchard.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: MacLennan Township, Diamond-Drilling Report 11.

GSC 1936, Memoir 192, p.144 (Mammoth Mine).

OBM 1894, Vol.4, p.233.

ODM 1960, GR2, p.28 (MacLennan Mine, Concession IV, Lot 2).

Skead Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 6 miles northeast of Falconbridge, in N½, lot 5, concession III, MacLennan Township. Patented claim S27418. Latitude 46.66°, Longitude 80.74°.

Map reference: ODM 2009, MacLennan and Scadding Townships.

GEOLOGY: Northwest-trending metasediments of the Huronian Supergroup (Mississagi Formation) are intruded by metamorphosed Nipissing-type olivine gabbro.

The gold-bearing zone, which strikes east and dips 25°N, follows a contact between altered quartzite (on the footwall) and argillite (on the hanging wall). The vein material consists of altered quartzite with some vein quartz, carbonates, and traces of sulphide mineralization.

ECONOMIC FEATURES: In 1946, sampling of some 488 tons from the surface ore dump indicated an average grade of 0.088 ounce of Au per ton. Sampling of the 165-foot level revealed three small gold-bearing ore shoots. The west shoot averaged 0.390 ounce of Au per ton, and 0.20 percent Cu over an average width of 4 feet and for a length of 60 feet. The central shoot averaged 0.270 ounce of Au per ton and 0.62 percent Cu over an average width of 6.1 feet and for a length of 50 feet. The east shoot averaged 0.198 ounce of Au per ton over an average width of 5.8 feet and for a length of 60 feet.

HISTORY: Circa 1933: Surface trenching, test pitting, and a shaft with drifting on the 165-foot level by G. Glendenning of Toronto.

1946: Mine dewatered, mapped, and sampled by Falconbridge Nickel Mines Limited.

REFERENCES: ODM 1960, GR2, p.27 (MacLennan Township, Concession III, North Half Lot 5).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: MacLennan Township, McBride.

MACMURCHY TOWNSHIP

(NTS 41P/11E)

Bilmac Prospect

MAIN METALS: Au

LOCATION: Approximately 5½ miles northeast of Shining Tree, in southwestern Macmurchy Township. Claims TRS2504, TRS2534, TRS2535, TRS-2540, TRS2541, and WD1417. Main shaft in claim WD1417. Latitude 47.60°, Longitude 81.18°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships.

GEOLOGY: Keewatin-type amygdaloidal and pillow lavas, and slaty beds (with possible associated iron formation) are cut by a quartz porphyry dike and north-trending diabase dikes. Two parallel quartz veins, the Saville and Evelyn Veins, strike N60°W and dip 65°SW and 70°SW respectively.

The Saville Vein lies in a shear zone and consists of lenticular quartz with pyrite and gold. It has an average width of 3 feet and has been exposed for a distance of 1,000 feet.

The Evelyn Vein, situated 300 feet north of the Saville Vein, also lies in a shear and consists of quartz with gold, silver, cobalt, smaltite and pyrite mineralization. It varies from 4 to 6 feet in width and has been exposed for a distance of 1,200 feet.

ECONOMIC FEATURES: A test run of 1,500 pounds of ore from the Evelyn Vein yielded a value of 4.0 ounces of Au per ton. Twelve tons of ore shipped to the International Nickel Company of Canada Limited smelter yielded 8.45 ounces of Au. Sampling of the main shaft and the 65-foot level in 1940 gave values ranging from trace to 2.1 ounces of Au per ton.

Reserves were estimated to be 250,000 tons grading 0.34 ounce of Au per ton (Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Macmurchy Township, Burke (1940)).

HISTORY: 1911: Gold found on Jefferson claim (TRS2504).

1919-1921: Surface work, adit, and 87-foot shaft on Evelyn Vein by Atlas Gold Mines Limited.

1922-1923: Two-compartment shaft sunk to 175 feet on the Evelyn Vein, with levels at 65 and 170 feet and 1,076 feet of lateral development on these two levels. Second shaft to 40 feet. All work by White Rock Mining Company Limited.

1933: Main shaft dewatered and 700 feet of drifting by White Rock Mining Company Limited.

1934-1938: Main shaft deepened to 425 feet, with 2,585 feet of underground development on the 65-, 170-, and 410-foot levels. 80-ton mill installed.

PRODUCTION: In 1922 and 1933 production from the White Rock and Atlas properties amounted to

\$1,607 (gold and silver combined).

REFERENCES: Marginal Notes, ODM Map P.765, Macmurchy Township.

ODM 1920, Vol.29, pt.3, p.40, 43, 44 (Atlas).

ODM 1923, Vol.32, pt.6, p.33 (White Rock).

ODM 1926, Vol.35, pt.6, p.94 (White Rock).

ODM 1935, Vol.44, pt.7, p.42, 43.

ODM 1977, GR152, p.37, 38.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Macmurchy Township, Burke (1940).

Lake Caswell Prospect

MAIN METALS: Au

LOCATION: Approximately 5 miles northeast of Shining Tree, at the southeast end of West Shining Tree Creek, in southwestern Macmurchy Township. Claims WD1418 to WD1421. Latitude 47.60°, Longitude 81.19°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Johnson, D.A. and Johnson, R.M.).

GEOLOGY: The property is underlain by Keewatin-type metavolcanics (amygdaloidal and pillow basalt), highly altered diabase, and dark slaty bands impregnated with pyrite. A quartz-porphyry schist intrudes the metavolcanics and all of the rocks are cut by north-trending diabase dikes. Quartz veins and stringers occur in a shear zone, which strikes N60-90°E and dips vertically. The quartz veins are irregular and lenticular, and in some places several occur close together to give a total thickness of 6 to 10 feet.

"Spectacular gold samples" (ODM 1926, Vol.35, pt.6, p.94) came from a vertical pipelike deposit formed at the intersection of the shear zone and a slaty pyrite band. Samples from across the shaft reportedly averaged 0.4 ounce of Au per ton.

HISTORY: 1919: Surface work and 67-foot shaft sunk by the West Tree Company.

1924-1925: Surface work, a shaft (92 feet deep) on the east shore of the creek, 178 feet of drifting from the bottom of the shaft, and 3,390 feet of diamond-drilling by Canadian Champion Reef Mining Company Limited.

1928-1929: Shaft sunk to 520 feet with levels at 100, 250, 375 and 500 feet. Lateral development totalled 325 and 780 feet on the 250- and 500-foot levels respectively by Canadian Champion Reef Mining Company Limited.

1934: Main shaft dewatered and 70 feet of lateral work on 500-foot level by Lake Caswell Mines Limited.

REFERENCES: ODM 1920, Vol.29, pt.3, p.46, 47 (West Tree).

ODM 1926, Vol.35, pt.6, p.93, 94 (West Tree).

ODM 1930, Vol.39, pt.1, p.87 (Canadian Champion Reef Mining Company Limited).

ODM 1935, Vol.44, pt.1, p.109, 110; pt.7, p.41, 42.

ODM 1977, GR152, p.44, 45 (Johnson, D.A., and Johnson, R.M.).

Ronda Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 4 miles northeast of Shining Tree, straddling the Macmurchy-Churchill township boundary between the 1- and 2-mile posts, in southwestern Macmurchy Township. Highway 560 crosses the property. Claims TRS2529, TRS2530, TRS3765, TRS3771 and TRS4078 in Macmurchy Township and TRS4108 in Churchill Township. Shafts in claim TRS2530. Latitude 47.60°, Longitude 81.20°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Triton Explorations Ltd.).

GEOLOGY: Keewatin-type mafic to intermediate metavolcanics are cut by north-trending diabase dikes. Gold occurs in the Ribble Vein which strikes north and dips 60°W. The vein has been intensely folded and some drag folds pass into small faults. The average width of the vein is about 4 feet, although a 23-foot width of quartz and schist has been reported. The wall rock consists of chloritic schist.

Moiled samples have yielded values of 0.50 ounce of Au per ton over an average width of 4.2 feet and 0.39 ounce of Au per ton over an average width of 4.1 feet.

OWNERSHIP: Triton Explorations Limited until September 12, 1974. Present status unknown.

HISTORY: 1912: Gold discovered by two prospectors who had been grubstaked by A. Ribble.

1913: Trenching by The Sharon Mines Limited.

1916: Surface work by G.R. Rogers.

1919: Two-compartment vertical No. 1 Shaft sunk to 150 feet with 71 feet of crosscutting on a level at 100 feet by Wasapika Gold Mines Limited.

1922-1923: No. 1 Shaft deepened to 325 feet with new levels at 200 and 300 feet, and approximately 1,200 feet of lateral development by Ribble Mines Limited.

1934-1935: No. 1 Shaft dewatered and resampled by Neville Canadian Gold Mines Limited. Shaft again dewatered and 30-ton mill installed by Bramor Mines (Ontario) Limited.

1935-1939: Vertical three-compartment winze sunk from 300-foot level to a depth of 700 feet with levels at 425, 550, and 675 feet. This was then extended to the surface and used as a shaft. Total lateral development work until the time that opera-

tions ceased in 1939 was 4,969 feet. During 1938 and 1939 there was 5,401 feet of underground diamond-drilling in 22 holes and 535 feet of surface diamond-drilling in 3 holes. 150-ton mill installed in 1938. All work by Ronda Gold Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1939	2,727	4,830	24,592	0.11

REFERENCES: ODM 1920, Vol.29, pt.1, p.90 (Wasapika); pt.3, p.45, 46 (Wasapika).
ODM 1926, Vol.35, pt.6, p.92, 93 (Wasapika).
ODM 1935, Vol.44, pt.7, p.40, 41 (Neville Canadian Gold Mines Limited).
ODM 1940, Vol.49, pt.1, p.193.
ODM 1977, GR152, p.53-55 (Triton Explorations Limited).
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Tenendo Prospect

MAIN METALS: Au

LOCATION: Approximately 11 miles northeast of Shining Tree, straddling Highway 560, in north-eastern Macmurchy Township. Latitude 47.66°, Longitude 81.11°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Cook, C.).

GEOLOGY: The property is underlain by Early Precambrian rhyolite, andesite, and pyroclastic rocks, interlayered with tuffaceous sedimentary rocks. A carbonatized shear zone, 20 feet wide and 40 feet long, contains a 1-foot wide quartz vein which strikes N70°W and dips 80°SW. The shear also contains 6- to 12-inch wide quartz stringers. Mineralization consists of gold, pyrite, pyrrhotite, and arsenopyrite.

Grab samples from the zone reportedly assayed 4.0 ounces of Au per ton. Assays of drill core samples ranged from trace to 0.6 ounce of Au per ton.

HISTORY: 1939: Surface work and three diamond-drill holes (697 feet) by Sylvanite Gold Mines Limited.

1952: Eight diamond-drill holes (1,839 feet) by Tenendo Mining Corporation Limited.

1953: 11 diamond-drill holes (6,299 feet) by Tenendo Mining Corporation Limited.

1972-1973: Trenching by A. Decker.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Macmurchy Township, Gerrie (1953), Hurd (1952), Savage (1948).

ODM 1977, GR152, p.40 (Cook, C.).

MONGOWIN TOWNSHIP

(NTS 411/4)

Fox Lake Prospect

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 7½ miles south of Espanola, in lots 5 and 6, concession IV, Mongowin Township. Latitude 46.16°, Longitude 81.73°.

Map reference: ODM 2312, Mongowin and Curtin Townships.

GEOLOGY: Quartzites belonging to the Serpent and Gowganda Formations of the Huronian Supergroup trend easterly through the area. Structurally, the property is located on the south limb of the Fox Lake Anticline. The northeast-trending Fox Lake Fault brings sheared and brecciated quartzites of the Serpent and Gowganda Formations into juxtaposition. These rocks adjacent to the fault are silicified, carbonatized, and veined with quartz.

The main showing is a breccia zone in Gowganda Formation quartzite in which there has been replacement by carbonate and quartz, and some sulphide mineralization. The zone is irregular in shape, with widths up to 25 feet and a length of 200 feet. Oxidation of the carbonates has produced a weathered capping more than 20 feet thick.

A bulk sample weighing 690 pounds, assayed by the Canada Centre for Mineral and Energy Technology, Ottawa, yielded 0.83 ounce of Au per ton, 0.94 ounce of Ag per ton, and 1.91 percent Cu.

HISTORY: 1932-1936: Several test pits and a 30-foot shaft. In 1934, additional surface work and construction of a 40-ton mill by the Fox Lake Gold Syndicate. Milling operations lasted for two weeks and Fox Lake Gold Mines Limited took over the property. Diamond-drilling operations carried out intermittently. Shaft deepened to 35 feet. Three 100-pound samples and bulk samples of 150 and 690 pounds were assayed by the Canada Centre for Mineral and Energy Technology, Ottawa.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 6, 41/1/4, September 1961.

GSC 1936, Memoir 192, p.97.

ODM 1935, Vol.44, pt.7, p.60, 61.

ODM 1976, GR131, p.56.

Jo-Ami Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles south of Espanola, in lot 7, concession III, Mongowin Township. Claims S143947, S143948. Latitude 46.14°, Longitude 81.76°.

Map reference: ODM 2312, Mongowin and Curtin

Townships (Kirwan, G.L.).

GEOLOGY: The area is underlain by Gowganda and Lorrain Formation sediments on the south limb of the east-trending Fox Lake Anticline. In the southern part of the property, an east-trending Nipissing Diabase dike intrudes the sediments.

The main showing is a northeast-striking zone of quartz veining in Gowganda Formation quartzite, adjacent to and on the west side of the northeast-trending Fox Lake Fault. The zone varies in width up to 10 feet and appears to be parallel in attitude to an adjacent amphibolite dike. A channel sample taken across a 9-foot width of the vein assayed 1.44 ounces of Au per ton. One diamond-drill core intersection averaged 2.20 ounces of Au per ton over 6 feet, but in general the values were low.

HISTORY: 1958: Surface prospecting by the Cogo Syndicate.

1959-1960: 17 diamond-drill holes (3,742 feet) to test the zone over a strike-length of 300 feet by Jo-Ami Mines Limited.

1967: Geological and geophysical surveys by Advance Geophysics Limited.

1968: Six diamond-drill holes (2,422 feet) to test a possible extension of the zone by Accra Explorations Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Mongowin Township, Diamond-Drilling Reports 11 and 14. ODM 1976, GR131, p.283 (G.L. Kirwan (Jo-Ami Occurrence)).

Majestic Prospect

MAIN METALS: Au

LOCATION: Approximately 8 miles south of Espanola, in lot 8, concession III, Mongowin Township. Claim S4730. Latitude 46.13, Longitude 81.77°. Map reference: ODM 2312, Mongowin and Curtin Townships (Gregory, Charles, estate (Majestic mine)).

GEOLOGY: The property is underlain by east-striking Gowganda Formation metasediments on the south limb of the Fox Lake Anticline.

The showing consists of a large quartz vein in Gowganda Formation quartzite. The vein trends easterly, is up to 32 feet wide and has been exposed by trenching for a distance of 4,000 feet. In one place it consists of 18 feet of massive quartz with 32 feet of quartz stringers in the wall rocks. Sulphide mineralization is irregularly distributed and consists of pyrite, chalcopyrite, and arsenopyrite.

HISTORY: 1921-1922: Surface prospecting, shaft to 228 feet, and approximately 480 feet of crosscutting on levels at 100 and 200 feet by Majestic Gold

Mines Limited.

1963: Prospect covered by geological and magnetic surveys carried out over a 48-claim group by Dayjon Explorers Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Mongowin Township, Technical Survey File 63.1132.

GSC 1936, Memoir 192, p.98.

ODM 1929, Vol.38, pt.7, p.46.

ODM 1976, GR131, p.56, 57 (Charles Gregory Estate (Majestic Mine)).

McMillan Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 8 miles south of Espanola, in lot 11, concession III, Mongowin Township. Claim S6225. Latitude 46.14°, Longitude 81.80°. Map reference: ODM 2312, Mongowin and Curtin Townships (Dayjon Explorations and Holdings Ltd. (McMillan Mine)).

GEOLOGY: The area is underlain by interbedded quartzite and argillite of the Gowganda Formation which have been folded about an east-trending anticlinal axis. The metasediments have been intruded by Nipissing Diabase dikes and sills, and a large Keweenaw olivine diabase dike which crosses the property in a northwesterly direction east of the mine.

South of the shaft there is a U-shaped drag fold in the metasediments, the axis of which strikes easterly and plunges 65°E. Gold-bearing quartz veins are associated with this folding and lie along the contact between quartzite and diabase. The width of the veins does not usually exceed 6 feet, but can vary up to 25 feet. The southeast-striking McMillan Fault terminates the vein structures east of the mine shaft.

ECONOMIC FEATURES: The No.1 Vein is located at a diabase-quartzite contact which dips 80°N. The main ore shoot of this vein had a strike-length of 300 feet down to the 325-foot level, but pinched out above the 425-foot level. Other smaller ore shoots were encountered to the lowest level at 850 feet. Mineralization consists mostly of arsenopyrite, with some pyrrhotite, chalcopyrite, and pyrite. The gold is associated with the arsenopyrite.

OWNERSHIP: Dayjon Explorations and Holdings Limited.

HISTORY: Circa 1910: 12-foot test pit by A. Heard.

1920-1926: Prospecting by Gold Nugget Mining and Development Company Limited.

1926-1959: 900-foot shaft with 8 levels and approximately 6,280 feet of lateral development by McMillan Gold Mines Limited. 150-ton mill installed.

1959-1963: Geological and geophysical surveys, trenching, and four diamond-drill holes (1,300 feet) by Dayjon Explorers Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1934-1937	10,593	378	60,139	0.18

REFERENCES: GSC 1936, Memoir 192, p.93-98.

ODM 1929, Vol.38, pt.7, p.39-46.

ODM 1935, Vol.44, pt.7, p.57-60.

ODM 1976, GR131, p.53-55 (Dayjon Explorations and Holdings Limited (McMillan Mine)).

NEWTON TOWNSHIP

(NTS 410/16W)

Rundle No.1 Prospect

MAIN METALS: Au

LOCATION: Approximately 33 miles west-northwest of Gogama, in southeastern Newton Township. Shaft in claim LO261. Latitude 47.82°, Longitude 82.37°. Map reference: ODM P.675, Opeepeesway-Rocky Island Lakes Sheet.

GEOLOGY: In the mine area, east-trending Early Precambrian mafic to felsic metavolcanics are intruded by Kenoran feldspar porphyry, part of which may be extrusive. The metavolcanics include andesite, rhyolite, and bedded tuff. Some iron formation is interbedded with the metavolcanics.

A lenticular body of pink feldspar porphyry, 2,300 feet long, up to 400 feet wide, and containing large remnants of altered mafic lavas, is host to the gold-bearing mineralized zone. Both the porphyry and lavas have been extensively carbonatized and sericitized. The mineralized zone comprises quartz veins, stockworks of quartz stringers, and silicification of the feldspar porphyry and lavas. Mineralization consists of pyrite and minor chalcopyrite. The zone, a pipe-like structure 120 feet long and up to 55 feet wide, plunges roughly 75°NE. It has been explored by underground development and diamond-drilling to a depth of 360 feet.

ECONOMIC FEATURES: Hollinger Consolidated Gold Mines Limited estimated that underground work had outlined 100,000 tons of ore with an average grade of 0.29 ounce of Au per ton. However, the pipe-shaped zone of mineralization may provide large tonnages of low-grade ore capable of being mined by cheaper openpit or block-caving methods.

HISTORY: 1936-1941: Property developed under option by Hollinger Consolidated Gold Mines Limited. 1941-1942: Extensive trenching and 35 diamond-drill holes (3,960 feet). Vertical two-compartment shaft to 375 feet with 1,536 feet of lateral devel-

opment on levels at 150 and 300 feet. A total of 4,364 tons of ore was hoisted.

REFERENCES: ODM 1942, Vol.51, pt.1, p.114, 185.

ODM 1943, Vol.52, pt.1, p.118, 180.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Newton Township, Rundle Gold Mines Limited.

Rundle No.2 (Miquelon) Prospect

MAIN METALS: Au

LOCATION: Approximately 37 miles west-northwest of Gogama, in central Newton Township. Latitude 47.91°, Longitude 82.39°.

Map reference: ODM P.673, Horwood Lake Sheet (prospect not shown on map).

GEOLOGY: The vein is in andesitic, spherulitic pillow lava, at a point where the lava has a change in strike. Where pillow lava can be seen at the north end of the stripping, it strikes N50°E and dips southeast. Approximately 100 feet south of the vein, and also west of the vein, the lava strikes N85°W and dips south. Approximately 300 feet south of the vein there is a yellow quartz porphyry dike striking N80°E.

The vein is drag-folded and has been exposed for a distance of 270 feet. The northern portion, 100 feet long and striking N40°E, consists of closely-spaced quartz stringers in chloritized, carbonatized, and sericitized lava. Visible gold was found in one of these stringers. The central drag-folded portion, about 50 feet long and striking east, contains little mineralization. The southern portion strikes N60°E and has been exposed for 120 feet. Sulphide mineralization is best in this southern part, which consists of stringers of blue and white quartz in sheared lava. The vein on surface reportedly averaged 0.30 ounce of Au per ton over a width of 4 feet and a length of 350 feet.

HISTORY: Circa 1945: 370 feet of trenching and six diamond-drill holes by Hollinger Consolidated Gold Mines Limited under option from Rundle Gold Mines Limited.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Sudbury: Newton Township, Rundle Gold Mines Limited.

OSWAY TOWNSHIP

(NTS 410/9)

Bi-Ore Prospect

MAIN METALS: Au

LOCATION: Approximately 24 miles west-southwest of

Gogama, in southeastern Osway Township. Claim S32324. Latitude 47.60°, Longitude 82.22°.

Map reference: ODM 1949-2, Township of Osway.

GEOLOGY: The property is underlain by east-trending Early Precambrian mafic metavolcanics and metasediments which have been intruded by bodies of Kenoran quartz-feldspar porphyry and syenite porphyry. All rocks show evidence of intensive shearing and deformation, and in the vicinity of porphyry bodies, the volcanic and sedimentary rocks are highly altered.

The mineralized zone lies along the highly sheared and carbonatized east-striking greywacke-'greenstone' contact. It contains irregular patches and lenses of quartz, some of which is bluish in colour and well mineralized with pyrite and arsenopyrite. The zone has a strike length of at least 300 feet; it averages more than 6 feet in width, but varies locally up to 30 feet. The gold values of surface and diamond-drill core samples were generally low, but one 5-foot section of massive arsenopyrite in drill core assayed 0.17 ounce of Au per ton.

HISTORY: Circa 1950: Geological survey, extensive surface trenching, and approximately 30,000 feet of diamond-drilling by Bi-Ore Mines Limited.

REFERENCES: Financial Post Survey of Mines 1954, p.224.

ODM 1949, Vol.58, pt.5, p.15, 16.

Cipway Prospect

MAIN METALS: Au

LOCATION: Approximately 26 miles west-southwest of Gogama, ½ mile southwest of Cipway Point, in west-central Osway Township. Latitude 47.63°, Longitude 82.30°.

Map reference: ODM 1949-2, Township of Osway.

GEOLOGY: Southeast-trending isoclinally folded Early Precambrian mafic metavolcanics and metasediments are intruded by dikes of Kenoran quartz-feldspar porphyry. In the vicinity of the main showing, sheared and carbonatized mafic metavolcanics are cut by dikes of quartz-feldspar porphyry.

The mineralized zone is approximately 10 feet wide and is associated with soft pyritic 'greenstone' and porphyry which are variably carbonatized and silicified. Mineralization consists of quartz veining, pyrite, pyrrhotite, chalcopyrite and a little arsenopyrite. A character sample of mineralized material, assayed by the Geoscience Laboratories, Ontario Geological Survey, Toronto yielded 0.07 ounce of Au per ton.

HISTORY: Circa 1945: Trenching and diamond-drilling by Cipway Gold Mines Limited.

REFERENCES: Canadian Mines Handbook 1950, p.239.

Financial Post Survey of Mines 1950, p.152.

ODM 1949, Vol.58, pt.5, p.17, 18.

Jerome Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 24 miles west-southwest of Gogama, on Jerome Point, in eastern Osway Township. Shaft located in patented claim S32071. Latitude 47.62°, Longitude 82.24°.

Map reference: ODM 1949-2, Township of Osway.

GEOLOGY: Southeast-trending synclinally folded Precambrian metasediments are intruded by Kenoran quartz and feldspar porphyry and Keweenawan diabase dikes. The property is underlain by conglomerate and arkose which have been intruded by granodiorite porphyry. The largest intrusive body in the mine area is a lenticular mass 2 miles in length with a maximum width of 4,000 feet.

The orebody lies along a shear on the south contact of the porphyry at its western end. It consists of a vein which has an arcuate form, ranging in strike from N50°W at its eastern end to N80°W at the western end and having an average dip of 72°N. The vein varies from 5 to 75 feet in width. The zone of ore grade material lies largely along the hanging wall and consists of numerous shoots distributed over a 3000-foot strike length and varying from 5 to 40 feet in width.

The vein consists of bluish-coloured cherty replacement silica along the north side and a later quartz-carbonate replacement to the south. Mineralization consists of pyrite, chalcopyrite, tetrahedrite, galena, sphalerite, molybdenite, and rare native gold.

There are two stages of post-vein faulting: an earlier north-trending set with right lateral displacement of up to 50 feet, and a later east-trending set of longitudinal faults with left lateral displacement of up to 30 feet. Quartz-filled tension fractures with associated native gold are related to the second set of faults.

ECONOMIC FEATURES: At the time operations were suspended in 1945, ore reserves were estimated to be 344,000 tons grading 0.19 ounce of Au per ton (Canadian Mines Handbook 1946, p.159).

OWNERSHIP: Eddy Forest Products Limited.

HISTORY: 1939-1945: Three-compartment vertical shaft to 1,138 feet with levels at 200, 350, 500, 650, 800, and 1,100 feet. Underground development amounted to 21,100 feet of drifting, 3,155 feet of crosscutting, and 3,402 feet of raising. Surface and underground diamond-drilling totalled 38,149 feet and 47,293 feet respectively. A 500-ton mill operated from 1941 to 1943, but all equipment was sold

after production was halted and the buildings were destroyed by fire in 1957. All work by Jerome Gold Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1941-1943	56,879	15,105	335,060	0.17
1956	14	9	—	—
Total	56,893	15,114	335,060	0.17

The 1956 figure probably represents gold and silver recovered during clean-up of the mill circuit.

REFERENCES: Canadian Mines Handbook 1946, p.159.
Canadian Mining Journal, January, 1957, p.110.
CIMM 1948, Jubilee Volume, p.438-441.
ODM 1949, Vol.58, pt.5, p.18-22.

Skye Prospect

MAIN METALS: Au

LOCATION: Approximately 26 miles west-southwest of Gogama, in southeastern Osway Township. Latitude 47.60°, Longitude 82.25°.

Map reference: ODM 1949-2, Township of Osway.

GEOLOGY: East-trending Early Precambrian mafic metavolcanics and metasediments underlie the area. The showing comprises a mineralized shear zone at or near a metavolcanic-metasediment contact. It has been traced intermittently for a distance of ½ mile. The south wall of the shear zone is massive amphibolitic 'greenstone'; the north wall is not exposed. The shear zone consists of carbonatized chlorite and sericite schist, with quartz present as silicification and as later veining associated with carbonate. Sulphide mineralization includes arsenopyrite and pyrite.

A chip sample, assayed by the Geoscience Laboratories, Ontario Geological Survey, Toronto yielded 0.40 ounce of Au per ton over 2 feet. However, most assays were in the range 0.02 to 0.08 ounce of Au per ton.

HISTORY: Circa 1940: A considerable amount of trenching and six diamond-drill holes.

REFERENCES: ODM 1949, Vol.58, pt.5, p.23,24.

RATHBUN TOWNSHIP

(NTS 41I/10E, 41I/15E)

Comstock Prospect

MAIN METALS: Au

LOCATION: Approximately 14 miles east-northeast of Capreol, near Bowland Lake, in lot 6, concession III, Rathbun Township. Patented claim WR40. Latitude 46.75°, Longitude 80.62°.

Map reference: ODM P.844, River Valley Area (prospect not shown on map).

GEOLOGY: The property is underlain by southeast-trending gently-dipping Huronian metasediments which have been intruded by sills and dikes of Nipissing Diabase.

The main showing is a quartz-carbonate vein which strikes northwest and dips 80°S. It has been exposed by stripping for a distance of 100 feet and tested by a shaft to a depth of 102 feet. Visible gold was reported at a depth of 65 feet in the shaft. Assays reportedly ranged from 3.5 to 12.9 ounces of Au per ton. A subsidiary vein, 17 feet from the main one and running parallel to it, has been stripped for 75 feet.

HISTORY: 1897: Shaft to 102 feet, with some lateral work on the 90 foot level by The Comstock Gold Mining and Development Company of Ontario Limited.

1925: Property acquired by Crystal-Comstock Gold Mines Limited and developed along with the Crystal Mine. Details of development work not known.

REFERENCES: GSC 1936, Memoir 192, p.143.
OBM 1896, Vol.6, p.269.

Crystal Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 16 miles northeast of Falconbridge, between Bowland and Matagamasi Lakes, in lot 6, concessions III and IV, Rathbun Township. Patented claim WD43. Latitude 46.75°, Longitude 80.61°.

Map reference: ODM P.844, River Valley Area (mine not shown on map).

GEOLOGY: The area is underlain by flat-lying Huronian metasediments which have been intruded by sills and dikes of Nipissing Diabase. The deposit lies at the contact between arkose and greywacke of the Gowganda Formation and a Nipissing Diabase sill. In places the contact is marked by a crush breccia of diabase and metasediments, as well as a steepening in the dip of the metasediments. Both diabase and metasediments are cut by numerous quartz-carbonate veins, most of which are less than 1 foot wide. Mineralization consists of pyrite, a little chalcopyrite, and visible gold.

OWNERSHIP: R. McGregor.

HISTORY: 1892-1908: Shaft sunk to 100 feet, adit driven 106 feet, mine buildings constructed and 5-stamp mill installed, all by the Crystal Gold Mining Company.

1925: Diamond-drilling by Crystal-Comstock Gold Mines Limited.

1963-1970: Geophysical survey, surface work, and diamond-drilling by Little AG Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1897-1898, 1908	387	730	0.53

REFERENCES: GSC 1921, Summary Report, pt.D, p.50.

GSC 1946, Economic Geology Series No.15, p.67.

OBM 1895, Vol.5, p.262.

ODM 1932, Vol.41, pt.4, p.46.

ROOSEVELT TOWNSHIP

(NTS 411/3W, 411/4E)

Hanwood Lake Prospect

MAIN METALS: Au

LOCATION: Approximately 12½ miles southeast of Espanola, at the west end of Hanwood Lake, in western Roosevelt Township. Claims S6576, S20511, S20615, S20652, S25470, and S25471. Latitude 46.16°, Longitude 81.54°.

Map reference: ODM P.668, Panache Lake Area (West Half).

GEOLOGY: The area is underlain by east-trending folded Huronian metasediments cut by northwest- and northeast-striking Keweenawan diabase dikes. Approximately 4,000 feet south of the prospect, the Charlton Lake Fault separates the Lorraine and Gowganda Formations. The four principal gold-bearing occurrences are in argillaceous quartzite and interbedded conglomerate of the Gowganda Formation.

The No.1 Occurrence, located north of Leech Lake, is a highly mineralized zone in quartzite, close to the contact with a northeast-striking diabase dike. No distinct vein occurs in the zone, but over a width of 2 feet the quartzite is highly mineralized with pyrite. No sampling results are available.

The No.2 Occurrence, situated between Leech and Hanwood Lakes, consists of a few narrow quartz-pyrite stringers and veins up to 3 inches wide. Pyrite is the main sulphide, but a little arsenopyrite is also present. The zone has been traced with test pits for a distance of 1,200 feet. Assay values up to 0.88 ounce of Au per ton over a width of 27 inches have been reported.

The No.3 Occurrence (the 'white quartz vein'), located at the west end of Hanwood Lake, is a massive quartz vein in greywacke. It has been exposed for a distance of 300 feet by trenches and narrows to 2 feet at both ends. Sparse pyrite is present. Diamond-drilling results ranged from 0.15 ounce of Au per ton over 2 feet to 4.6 ounces of

Au per ton over 4 feet.

The No.4 Occurrence (the 'blue quartz vein') approximately 1 mile south of No. 3, ranges from 2 to 3 feet in width. It has been exposed over a length of 180 feet on surface and to a depth of 61 feet by a shaft. It is a quartz-carbonate vein with very sparse sulphides. No gold values were reported.

HISTORY: Circa 1915: Shaft to 30 feet on 'blue quartz vein'; vein sampled.

Circa 1927: Shaft to 14 feet and 300 feet of stripping on 'white quartz vein' by Clarence Gold Mines Limited.

1935-1937: Stripping, trenching, 12 diamond-drill holes (approximately 4,000 feet), deepening of existing shafts, and sinking of new shafts.

The 'white quartz vein' was stripped for 700 feet and one diamond-drill hole (122 feet) put down. On the 'blue quartz vein', the shaft was deepened to 61 feet and a bulk sample of 3,400 pounds taken for assay. The No.1 Vein was explored with a shallow shaft, two pits, and two diamond-drill holes. All work by Hanwood Lake Mines Limited.

REFERENCES: DEMR Ottawa, Mineral Development Sector Corporation Files: Hanwood Lake Mines Ltd.

ODM 1929, Vol.38, pt.7, p.50, 51 (Clarence Property).

ODM 1939, Vol.48, pt.10, p.20-23 (Hanwood Lake Mines, Limited).

SCADDING TOWNSHIP

(NTS 411/10E)

Red Rock Prospect

MAIN METALS: Au

LOCATION: Approximately 10½ miles northeast of Falconbridge, in NE¼, S½, lot 6, concession IV, Scadding Township. Patented claim S5110. Latitude 46.66°, Longitude 80.62°.

Map reference: ODM 2009, MacLennan and Scadding Townships.

GEOLOGY: Huronian metasediments, trending southeasterly and dipping east, are intruded by a large sill-like body of Nipissing Diabase.

A shaft was sunk close to a contact between argillite of the Gowganda Formation and the diabase. There is considerable carbonate and pyritized material on the dump. Some high grade ore was reportedly taken from the underground workings. No assay results are available.

HISTORY: 1922-1923: Four test pits, one of them 27 feet deep, and stripping by Golden Nugget Exploration and Development Company.

1923-1925: Shaft to 160 feet and 1,140 feet of

lateral development on the 100-foot level by McMillan Development Company Limited.
REFERENCES: ODM 1932, Vol.41, pt.4, p.41, 42.
 ODM 1960, GR2, p.29 (Scadding Township, Concession IV, Lot 6).

Wanapitei Basin Prospect

MAIN METALS: Au

LOCATION: Approximately 10 miles northeast of Falconbridge, in lot 5, concession III, Scadding Township. Latitude 46.65°, Longitude 80.62°.

Map reference: ODM 2009, MacLennan and Scadding Townships (prospect not shown on map).

GEOLOGY: The property is underlain by southeast-striking Huronian metasediments which have been intruded by sill-like bodies of Nipissing Diabase. The occurrence is described as numerous quartz veins, some of which are gold-bearing, occupying shears and fractures in monzonite within Serpent Formation conglomerates. The monzonite strikes southeasterly and may be a sill.

ECONOMIC FEATURES: Drilling has outlined three ore shoots:

Ore Shoot	Length (feet)	Width (feet)	Tonnage	Average Grade (ounce of Au per ton)
1	200	6	20,000	0.45
2	160	37	10,000	0.18
3	120	10	12,000	0.38

The average grade of the 42,000 tons of ore outlined was 0.37 ounce of Au per ton.

HISTORY: 1933-1934: Trenching, test-pitting, and 400 feet of diamond-drilling by Wanapitei Syndicate.
 1944-1945: 20 diamond-drill holes (8,269 feet) by Wanapitei Basin Mines Limited.

1972-1973: Geological and geophysical surveys, and five diamond-drill holes by Glade Explorations Limited.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 15, 411/10, September 1961; Corporation Files: Wanapitei Basin Mines Limited, Sudore Gold Mines Limited.
 GSC 1936, Memoir 192, p.146.

SEMPLER TOWNSHIP

(NTS 41P/14, 42A/3)

Saville Prospect

MAIN METALS: Au

LOCATION: Approximately 26 miles west of Matachewan, 1 mile east of the Redstone River, in northeastern Semple Township. Latitude 48.01°, Longitude 81.22°.

Map reference: ODM 2291, Semple and Hutt Townships (Hollinger occurrences (Redstone River group)).

GEOLOGY: Quartz veins and stringers occur in silicified and carbonatized andesite. The veins and stringers are erratic in outline, distribution, and strike direction; width varies from a few inches to 20 feet. The quartz and adjacent silicified andesite are well mineralized with disseminated pyrite.

Chip and channel samples assayed from 0.02 to 0.16 ounce of Au per ton over an average width of 1.5 feet.

HISTORY: 1958: Trenching and sampling by Jonsmith Mines Limited.

1962: Magnetic and electromagnetic surveys, and six diamond-drill holes (2,841 feet) by Hollinger Consolidated Gold Mines Limited.

1972: Magnetic survey and one diamond-drill hole (340 feet) by Dowa Mining Company Limited.

REFERENCES: ODM 1978, OFR5221, p.82-86 (Hollinger Occurrences (Redstone River Groups)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Semple Township, McLeod (1959).

SHAKESPEARE TOWNSHIP

(NTS 411/5W)

Shakespeare Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 2 miles northeast of Webbwood, in NE¼, N½, lot 5, concession I, Shakespeare Township. Claim S110445. Latitude 46.30°, Longitude 81.86°.

Map reference: ODM 2313, Dunlop and Shakespeare Townships.

GEOLOGY: Northeast-trending folded Huronian metasediments are intruded by dikes and sills of Nipissing Diabase and northwest-trending Keweenaw diabase dikes. The Murray Fault, striking N70°E, passes through the area approximately 1,000 feet north of the mine workings.

In the mine area, schistose Matinenda Formation quartzites with streaks and bands of schistose greywacke contain stringers of dark quartz. These stringers parallel the strike of the quartzites which have been folded into a lens in the shaft area. Thus, the mineralized zone strikes northeast and dips steeply south.

Chalcopyrite, pyrrhotite and arsenopyrite occur in the quartz veining. Native gold has been reported.

The western part of the mineralized zone has been traced for 15 feet and was found to contain 1.12 to 1.85 ounces of Au per ton over an average width of 3.5 feet. Gold distribution in the eastern zone is

more erratic, with values ranging from 0.45 ounce of Au per ton over 0.9 feet to 1.43 ounces of Au per ton over 1.2 feet.

OWNERSHIP: Rodney Gold Mines Limited.

HISTORY: 1903-1907: A 60-foot tunnel was driven into the northwest side of the ridge on which the shaft was to be located; an adit was driven 300 feet into the north side of the ridge. Shaft sunk to 315 feet with levels at 50-foot intervals and approximately 2,000 feet of lateral development. A 10-stamp mill operated intermittently. All work by the Shakespeare Gold Mining Company Limited. 1936: Mine workings dewatered, surveyed, and sampled by Ensign Gold Mines Limited. A 300-pound sample of mill tailings was sent to the Canada Centre for Mineral and Energy Technology, Ottawa for mill tests.

1942-1944: Webbwood Copper Mining Syndicate Limited dewatered the shaft and did some diamond-drilling on the 60-foot level in a search for copper mineralization. A 30-foot adit was driven into the hillside 70 feet east of the shaft.

1944-1945: Mine leased to N. Oreck who hand cobbled about 9 tons of high grade ore.

1950: Greenray Mines Limited dewatered the shaft to the 128-foot level and advanced the 60-foot adit to connect with the shaft at that level. Bulk sampling and eight diamond-drill holes (1,956 feet).

1956-1961: Magnetic survey and nine diamond-drill holes (1,486 feet). Second and third mine levels reconditioned and geologically mapped.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1905	1,723	4,550	0.38
1906	512	—	—
1907	339	4,040	0.08
1941	1	—	—
1945	237	9 (hand-	26.30
1948	147	cobbed)	
Total	2,959		

Figures on the amount of ore milled were not available for some of the years during which gold was produced.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 1, 411/5, May, 1961.

GSC 1936, Memoir 192, p.96.

ODM 1906, Vol.15, pt.1, p.66, 67.

ODM 1976, GR139, p.39, 40.

SILK TOWNSHIP

Orofino Mines Prospect

MAIN METALS: Au

LOCATION: Approximately 16 miles south of Foleyet, on the boundary between Horwood and Silk Townships, in southeastern Silk Township. Shaft located in patented claim S38945. Latitude 47.96°, Longitude 82.41°.

Map reference: ODM 2329, Horwood Lake.

GEOLOGY: The area is underlain by north- to northeast-trending Early Precambrian mafic metavolcanics. Intrusive into the lavas are stocks of metagabbro, a granite pluton of Kenoran age to the west, and a late olivine diabase dike which trends northeasterly through the area.

The mineralized zone occurs in a small stock of metagabbro which is elongated in a northerly direction, parallel to the strike of the lavas. Gold mineralization is confined to an east-striking system of quartz veins which appears to follow two major fracture sets having north or south dips of between 30° and 45°. Lamprophyre and feldspar porphyry dikes postdate the gold mineralization.

The main showing contains approximately ten quartz veins, the most important of which are the No.1 South Vein and the No.1 North Vein. These two veins contain a large proportion of the indicated potential ore. Gold mineralization is associated with two types of veins: (i) a vein system of irregular quartz stringers in the metagabbro wall rock, and (ii) well-defined quartz-calcite veins. Representative of the two types are the No.1 North and No.1 South Veins respectively.

The No.1 North Vein is a stockwork of horizontal quartz stringers, varying in width from a fraction of an inch to 6 inches. These stringers form a zone which strikes easterly, dips 40°N, and is 12.7 feet wide. Sulphide mineralization consists of disseminations and aggregates of pyrite, mainly in the gabbro wall rock. Gold values are confined to the pyrite.

The No.1 South Vein is a 6-foot wide quartz-calcite vein striking N70°E and dipping 40°N. It is characterized by a narrow, red to buff, feldspathic zone on the footwall and/or the hanging wall. In certain areas the gabbro wall rock is fractured and injected with "ribbons" of quartz; angular inclusions of chloritized wall rock are also present. Sulphide mineralization and higher gold values occur in these areas.

Pyrite is the most abundant sulphide mineral in both vein types and is present as disseminations and massive aggregates. Inconspicuous amounts of pyrrhotite, chalcopyrite, galena, sphalerite and

arsenopyrite are also found. High gold values are associated with the presence of galena in the No.1 South Vein.

ECONOMIC FEATURES: Estimates of indicated potential ore:

Vein	Tonnage	Average Grade (ounces of Au per ton)
No.1 North	60,000	0.19
No.1 South	45,000	0.38
Total	105,000	0.27

HISTORY: 1933: Property staked for G.A. Thorne and some surface development carried out.

1935: Trenching, channel sampling, and 25 diamond-drill holes by Hollinger Consolidated Gold Mines Limited.

1945-1946: Continued stripping and trenching followed by extensive diamond-drilling by Orofino Mines Limited. Mineralization established to a depth of at least 200 feet.

1947-1949: Vertical 3-compartment shaft sunk to 306 feet, with 210 feet of lateral development on levels at 150 and 275 feet. Surface diamond-drilling totalled 15,000 feet in 57 holes. Fire destroyed most of the surface buildings in 1948.

1950: Lateral work brought the total amount of underground development to 2,058 feet of drifting, 1,134 feet of crosscutting and 21 feet of raising. Twenty-two underground diamond-drill holes (1,850 feet).

1951: Underground development was increased to 3,381 feet of drifting, 1,299 feet of crosscutting, and 78 feet of raising. Surface diamond-drilling amounted to 5,008 feet in 20 holes, and underground diamond-drilling, 6,159 feet in 54 holes. Work by Orofino Mines Limited ceased in October, 1951.

1962-1963: Several diamond-drill holes, 800 to 1,000 feet in length, by Orofino Mines Limited. Total amount of diamond-drilling by Orofino Mines Limited on the prospect was 21,311 feet.

REFERENCES: Canadian Mines Handbook 1971-1972, p.290.

Northern Miner, October 3, 1973, p.1.

ODM 1935, Vol.44, pt.7, p.34, 35 (G.A. Thorne).

ODM 1937, Vol.46, pt.2, p.20 (G.A. Thorne).

ODM 1973, OFR5097, p. 85-91.

Regional Geologist's Files, Ontario Ministry of Natural Resources, Timmins: Horwood Township, File T-152.

SOTHMAN TOWNSHIP (NTS 41P/14)

Buffalo Prospect

MAIN METALS: Au, Ag, Pb, Zn

LOCATION: Approximately 24 miles west of Matachewan, immediately west and southwest of Budd Lake, in northwestern Sothman Township. Claims S55344, S55336, and S55337. Latitude 47.92°, Longitude 81.32°.

Map reference: ODM 1953-3, Township of Sothman.

GEOLOGY: The border phase of a large batholith is exposed northwest of Edlestone Lake. The rock types consist of granite, diorite, and hybrid granite gneiss. Mafic to intermediate metavolcanics occur southeast of the batholith. These have been altered to talc-chlorite schists, and in some cases completely converted to a green carbonate rock impregnated with quartz and carbonate stringers and containing disseminated pyrite. These rocks are overlain by gently dipping Cobalt Group metasediments.

Trenching west of Budd Lake has revealed several sheared and carbonatized zones striking N80°W and dipping south in a volcanic fragmental. These zones contain galena and sphalerite, and have yielded low gold and silver values. Gold values of up to 0.18 ounce per ton have been obtained from several zones of quartz stringers elsewhere on the property. An 8.5-foot section of diamond-drill core assayed 0.20 ounce of Au per ton. Other assays were: 2.92 percent Pb, 1.68 percent Zn, and 0.08 ounce of Ag per ton from a channel sample; 0.22 percent Pb, 1.08 percent Zn and 0.39 ounce of Ag per ton from a 9.8-foot section of diamond-drill core.

HISTORY: Circa 1914-1918: Gold reportedly found by an Indian trapper.

1944: Gold found by R. Edleston.

1944-1947: Stripping, trenching, and 12 diamond-drill holes (3,050 feet) by Buffalo Ankerite Mines Limited.

1951: Geological survey, stripping, trenching, and seven diamond-drill holes (2,269 feet) by Preston East Dome Mines Limited.

1965: Magnetic and electromagnetic surveys by The Consolidated Mining and Smelting Company of Canada Limited.

1973: Geological, magnetic, and electromagnetic surveys, and two diamond-drill holes (964 feet) by Dowa Mining Company Limited.

REFERENCES: ODM 1953, Vol.62, pt.6, p.28-30 (Preston East Dome Mines, Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Sothman Township, Clarke (1947) and Firth (1951).

Sherwood Prospect

MAIN METALS: Au

LOCATION: Approximately 23 miles west of Matachewan, southeast of Smylie Lake, in northern Sothman Township. Main showing in claim S40388. Latitude 47.92°, Longitude 81.29°.

Map reference: ODM 1953-3, Township of Sothman.

GEOLOGY: In the vicinity of the main showing, sheared and folded mafic and felsic metavolcanics are intruded by dikes of diorite porphyry and quartz feldspar porphyry. Mineralized shear zones are found close to and along the diorite-porphry-andesite contact and along the andesite-acidic volcanic contact. The property is largely covered by overburden.

The main showing is a shear zone, 1 foot to 4 feet wide, which has been exposed for a distance of 250 feet. The zone parallels the axial plane of an anticline and consists of rusty pyritized sericitic schist from which gold has been panned. Several channel samples reportedly assayed greater than 0.05 ounce of Au per ton. The best assay from drill core was 0.22 ounce of Au per ton.

HISTORY: 1947-1948: Geological and magnetic surveys, trenching, and stripping by Sherwood Gold Mines Limited.

1954: 16 diamond-drill holes (3,516 feet) by Upper Canada Mines Limited.

1970-1971: Geological, magnetic, electromagnetic, and induced polarization surveys, and three diamond-drill holes (1,454 feet) on the southern part of the property by Canex Aerial Exploration Limited.

REFERENCES: ODM 1953, Vol.62, pt.6, p.30-32.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Sothman Township, Savage (1955).

STOVER TOWNSHIP

(NTS 42B/5W)

Stover Gold Prospect

MAIN METALS: Au

LOCATION: Approximately 4 miles northeast of Missanabie, south of Lancel Lake, in northwestern Stover Township. Patented claims S36302, S36307, S36383, S36384. Latitude 48.37°, Longitude 83.99°.

Map reference: ODM 2380, Stover and Brackin Townships (Fitzgerald, D.A.).

GEOLOGY: The area is underlain by southeast-trending Early Precambrian mafic and felsic metavolcanics and minor metasediments, including narrow bands of iron formation. These rocks are intruded by an

Algonian granitic batholith and by north-northwest-trending diabase dikes.

The principal showings are shear zones in massive fine-grained andesitic lava. These zones have an average strike of S67°E and dips of 75-80°S. The shears pinch and swell along strike, ranging up to 3 feet in width. They contain lenses and stringers of quartz, and streaks of sheared altered andesite. The quartz veins contain fine-grained pyrite, and in some places visible gold has been reported.

The best assays were obtained from seven samples taken along an 80-foot strike length; the values ranged from 0.03 ounce to 2.67 ounces of Au per ton over widths of up to 3.5 feet. The weighted average grade of this section was 0.66 ounce of Au per ton over 2.8 feet.

Several thousand dollars worth of gold was reportedly panned from the showing by the discoverer.

HISTORY: 1942: Stripping and trenching by the Pileggi Prospecting Syndicate.

1948-1949: Stripping, trenching, bulk sampling, and diamond-drilling by Stover Gold Mines Limited.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 3, 42B/5, Stover Gold, October, 1965.

ODM 1942, Vol.51, pt.8, p.35-39 (Pileggi Prospecting Syndicate).

ODM 1978, Report 172, p.35, 36 (Dennis A. Fitzgerald).

SWAYZE TOWNSHIP

(NTS 41O/15E)

Buffalo-Canadian Prospect

MAIN METALS: Au

LOCATION: Approximately 32 miles east of Chapleau, north of the east end of Cree Lake, in southwestern Swayze Township. Latitude 47.79°, Longitude 82.69°.

Map reference: ODM 2070, Swayze and Dore Townships (Flint Rock Mines Ltd.).

GEOLOGY: The township is underlain by an east-trending belt of folded Early Precambrian mafic and felsic metavolcanics, iron formation, and minor metasediments. These rocks are intruded by small stocks of Algonian granite and northwest- to northeast-striking Keeweenawan diabase dikes.

Much of the property is underlain by highly schistose and fractured mafic to intermediate metavolcanics containing considerable quartz and calcite veining. The main occurrence consists of a stockwork of quartz-carbonate veins ranging from 6 inches to 2 feet in width, and containing minor pyrite, chalcopyrite, and pyrrhotite mineralization.

Shallow diamond-drill hole intersections on a 300

foot vein structure assayed from 0.40 ounce to 20.7 ounces of Au per ton and from 0.32 ounce to 4.54 ounces of Ag per ton over widths ranging from 1.0 foot to 1.5 feet.

HISTORY: 1933-1934: Surface work and some diamond-drilling by Buffalo Canadian Gold Mines Limited. No.2 Vein stripped for 500 feet.

1961-1963: Resampling of old trenches and 34 diamond-drill holes (each 200 to 400 feet deep) by Flint Rock Mines Limited.

REFERENCES: Assessment Files Research Office, Ontario Geological Survey, Toronto: Swayze Township, Diamond-Drilling Reports 10, 11, 13 and 14.

ODM 1934, Vol.43, pt.3, p.26.

ODM 1965, GR33, p.22 (Flint Rock Mines Limited).

Kenty Prospect

MAIN METALS: Au

LOCATION: Approximately 37 miles east of Chapleau, 1 mile northeast of the east end of Brett Lake, in northeastern Swayze Township. Patented claims S20702-S20713. No.1 Shaft in claim S20706; No. 2 Shaft in claim S20713. Latitude 47.83°, Longitude 82.61°.

Map reference: ODM 2070, Swayze and Dore Townships (W.G. Atkins).

GEOLOGY: The area is underlain by an east-striking belt of folded Early Precambrian mafic and felsic metavolcanics, with small interbedded lenticular bodies of clastic metasediments. The principal occurrences lie within massive andesite and schistose felsic metavolcanics close to a large body of feldspar porphyry. The porphyry is considered by Donovan (ODM 1965, GR33, p.6) to be a phase of the felsic volcanic suite.

The deposit consists of a series of parallel fracture-filling quartz-carbonate veins in an altered host rock which can be mafic or felsic lava, or feldspar porphyry. The average strike of the veins is N60°E, and dips range from 40-80°SE. The veins average 4 to 5 feet in width; the maximum width is 10 feet. Each consists of a main quartz leader with subsidiary parallel veinlets on either side.

Mineralization consists of pyrite and minor galena, chalcopyrite, sphalerite, specularite, and graphite. Coarse visible gold occurs in fractures in the vein quartz. Development work indicated that the best values occur where the host rock is 'greenstone'. Two grab samples of mineralized vein material from a muck pile near Shaft No.1 assayed 0.16 and 0.19 ounce of Au per ton (Geoscience Laboratories, Ontario Geological Survey, Toronto).

ECONOMIC FEATURES: Channel sampling on surface

indicated that an ore shoot on the No.1 Vein, measuring 6.3 feet in width and 50 feet in length, averaged 0.39 ounce of Au per ton. A second ore-shoot, located to the east of the first and measuring 3.7 feet in width by 72 feet in length, averaged 0.67 ounce of Au per ton.

Possible reserves of undetermined grade were reported (Financial Post Survey of Mines 1948, p.141):

No. 1 Shaft Area	69,000 tons
No. 2 Shaft Area	290,000 tons
Total	359,000 tons

HISTORY: 1931-1934: Surface and underground work by Kenty Gold Mines Limited. Underground workings consisted of two vertical two-compartment shafts with the following lateral development:

	Drifting	Crosscutting
No. 1 Shaft (510 feet deep):		
250-foot	434	74
375-foot	840	518
500-foot	160	202
No. 2 Shaft (534 feet deep):		
290-foot	1,991	1,277
525-foot	554	705

In addition, 7,410 feet of diamond-drilling was done, 6,298 feet of this from underground.

1936: 5-ton test mill installed and operated for three months by Brett Tretheway Mines Limited.

1947-1949: No. 1 shaft dewatered to the second level and a small amount of raising done. 100-ton mill installed. 1,250 tons of ore hoisted. 1,634 feet of diamond-drilling. All work by Erndale Mines Limited.

1950: Small amount of work by Elanca Mines Limited.

REFERENCES: DEMR Ottawa, Mineral Development Sector Files: Au 2, 410/15, Kenty, February, 1964; MR-Au-301.00, Swayze Area.

Financial Post Survey of Mines 1948, p.141 (Erndale Mines Limited).

ODM 1934, Vol.43, pt.3, p.21-25.

ODM 1965, GR33, p.20-22 (W.G. Atkins).

McNeely-McCulloch Prospect

MAIN METALS: Au

LOCATION: Approximately 37 miles east of Chapleau, ½ mile north of the east end of Brett Lake, in northeastern Swayze Township. Latitude 47.82°, Longitude 82.62°.

Map reference: ODM 43b, Swayze Gold Area.

GEOLOGY: The area is underlain by an east-striking fold belt consisting of Early Precambrian mafic to felsic metavolcanics and small amounts of interbedded metasediments. The showings consist main-

ly of narrow quartz-carbonate veins and stringers. These occupy fracture zones along the north edge of a feldspar porphyry body which is considered to be a phase of the felsic volcanic suite. Some of these showings reportedly gave moderately low gold values over narrow widths.

HISTORY: Circa 1931: Considerable trenching by McNeely and McCulloch.

1933: Property optioned and 5,000 feet of diamond-drilling done by The Consolidated Mining and Smelting Company of Canada Limited.

REFERENCES: ODM 1934, Vol.43, pt.3, p.25, 26.

SUDBURY DISTRICT OCCURRENCES

ASQUITH TOWNSHIP

(NTS 41P/11)

Name and Location	References	Metals	Remarks
Buckingham Occurrence: Near the 4-mile post on the Asquith-Fawcett township boundary, in north-eastern Asquith Tp. Claims TRS2407, TRS2461, and TRS3664. Lat. 47.56°, Long. 81.20°.	ODM 1920, Vol.29, pt.3, p.48,49. Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1936). ODM Map 29a, West Shiningtree Gold Area.	Au	Keewatin-type pillow lavas cut by north-trending diabase dikes. East-trending 3- to 4-foot wide quartz vein, dipping 70°S and containing visible gold, was traced for 800 feet. Surface samples from pits assayed 0.13 to 0.44 oz. Au/ton. 1919: Pits. Shaft, inclined 60°S, sunk to 85 feet. Circa 1928-1929: Inclined shaft continued to 165-foot level and 400 feet of crosscutting and drifting by Buckingham Mines Ltd.
Clarke Occurrence: Immediately north of MacDonald Lake, in north-east-central Asquith Tp. Claim TRS2277. Lat. 47.57°, Long. 81.23°.	ODM 1920, Vol.29, pt.3, p.50. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 29a, West Shiningtree Gold Area.	Au	Iron-magnesium-calcium carbonate with pyrite and quartz stockworks, some of which contain free gold.
Gibson Occurrence: Southeast shore of West Shiningtree Lake, in north-central Asquith Tp. Claim TRS3560. Lat. 47.56°, Long. 81.25°.	ODM 1920, Vol.29, pt.3, p.50. Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1936). ODM Map 29a, West Shiningtree Gold Area.	Au	Keewatin 'greenstones' and inter-bedded greywackes are cut by ap-lite dikes and an east-trending shear zone containing minor amounts of quartz and pyrite. Assays ranged from trace to 0.09 oz. Au/ton.
Holding Occurrence: South of MacDonald Lake, in northeast-central Asquith Tp. Claims TRS3118 and TRS3508. Lat. 47.54°, Long. 81.25°.	ODM 1920, Vol.29, pt.3, p.49,50. Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1937). ODM Map 29a, West Shiningtree Gold Area.	Au	Quartz streaks occur in a 3- to 5-foot wide fracture zone in diorite. Channel samples assayed from trace to 0.07 oz. Au/ton. 1915-1925: 3 shafts, 40, 90, and 100 feet deep, and limited drifting by Holding Consolidated Gold Mines Ltd.
Kubiak Occurrence: Near 3-mile post on the Asquith-Fawcett township boundary, in eastern Asquith Tp. Claims TRS4091, TRS4295, TRS4296, and TRS4327. Lat. 47.54°, Long. 81.20°.	ODM 1920, Vol.29, pt.3, p.48. Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1936). ODM Map 29a, West Shiningtree Gold Area.	Au	Keewatin 'greenstones' and inter-bedded metasediments are cut by north-trending diabase dikes. The 'greenstones' are drag-folded and cut by numerous shears and quartz veins. Grab samples assayed from trace to 0.15 oz. Au/ton.
McGuire Occurrence: South of western bay of West Shiningtree Lake, in Asquith Tp. Claim TRS3738. Lat. 47.55°, Long. 81.25°.	ODM 1920, Vol.29, pt.3, p.52. ODM Map 29a, West Shiningtree Gold Area.	Au	Several veins, 8- to 9-inches wide, occur in pyrite-bearing schist. "Some rich samples of gold in quartz are said to have been obtained" (ODM 1920, Vol.29, pt.3, p.52).
Noranda Occurrence: Property straddles the Asquith-Churchill township boundary between the 2- and 3-mile posts, in northern Asquith Tp. Claims TRS2196, TRS2365, and TRS2366 in northern Asquith Tp., and WD1173, WD1174, and L342854 in southern Churchill Tp. Lat. 47.58°, Long.	Marginal Notes, ODM Map P.960, Churchill Township (Gosselin). ODM 1920, Vol.29, pt.3, p.51,52 (Gosselin). Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1937) and Amos (1959).	Au Ag	Keewatin-type andesite and pillow lavas, and carbonate rocks are intruded by red granite, syenite, and dikes of feldspar porphyry and lamprophyre. The Main Vein, which straddles the township boundary, strikes N15-55°W, dips 60°W, is 6- to 6.5-feet wide, and has been traced for approximately 1½ miles.

Name and Location	References	Metals	Remarks
81.25°.	ODM Map 29a, West Shining-tree Gold Area (Gosselin). ODM Map P.960, Churchill Township (Gosselin).		It cuts altered pillow lavas and carbonate, consists of white or rose quartz, and is brecciated. A channel sample assayed 0.21 oz. Au/ton over 7.8 feet. The best grab sample assayed 4.0 oz. Au/ton and 20.1 oz. Ag/ton. The Discovery Vein, which is entirely in Churchill Tp., is 2300 feet long, 4 to 6 feet wide, and strikes N73°W into the Main Vein. No assay results are available. 1911: Gold discovered by Fred Gosselin. 1912: Pitting, trenching, and 50-foot prospect shaft by W. Pakowsky. 1973: Magnetic survey by Noranda Mines Ltd.
Saville, A. Occurrence: Immediately north of Moore and MacDonald Lakes, in north-central Asquith Tp. Claims TRS2275, TRS2276, and TRS2279. Lat. 47.56°, Long. 81.24°.	OBM 1913, Vol.22, pt.1, p.237 (Moore and MacDonald Claims). ODM 1920, Vol.20, pt.3, p.50 (Moore-MacDonald). Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 29a, West Shining-tree Gold Area (Moore-MacDonald).	Au Ag	Several shear zones, totalling 60 feet in width, contain quartz stockworks and are mineralized with pyrite. "Considerable gold was observed . . ." (ODM 1913, Vol.22, pt.1, p.237). Circa 1913: Pitting and trenching. 1970-1974: Trenching by A. Saville.
Saville, T. Occurrence: Approximately 1 mile southwest of Shiningtree and west of Jesse James Lake, in central Asquith Tp. Lat. 47.55°, Long. 81.27°.	Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Ogden (1971). ODM Map 43c, Makwa-Churchill Area (E.B. James).	Au Cu Pb	Keewatin-type metavolcanics contain a 5- to 12-inch wide quartz vein which trends west and is mineralized with chalcopyrite, pyrite, and galena. It has been reported that "high grade gold was removed" (Resident Geologist's Files, OMNR, Kirkland Lake).
Shining Tree Occurrence: Southeast shore of West Shiningtree Lake, in north-central Asquith Tp. Claim TRS3638. Lat. 47.55°, Long. 81.25°.	ODM 1920, Vol.29, pt.3, p.51 (Moore). Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1936). ODM Map 29a, West Shining-tree Gold Area (Moore).	Au	Keewatin 'greenstones' contain silicified shear zones mineralized with pyrite. Assays range from trace to 0.03 oz. Au/ton.
Steep Occurrence: On an island in West Shiningtree Lake, in north-western Asquith Tp. Claim TRS2434. Lat. 47.57°, Long. 81.28°.	ODM 1920, Vol.29, pt.3, p.52. Resident Geologist's Files, OMNR, Kirkland Lake: Asquith Tp., Burke (1937) and McCannell (1973). ODM Map 29a, West Shining-tree Gold Area.	Au Cu Pb Zn	Shear zone in 'greenstone' is 5 feet wide and 500 to 600 feet long. The zone contains a 1- to 2-foot wide blue lenticular quartz vein which carries sphalerite, galena, chalcopyrite, and very fine free gold. Samples from shaft assayed from trace to 0.74 oz. Au/ton. Assays from drill core ranged from trace to 0.14 oz. Au/ton. 1914: 100-foot shaft, inclined 85°S, by Steep. 1973-1974: Electromagnetic survey and 5 diamond-drill holes (894 feet) by Vintage Mines Ltd.
Sullivan Occurrence: On McRae Island, in northwestern Asquith Tp. Claim MR34833. Lat. 47.55°, Long. 81.27°.	ODM 1920, Vol.29, pt.3, p.51 (McRae). ODM Map 29a, West Shiningtree Gold Area (McRae).	Au	Keewatin pillow lavas cut by quartz veins and lenses containing visible gold.

Name and Location	References	Metals	Remarks
Thompson-Peterson Occurrence: North of Moore and MacDonald Lakes, in north-central Asquith Tp. Claims TRS2306 and TRS2311. Lat. 47.57°, Long. 81.24°.	ODM 1920, Vol.29, pt.3, p.50. ODM Map 29a, West Shining-tree Gold Area.	Au	A zone of rusty iron-magnesium-calcium carbonate rock near a granite porphyry body is cut by a network of quartz stringers containing visible gold.

BEEMER TOWNSHIP

(NTS 42A/3W)

Sylvanite Occurrence: Immediately northeast of Telluride Lake, in eastern Beemer Tp. Claims TRS1760 and TRS1887. Lat. 48.07°, Long. 81.35°.	ODM 1978, OFR5221, p.72-74. ODM Map 2289, Beemer and Moher Townships.	Au	East-striking auriferous quartz veins cut sheared mafic tuffs and flows near a contact with gabbroic sills. Grab samples of vein material yielded gold values of 0.44 and 0.38 oz./ton. A pit in claim TRS1887 yielded values of 0.16 and 1.7 oz. Au/ton. 1935-1936: Trenching and sampling by Sylvanite Mines Ltd. through their subsidiary Erie Canadian Mines Ltd.
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BLEZARD TOWNSHIP

(NTS 41I/10W, 41I/11E)

Papineau Occurrence: Northeast shore of Whitson Lake, in NW¼, lot 3, con. III, Blezard Tp. Lat. 46.60°, Long. 80.97°.	ODM 1929, Vol.38, pt.3, p.49. ODM Map 2170, Sudbury Mining Area.	Au Ag Cu Pb	Several short veins and lenses of quartz occur in the Middle Precambrian Onaping Breccia, near its contact with micropegmatite (the upper member of the Sudbury Ir-ruptive). The veins appear to be related to offshoots of the micropegmatite which extend for short distances into the metavolcanics. An 8-foot wide quartz lens, on which a 40-foot shaft was sunk prior to 1929, is mineralized with chalcopyrite, arsenopyrite and galena, with the heaviest concentration near the walls. Two grab samples of vein material from the surface outcrop assayed 0.08 and 0.22 oz. Au/ton with nil and 0.78 oz. Ag/ton. A number of other veins in the vicinity have been trenched but show very little sulphide mineralization.
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BURROWS TOWNSHIP

(NTS 41P/14W)

Amax Occurrence: Southeastern Burrows Tp. Lat. 47.76°, Long. 81.27°.	Resident Geologist's Files, OMNR, Kirkland Lake: Burrows Tp., Longley (1957). ODM Map P.151, Gogama Sheet (occurrence not shown on map).	Au	Mafic to felsic metavolcanics, tuffs, and carbonate rocks are cut by diabase dikes. Assays from drill core containing quartz stringers with pyrite mineralization ranged from trace to 0.02 oz. Au/ton. 1957: Airborne electromagnetic, ground geological, electromagnetic and magnetic surveys, and 3 diamond-drill holes (2,138 feet) by Paymaster Consolidated Mines Ltd.
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Name and Location	References	Metals	Remarks
CABOT TOWNSHIP (NTS 41P/11W)			
Saville Occurrence: On the large peninsula in Claw Lake, in southern Cabot Tp. Showings in claims TRS6254 and TRS6255. Lat. 47.69°, Long. 81.38°.	ODM 1934, Vol.43, pt.3, p.68. ODM Map P.1104, Cabot Township (Canadian Johns-Manville Prospect).	Au Mo	1970-1972: Geological, geochemical, electromagnetic, and magnetic surveys, and diamond-drilling by Amax Potash Ltd. Showing No.1 is an intricate stock-work of quartz stringers cutting across a granitized and sheared Keewatin tuff. The tuff is impregnated with quartz, pyrite and other sulphides, and yields low gold values. No.2 Showing consists of two parallel quartz veins, 10 and 16 inches wide. Fair gold values were reported. No.3 Showing consists of pitting on two parallel veins which yielded molybdenum values but only a trace of gold.
CAPREOL TOWNSHIP (NTS 41I/10W)			
Onwatin (Placer) Occurrence: North shore of Onwatin Lake, in northwestern Capreol Tp. Lat. 46.70°, Long. 80.92°.	ODM 1949, PR.1949-2, p.7,8. ODM Map 2170, Sudbury Mining Area (occurrence not shown on map).	Au	Pleistocene sand, gravel, and boulder deposits of both glacio-fluvial and alluvial origin cover Precambrian lavas, and sedimentary and intrusive rocks. Some fine placer gold has been found on the north shore of Onwatin Lake in channel gravels which are covered by lake mud. A few test pits were sunk by the Great Northern Mining Co. on the north shore of Onwatin Lake in 1898, but the grade was not sufficiently high and operations ceased. Interest was not revived until 1939 when the Onwatin Placer Mining Syndicate Ltd. was formed to test the deposits. A considerable amount of test pitting and some churn-drilling was done, especially in the section of the valley between Capreol and Milnet, before operations were suspended in 1942. Samples taken from under Onwatin Lake during the winters of 1938-1939 and 1939-1940, down to depths of 65 feet, reportedly gave values ranging from 0.004 to 0.03 oz. Au/cubic yard. Operations resumed in 1945 and 6 churn-drill holes put down in 1948 substantiated the previous results.
CHAMPAGNE TOWNSHIP (NTS 41P/5E, 41P/12E)			
Dunn, J.C. Occurrence: Immediately east of Makwa-Champagne property, in north-central Cham-	ODM 1934, Vol.43, pt.3, p.65. ODM Map 43c, Makwa-Churchill Area.	Au	A large irregular lens of quartz in the northwest corner of the claim is exposed for a distance of 45 feet

Name and Location	References	Metals	Remarks
pagne Tp. Showing in claim S24580. Lat. 47.56°, Long. 81.66°.			and has a width of 10 feet. The lens, which strikes N61°E and has a vertical dip, occurs at the contact between a large inclusion of Keewatin schist on the north and granite or granodiorite on the south. The quartz is sparsely mineralized, but is said to yield fine gold when panned.
North Bay Occurrence: Immediately south of Makwa-Churchill property, ½ mile east of the railroad bridge at Makwa, in west-central Champagne Tp. Lat. 47.79°, Long. 81.70°.	GSC 1922, Summary Report, Pt. D, p.11,12. ODM 1934, Vol.43, pt.3, p.63,64. ODM Map 43c, Makwa-Champagne Area.	Au Cu	A sparsely mineralized quartz vein which strikes N80°E, dips steeply south, and is 1- to 2-feet wide, has been exposed for 300 feet in a host rock of granodiorite. Test pitting along strike east of the vein shows a heavy gossan in a strongly fractured zone 6- to 10-feet wide. The fracture zone is strongly mineralized with pyrrhotite, chalcopyrite and pyrite. The gossan is reported to have yielded high gold values, whereas the fresh quartz vein had a very low gold content.

CHESTER TOWNSHIP

(NTS 41P/12W)

Beaver-Bethnal Occurrence: West of Mesomikenda Lake and ¼ mile south of the Chester-Neville township boundary in northern Chester Tp. Lat. 47.61°, Long. 81.92°.	ODM 1932, Vol.41, pt.3, p.27. ODM 1934, Vol.43, pt.3, p.74. ODM Map 41d, Three Duck Lakes Area.	Au	Showing consists of a strongly schisted zone which trends N65°W for several hundred feet in a highly carbonatized and sericitized greywacke. Grab samples from test pits yielded values of up to 0.40 oz. Au/ton.
Brennan, A. Occurrence: On west side of Mesomikenda Lake, immediately south of Beaver-Bethnal Occurrence, in north-central Chester Tp. Lat. 47.60°, Long. 81.94°.	ODM 1932, Vol.41, pt.3, p.27. ODM Map 41d, Three Duck Lakes Area.	Au Ag	A sulphide lens, 4 feet wide and exposed for a distance of 60 feet, occurs in sericite schist and carries values of 0.36 oz. Au/ton and 1.04 oz. Ag/ton.
Chester Occurrence: Between Chester and Clam Lakes, in western Chester Tp. Main showing in claim S21576. Lat. 47.54°, Long. 81.93°.	Canadian Mines Handbook 1935, p.60. ODM 1934, Vol.43, pt.3, p.74,75. ODM Map 41d, Three Duck Lakes Area (occurrence not shown on map).	Au	Quartz veinlets impregnate a well-fractured epidotized zone in porphyritic granite. The zone is 5 feet wide, strikes N73°E, and dips 30°S. Massive pyrite is common and native gold is observed in a few places. A grab sample yielded 0.10 oz. Au/ton but higher values have reportedly been obtained. Four mineralized veins have been found. 1932-1933: Stripping, trenching, test pits, and a shaft to a depth of 35 feet by Chester Gold Mines Ltd.
Corbett-McCambly Occurrence: Northwestern Chester Tp. Claims S24803 and S24936. Lat. 47.58°, Long. 81.95°.	ODM 1934, Vol.43, pt.3, p.79. ODM Map 41d, Three Duck Lakes Area (occurrence not shown on map).	Au	An 8-foot quartz vein, striking east and dipping south, is located at the contact between arkose and a feldspar porphyry dike in claim S24803. A channel sample over an 8-foot width yielded 0.09 oz. Au/ton. A 6-foot quartz vein, striking east and dipping steeply south, is located in sheared arkose in claim S24936. A

Name and Location	References	Metals	Remarks
			channel sample over a 7-foot width assayed 0.05 oz. Au/ton. 1933: Surface prospecting, pitting, and trenching.
Cote Occurrence: Between Clam and Cote Lakes, in west-central Chester Tp. Lat. 47.55°, Long. 81.96°.	ODM 1932, Vol.41, pt.3, p.33. ODM 1934, Vol.43, pt.3, p.79 (M.S. Beal). ODM Map 41d, Three Duck Lakes Area.	Au Cu	Two gold-bearing quartz veins occupy well-defined fractures in granodiorite. The north vein is a small quartz lens which has been traced for 25 feet and is 6- to 12-inches in width. It is heavily mineralized with pyrite, chalcopyrite and contains native gold. The south vein is 2 inches wide and contains pyrite, chalcopyrite, native gold, and tellurides. A chip sample assayed 6.12 oz. Au/ton. Circa 1931-1932: Stripping and trenching. 1965: Geological mapping.
Cote Lake Occurrence: West side of Cote Lake, in west-central Chester Tp. Patented claims S19977 and S19998. Lat. 47.56°, Long. 81.93°.	ODM 1932, Vol.41, pt.3, p.29 (Three Ducks Syndicate). ODM Map 41d, Three Duck Lakes Area (Three Ducks Syndicate).	Au Ag	A quartz vein occurs along the contact between pink granite and a 2-foot wide lamprophyre dike. The vein averages 1 foot in width and has been traced for approximately 125 feet. Considerable amounts of coarse gold occur in both the vein and wallrocks. Chip sample assayed 1.17 oz. Au/ton and 0.53 oz. Ag/ton.
Cryderman Occurrence: Approximately ¼ mile east of south end of Three Duck Lake, in south-central Chester Tp. Claim S20575. Lat. 47.52°, Long. 81.89°.	ODM 1932, Vol.41, pt.3, p.30 (James R. Cryderman). ODM Map 41d, Three Duck Lakes Area (James Cryderman).	Au Ag Cu Pb	A 2-foot wide fissure-type quartz vein within the quartz porphyry phase of a Kenoran granitic batholith complex has been traced for 325 feet. It strikes N73°E and dips steeply north. The quartz is dull and granular with specks of native gold and notable amounts of pyrite, chalcopyrite, sphalerite, and galena. Sulphides extend into the wall rock for at least 4 feet on either side of vein. Chip sample assayed 1.08 oz. Au/ton and 0.95 oz. Ag/ton. Sulphide mineralization is heavier where a lamprophyre dike forms the hanging wall. 1931-1932: Trenching and stripping.
Eccles-Holmes Occurrence: East of Mesomikenda Lake, in northeastern Chester Tp. Claims S21529 and S21779. Lat. 47.56°, Long. 81.88°.	ODM 1934, Vol.43, pt.3, p.75,76. ODM Map 41d, Three Duck Lakes Area (occurrence not shown on map).	Au Cu Mo	The area is underlain by a Kenoran granitic batholith complex, which on the property has the composition of granodiorite with phases of diorite. There are two main showings, the No.1 and No.4. No.1 showing, in claim S21529, is a quartz vein which strikes north, has an average width of 1 foot, and has been traced for 100 feet. The quartz is mineralized with pyrite, chalcopyrite, and minute amounts of molybdenite. Wall rock is porphyritic granodiorite which has been silicified and mineralized with pyrite over several inches. Channel sample from main

Name and Location	References	Metals	Remarks
			pit reportedly assayed 0.50 oz. Au/ton over a 3.3 foot width. No.4 Showing, in claim S21779, is a shear zone which ranges from 3 to 5 feet in width and strikes northwest in a dioritic phase of the granodiorite. Within the shear there are narrow quartz stringers and veins. Mineralization consists of pyrite, chalcopyrite, a little visible gold, and minute amounts of bismuthinite and tetradymite. A channel sample over 2.3 feet assayed 1.39 oz. Au/ton Circa 1932-1933: Stripping, trenching, and pitting by J.F. Eccles-Holmes.
Ironstone Occurrence: West of Mesomikenda Lake, in east-central Chester Tp. Claim S21616. Lat. 47.55°, Long. 81.88°.	ODM 1934, Vol.43, pt.3, p.79. ODM Map 41d, Three Duck Lakes Area (occurrence not shown on map).	Au	The rocks underlying the property are principally granodiorite and porphyritic granite. A channel sample taken from a quartz vein in the northwest corner of the claim yielded 0.19 oz. Au/ton over 4.5 feet. 1933: Stripping and trenching.
Sheppard Occurrence: On east and west shores of the central part of Three Duck Lake, in central Chester Township. Patented claims S20655, S20657, S20661 and S20662. Lat. 47.55°, Long. 81.92°.	ODM 1932, Vol.41, pt.3, p.30. ODM 1934, Vol.43, pt.3, p.78. ODM Map 41d, Three Duck Lakes Area.	Au Cu	The property is underlain by granodiorite, alaskite and quartz porphyry phases of a Kenoran granitic batholith complex. Two parallel quartz veins, 50 feet apart in east-striking shear zones, have been exposed for a distance of 200 feet in claim S20655. The north shear zone is 2 feet wide with a 10 inch quartz vein containing visible gold. The south shear zone is 5 feet wide and contains pyrite and chalcopyrite. Channel samples reportedly have assayed up to 0.84 oz. Au/ton over a 7.5 foot width. Vein 5 in patented claim S20657 consists of 8-inch wide quartz lenses in a 3-foot wide shear zone which has been exposed for 125 feet in a quartz diorite porphyry host rock. It is heavily mineralized with pyrite, chalcopyrite, and visible gold. Circa 1931: Stripping and trenching on two veins in patented claim S20655 by R.S. Sheppard. 1933: Stripping and trenching in patented claims S20655, S20657, S20661, and S20662 by West McWatters Syndicate Ltd. 1945: Surface exploration and diamond-drilling.
Three Ducks (Gosselin) Occurrence: On east shore of Three Duck Lake, in north-central Chester Tp. Patented claim S20095. Lat. 47.56°, Long. 81.91°.	ODM 1932, Vol.41, pt.3, p.28-30. ODM 1934, Vol.43, pt.3, p.78 (Martin Syndicate). ODM Map 41d, Three Duck Lakes Area.	Au Cu	A lenticular quartz vein occupies an east-trending fracture zone within Kenoran porphyritic granite. It has been exposed by stripping for a distance of about 100 feet. The ore lens consists of mineralized quartz veining and heavily mineralized and altered host rock. The

Name and Location	References	Metals	Remarks
			quartz carries spectacular amounts of visible gold and, although no gold was seen in the wall rocks, assays indicated that it is present. A chip sample of the quartz assayed 0.38 oz. Au/ton, nil in Ag and 0.25% Cu. A channel sample over a 10 foot width reportedly assayed 0.77 oz. Au/ton. 1930: Prospecting, stripping, and trenching by Alfred Gosselin. 1931: Sampling by The Consolidated Mining and Smelting Co. of Canada Ltd. 1932: Diamond drilling by R. Martin. 1965: Geological and geophysical surveys by Gogama Gold Mines Ltd.

CHURCHILL TOWNSHIP

(NTS 41P/11)

Gold Corona Occurrence: West of the southern end of Michiwakenda Lake, in southeastern Churchill Tp. Claim TRS3645. Lat. 47.61°, Long. 81.22°.	ODM 1920, Vol.29, pt.3, p.42. Au ODM Map 43c, Makwa-Churchill Area.		A vein, approximately 8 feet wide, dipping 70°W and cutting metavolcanics, has been exposed by trenching along the east boundary of the claim. The vein has been folded and brecciated, with small offshoots extending out on either side, one of which contains gold. Some of the veinlets in the banded iron formation also contain visible gold. A second vein has a northeasterly strike, and where it passes through the banded iron formation gold can be seen. The sulphide minerals in the iron band were probably the precipitating agent for the gold.
Gosselin Occurrence (see Noranda Occurrence, Asquith Tp.).			
Triton Occurrence: Approximately 1 mile west of Michiwakenda Lake in southeastern Churchill Tp. Lat. 47.62°, Long. 81.22°.	ODM 1920, Vol.29, pt.3, p.41,42 (Cochrane). Resident Geologist's Files, OMNR, Kirkland Lake: Churchill Tp., Burke (1936). ODM Map P.960, Churchill Township (Hames, C.M.).	Au	Keewatin-type 'greenstones' and interbedded agglomerates and iron formation are cut by porphyry and later diabase dikes. The iron formation contains a 10-inch wide quartz vein which carries pyrite and numerous small particles of gold. The southern part of the property is underlain by a small granite mass. A north-striking shear zone contains quartz lenses <i>en echelon</i> . Channel samples ranged from trace to 3.5 oz. Au/ton over unknown widths. Assays of diamond-drill core ranged from trace to 0.22 oz. Au/ton. 1916: 40-foot test pit by Mining Corporation Ltd. Circa 1945: 13 diamond-drill holes (1,760 feet). 1973: Geological and magnetic surveys over part of property by Falcon Gold Developments Ltd.

Name and Location	References	Metals	Remarks
CONNAUGHT TOWNSHIP			
(NTS 41P/11W)			
Saville Occurrence: Approximately ½ mile north of Elephant Head Lake, in southern Connaught Tp. Lat. 47.59°, Long. 81.37°.	Resident Geologist's Files, OMNR, Kirkland Lake: Connaught Tp., Worsley (1957). ODM Map 43c, Makwa-Churchill Area (occurrence not shown on map).	Au	Andesite overlain by gently dipping limestone. The limestone is mineralized with pyrite and magnetite. Samples of drill core from limestone yielded trace to 0.01 oz. Au/ton. 1957: 4 diamond-drill holes (1,267 feet) by Saville. 1961: 6 diamond-drill holes (246 feet) by McLean.
Siscoe Occurrence: Approximately ½ mile east of Connaught Lake, in east-central Connaught Tp. Lat. 47.63°, Long. 81.43°.	Resident Geologist's Files, OMNR, Kirkland Lake: Connaught Tp., Anonymous (1963). ODM Map 43c, Makwa-Churchill Area (occurrence not shown on map).	Au Ag	Quartz veins occur in "sheared" quartz porphyry and rhyolite mineralized with pyrite. Assays of drill core ranged from trace to 0.01 oz. Au/ton and from trace to 0.18 oz. Ag/ton. 1956: Airborne magnetic survey by Barmyke Mines Ltd. 1963: 8 diamond-drill holes (2,013 feet) by Siscoe Metals of Ontario Ltd. 1970: Airborne magnetic and electromagnetic surveys by Y. Collins, R. Collins, L. Marino, D. McKinnon and B. Todd.
COPPELL TOWNSHIP			
(NTS 41O/15E, 41O/16W)			
Hanson Lake Occurrence: Near Hanson Lake, in west-central Coppel Tp. Approximate coordinates: Lat. 47.53°, Long. 82.34°.	ODM 1937, Vol.46, pt.2, p.20 (Northern Ontario Lands Corp. Ltd.). ODM Map 43b, Swayze Gold Area (occurrence not shown on map).	Au	Quartz vein discovered in 1936 and reported to contain gold values. No further developments reported.
CURTIN TOWNSHIP			
(NTS 41I/4E)			
Upsala Occurrence: Central Curtin Tp. Claim S111975. Lat. 46.15°, Long. 81.61°.	ODM 1976, GR131, p.57 (S.J. White (Upsala Mine)). ODM Map 2312, Mongowin and Curtin Townships.	Au Cu Pb	Folded east-trending Cobalt Group metasediments, intruded by Nipissing Diabase sills, are cut by east- and northwest-striking faults. The east-trending vein, which occurs in a faulted and sheared section of interbedded sandstones and argillites of the Gowganda Formation about 1000 feet north of a Nipissing Diabase sill, is approximately 400 feet long and up to 8 feet wide. It has been explored with a 300-foot long trench and a shallow shaft (age unknown). The vein material consists mainly of white quartz, but there are several carbonate-rich zones containing minor disseminated chalcopryrite, pyrite, and galena. The carbonates are calcite and ankerite. A grab sample of the best-looking material on the dump yielded values

Name and Location	References	Metals	Remarks
			of 0.11 oz. Au/ton and 0.4% Cu. 1960-1961: 9 diamond-drill holes (900 feet) put down along the length of the vein; these revealed only minor gold values.
DAVIS TOWNSHIP (NTS 41I/9W, 41I/10E)			
Crerar Occurrence: SE¼, S½, lot 13, con. II, Davis Tp. Patented claim S3707. Lat. 46.64°, Long. 80.55°.	ODM 1932, Vol.41, pt.4, p.48,49. ODM 1963, GR15, p.17 (Lot 13, Concession II, Davis Township). ODM Map 2037, Kelly and Davis Townships (Lot 13, Concession II, Davis Township).	Au Cu	The area is underlain by Middle Precambrian metasediments of the Cobalt Group and post-Huronian gabbro. The rocks underlying the showing are mainly northeast-trending beds of greywacke and quartzite of the Gowganda Formation. Narrow cherty quartz veins containing pyrite and chalcopyrite occur within extensively silicified, carbonatized, and fractured quartzite. A well-mineralized specimen from test pit assayed 4.09% Cu and 0.09 oz. Au/ton. Circa 1922: Extensive pitting and trenching, including one trench 80 feet long. Shaft to 30 feet and two carloads of ore shipped to Coniston. 1929: Examination and mapping by E. Lang of Iron River, Michigan.
Handy, J.O. Occurrence: S½, lot 14, concession IV, Davis Tp. Mining Location WR36. Lat. 46.67°, Long. 80.55°.	ODM 1932, Vol.41, pt.4, p.47. ODM 1963, GR15, p.17 (Mining Location WR36). ODM Map 2037, Kelly and Davis Townships (Mining Location WR36).	Au	Area underlain by Middle Precambrian Cobalt Group metasediments. The showings consist of narrow gold-bearing quartz veins in coarse conglomerate of the Gowganda Formation. The veins strike north and northeast, and have a maximum width of 1.3 feet. Circa 1890: Considerable pitting and trenching by J.O. Handy. 1934-1935: Trenching.
Tecumseh Occurrence: NE¼, N½, lot 11, concession IV, Davis Tp. Lat. 46.67°, Long. 80.52°.	ODM 1963, GR15, p.18 (Former Lot 11, Concession IV, Davis Township). ODM Map 2037, Kelly and Davis Townships (Former Lot 11, Concession IV, Davis Township).	Au Cu	Area occupied by conglomerate, quartzite, and greywacke of the Gowganda Formation. Intrusive into these rocks is a large northwest-trending body of post-Huronian gabbro. The property is underlain entirely by gabbro. Quartz veins, occupying shear zones in gabbro, have maximum widths of 1.7 feet and have been traced for as much as 1200 feet. Vein mineralization consists of pyrite, chalcopyrite, bornite, breunnerite, and visible gold. Gold also occurs in sheared gabbro independently of quartz veining. Diamond-drilling has shown that gold values are erratic, although in places the veins are high-grade. 1934: Prospecting and sampling by Shaw Wright Gold Syndicate. 1935-1938: Stripping, trenching, test pitting, and diamond-drilling

Name and Location	References	Metals	Remarks
			(footage and number of holes unknown) by Tecumseh Gold Mines Ltd.
Washagami Lake Occurrence: S½, lot 7, concession III, Davis Tp. Lat. 46.65°, Long. 80.49°.	ODM 1963, GR15, p.17 (Former Lot 7, Concession III, Davis Township). ODM Map 2037, Kelly and Davis Townships (Former Lot 7, Concession III, Davis Township).	Au Cu	The area is underlain by east-south-east-trending beds of conglomerate, argillite, and quartzite of the Gowganda Formation which dip gently northeast. A narrow band of post-Huronian gabbro trends east across the area. A system of gash veins in the gabbro strikes N50°E and dips 50°NW. The vein quartz is fractured and contains a little chalcopyrite. A grab sample of vein material showing the best mineralization assayed 10% Cu and 0.04 oz. Au/ton (Geoscience Laboratories, Ontario Geological Survey, Toronto). Test pit and shaft put down many years ago.

DENISON TOWNSHIP

(NTS 411/6W)

Ranger, H. Occurrence: On the Vermilion River, in lot 1, con. IV, Denison Tp. Lat. 46.41°, Long. 81.30°.	Report of the Royal Commission on the Mineral Resources of Ontario 1890, p.108, 425 (Vermilion River location). ODM Map 2119, Denison-Waters Area (occurrence not shown on map).	Au Cu	The vein, located on the Vermilion River, strikes N60°E and seems to dip vertically. It is a strong vein with an average width of 12 feet and consists of white quartz with reddish tints in places. A grey dioritic rock forms both walls of the vein. It carries pyrite, chalcopyrite and graphite, and reportedly a paying quantity of gold. Prior to 1890: Discovered by H. Ranger. No development work recorded.
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DENYES TOWNSHIP

(NTS 410/15)

Sylvanite Occurrence: 1½ miles southwest of Denyes Lake, in west-central Denyes Tp. Claim S21131. Lat. 47.82°, Long. 82.83°.	ODM 1934, Vol.43, pt.3, p.31. ODM 1968, GR63, p.42. ODM Map 2120, Halcrow and Denyes Townships.	Au	Area is underlain by an east-trending fold belt of Early Precambrian metavolcanics and metasediments. On the property, a series of parallel quartz porphyry dikes, striking S60°E, intrude schistose greywacke and tuff. The porphyry and schist have been fractured and the fractures filled with quartz and carbonate, and heavily mineralized with pyrite. A quartz vein, dipping 60°N, has been exposed for a distance of 200 feet along a contact between bedded tuffs and porphyry. The vein averages 3 feet in width but can be up to 4 feet. No native gold is visible, but channel-samples taken over 3-foot widths, at intervals, for a distance of 160 feet reportedly gave values of up to 0.40 oz. Au/ton. Grab samples of quartz carrying considerable pyrite gave values of
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Name and Location	References	Metals	Remarks
			up to 0.36 oz. Au/ton. 1932-1933: Trenching and stripping by Sylvanite Gold Mines Limited.
DORE TOWNSHIP			
(NTS 41O/15E, 41O/16W)			
Kenty, M. Occurrence: In the northwest corner of Dore Tp. Lat. 47.84°, Long. 82.60°.	ODM 1965, GR33, p.20 (Annie Kenty (former Miner Kenty)). ODM Map 2070, Swayze and Dore Townships.	Au	The township is underlain by an east-trending fold belt of Early Precambrian metavolcanics and metasediments. On the property, 8 quartz veins in mafic metavolcan- ics have been exposed. The veins do not exceed 100 feet in length and have maximum widths of 2 feet. Gold values were reportedly low. 1931-1932: 8 veins uncovered and trenched, and 1,000 feet of dia- mond-drilling by Cyril Knight Pros- pecting Co. Ltd.
DRURY TOWNSHIP			
(NTS 41I/15E, 41I/6W)			
Dwyer Occurrence: Lot 6, con. IV, Drury Tp. Lat. 46.30°, Long. 81.51°.	ODM 1897, Vol.7, pt.1, p.87. ODM 1929, Vol.38, pt.7, p.36,37. ODM Map P.134, Drury Township.	Au	Early Precambrian mafic intrusive rocks and an east-trending fold belt of Huronian metasediments (the Elliot Lake Group) are cut by the Sudbury Irruptive and north- west-trending Late Precambrian dia- base dikes. The precise location of the showings is not known, but on the basis of brief descriptions it seems that the Dwyer Prospect is in the north half of Lot 6. Five parallel east-striking quartz veins occur in an area underlain by al- tered and brecciated gabbro. All but Vein No.1 contain nil to low gold and silver values. The No.1 Vein is exposed for about 400 feet and is up to 40 feet in width. In a 38-foot shaft, the vein width varies from 15 feet at surface to 8 feet at the bottom. Assays of up to 1.41 oz. Au/ton were reported for the No.1 Vein. Circa 1898: Stripping and 2 shallow shafts by the John Dwyer Gold Mining Co. Circa 1929: Further development work C.G. Hyatt.
ENGLISH TOWNSHIP			
(NTS 42A/3)			
West Muskasenda Occurrence: On west shore of Muskasenda Lake, at its southern end, in western English Tp. Includes claims TRS1759 and TRS7055. Lat. 48.07°, Long. 81.33°.	ODM 1978, OFR5221, p.77-79 (Boychuk, F. (West Muskasenda Group)). Resident Geologist's Files, OMNR, Kirkland Lake: English Tp., Anonymous	Au	The gold mineralization is restricted to a shear zone in metavolcanics, immediately adjacent to the south- east-trending upper contact of the lower gabbroic sill in the Muska- senda Lake metagabbro complex.

Name and Location	References	Metals	Remarks
	(1935). ODM Map 2290, English and Zavitz Townships (Boychuk, F. (West Muskasenda Group)).		The shear strikes N75°E, dips 63°N, averages 80 feet in width and was traced for 200 feet. A 28-foot section of the zone, well mineralized with pyrite and cut by quartz stringers, averaged 0.14 oz. Au/ton across 3.2 feet. 1930: Gold discovered by J. Nelson. 1930-1936: Pitting and trenching, some of it by Sylvanite Gold Mines Ltd. (under option). 1968: Geological, magnetic, and electromagnetic surveys by Iceberg Explorations Corp.

ESTHER TOWNSHIP

(NTS 41O/9W)

Northern Aerial Occurrence: Northeastern Esther Tp. Claim S32457. Lat. 47.66°, Long. 82.30°.	ODM 1935, Vol.44, pt.7, p.23 (Northern Aerial Canada Golds Limited). ODM Map 44g, Opeepeesway Lake Area (N.A.M.E.).	Au Ag	The property is underlain by felsic pyroclastic rocks and conglomerates intruded by a plug of quartz diorite. The main showing occurs in a rusty-weathering, heavily carbonatized zone in schistose quartz diorite. The zone trends east and has a width of approximately 40 feet. A quartz lens, 30 feet long and 3 feet in width, strikes N10°W and dips 45° W in the schistose zone. The quartz is coarse-grained and glassy, and is heavily mineralized with pyrite and arsenopyrite. A grab sample containing massive arsenopyrite yielded 0.63 oz. Au/ton and 3.46 oz. Ag/ton. 1928: Trenching and pitting by Northern Aerial Canada Golds Ltd.
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FAWCETT TOWNSHIP

(NTS 41P/11E)

Hiview Occurrence: Between Asquith Township boundary and Granite Lake, in western Fawcett Tp. Claims TRS3767 and TRS3786. Lat. 47.55°, Long. 81.19°.	Marginal Notes, ODM Map P.819, Fawcett Township (Burke or Burkett). ODM 1920, Vol.29, pt.3, p.48 (Burke). Resident Geologist's Files, OMNR, Kirkland Lake: Fawcett Tp., Anonymous (1921) and Anonymous (1950). ODM Map P.819, Fawcett Township (Burkett, L.).	Au	Mafic to felsic metavolcanics are cut by Matachewan diabase dikes and overlain by Nipissing diabase. A north-trending quartz vein occurs in partly sheared metavolcanics. Channel samples from shaft and crosscut averaged 0.8 oz. Au/ton. Samples from drill core assayed only trace. 1917: Trenching and 40-foot shaft. 1919: 20-foot shaft with 78 feet of crosscutting. 1938: Pitting and trenching by E. James. 1950: 2 diamond-drill holes (442 feet) by Prospectors Airways Co. Ltd. 1963: 3 diamond-drill holes (317 feet) by Voyager Explorations Ltd.
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Name and Location	References	Metals	Remarks
FOSTER TOWNSHIP			
(NTS 411/4E, 411/5E)			
Stratton Lake Occurrence: South of the narrows at the west end of Stratton Lake, in lot 12, concession II, Foster Tp. Patented claim S21962. Lat. 46.22°, Long. 81.68°.	ODM 1929, Vol.38, pt.7, p.49. ODM 1976, GR131, p.58 (Scott). ODM Map 2311, Merritt and Foster Townships (Scott, K.).	Au	Folded east-trending Huronian metasediments, intruded by Nipissing Diabase and late diabase dikes, are cut by northeast- and prominent east-trending faults. An east-striking quartz vein, 2 to 4.5 feet in width and traced for 150 feet on surface, occurs in quartzites of the Serpent Formation approximately 200 feet south of the Loon Lake Fault. The vein is sparsely mineralized with pyrite and pyrrhotite. Reportedly this vein carried considerable values in gold. A sample taken across a 4.5-foot width at the bottom of the shaft contained no gold. A grab sample containing approximately 10% sulphides assayed 0.04 oz. Au/ton. Circa 1925: Trenching, pitting, and a 12-foot shaft on a 150-foot length of the vein.
GRAHAM TOWNSHIP			
(NTS 411/6)			
Simpson Occurrence: Approximately ½ mile north of the Vermilion River, in lot 11, con. II, Graham Tp. Lat. 46.17°, Long. 81.17°.	GSC 1892-1893, Vol.6 p.52R. ODM 1891, Vol.1, p.92. ODM Map 2119, Denison-Waters Area.	Au	South of the Sudbury Nickel Irruptive, northeast-trending metasediments of the Huronian Supergroup are intruded by the granitic Creighton Pluton, Nipissing-type gabbro sills and northwest-striking late diabase dikes. The Murray Fault trends easterly across the area, immediately north of the occurrence. Lot 11, concession II is underlain by pelitic metasediments of the McKim Formation. ODM Map 2119 shows quartz veins 500 feet north of the railway in the SW¼, N½, lot 11, concession II. A sample of pyrite with siliceous gangue from the property, assayed by the GSC yielded 0.35 oz. Au/ton and no silver. Circa 1890: Unreported amount of exploration on a property referred to as Simpson Mine.
GREENLAW TOWNSHIP			
(NTS 410/10)			
Greenlaw Occurrence: Northwestern Greenlaw Tp. Claim S24542. Lat. 47.74°, Long. 82.82°.	ODM 1934, Vol.43, pt.3, p.34. ODM Map 2121, Tooms and Greenlaw Townships.	Au Cu	The area is underlain by east-trending, steeply dipping Early Precambrian mafic metavolcanics with minor felsic units. These rocks have been intruded by felsic porphyry dikes. The contacts between a quartz porphyry dike and a body of diorite is sheared and replaced by quartz and carbonate with asso-

Name and Location	References	Metals	Remarks
			ciated pyrite and minor chalcop- rite mineralization. No information as to gold values is known. 1932-1935: Stripping, trenching, pitting and inclined shaft to 50 feet by Greenlaw Gold Mines Ltd. 1972: Electromagnetic and magne- tic ground surveys by Broad Scope Developments Ltd.

GROVES TOWNSHIP

(NTS 41P/12E)

Tasmijopen Occurrence: East end of Pensyl Lake, in south-central Groves Tp. Claim S24319. Lat. 47.61°, Long. 81.66°.	ODM 1934, Vol.43, pt.3, p.65,66. ODM Map 43c, Makwa- Churchill Area.	Au Cu Zn	The showings occur in a band of cherty iron formation which is in contact with greywacke, strikes N85°E and dips steeply north. Sul- phide mineralization consists of py- rite, pyrrhotite, chalcopyrite, ar- senopyrite, and sphalerite. Selected samples reportedly assayed up to 0.50 oz. Au/ton. Circa 1933: Trenching and some diamond-drilling by the Tasmijopen Syndicate.
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HALCROW TOWNSHIP

(NTS 41O/15W)

Lyall-Beidelman Occurrence: 1 mile south of the north end of Shunsby Lake, in north-central Halcrow Tp. Lat. 47.83°, Long. 82.94°.	CPR Indust. Devel. Dept. 1959, A Report on Pros- pecting in the Ridout- Swayze Area. ODM 1968, GR63, p.41,42. ODM Map 2120, Halcrow and Denyes Townships.	Au	Early Precambrian mafic and felsic metavolcanics, with intercalated metasediments, terminate westward against massive granitic rocks of Kenoran age and migmatites of the Kapuskaing Tectonic Belt. The me- tasediments have been intruded by dikes of syenite porphyry. An east- trending fracture zone in a large syenite porphyry dike intrusive in- to sediments is veined with quartz stringers and the porphyry is min- eralized with pyrite and arsenopy- rite. Native gold has been reported. A similar showing, 100 feet to the north and striking northeast, has more quartz and heavier mineraliza- tion over widths up to 3 feet but the linear extent has not been deter- mined. Selected grab samples from both showings reportedly yielded high gold values. Two chip samples, taken over 15 and 20 feet on the north zone, assayed 0.03 ounce of Au per ton. Circa 1934: A series of trenches, totalling more than 200 feet in length, were dug and some grab and chip samples taken.
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Name and Location	References	Metals	Remarks
HALLIDAY TOWNSHIP			
(NTS 41P/14E)			
Larche-Rousseau Occurrence: Immediately southwest of Campbell Lake, in eastern Halliday Tp. Lat. 47.92°, Long. 81.09°.	ODM 1970, GR79, p.22 (L. Lamothe). Resident Geologist's Files, OMNR, Kirkland Lake: Halliday Tp., Ambrose (1972) and Savage (1951). ODM Map 2187, Halliday and Midlothian Townships (Lamothe, L.).	Au Zn Cu Pb	Showing is in Keewatin-type meta- volcanics, 1,800 feet south of the contact with Timiskaming-type me- tasediments. The vein is mineralized with pyrite, chalcopyrite and galena. Grab samples reportedly assayed 0.17 oz. Au/ton and 2% Zn. Best assay from drill core was 0.005 oz. Au/ton. 1933: Pitting and trenching by P.H. Silams. 1950: Pitting and trenching by L. Lamothe. 1970-1973: Geological, magnetic, induced polarization and electro- magnetic surveys, and 7 diamond- drill holes (1,074 feet) by Newmont Mining Corp. of Canada Ltd. and Canadian Arrow Mines Ltd.
HORWOOD TOWNSHIP			
(NTS 41O/16, 42B/1)			
Cambach Occurrence: Immediately north of the Dale-Horwood town- ship boundary, 1 mile east of Horwood Lake, in southern Hor- wood Tp. Claim S22549. Lat. 47.93°, Long. 82.29°.	ODM 1935, Vol.44, pt.7, p.37. ODM 1937, Vol.46, pt.2, p.25 (Bachman-Campbell-Reany). ODM Map 2329, Horwood Lake.	Au Cu	Early Precambrian mafic metavol- canics and minor felsic metavolcan- ics strike N45-70°E in the area. The metavolcanics are intruded by the felsic Hardiman Lake Pluton and numerous quartz-feldspar porphyry dikes of Kenoran age. Six parallel rusty-weathering shear zones are ex- posed over a width of 300 feet and a length of 450 feet in schistose pil- lowed andesites. Individual shear zones range from 4 to 20 feet in width and strike east. Between the shear zones, quartz-feldspar por- phyry dikes, ranging from a few inches to 20 feet in width, intrude the andesite parallel to the schisto- sity. The shear zones are cut by an intricate system of narrow quartz- carbonate veinlets which are min- eralized with moderate amounts of pyrite and chalcopyrite. Enclosing schists contain abundant ankerite and cubic pyrite. The main showing is a shear zone up to 20 feet wide. Surface and diamond-drill hole sam- pling indicated low gold values in the sheared andesite and an adjacent quartz vein.
Gilbert Occurrence: Immediately west of Horwood Lake, in south- central Horwood Tp. Patented claim S25395. Lat. 47.95°, Long. 82.33°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood Tp., Diamond-Drilling Report 11. ODM 1935, Vol.44, pt.7, p.36, 37 (Lefever-Anderson Claims). ODM 1937, Vol.46, pt.2, p.30.	Au Cu	An irregular system of narrow quartz stringers in sheared andesite is mod- erately mineralized with pyrite and chalcopyrite. The zone trends north- easterly and dips 80°N. Both shear- ing and quartz veining occur in lenses over an exposed strike length of 600 feet. The quartz veining re-

Name and Location	References	Metals	Remarks
	ODM Map 2329, Horwood Lake (Lefever, Mrs. F. and J. Jr. (Smith-Thorne Mine)).		portedly contains gold values. 1934: Stripping and trenching under the direction of J. Lefever. 1947: Additional claims staked to the east and north of the original group and 17 shallow diamond-drill holes (approximately 1300 feet) by J. Lefever.
Gould-Dunn Occurrence: 1 mile north-northwest of Great Pike Lake, on the northwest shore of Hardiman Bay, in east-central Horwood Tp. Claim S20893. Lat. 47.99°, Long. 82.28°.	ODM 1937, Vol.46, pt.2, p.23. Au ODM Map 2329, Horwood Lake (shown on map as a pyrite-quartz occurrence).		A mineralized quartz-carbonate vein, 2 to 6 feet wide and approximately 400 feet long, parallels the north-east-striking mafic flows. Wider sections of the vein contain masses of foliated green schist; both the quartz and the schist have abundant disseminated pyrite. Gold has reportedly been panned from vein material. 1933-1934: Staked by F. Gould. Very little development work recorded. 1937: Sampling by P.H. Silams.
Jacobs Occurrence: ½ mile north of Great Pike Lake, on the southeast shore of Hardiman Bay, in east-central Horwood Tp. Claim S28147. Lat. 47.98°, Long. 82.27°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Horwood Tp., Technical Survey File 63A.402. ODM 1937, Vol.46, pt.2, p.22 (Horwood Exploration Syndicate). ODM 1978, Report 169, p.44 (Ajax Occurrence). ODM Map 2329, Horwood Lake (Ajax).	Au Cu Pb	A mineralized quartz-carbonate vein, striking N20°W and dipping 75°NE, cuts across mafic flow rocks which strike N70°E and dip 30°-60°NW. The vein, which has been exposed for 300 feet by trenching, is mineralized with pyrite, pyrrhotite, chalcopyrite, and galena. Low gold values are reported. 1935-1937: Trenching by Horwood Exploration Syndicate exposed vein for 300 feet. 1961: Occurrence included in a geological survey conducted by Ajax Minerals Ltd.
Lefever-Desourdy-Silams Occurrence: 1 mile northeast of Pinecone Point, on the east shore of Horwood Lake, in north-central Horwood Tp. Claim S380265. Lat. 48.02°, Long. 82.32°.	ODM 1937, Vol.46, pt.2, p.27. Au ODM Map 2329, Horwood Lake. Cu		A sheared contact between mafic pillow lava and a quartz-feldspar porphyry dike strikes N25°E and dips vertically. It contains quartz, pyrite, chalcopyrite, and pyrrhotite. A grab sample gave a trace value in gold. A second showing, 400 feet to the southwest, consists of a system of vertical quartz veins which has been traced for 600 feet. The veins, which strike northwest and are up to 6 inches wide, have been emplaced at the contact between mafic lavas and intercalated thin sedimentary beds. The northwest part of the zone contains three quartz veins over a width of 60 feet. Mineralization consists of pyrite and chalcopyrite. A selected grab sample of well-mineralized vein material assayed 0.15 oz. Au/ton. 1935-1936: Trenching and sampling, and 4 shallow diamond-drill holes under the direction of P.H. Silams.

Name and Location	References	Metals	Remarks
O'Neil Occurrence: Pinecone Point, on the west shore of Horwood Lake, in central Horwood Tp. Claim S380040. Lat. 48.01°, Long. 82.34°.	Financial Post Survey of Mines 1947, p.241. ODM 1937, Vol.46, pt.2, p.29,30. ODM Map 2329, Horwood Lake.	Au Cu	The main showing is a quartz vein which occurs in east-trending Keewatin pillow lavas. The vein appears to have been folded into an anticline which plunges approximately 35°E. A body of granite containing quartz stringers appears to occupy the crest of the anticline. The vein and adjacent schistose lavas contain pyrite and chalcopyrite. Grab samples of vein material have yielded gold values. 1933-1936: Surface work by the O'Neil Gold Prospecting Syndicate. 1945: Stripping and trenching by Atom Gold Mines Ltd.
Silams, P.H. Occurrence: ¼ mile northwest of Great Pike Lake, on the southeast shore of Hardiman Bay, in south-central Horwood Tp. Lat. 47.97°, Long. 82.30°.	ODM 1937, Vol.46, pt.2, p.25. ODM Map 2329, Horwood Lake.	Au	Keewatin metavolcanics and metasediments are intruded by granite, quartz-feldspar porphyry, and mineralized quartz veins. Sample of a sulphide-bearing vein contained 0.09 oz. Au/ton.
Smith, A.H. Occurrence: 1½ miles north-northeast of Great Pike Lake, on the southeast shore of Hardiman Bay, in east-central Horwood Tp. Claim S28512. Lat. 47.99°, Long. 82.25°.	ODM 1937, Vol.46, pt.2, p.24. ODM Map 2329, Horwood Lake.	Au Cu	A 50-foot wide system of 5 parallel quartz veins in mafic metavolcanics strikes N10°E and dips steeply west. The veins vary in width from 1 foot to 4 feet and have been exposed for distances of up to 100 feet. Sulphide mineralization in the quartz consists of pyrite and chalcopyrite. Considerable pyrite is disseminated in the schistose volcanic wall rock. A composite grab sample of the quartz veins and mineralized schist yielded a low gold value. 1936: Stripping, trenching, and blasting by A.H. Smith.
HUTT TOWNSHIP (NTS 41P/14E, 42A/3E)			
Clayton-Cyr Occurrence: Astride the Hutt-Zavitz township boundary, between the 4- and 5-mile posts, in northern Hutt Tp. Lat. 48.00°, Long. 81.17°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2291, Semple and Hutt Townships (occurrence not shown on map).	Au	Keewatin-type andesite, fine-grained bedded tuff, and agglomerate are cut by feldspar porphyry dikes. East-trending zones of carbonate rocks occur in association with the metavolcanics. Chip samples from pits and trenches assayed 0.09 to 0.11 oz. Au/ton. Circa 1947: Pitting and trenching.
Hollinger Occurrence: 200 feet east of the Hutt-Semple township boundary, ¼ mile north of the 4-mile post, in western Hutt Tp. Lat. 47.97°, Long. 81.20°.	ODM 1978, OFR5221, p.82-86. ODM Map 2291, Semple and Hutt Townships.	Au	A 5- to 8-foot wide felsic dike is cut by a stockwork of narrow quartz veins and stringers containing disseminated pyrite. A selected sample assayed 0.035 oz. Au/ton. 1962-1963: Trenching and diamond-drilling by Hollinger Consolidated Gold Mines Ltd.

Name and Location	References	Metals	Remarks
HUTTON TOWNSHIP (NTS 41I/14E, 14I/15W)			
Concor-Chibougamau (Placer) Occurrence: Lot 1, con. I, II and III, Hutton Tp. Claims S100186, S100188-S100194, S105829-S105837 and S107362. Lat. 46.82°, Long. 80.95°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Hutton Tp., Technical Survey File 63.985. ODM 1949, PR1949-2, 8p. ODM 1970, GR80, p.35-39; p.41,42 (W. Doussept, A.E. Maclean, G.S. Shane). ODM Map 2180, Hutton and Parkin Townships (Doussept, W., Maclean, A.E. and Shane, G.S.).	Au	"Placer gold is present in the Vermilion River gravels in the vicinity of Milnet in sufficient amounts, at least locally, to have made the area an attractive prospecting ground. Unfortunately, the exploration conducted to date has not been able to prove commercially workable deposits." (ODM 1970, GR80, p.39). 1959: Concor-Chibougamau Mines Ltd. investigated the placer gold occurrences of the Vermilion River drainage channels in Hutton and Parkin Townships. A refraction seismograph survey was done to locate old river channels and thus determine favorable locations for drilling. This survey showed that the overburden thickness varied from 25 to 75 feet. In the assessment file are logs and sections for 17 drill holes and on the map are locations for 20 churn-drill holes and 40 test pits. No assays are given.
Queensland (Placer) Occurrence: Lots 1 and 2, con. III, Hutton Tp. Claims S100012-S100017. Lat. 46.84°, Long. 80.96°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Hutton Tp., Technical Survey File 63.1001. ODM 1949, PR1949-2, 8p. ODM 1970, GR80, p.35-39; p.41,42 (W. Castonguay, G.S. Shane). ODM Map 2180, Hutton and Parkin Townships (Castonguay, W. and Shane, G.S.).	Au	1959: Queensland Explorations Ltd. took gravel samples from the bottom of 36 test pits. The concentrates were analyzed by the Mineral Research Branch, OMNR. 24 samples registered a trace of gold, 8 registered 0.01 oz., 2 registered 0.02 oz., 1 each registered 0.013, 0.06 and 0.10 oz. These appear to be absolute assays, but would amount to 2 to 3 cents per cubic yard.
JANES TOWNSHIP (NTS 41I/9W)			
Janes Tp., Con. III and IV, Lots 1 and 2 Occurrence: Near Theriault Lake, in eastern Janes Tp. Lat. 46.66°, Long. 80.30°.	ODM 1932, Vol.41, pt.4, p.27. ODM Map 41f, The Townships of Janes, McNish, Pardo and Dana (occurrence not shown on map).	Au	Quartz veins in diabase and surrounding mafic rocks yielded low gold values. Several test pits and a 30-foot deep shaft were sunk.
KELLY TOWNSHIP (NTS 41I/9W, 41I/10E, 41I/15E, 41I/16W)			
Gold Cliff Occurrence: On the east shore of a long hooked peninsula extending into the northern part of Kukagami Lake, in western Kelly Tp. Lat. 46.76°, Long. 80.54°.	OBM 1898, Vol.7, pt.2, p.139,140. ODM Map 2037, Kelly and Davis Townships.	Au	Huronian slate and greywacke intruded by diorite and cut by 8 quartz veins. The veins are irregular and trend roughly east. One of the smaller veins was reportedly rich in free gold. 1895-1897: Stripping for a distance of 2,000 feet and an adit driven for 182 feet.

Name and Location	References	Metals	Remarks
KELVIN TOWNSHIP			
(NTS 41P/11)			
Timiskaming Occurrence: East-central Kelvin Tp. Claims MR46136, MR46138, and MR46140. Lat. 47.74°, Long. 81.25°.	Resident Geologist's Files, OMNR, Kirkland Lake: Kelvin Tp., Longley (1957). ODM Map P.1105, Kelvin Township (HBOG Mining Ltd.).	Au	Quartz veins and stringers occur in Keewatin-type volcanic breccia, graphitic tuff, and carbonate rock. Drill core assayed trace to 0.02 oz. Au/ton. 1957: 5 diamond-drill holes (2,303 feet) by Paymaster Consolidated Mines Ltd. 1968-1970: Airborne electromagnetic and magnetic surveys, and 4 diamond-drill holes (2,179 feet) by Timiskaming Nickel Ltd.
KENOGAMING TOWNSHIP			
(NTS 42A/4W)			
Hoodoo Group Occurrence: Approximately ¼ mile northeast of Logie Lake, in central Kenogaming Tp. Lat. 48.15°, Long. 81.92°.	Marginal Notes, ODM Map P.465, Kenogaming Township. ODMNA 1972, GR97, p.80-82, 90, 91. ODMNA Map 2231, Penhorwood and Kenogaming Townships (JonSmith Mines Ltd., Hoodoo claim group).	Au Ag Zn	1947: Trenching by Hoodoo Lake Mines Ltd. exposed a pyritized, silicified shear zone trending northwest and carrying erratic gold values. 1960: Diamond-drilling, 1500 feet northeast of the original showing, by JonSmith Mines Ltd. The best intersection assayed 0.92 oz. Au/ton over 5 feet. Other holes encountered low Au, Ag, and Zn values.
Little Long Lac Occurrence: Approximately 1 mile north of Chabot Lake, in northern Kenogaming Tp. Lat. 48.17°, Long. 81.95°.	Marginal Notes, ODM Map P.465, Kenogaming Township. ODMNA 1972, GR97, p.103. ODMNA Map 2231, Penhorwood and Kenogaming Townships (occurrence not shown on map).	Au Fe	1,900 feet of diamond-drilling along an iron formation encountered zones of massive pyrite-pyrrhotite mineralization up to 5 feet wide along the contacts of an iron formation. These and scattered small quartz veins yielded only low Au values (0.04 oz./ton).
LEESON TOWNSHIP			
(NTS 42B/5W)			
Camabie Occurrence: Approximately ½ mile north-northwest of the Renabie Mine, in south-western Leeson Tp. Patented claim S34429. Lat. 48.38°, Long. 83.88°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Leeson Tp., Technical Survey File 63A.27. ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.	Au	There are many quartz stringers and veins, ranging up to 10 feet in width. Most of the veins strike roughly north, parallel to the granite-greenstone contact, but several strike roughly east. All veins are in granodiorite and within 600 feet of the greenstone contact. A lenticular mass of vein quartz, 35 feet long and up to 15 feet wide, reportedly yielded good gold values. Mineralization consists of a few specks of pyrite. Circa 1947: Geological survey, stripping, trenching, and 3 diamond-drill holes in the northwest corner of the claim by Camabie Mines Ltd.
Hard Rock Occurrence: Approximately 2½ miles northeast of the	Assessment Files Research Office, Ontario Geological	Au	A group of 5 quartz veins, known as the A, B, C, D and E Zones, is

Name and Location	References	Metals	Remarks
Renabie Mine, in central Leeson Tp. Patented claims S39253, S39254, and S39257. Lat. 48.41°, Long. 83.84°.	Survey, Toronto, Leeson Tp., Technical Survey File 63A.128. Marginal Notes, ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties (MacLeod-Mosher Mines Limited). ODM Map P.492, Renabie Mines Limited, Nudulama Mines Limited and Adjoining Properties.		located in grey foliated biotite granodiorite approximately 6,000 feet west of the metavolcanic-granodiorite contact. The quartz veins are lenticular and occupy tensional fractures. Mineralization consists chiefly of pyrite and locally substantial magnetite. The principal vein system, the A Zone, is exposed over a strike length of 2000 feet, with widths varying from 1 foot to 3 feet. Chip and grab samples yielded gold values ranging from 0.01 to 0.15 oz./ton. 1945-1946: Stripping and trenching by Hard Rock Gold Mines Ltd. 1949: 2 diamond-drill holes (444 feet) in claims S39253 and S39257 by Hard Rock Gold Mines Ltd. 1951: Geological survey by Hard Rock Gold Mines Ltd.

MACBETH TOWNSHIP

(NTS 411/16W)

Nichol, W. Occurrence: East shore of Cucumber Lake, in eastern Macbeth Tp. Claim S108371. Lat. 46.86°, Long. 80.31°.	ODM 1977, Report 170, p.50, Au 51 (Cucumber Lake Occurrence). Resident Geologist's Files, OMNR, Sudbury: Macbeth Tp., W. Nichol Option. ODM Map 2386, Macbeth and Clement Townships (Cucumber Lake Occurrence).		On the property, steeply dipping intermediate lava and siliceous iron formation are overlain by flat-lying siltstone and greywacke of the Gowganda Formation and capped in many locations by a sheet of Nipissing Diabase. A prominent topographic linear, interpreted as a fault, trends south through Cucumber Lake. There are three showings, A, B, and C, consisting of quartz veins in andesite and iron formation. The principal A Showing is an east-trending quartz vein in andesite. It has been exposed by trenching for a distance of 220 feet and has widths ranging from 1 foot to 2.5 feet. Mineralization consists of minor pyrite; no visible gold has been reported. Gold values range from 0.01 to 1.76 oz./ton over 1 foot widths. A chip sample of siliceous iron formation from an unidentified trench assayed 0.28 oz. Au/ton over 4 feet. 1959-1960: Trenching and prospecting, followed by 5 diamond-drill holes (208 feet) by the Little Long Lac Gold Mines Ltd.
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MACLENNAN TOWNSHIP

(NTS 411/10)

Sheppard Occurrence: South shore of Wanapitei Lake, in lot 4, con. V, Maclennan Tp. Lat. 46.68°, Long. 80.72°.	GSC 1888-1889, Vol.4, pt.R, p.37. Au GSC 1936, Mem. 192, p.146. Ag OBM 1898, Vol.7, p.138. ODM Map 2009, Maclennan		Northeast-trending metasediments of the Huronian Supergroup (Mississagi Formation) are intruded by post-Huronian, metamorphosed Nipissing Diabase. The occurrence
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Name and Location	References	Metals	Remarks
	and Scadding Townships (occurrence not shown on map).		consists of narrow quartz stringers in metamorphosed greywacke. Vein No.1 reportedly assayed 5.43 oz. Au/ton and 0.23 oz. Ag/ton. Circa 1890: Workings consisted of a short drift into the face of a hill and a small open cut near the top of the same hill. Some ore extracted and treated in an arrastra. It is not known who did the work.
MACMURCHY TOWNSHIP (NTS 41P/11E)			
Brunet Occurrence: East of Ragen Lake, in eastern Macmurchy Tp. Claims MR43162-MR43164 and MR44473-MR44476. Lat. 47.64°, Long. 81.08°.	ODM 1977, GR152, p.38,39. Resident Geologist's Files, OMNR, Kirkland Lake: Macmurchy Tp., Holbrooke (1946), Innes (1969), Nelson (1948). ODM Map 2365, Macmurchy and Tyrrell Townships.	Au	Early Precambrian metavolcanics, (pillowed andesite, flow breccia, agglomerate, rhyolite, and rhyolite agglomerate) with intercalated sedimentary horizons (black carbonaceous slaty material) are overlain by Cobalt Group sedimentary rocks. Several diabase dikes present. Heavily carbonatized pillow lavas are cut by quartz stringers and veins. Channel samples assayed from trace to 0.02 oz. Au/ton and chip samples averaged 0.18 oz. Au/ton. Drill core samples assayed from trace to 0.01 oz. Au/ton. 1934-1936: Surface work by various companies. 1969-1970: Geological, magnetic, and electromagnetic surveys, and 10 diamond-drill holes (553 feet) by Madsen Red Lake Gold Mines Ltd.
Cryderman <i>et al.</i> Occurrence: Southwestern Macmurchy Tp. Showing in claim TRS3518. Lat. 47.59°, Long. 81.18°.	ODM 1977, GR152, p.41 (B.M. Cryderman, A.E. Manwell, A.R. Moore). Resident Geologist's Files, OMNR, Kirkland Lake: Macmurchy Tp., Gamey (1943). ODM Map 2365, Macmurchy and Tyrrell Townships (Cryderman, B.M., Manwell, A.E., Moore, A.R.).	Au	Mafic to intermediate metavolcanics are cut by north-trending diabase dikes. The Queen Elizabeth Vein, located on the east boundary of claim TRS3518, is 340 feet long and 1 foot to 3 feet wide. A channel sample across the vein yielded 3.19 oz. Au/ton over 10 inches. 1917: 40-foot shaft. 1943: Trenching.
Foisey (Reil) Occurrence: North and west of Foisey Lake, in the southwest corner of Macmurchy Tp. Foisey Vein in claims TRS3544 and TRS3772. Lat. 47.58°, Long. 81.18°.	ODM 1920, Vol.29, pt.3, p.42. ODM 1977, GR152, p.48,49 (J.J. Moore). Resident Geologist's Files, OMNR, Kirkland Lake: Macmurchy Tp., Reil. ODM Map 2365, Macmurchy and Tyrrell Townships (Moore, J.J.).	Au	A shear zone which strikes north and dips vertically in mafic to intermediate metavolcanics is cut by north-trending diabase dikes. The zone contains small irregular quartz lenses. Channel samples assayed 0.06 to 0.17 oz. Au/ton.
Kingston Occurrence: 2000 feet southwest of Pat Lake, in southwestern Macmurchy Tp. Claims TRS2508 and TRS3715. Lat. 47.59°, Long. 81.16°.	ODM 1926, Vol.35, pt.6, p.95,96. ODM 1940, Vol.49, pt.1, p.188 (Pirate Gold Mines Limited). ODM 1977, GR152, p.54	Au Zn Pb	A quartz vein, 1 foot to 6 feet wide and striking N60°W, occurs in a vertically dipping shear zone which cuts andesite lavas. Native gold, pyrite, and minor pyrrhotite, sphalerite, and galena are associated with

Name and Location	References	Metals	Remarks
	(Triton Explorations Limited). Resident Geologist's Files, OMNR, Kirkland Lake: Macmurchy Tp., Anonymous (1934). ODM Map 2365, Macmurchy and Tyrrell Townships (Triton Explorations Ltd.).		the vein. Assays of drill core averaged 0.68 oz. Au/ton over 1.6 feet and assays from shaft ranged up to 8 oz. Au/ton. Pre-1938: Shaft to 114 feet and some lateral development on the 100-foot level. 1938: Shaft dewatered and 15 feet of crosscutting on 100-foot level by Pirate Gold Mines Ltd. 1939: Diamond-drilling (number of holes and footage unknown).
Mayflower Occurrence: Southwestern Macmurchy Tp. Claims TRS2507 and WD1406. Lat. 47.60°, Long. 81.16°.	ODM 1920, Vol.29, pt.3, p.40 (Bennett). ODM 1926, Vol.35, pt.6, p.95 (Bennett). ODM 1977, GR152, p.47. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2365, Macmurchy and Tyrrell Townships.	Au	Massive and pillowed metabasalts containing a narrow slatey tuff band are cut by a shear zone which strikes N60°W, dips vertically, and is 400 feet long and 2 to 8 feet wide. The zone contains lenticular quartz veins mineralized with pyrite and gold. Channel sampling of the surface and shaft yielded values of 1.67 oz. Au/ton and 2.2 oz. Au/ton over widths of 1.7 feet. 1911: Property staked, surface work, and 36-foot prospect shaft by G. Bennett. 1935: Shaft to 100 feet with 26 feet of drifting on the 100-foot level by Shining Tree Gold Mines Ltd. 1941: Sampling by Sylvanite Gold Mines Ltd. 1947: Geological mapping.
McIntyre-McDonald Occurrence: At the south end of Wasapika Lake, in southwestern Macmurchy Tp. Claims TRS2565 and TRS2566. Lat. 47.60°, Long. 81.17°.	ODM 1920, Vol.29, pt.3, p.44. ODM 1926, Vol.35, pt.6, p.94,95. ODM 1977, GR152, p.54 (Triton Explorations Limited). ODM Map 2365, Macmurchy and Tyrrell Townships (Triton Explorations Ltd.).	Au	Two gold-bearing quartz veins occur in mafic metavolcanics. The most important trends northeast, has an average width of 4 feet, and has been traced for 600 feet. The second vein trends west-northwest, varies in width from 3 inches to 2 feet, and is 100 feet long. Several bags of ore were shipped for testing but no results available. 1920-1926: Surface work and two shafts (50 and 55 feet deep) by McIntyre and MacDonald.
Miller-Adair Occurrence: North of Foisey Lake, in southwestern Macmurchy Tp. Claims TRS8294 and TRS8295. Lat. 47.59°, Long. 81.18°.	ODM 1920, Vol.29, pt.3, p.44. ODM 1977, GR152, p.54 (Triton Explorations Limited). ODM Map 2365, Macmurchy and Tyrrell Townships (Triton Explorations Ltd.).	Au	A gold-bearing vein crosscuts pillow lava schist. Surface sampling yielded "fair values in gold" (ODM 1920, Vol.29, pt.3, p.44).
Pariseau Occurrence: East of the Montreal River, in the northeast corner of Macmurchy Tp. Claim TRS5423. Lat. 47.67°, Long. 81.10°.	ODM 1932, Vol.41, pt.2, p.61. ODM 1977, GR152, p.34,35 (Amax Potash Limited). ODM Map 2365, Macmurchy and Tyrrell Townships (Amax Potash Ltd.).	Au Cu	A quartz vein which strikes N60°W, dips vertically, and is up to 10 feet wide cuts massive andesite flows. It has been exposed for 100 feet. Mineralization consists of pyrite and chalcopyrite. Low gold values reported.
Wood Occurrence: East of Knox Lake, in southwest-central Mac-	ODM 1920, Vol.29, pt.3, p.48. Resident Geologist's Files,	Au	Early Precambrian metavolcanics and intercalated metasediments are

Name and Location	References	Metals	Remarks
murchy Tp. Claims TRS2622 and TRS2623. Lat. 47.61°, Long. 81.16°.	OMNR, Kirkland Lake: Macmurchy Tp., Burke (1937). ODM 1977, GR152, p.54 (Triton Explorations Limited). ODM Map 2365, Macmurchy and Tyrrell Townships (Triton Explorations Ltd.).		cut by a north-trending diabase dike. Two strong shear zones within the metasediments contain quartz lenses. Assays from pits and trenches ranged from trace to 0.02 oz. Au/ton.

McPHAIL TOWNSHIP

(NTS 41O/1E)

McClasky, J.A. Occurrence: On the west shore of Ramsey Lake, in the southwest corner of McPhail Tp. Lat. 47.16°, Long. 82.22°.	ODM 1961, GR7, p.32. ODM Map 2013, Biscotasing Area.	Au Cu Pb	The showing consists of a quartz stockwork in a diabase dike. The dike strikes N10°W and intrudes migmatite and hybrid gneiss. The quartz stockwork strikes N8°E and dips 80°W; it is exposed for a distance of 500 feet, has a width of 75 to 100 feet, and is open at both ends. Mineralization consists of pyrite, chalcopyrite, galena, malachite, and specular hematite. Grab samples from the northern end and central section of the dike yielded values of 0.12 and 0.11 oz. Au/ton respectively. Both samples came from highly silicified phases of the diabase. 1955: 3 surface trenches and sampling by J.A. McClasky. 1961: Samples for assay taken by D.P. Rogers during an ODM survey.
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MALLARD TOWNSHIP

(NTS 41O/9W)

Ferland-Gauldie-Mogridge Occurrence: Central Mallard Tp., at the common corner of patented claims S24797-S24800. Lat. 47.67°, Long. 82.28°.	ODM 1934, Vol.43, pt.3, p.36. ODM 1935, Vol.44, pt.7, p.23-25. ODM Map 44g, Opeepeesway Lake Area.	Au Ag Cu	The main showing is a rusty-weathering shear zone at the contact between andesitic lavas and a light-coloured bedded tuff. The shear zone strikes N45°W and dips 63°S, has a width varying from 15 to 30 feet, and has been exposed for a distance of 450 feet. The schist is silicified and carbonatized, and contains abundant fine pyrite and some chalcopyrite throughout its length. There are a few small irregular quartz lenses, but vein quartz is generally scarce. Selected grab samples of well-mineralized schist from the surface yielded 0.01 to 0.11 oz. Au/ton and 1.45 to 4.85 oz. Ag/ton. The best diamond-drill result was 0.11 oz. Au/ton over 10 feet. 1933: Stripping and trenching by J. Gauldie, L. Mogridge, and E. Ferland. 1933-1934: Option taken and 4 diamond-drill holes (502 feet) by the N.A. Timmins. Co.
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Name and Location	References	Metals	Remarks
Hermiston, P.A. Occurrence: Central Mallard Tp. Patented claim S37428. Lat. 47.67°, Long. 82.29°.	ODM 1934, Vol.43, pt.3, p.36. ODM 1935, Vol.44, pt.7, p.28. ODM Map 44g, Opeepeesway Lake Area (occurrence not shown on map).	Au	Located on the northeast limb of an Early Precambrian synclinal fold belt consisting mainly of mafic metavolcanics. Main showing is in schistose andesitic lavas which trend S45°E. Mineralization consists of abundant pyrite in lenses of quartz and occurs across a width of 15 feet. Two grab samples of the pyritized schist assayed 0.21 and 0.28 oz. Au/ton. 1933-1934: 2 trenches dug and samples taken for assay by P.A. Hermiston and W. Hammerstrom.
Woman River Occurrence: On the Woman River, in northwestern Mallard Tp. Claim S20506. Lat. 47.67°, Long. 82.33°.	ODM 1934, Vol.43, pt.3, p.36. ODM 1935, Vol.44, pt.7, p.25-28. Regional Geologist's Files, OMNR, Timmins: Mallard Tp., Woman River Syndicate (1936). ODM Map 44g, Opeepeesway Lake Area.	Au Cu	Main showing consists of a carbonatized chlorite-sericite shear zone in pillowed andesite. The zone is associated with small dikes of quartz and feldspar porphyry and contains narrow lenses and stringers of quartz. It strikes N68°W and dips vertically, has been exposed for a distance of 140 feet, and has an average width of 10 feet. The zone of quartz veining can be up to 3 feet in width but is usually indistinct owing to intense silicification of the schist. The quartz carries minute amounts of pyrite. In a pit on the east shore of the river the schist contains 50% quartz and carbonate, and small amounts of pyrite and chalcopyrite. Channel samples of this material yielded low gold values. Approximately 50 feet south of the main showing, two irregular quartz-carbonate lenses up to 3 feet in width carry moderate amounts of pyrite and chalcopyrite, and a little tourmaline. A selected grab sample of the vein material assayed 0.19 oz. Au/ton. Circa 1933: Shallow trenching, test pitting, and channel sampling by Woman River Gold Mines Ltd.

MARGARET TOWNSHIP

(NTS 41O/1E, 41O/8E)

Margaret Occurrence: On the west shore of Longspur Bay of Biskotasi Lake, in central Margaret Tp. Lat. 47.27°, Long. 82.15°.	ODM 1961, GR7, p.31. ODM Map 2013, Biscotasing Area.	Au	The showing occurs in a highly sheared metasedimentary-metavolcanic inclusion within porphyritic monzonite. Mineralization consists of sporadic pyrite, quartz, magnetite, and traces of chalcopyrite in small veinlets and lenses. The inclusion strikes N40-60°E, dips 30-50° SE, and is 15 to 25 feet wide. The mineralized zone has been exposed at intervals with trenches for a distance of 600 feet. A grab sample from the zone assayed 0.07 oz. Au/ton.
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Name and Location	References	Metals	Remarks
MARSH TOWNSHIP (NTS 42B/4W, 42B/5W)			
Charlebois-Cristakos Occurrence: North of the east end of Ash Lake, in northern Marsh Tp. (Tp.44). Lat. 48.27°, Long. 83.93°.	ODM 1935, Vol.44, pt.8, p.38. ODM Map 44c, Lochalsh- Missinaibi Area.	Au	Hornblende schist contains some pyrite and is cut by small dikes of magnetite and pyrite. A channel sample taken across 30 feet of the schist yielded 0.1 oz. Au/ton.
OSWAY TOWNSHIP (NTS 41O/9)			
Osway Occurrence: On east shore of the Northeast Arm of Opeepeesway Lake, in northwest-central Osway Township. Latitude 47.65°, Long. 82.29°.	ODM 1949, Vol.58, pt.5, p.23. ODM Map 1949-2, Township of Osway.	Au Cu	A brecciated zone in porphyry was exposed by trenching. Mineraliza- tion consists of quartz, carbonate, chalcopyrite, and pyrite. Grab sam- ple assayed 0.03 oz. Au/ton.
PARKIN TOWNSHIP (NTS 41I/15W)			
Brennan, S. Occurrence: S½, lot 10, con. III, Parkin Tp. Claim S127484. Lat. 46.84°, Long. 80.93°.	ODM 1970, GR80, p.52. ODM Map 2180, Hutton and Parkin Townships.	Au	3 diamond-drill holes (355 feet) in fractured volcanics returned values up to 0.23 oz. Au/ton.
Decade Occurrence: Lots 4-6, con. II and III, Parkin Tp. Claims S345196, S345197, S345558, and S357966-S357974. Lat. 46.83°, Long. 80.87°.	Northern Miner, Jan. 25, 1973, p.15. Northern Miner, May 17, 1973, p.22. ODM Map 2180, Hutton and Parkin Townships.	Au Ag	The claims cover a quartz vein sys- tem carrying values in gold and sil- ver. The main vein is 6 to 8 feet wide and branch stringers extend more than 20 feet to one side. 1972: Zone opened up by strip- ping for a distance of more than 200 feet.
Concor-Chibougamau (Placer) Occurrences: Lots 11 and 12, con. I, II and III, Parkin Tp. Claims S90430, S90431, S91018, S91019, S95389, S91762-S91770, S99411- S99420, S99430-S99434, S99491- S99495, S100187, S107167. Lat. 46.82°, Long. 80.93°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Parkin Tp., Technical Survey File 63.985. ODM 1949, PR1949-2, 8p. ODM 1970, GR80, p.35-39; p.41,42 (R. Fielding, J.F. Rheault, E. Rivers). ODM Map 2180, Hutton and Parkin Townships (Fielding, R., Rheault, J.F., Rivers, E.).	Au	"Placer gold is present in the Ver- million River gravels in the vicinity of Milnet in sufficient amounts, at least locally, to have made the area an attractive prospecting ground. Unfortunately, the exploration con- ducted to date has not been able to prove commercially workable depo- sits." (ODM 1970, GR80, p.39). 1959: Concor-Chibougamau Mines Ltd. investigated the placer gold occurrences of the Vermilion River drainage channels in Hutton and Parkin Townships. A refraction seis- mograph survey was done to locate old river channels and thus deter- mine favorable locations for drilling. This survey showed that the over- burden thickness varied from 25 to 75 feet. In the assessment file are logs and sections for 17 drill holes, and on the map are locations for 20 churn-drill holes and 40 test pits. No assays are given.
Mataris, J. Occurrence: Lots 2 and 3, con. II, Parkin Tp. Patented claims S5324-S5326. Lat. 46.83°, Long. 80.84°.	GSC 1936, Mem.192, p.144. ODM 1932, Vol.41, pt.4, p.36,37. ODM Map 2180, Hutton and	Au	On the property, vertically-dipping Bruce Formation quartzite and con- glomerate are overlain by Espanola Formation limestone. Dikes of Ke-

Name and Location	References	Metals	Remarks
	Parkin Townships.		weenawan diabase cut the sedimentary rocks. Quartz veins up to 3 feet wide occur in shear zones in quartzite, and as narrow stockworks in limestone beds. These zones contain some pyrite and arsenopyrite, and the quartz veins carry low gold values. Circa 1930: Surface exploration and trenching.
Parkin Occurrence: Approximately ¼ mile west of Hwy. 545, in lot 6, con. III, Parkin Tp. Claim S13043. Lat. 46.82°, Long. 80.87°.	GSC 1936, Memoir 192, p.145. ODM 1932, Vol.41, pt.4, p.38. ODM Map 2180, Hutton and Parkin Townships.	Au Pb	An isoclinally folded belt of south-east-trending, steeply dipping Huronian metasediments is intruded by sills and plugs of Nipissing-type gabbro. The principal showing occurs in brecciated limestone and consists of a zone, 60 by 70 feet, containing a number of quartz stringers with some galena, pyrite and breunnerite. A sample taken from a quartz vein, 4 feet wide and striking N80°E, assayed 0.20 oz. Au/ton. Other samples reportedly yielded 0.34 oz. Au/ton. Circa 1930: Pitting and sampling.

PENHORWOOD TOWNSHIP

(NTS 42B/1E)

Bragagnola (Bromley) Occurrence: Southwest of Primer Lake, in north-west-central Penhorwood Tp. Patented claims S35288-S35291. Lat. 48.18°, Long. 82.11°.	ODMNA 1972, GR97, p.66, p.107-109 (Radio Hill Mines Company Limited). ODMNA Map 2231, Penhorwood and Kenogaming Townships.	Ag Au Cu Zn Pb	Area is underlain by sheared, highly carbonatized metavolcanics and feldspar porphyry intrusive rocks. Trenching on 3 zones of quartz veining revealed a maximum width of 4 feet. Quartz veins with chloritic inclusions and stockworks of quartz veins host pyrite, chalcopyrite, sphalerite and galena mineralization. Grab samples from a quartz stockwork assayed as high as 72 to 80 oz. Ag/ton. Diamond-drilling returned values of 0.13 oz. Au/ton and 3 oz. Ag/ton over a 2-foot width. 1967: Trenching and diamond-drilling.
Burtho Occurrence: Approximately 2 miles north-northeast of Tionaga, in east-central Penhorwood Tp. Lat. 48.11°, Long. 82.08°.	ODMNA 1972, GR97, p.75 (Nat River and Burtho Claim Groups). Regional Geologist's Files, OMNR, Timmins: Penhorwood Township, File T191. ODMNA Map 2231, Penhorwood and Kenogaming Townships (occurrence not shown on map).	Au	Several mineralized shear zones were located, but no gold values higher than 0.03 oz./ton were found. 1946: Geological survey and prospecting by Burtho Gold Mines Ltd. 1956: Geological and geophysical (ground magnetic and electromagnetic) surveys by Canadian Johns-Manville Co.
Nib Yellowknife Occurrence: Approximately 1 mile north of Jehann Lake, in northern Penhorwood Tp. Lat. 48.17°, Long. 82.10°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Penhorwood Tp., Technical Survey File 63A.11. ODMNA 1972, GR97, p.106. ODMNA Map 2231, Penhorwood and Kenogaming Townships.	Au	East-trending, isoclinally folded Archean mafic metavolcanics and metasediments are cut by Early Precambrian intrusive bodies of various compositions and by Keweenawan diabase dikes. Easterly-trending faults are prominent in the area. The main showing, exposed in a 10-

Name and Location	References	Metals	Remarks
			by 12-foot pit, consists of a mineralized fracture zone in amphibolite. Quartz veins up to 1 inch wide fill fractures in the amphibolite. Both the quartz veins and amphibolite are mineralized with arsenopyrite. Samples from the pit assayed up to 0.20 oz. Au/ton, but elsewhere on the property the values were low (0.01 to 0.02 oz. Au/ton). 1947: Geological mapping and trenching by Nib Yellowknife Mines Ltd.

RANEY TOWNSHIP

(NTS 410/15)

Raney Lake Occurrence: Northeast of Raney Lake, in central Raney Tp. Lat. 47.88°, Long. 82.80°.	ODM 1934, Vol.43, pt.3, p.35. ODM Map 43b, Swayze Gold Area.	Au Cu Pb	Country rocks consist of arkose, impure quartzite, and feldspar porphyry. Two quartz veins with maximum widths of 6 inches and 2 feet contain pyrite, galena, chalcopyrite, and native gold. Circa 1932: Trenching.
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RATHBUN TOWNSHIP

(NTS 411/10E, 411/15E)

Dobson Occurrence: North shore of Wanapitei Lake, in northern Rathbun Tp. Lat. 46.79°, Long. 80.75°.	Report of the Royal Commission on the Mineral Resources of Ontario 1890, p.112. ODM Map P.844, River Valley Area (occurrence not shown on map).	Au	A northeast-trending quartz vein, which is 4 feet wide and has been traced for 2000 feet, cuts granite gneiss. Arsenopyrite along the hanging wall assayed 42 oz. Au/ton; the vein itself assayed 1.9 oz. Au/ton.
Last Chance Occurrence: Lot 5, con. IV, Rathbun Tp. Lat. 46.75°, Long. 80.61°.	OBM 1896, Vol.6, p.269. ODM Map P.844, River Valley Area (occurrence not shown on map).	Au	The property is underlain by southeast-trending gently dipping Huronian metasediments which have been intruded by a large sill-like body of Nipissing Diabase. The principal showing comprises two parallel quartz veins striking easterly and dipping south in coarse-grained diabase. The larger vein has been traced for ¼ mile; stripping for a distance of 300 feet revealed a maximum width of 1.2 feet. Mineralization consists of pyrite and visible gold. Circa 1895: Stripping and 2 test pits.
Mondoux Occurrence: Lot 5, con. IV, Rathbun Tp. Lat. 46.75°, Long. 80.61°.	OBM 1895, Vol.5, p.263. ODM Map P.844, River Valley Area (occurrence not shown on map).	Au	The area is underlain by southeast-trending Huronian metasediments which have been intruded by a large sill-like body of Nipissing Diabase. A quartz vein with an exposed length of 60 feet reportedly carried good gold values. 1894-1895: Some stripping and an open cut. No record of any subsequent work.

Name and Location	References	Metals	Remarks
REEVES TOWNSHIP			
(NTS 42B/1E, 42B/8E)			
Kalbrook (Boulder) Occurrence: Southeast corner of Reeves Tp. Lat. 48.19°, Long. 82.02°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Reeves Tp., Technical Survey File 63.107. ODMNA 1972, GR97, p.91 (Kalbrook Mining Company Limited). ODMNA Map 2230, Reeves and Sewell Townships.	Au	The showing consists of rusty quartz rubble with visible gold. This is believed to be float, since no quartz veining was found in situ. A grab sample of quartz from the float trench assayed 0.13 oz. Au/ton; 10 other samples registered nil or trace Au. 1935: Geological examination and sampling of trench material by D. Burke. 1946: 13 diamond-drill holes by Kalbrook Mining Co. Ltd. 1947: Magnetic survey by McIntyre Porcupine Mines Ltd.
ROLLO TOWNSHIP			
(NTS 41O/15E)			
Agaura Occurrence: Approximately 1 mile south of Ridley Lake, in western Rollo Tp. Lat. 47.87°, Long. 82.71°.	ODM 1934, Vol.43, pt.3, p.35. ODM Map 43b, Swayze Gold Area.	Au Pb	The main showing consists of two zones in arkose which contain quartz veins mineralized with pyrite. The south zone has three short veins which strike N70°E and are exposed in trenches for a distance of 900 feet. The centre vein has a length of 70 feet and a width of 1.1 feet. It is composed of quartz-carbonate mineralized with pyrite, a little galena, and some visible gold. A channel sample taken across an 8-inch width assayed 0.70 oz. Au/ton. A strongly-schistose zone, having a strike of N80°E, widths of up to 12 feet and a length of 500 feet, lies 500 feet to the north in 'greenstone'. It is mineralized with pyrite and lenses of quartz. Parallel to it and 50 feet to the south, there is a carbonatized quartz porphyry dike, with a maximum width of 12 feet, which yielded low gold values from surface sampling. Circa 1933: Surface prospecting and channel sampling by Agaura Explorations Ltd.
Cyril Knight Occurrence: South-east end of Ridley Lake, in western Rollo Tp. Claim S22721. Lat. 47.88°, Long. 82.71°.	ODM 1934, Vol.43, pt.3, p.35. ODM Map 43b, Swayze Gold Area.	Au	A gold-bearing quartz vein in schistose andesite has an indicated length of 800 feet and maximum width of 10 feet. It strikes N65°E and dips 80°SE. The quartz is badly fractured in a direction parallel to the strike of the vein and carries small amounts of pyrite and native gold. Channel sampling reportedly yielded low gold values. 1932: Trenching and sampling by the Cyril Knight Prospecting Co. Ltd.

Name and Location	References	Metals	Remarks
SCADDING TOWNSHIP (NTS 411/10E)			
Alkin Occurrence: N½, lot 8, con. II, Scadding Tp. Patented claims S5441 and S5508. Lat. 46.65°, Long. 80.64°.	ODM 1932, Vol.41, pt.4, p.44. ODM 1960, GR2, p.29 (Scadding Township, Concession II, Lot 8). ODM Map 2009, Maclellennan and Scadding Townships (Claims S5508 and S5441).	Au	The area is underlain by southeast-trending Huronian metasediments which have been intruded by a large sill of Nipissing Diabase. The occurrences are quartz-carbonate veins in sheared gabbro close to a contact with Bruce Formation arkose. They consist of a series of irregular veins and pockets in a zone which is 300 feet long, 50 feet wide and runs parallel to the contact. There is some pyrite mineralization, and a considerable amount of visible gold has been reported. A channel sample taken prior to 1932 yielded a low gold value. Circa 1932: Pitting and trenching.
Glade Occurrence: Lots 5 and 6, con. II, Scadding Tp. Lat. 46.64°, Long. 80.61°.	DEMR Ottawa, Mineral Development Sector Files: Au 19, 411/10, Glade, March, 1973. Northern Miner, Jan. 25, 1973, p.6. ODM Map 2009, Maclellennan and Scadding Townships.	Au Cu	The property is underlain by Huronian metasediments which have been intruded by dikes and sills of Nipissing Diabase. Quartz fissure veins, conformable with the enclosing sediments, are from 1 foot to 4 feet wide and vary up to 110 feet in length. Assays of grab samples ranged from 0.005 to 1.22 oz. Au/ton. Circa 1973: 6 diamond-drill holes, from which the best assay was 1.2 oz. Au/ton over a 5.1-foot width.
Mid-Continent Occurrence: N½, lots 5 and 6, con. IV, Scadding Tp. Patented claims S16085, S16087, S16089 and S16092. Lat. 46.66°, Long. 80.62°.	GSC 1936, Memoir 192, p.145. ODM 1932, Vol.41, pt.4, p.43. ODM 1960, GR2, p.29 (Scadding Township, Concession IV, Lots 5 and 6). ODM Map 2009, Maclellennan and Scadding Townships (Claims S16085, S16087, S16089, S16092).	Au	The occurrence comprises a number of quartz-carbonate veins in diabase, close to a contact with Espanola Formation greywacke. The veins lie in shear zones which have an average width of 10 feet and dip 40-60°E. The western vein has been traced for ½ mile and is up to 14 feet wide. Mineralization consists of a little pyrite and, in the carbonate, some visible gold. Assays of vein material yielded only trace amounts of gold. Approximately 1,000 feet to the northeast, a 20-foot wide quartz-carbonate vein contains a little disseminated pyrite and reportedly assayed 0.14 oz. Au/ton across a width of 15 feet. 1931-1934: Surface development, consisting of trenching, stripping, and test-pitting, by Mid-Continent Goldfields Ltd.
Potvin, A. Occurrence: N½, lots 10 and 11, con. III, Scadding Tp. Claim S17051. Lat. 46.66°, Long. 80.67°.	GSC 1936, Memoir 192, p.145. ODM 1932, Vol.41, pt.4, p.44. ODM Map 2009, Maclellennan and Scadding Townships.	Au	The showing is a 7-foot wide quartz vein in diabase, close to the contact with Bruce and Espanola Formation metasediments. It strikes N40°E and dips 40°NW. There is some pyrite and visible gold. Approximately 800 feet to the east, quartz veinlets in gabbro yielded 0.09 oz.

Name and Location	References	Metals	Remarks
			Au/ton. Circa 1930: Surface exploration and channel sampling.
Scadding Occurrence: NE¼, S½, lot 9, con. I, Scadding Tp. Patented claim S5122. Lat. 46.59°. Long. 80.65°.	ODM 1932, Vol.41, pt.4, p.44 (Claim S. 5,122(P)). ODM 1960, GR2, p.29 (Scadding Township, Concession I, Lot 9). ODM Map 2009, Maclellan and Scadding Townships (Claim S5122).	Au	Southeast-striking Huronian meta-sediments are intruded by sill-like masses of Nipissing Diabase. The showing consists of a quartz-carbonate vein which strikes N80°E and dips 80°S in schistose Bruce Formation conglomerate. The vein varies from 3 to 8 feet in width and carries some pyrite. No gold assays have been reported. 1930: Surface development.

SEMPL TOWNSHIP

(NTS 41P/14, 42A/3)

Foisey, Frank Occurrence: Immediately south of the north boundary of the township, between the 1- and 2-mile posts, in northeastern Semple Tp. Lat. 48.01°, Long. 81.23°.	ODM 1926, Vol.35, pt.4, p.73,74. ODM 1978, OFR5221, p.82-86 (Hollinger Occurrences (Redstone River Group)). ODM Map 2291, Semple and Hutt Townships (Hollinger occurrences (Redstone River Group)).	Au Cu	Keewatin 'greenstone' and cherty iron formation host cross-cutting pink feldspar porphyry dikes. Mineralization is associated with the iron formation. Highly pyritized sections (including the country rock) have oxidized to form a rusty capping which contains pannable gold; siderite and chalcopyrite are also present.
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SEWELL TOWNSHIP

(NTS 42A/4W, 42A/5W)

Lamport-Lumbers Occurrence: On western boundary of Sewell Tp. Patented claims S4803-S4805, S4807, S4810. Lat. 48.22°, Long. 82.01°.	GSC 1916, Summary Report, p.181. ODM 1924, Vol.33, pt.6, p.14,15 (Gosselin Claims). ODMNA 1972, GR97, p.102. ODMNA Map 2230, Reeves and Sewell Townships.	Au Cu	The rocks within the claim group are chlorite-carbonate schists derived from pillowed mafic flows. Intruding the schists is a north-striking quartz diabase dike approximately 150 feet wide. A well-defined north-northeast-striking fault (Gosselin Fault) is largely filled with irregular masses of quartz. The vein material mixed with host rock in places reaches a width of 50 feet. Associated with the quartz are pyrite, pyrrhotite, chalcopyrite, tourmaline and mariposite. A sample taken across the vein zone reportedly assayed 0.02 oz. Au/ton. 1916: Gold discovered in quartz vein by T.L. Tanton. Circa 1924: Vein cleared and stripped for a distance of ½ mile, and 3 pits sunk to a depth of about 8 feet.
Mining Corporation Occurrence: Between Lap and Misty Lakes, in south-central Sewell Tp. Main showing in patented claim S36916. Lat. 48.20°, Long. 81.92°.	ODMNA 1972, GR97, p.105. ODMNA Map 2230, Reeves and Sewell Townships.	Au Cu	Limited exposure shows a coarse-grained, massive amphibolite to be intruded by coarse-grained hornblende syenite. A shear zone containing chlorite schist, quartz veins, and sheared syenite strikes N40°E and is at least 50 feet wide. Mineralization consists of pyrite, chalcopyrite, and some gold.

Name and Location	References	Metals	Remarks
			Circa 1946-1947: 15 diamond-drill holes (4,009 feet). A 4.8-foot section in one hole averaged 0.11 oz. Au/ton.
Sewell Lake Occurrence: Approximately ½ mile west-northwest of Sewell Lake and ½ mile south of Hwy. 101, in southwest-central Sewell Tp. Lat. 48.22°, Long. 82.00°.	ODMNA 1972, GR97, p.76; 88 (Fawcett Property). ODMNA Map 2230, Reeves and Sewell Townships.	Au	Pillowed mafic metavolcanic flows are intruded by minor amphibolite. A few pyritic quartz veins reportedly contained low gold values. 1947: Trenching and 8 diamond-drill holes (467 feet).

SNIDER TOWNSHIP

(NTS 41I/6E, 41I/11E)

McCormack Occurrence: Lot 3, con. II, Snider Tp. Lat. 46.48°, Long. 81.10°.	Report of the Royal Commission on the Mineral Resources of Ontario 1890, p.112. ODM Map 2170, Sudbury Mining Area (occurrence not shown on map).	Au	Huronian mafic and felsic metavolcanics, and metasediments of the Copper Cliff Formation, are intruded by the Creighton Pluton. This quartz monzonite porphyry intrusion pre-dates northwest-trending Nipissing Diabase dikes. The precise location of this occurrence is not known, nor is there a description of the geology. However, it is reported that a quartz vein, 2 to 2.5 feet in width, averaged 1.13 oz. Au/ton and approximately 5.5 oz. Ag/ton. Circa 1890: Surface work by R. McCormack. Property currently held under patent.
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SOTHMAN TOWNSHIP

(NTS 41P/14)

Wrigley Occurrence: 800 feet north-northeast of Wrigley Lake and in vicinity of Waterman Lake, in north-central Sothman Tp. Lat. 47.92°, Long. 81.27°.	ODM 1953, Vol.62, pt.6, p.32,33. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1953-3, Township of Sothman.	Au	The intermediate to felsic pillow lavas which underlie the property are largely obscured by overburden. Grab samples of pyritized schist assayed from trace to 0.01 oz. Au/ton. 1947: Magnetic, resistivity, and self potential surveys, and 4 diamond drill holes (1,766 feet) by Hollinger Consolidated Gold Mines Ltd. 1966: Magnetic and electromagnetic surveys, and 1 diamond-drill hole (400 feet) by PCE Explorations Ltd.
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STOVER TOWNSHIP

(NTS 42B/5W)

Guarnaccio Occurrence: Northwest corner of Stover Tp. Claims S48466-S48469. Lat. 48.35°, Long. 84.02°.	Canadian Mines Handbook 1953, p.85. DEMR Ottawa, Mineral Development Sector Files: Au 10, Guarnaccio, October, 1965. ODM Map 2380, Stover and	Au Cu	Southeast-trending Early Precambrian mafic and felsic metavolcanics, with narrow bands of iron formation, are intruded by an Algoman granitic batholith. Gold is found in silicified bands of iron formation which occurs interbedded
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Name and Location	References	Metals	Remarks
	Brackin Townships (occurrence not shown on map).		with tuffs and flows, and occasionally in discrete quartz veins. The iron formation has been sheared and deformed, and is cut by a network of quartz stringers mineralized with pyrrhotite, chalcopyrite, and in places visible gold. Three gold-bearing zones, 6 inches to 6 feet in width, have been indicated by surface exploration; assays ranged as high as 0.58 oz. Au/ton over 6 feet. 1949-1954: General surface exploration by Guarnaccio Gold Mines Ltd. 1955-1959: Stripping and trenching by Kent Mines Ltd. 1959-1962: Geophysical survey and diamond-drilling by Milmar-Island Mines Ltd.
Stover Lake Occurrence: Northeastern Stover Tp. Patented claim S49310. Lat. 48.38°, Long. 83.93°.	ODM 1942, Vol.51, pt.8, p.39. Au ODM 1978, Report 172, p.40, 41 (Turzone Exploration Limited (1961)). ODM Map 2380, Stover and Brackin Townships (Turzone Explorations Ltd. (1961)).		The principal showings are gold-bearing shear zones in highly altered felsic volcanic breccia. The rock in these zones has been altered and silicified, and contains stringers and small veins of quartz. A small amount of gold is generally associated with fine-grained pyrite which occurs in the veins and stringers. In some places, the rock is highly sheared and rusty; in others, it is fractured and only slightly mineralized. The sheared and mineralized zone has been traced for a distance of 350 feet and shows widths of up to 35 feet. The gold content varied from trace to 0.17 oz. Au/ton and averaged 0.04 oz. Au/ton. 1942-1943: Extensive stripping, trenching, and sampling by S. Pileggi. Property optioned to Sylvanite Gold Mines Ltd.
Sylvanite Occurrence: North end of a small lake situated 1 mile southeast of Stover Lake Occurrence, in north-central Stover Tp. Lat. 48.36°, Long. 83.95°.	ODM 1978, Report 172, p.39, 40. ODM Map 2380, Stover and Brackin Townships.	Au	A shear zone in dacitic volcanic breccia contains quartz stringers and lamprophyre dikes. A chip sample taken by S. Pileggi reportedly yielded 0.9 oz. Au/ton; subsequent channel sampling indicated only 0.04 oz. Au/ton over 3 feet.
STREET TOWNSHIP (NTS 41I/10E)			
McVittie, G.E. Occurrence: West bank of Wanapitei River, in N½, lots 9 and 10, con. III, Street Tp. Lat. 46.60°, Long. 80.65°.	ODM 1932, Vol.41, pt.4, p.47. Au ODM Map 48m, Ashigami Lake Area (occurrence not shown on map).	Cu	Northeast-trending folded Huronian metasediments underlie the area. The Grenville Front strikes northeast approximately 2 miles south of the occurrence and is defined in this area by the Wanapitei Fault. The showing is a zone of narrow quartz veins in quartzite and inter-

Name and Location	References	Metals	Remarks
			bedded slaty greywacke and conglomerate of the Mississagi Formation. Mineralization consists of disseminated pyrite and chalcopyrite. A well mineralized specimen of vein material assayed 1.12% copper and 0.018 oz. Au/ton. Circa 1930: Trenching and diamond-drilling by G.E. McVittie.

SWAYZE TOWNSHIP

(NTS 41O/15E)

Collins, J.H. Occurrence: Northeastern Swayze Tp. Lat. 47.81°, Long. 82.65°.	DEMR Ottawa, Mineral Development Sector Files: Au 30100 Swayze; Manitoba Basin Mining Co. Ltd. ODM Map 2070, Swayze and Dore Townships.	Au	The area is underlain by an east-trending fold belt of Early Precambrian mafic and felsic metavolcanics, with minor amounts of metasediment (including iron formation). Near the occurrence, a prominent northeast-trending fault with left lateral movement is characterized by highly sheared metavolcanics in zones up to 200 feet wide. One of several quartz veins reportedly contained visible gold. 1933: Some trenching and other surface work by Manitoba Basin Mining Co. Ltd.
Denyes Occurrence: Immediately south of the southwest corner of Swayze Lake, in northwestern Swayze Tp. Claims S131911-S131913. Lat. 47.82°, Long. 82.73°.	ODM 1934, Vol.43, pt.3, p.29. ODM Map 43b, Swayze Gold Area.	Au	The area is underlain by an east-striking fold belt of Early Precambrian mafic to felsic metavolcanics, with minor interbedded metasediments (including iron formation). In the vicinity of the property, massive to schistose rhyolitic metavolcanics contain small isolated bodies of clastic metasediments. The occurrence consists of small quartz veins carrying gold values. 1932: Trenching and stripping by Dome Mines Ltd.
Montgomery-Ackerman Occurrence: North and northeast of Ackerman Lake, in northeastern Swayze Tp. and northwestern Dore Tp. Lat. 47.83°, Long. 82.61°.	DEMR Ottawa, Mineral Development Sector Files: Au 8, 41O/15, Montgomery-Ackerman, Feb., 1964. ODM 1934, Vol.43, pt.3, p.26. ODM Map 43b, Swayze Gold Area.	Au	The area is underlain by an east-trending fold belt of Early Precambrian mafic and felsic metavolcanics with small interbedded lenses of metasediments. The property is underlain mainly by rhyolitic lavas. The occurrence is described as a number of small veins and mineralized shear zones containing quartz, carbonate, and pyrite. Low gold values were reported. 1932: Surface work, trenching, and approximately 1,000 feet of diamond-drilling under the direction of T. Montgomery.

YEO TOWNSHIP

(NTS 41P/12W, 41O/9E)

Hopkins, P.E. Occurrence: Between Clam and Moore Lakes, in eastern	Assessment Files Research Office, Ontario Geological	Au	An east-trending synclinal fold belt of Early Precambrian mafic meta-
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Name and Location	References	Metals	Remarks
Yeo Tp. Claims S21174 and S21175. Lat. 47.55°, Long. 81.97°.	Survey, Toronto: Yeo Tp., Diamond-Drilling Report 10. ODM 1932, Vol.41, pt.3, p.34. ODM Map 41d, Three Duck Lakes Area.		volcanics and Ridout Series meta-sediments is intruded by a variety of Algonian granitic rocks. North-trending late diabase dikes cut all other formations. The principal showings are three quartz veins ranging from 2 to 6 inches in width; gold was panned from all of these. A fourth showing comprises a lens of quartz, up to 1.5 feet in width, which has been traced for 100 feet. An assay of mineralized vein quartz yielded 0.22 oz. Au/ton. The rock hosting these occurrences is predominantly granodiorite. Circa 1930: Surface exploration by P.E. Hopkins. 1961: 3 diamond-drill holes (305 feet) by Jonsmith Mines Ltd.
Moore Lake Occurrence: Between Moore and Schist Lakes, in northeastern Yeo Tp. Lat. 47.57°, Long. 81.99°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Yeo Tp., Diamond-Drilling Report 12. ODM 1932, Vol.41, pt.3, p.30, 31 (Russell Cryderman). ODM Map 41d, Three Duck Lakes Area (Russell Cryderman).	Au	The occurrence consists of a quartz-carbonate vein in highly carbonatized and pyritized sericite schist derived from sediments of the Ridout Series. Samples of vein material taken from the dump yielded up to 0.11 oz. Au/ton. Circa 1912: Several test pits and a 30-foot shaft by P. Moore. 1958: One diamond-drill hole (184 feet) by the Three Duck Lake Syndicate.
Schist Lake Occurrence: Immediately south of the Yeo-Potier township boundary, between the 2 and 3 mile posts, in northern Yeo Tp. Claim S358978. Lat. 47.58°, Long. 82.03°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Yeo Tp., Technical Survey File 63A.95. ODM 1932, Vol.41, pt.3, p.30,31 (Russell Cryderman). Regional Geologist's Files, OMNR, Timmins: Yeo Tp., W. Gerrie (1951). ODM Map 41d, Three Duck Lakes Area (Russell Cryderman).	Au Cu	The occurrence consists of strongly silicified, carbonatized, and sericitized zones in schistose greywacke and conglomerate of the Ridout Series. Mineralization comprises pyrite, chalcopyrite, and arsenopyrite. No.1 Zone has been traced for a distance of 450 feet and is up to 13 feet in width. A sample from a pit on this zone assayed 0.18 oz. Au/ton. No.2 Zone, 130 feet to the north, consists of a 1-foot wide quartz vein. A specimen of vein quartz yielded 0.03 oz. Au/ton. Gold values were restricted to the sections carrying arsenopyrite. Circa 1930: Extensive pitting and trenching by Russell Cryderman. 1951: Property included in a geological survey by Central Manitoba Mines Ltd.
Young, C.T. Occurrence: South of the east end of Schist Lake, in northeastern Yeo Tp. Claim S2571. Lat. 47.58°, Long. 81.98°.	ODM 1932, Vol.41, pt.3, p.33. ODM Map 41d, Three Duck Lakes Area.	Au Cu	An east-trending synclinal fold belt of Early Precambrian mafic meta-volcanics and metasediments is intruded by Algonian granitic rocks and north-trending Keweenaw diabase dikes. The main showing consists of sheared impure arkose or greywacke mineralized with finely disseminated pyrite and chalcopyrite. A sample of mineralized schist from the bottom of a 35-foot

Name and Location	References	Metals	Remarks
			shaft assayed 0.03 oz. Au/ton. A second showing in iron formation reportedly yielded low gold values. Circa 1930: Surface work and pitting by C.T. Young. 1958: 2 diamond-drill holes (378 feet) by the Three Duck Lake Syndicate.
ZAVITZ TOWNSHIP (NTS 42A/3E)			
Robinson Occurrence: 1/5 mile northwest of Moray Lake, in southeastern Zavitz Tp. Claims L353160 and L353167. Lat. 48.03°, Long. 81.09°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Zavitz Tp., Technical Survey Files 2.1290, 2.1373; Diamond-Drilling Report 13. ODM 1978, OFR5221, p.95-97. Resident Geologist's Files, OMNR, Kirkland Lake: Zavitz Tp., Dirom (1965), Holbrooke (1941). ODM Map 2290, English and Zavitz Townships.	Au Ag Pb	Keewatin-type intermediate to felsic metavolcanics are intruded by a small stock of porphyritic syenite. Gold occurs in numerous quartz stringers which cut this stock. Grab sample taken by Sylvanite Gold Mines Ltd. in 1941 from the eastern end of the stock contained 0.28 oz. Au/ton. Grab sample taken by Noranda Exploration Co. Ltd. in 1965 from the western end contained 0.75 oz. Au/ton, 3.90 oz. Ag/ton, and 0.45% Pb. 1941: Trenching and sampling by Sylvanite Gold Mines Ltd. 1964-1965: Magnetic survey and sampling by Noranda Exploration Co. Ltd. 1973: Geological and geophysical (magnetic, electromagnetic, induced polarization) surveys, and 1 diamond-drill hole (251 feet) by Pan-Ore Mines Ltd.
Voyager Occurrence: ¾ mile northwest of Moray Lake, in southeastern Zavitz Tp. Lat. 48.04°, Long. 81.10°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Zavitz Tp., Technical Survey Files 2.1290, 2.1418; Diamond-Drilling Report 14. ODM 1978, OFR5221, p.97-99. Resident Geologist's Files, OMNR, Kirkland Lake: Zavitz Tp., Halladay (1973), Hellens (1964). ODM Map 2290, English and Zavitz Townships.	Au Cu	Northwest-trending intermediate to felsic metavolcanics are intruded by a quartz-feldspar porphyry dike. Copper and gold values are associated with pyrite-pyrrhotite mineralization in a bed of cherty rhyolite breccia. The copper-bearing rhyolite lens, which is about 1500 feet long and 200 feet wide, is interstratified with andesitic flows and tuff. Selected diamond-drill core samples assayed 0.03 oz. Au/ton and 0.91% Cu over 4.8 feet, and 0.33 oz. Au/ton and 0.46% Cu over 4 feet. 1964: Electromagnetic survey and 7 diamond-drill holes (1,819 feet) by Voyager Explorations Ltd. and Silvermaque Mining Ltd. 1973: Geophysical surveys (magnetic, electromagnetic, induced polarization) by Pan-Ore Mines Ltd. 1975: 2 diamond-drill holes (1,113 feet) by Rio Tinto Canadian Exploration Ltd.
Vipond and Heard Occurrence: 1¼ miles northwest of the north end of Luke Lake, in southern	Assessment Files Research Office, Ontario Geological Survey, Toronto: Zavitz Tp.,	Au	Tightly folded andesitic schists with bands of tuff and agglomerate strike N70°W, dip north, and are associa-

Name and Location

Zavitz Tp. Claim L354073.
Lat. 48.03°, Long. 81.16°.

References

Technical Survey File 2.1675.
ODM 1978, OFR5221, p.97.
ODM Map 2290, English and
Zavitz Townships.

Metals**Remarks**

ted with similarly-trending aplitic dikes. Quartz stringers and veins containing disseminated pyrite occur in sheared and carbonatized andesite tuff and aplite. Assays of grab samples averaged 0.1 oz. Au/ton; a chip sample taken over a 20-foot width assayed 0.11 oz. Au/ton. 1974: Geological and geophysical (electromagnetic, magnetic) surveys, pitting, and sampling by Vantage Mining Co. Inc.

TIMISKAMING DISTRICT

ARNOLD TOWNSHIP

(NTS 32D/4, 32D/5)

Lowe Prospect

MAIN METALS: Au

LOCATION: Approximately 14 miles northeast of Kirkland Lake, 2 miles southwest of Sweeney Lake, in east-central Arnold Township. Latitude 48.24°, Longitude 79.78°.

Map reference: ODM 2061, Arnold and Katrine Townships.

GEOLOGY: Mafic metavolcanics, including minor amounts of pillow lava, are altered to carbonatized and chloritized schist. A 35-foot wide, east-striking shear zone is cut by quartz veins which contain scattered pods of chalcopyrite.

Diamond-drill core from shear zone gave erratic values, the best being 1.66 ounces of Au per ton. Another intersection averaged 0.115 ounce of Au per ton over 28 feet.

HISTORY: 1945: Trenching and several short x-ray diamond-drill holes by D. Lowe.

1946: Six diamond-drill holes (3,449 feet) by Anglo-Huronian Limited.

1962: Seven diamond-drill holes (1,618 feet) by Rochester and Pittsburg Coal (Canada) Limited.

1964: Three diamond-drill holes (1,019 feet) by Rio Tinto Canadian Exploration Limited.

REFERENCES: ODM 1964, GR29, p.11.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Arnold Township, D. Lowe (1945, 1962).

BADEN TOWNSHIP

(NTS 42A/2)

Thesaurus Prospect

MAIN METALS: Au

LOCATION: Approximately 12 miles northwest of Kirkland Lake, 2/5 mile northeast of the head of Matachewan Lake, in northern Baden Township. Shaft in claim MR5868. Latitude 48.10°, Longitude 80.74°.

Map reference: ODM 2109, Baden and Alma Townships.

GEOLOGY: Andesite tuff and hornblende-mica granite are cut by north-trending Matachewan diabase dikes. The showing consists of three principal quartz veins with associated alteration zones.

Some visible gold was found during the sinking of

the shaft. Development work indicated high grade ore (no figures given) on the 100-foot level. Grab samples taken from the dump in 1963 yielded values ranging from trace to 0.14 ounce of Au per ton.

HISTORY: 1919-1923: 308-foot shaft with levels at 100 and 300 feet, and 330 feet of lateral development. Adit on another vein. All work by Thesaurus Gold Mines Limited.

1934: Shaft dewatered and resampled.

1972: Geological, geochemical, electromagnetic, and magnetic surveys by Canadian Johns-Manville Company Limited.

REFERENCES: ODM 1967, GR51, p.25, 26.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

BANNOCKBURN TOWNSHIP

(NTS 41P/15W, 42A/2W)

Ashley Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 12 miles northwest of Kirkland Lake, near the 5-mile post on the Argyle-Bannockburn township boundary, in northwestern Bannockburn Township and southwestern Argyle Township. Main (Ashley) Vein and shaft in claim MR8194. Garvey Vein in claim MR8205. Latitude 48.01°, Longitude 80.90°.

Map reference: ODM 41a, Bannockburn Gold Area.

GEOLOGY: Northwest-trending Keewatin basalt flows with good pillows are cut by dikes of porphyritic granite and lamprophyre. The gold mineralization occurs in numerous quartz veins, the two main ones being the Ashley and Garvey Veins in Bannockburn and Argyle Townships respectively. The Ashley Vein consists of connected lenses of quartz cutting the basalts; it strikes N10°W, dips 50°W, and is approximately 2 feet wide. Mineralization, consisting of pyrite, galena, sphalerite, chalcopyrite, altaite, specularite and native gold, occurs along fractures in the quartz. The Garvey Vein strikes east, dips 20°N, and has a maximum width of 1.5 feet. Mineralization is similar to that of the Ashley Vein.

ECONOMIC FEATURES: A 2,000-foot length of the Ashley Vein averaged 0.3 to 0.4 ounce of Au per ton across a width of 2.5 feet.

OWNERSHIP: MR8194 (shaft claim) and two adjacent claims by Caramora Porcupine Mines Limited. Garvey Vein claim and four adjacent claims by G. Sunisloe.

HISTORY: 1931: Trenching revealed several small veins. The two main veins were diamond-drilled, and as a result an inclined shaft was sunk on the Ashley Vein by Ashley Gold Mining Corporation Limited (controlled by The Mining Corporation of Canada Limited).

1932-1936: Inclined shaft to 403 feet, with levels at 100, 200, 300, and 400 feet. Two winzes, one of them from 400-foot level with levels at 500 and 600 feet. Underground development totalled 17,316 feet. Underground and surface diamond-drilling. All work by The Mining Corporation of Canada Limited.

1947: Caramora Porcupine Mines Limited purchased three claims (including shaft claim) and found a new vein, 4 inches to 2 feet wide, containing visible gold and tellurides. Underground workings pumped out to the 100-foot level and three diamond-drill holes put down.

1947-1948: Trenching and nine diamond-drill holes on the Garvey Vein by Ashley Gold and Oil Minerals Limited.

1973: Trenching by G. Sunisloe.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore milled (tons)	Recovered Grade (ounce of Au per ton)
1932-1936	50,123	7,644	157,636	0.32

REFERENCES: ODM 1932, Vol.41, pt.2, p.13-18 (Mining Corporation of Canada).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

BOSTON TOWNSHIP

(NTS 32D/4W)

R.A.P. Prospect

MAIN METALS: Au

LOCATION: Approximately 11 miles southwest of Kirkland Lake, ¾ mile north-northeast of the village of Boston Creek, in southern Boston Township. Latitude 48.02°, Longitude 79.93°.

Map reference: ODM 1957-4, Boston Township and part of Pacaud Township (Claims L5163 and L5216).

GEOLOGY: Keewatin mafic to intermediate metavolcanics are cut by a vein (the Kenzie Vein), ranging from several inches to 5 feet in width, which consists of quartz, silicified rock, reddish calcite and brecciated and partly replaced masses of reddish feldspar porphyry (remnants of a dike?). Mineralization consists of pyrite and minor chalcopyrite, molybdenite and galena.

Assays of a narrow band of chlorite-rich quartz near the footwall of the vein ran as high as 1.21 to 1.45 ounces of Au per ton.

HISTORY: 1914: Discovery of Kenzie Vein and surface work by La Rose Mines Limited.

1916: 200-foot inclined shaft with levels at 100 and 200 feet, and 750 feet of lateral development by R.A.P. Syndicate.

REFERENCES: ODM 1957, Vol.66, pt.5, p.33, 34 (Claims L5163 and L5216 (R.A.P. Syndicate)).

BRYCE TOWNSHIP

(NTS 41P/9E)

Britcana Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles southwest of Charlton, in N½, lots 7 and 8, concession IV and S½, lots 7 and 8, concession V, Bryce Township. Shaft in NW¼, N½, lot 7, concession IV, Bryce Township. Latitude 47.72°, Longitude 80.09°. Map reference: ODM 50j, Bryce-Robillard Area.

GEOLOGY: A body of medium-grained fractured feldspar porphyry intrudes Keewatin mafic and intermediate metavolcanics (including pillow lava, agglomerate, and tuff). The porphyry is in turn cut by numerous lamprophyric dikes.

Several mineralized zones occur on the property. Zone No.1 consists of quartz veins and stringers occupying a shear zone in the porphyry. An ore shoot having a length of 150 to 250 feet is indicated. Values ranged from 0.12 ounce of Au per ton over 1.3 feet to 4.97 ounces of Au per ton over 3.5 feet; two 5-foot sections assayed 0.88 ounce and 1.13 ounces of Au per ton. Zone No.2 consists of quartz-carbonate-pyrite-chalcopyrite mineralization along a contact between pillow lava and tuff. Diamond-drilling returned values of 0.16 to 0.70 ounce of Au per ton over 2.0 to 2.5 feet. A 22-ton bulk sample yielded 1.2 ounces of Au per ton and 22 ounces of Ag per ton. Zone No.5 consists of a 3-inch wide silicified and rusty shear zone which gave values up to 0.30 ounce of Au per ton across 1.5 feet.

HISTORY: 1934-1935: Staked by P.J. Flanagan and J.J. Flanagan.

1937: Pitting, trenching, and 27 diamond-drill holes (footage unknown) by Britcana Gold Mines Limited.

1965: Six diamond-drill holes (1,085 feet) by Norite Explorations Limited.

1968: Magnetic and electromagnetic surveys by E.E. Campbell.

1972: Electromagnetic survey and sampling by Consolidated Imperial Minerals Limited.

REFERENCES: ODM 1941, Vol.50, pt.4, p.23-25.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

GeoVolco Prospect

MAIN METALS: Au

LOCATION: Approximately 8½ miles southwest of Charlton, in lots 10 and 11, concession IV, Bryce Township. Main showings in SW¼, N½, lot 10, concession IV and E½, S½, lot 11, concession IV. Latitude 47.72°, Longitude 80.13°.

Map reference: ODM 50j, Bryce-Robillard Area (Briscoe Bryce Mines Ltd., Bryce Gold Syndicate, and Krone Mining Syndicate Ltd.).

GEOLOGY: The property is underlain mainly by Kewatin intermediate to felsic metavolcanics (including agglomerate, breccia, tuff, and tuffaceous sediment) with some basic pillow lavas to the north. The latter are intruded by dikes of porphyry and hornblende syenite.

The main showing, in the SW¼, N½, lot 10, concession IV, consists of a carbonatized and sericitized shear zone which has been traced for 550 feet and has a maximum width of 5.5 feet. Mineralization consists of a seam of massive pyrite, and disseminated pyrite and chalcopyrite in quartz. In addition there are numerous quartz-carbonate stringers and considerable alteration of the host rock. Assays of channel samples ranged from trace to 1.34 ounces of Au per ton over widths of 1 foot to 5 feet.

The second showing, located in E½, S½, lot 11, concession IV, consists of a narrow branching shear zone which has been traced for 70 feet and has a maximum width of 2 feet. Mineralization consists of seams of massive pyrite and chalcopyrite. The shear zone and a nearby porphyry dike both yielded gold values. A considerable amount of trenching was done at an unknown date.

ECONOMIC FEATURES: Sampling of the main showing indicated an ore shoot 450 feet long and 3 to 4 feet wide, which averaged 0.20 to 0.28 ounce of Au per ton.

HISTORY: All of the following work was carried out on the main showing.

1936: Trenching and pitting by Bryce Gold Mines Syndicate. Five diamond-drill holes by Noranda Mines Limited. Sampling by The Consolidated Mining and Smelting Co. of Canada Limited.

1938: Trenching by Halcrow Swayze Mines Limited, and Briscoe Bryce Mines Limited.

1939: Sampling and ten diamond-drill holes (1,507 feet) by Mining Projects of Canada Limited, and sampling by Sylvanite Gold Mines Limited.

1954: Sampling by Sylvanite Gold Mines Limited.

1959: One diamond-drill hole (70 feet) by the Briscoe brothers.

1960: Sampling by Sylvanite Gold Mines Limited.

1962: Two diamond-drill holes (206 feet) by H. Briscoe.

1967: Geological, magnetic and electromagnetic surveys, and four diamond-drill holes (1,295 feet) by Trihope Mining and Exploration Limited. These surveys also covered S½, lot 11, concession V.

1972: Trenching and one diamond-drill hole (260 feet) by GeoVolco Mining Limited.

REFERENCES: ODM 1941, Vol.50, pt.4, p.21-23, 25, 26, 33 (Briscoe Bryce Mines Limited, Bryce Gold Mines Syndicate, and Krone Mining Syndicate Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Libby Prospect

MAIN METALS: Au

LOCATION: Approximately 9 miles southwest of Charlton, in parts of lots 8-11, concession III, Bryce Township. Main showing in S½, lot 9, concession III. Latitude 47.70°, Longitude 80.11°. Map reference: ODM 50j, Bryce-Robillard Area (John B. Libby property and Libby-Kirkham Syndicate).

GEOLOGY: The property is underlain by intermediate to felsic agglomerate and lava flows, except to the southeast where Cobalt conglomerate and argillite are cut by Nipissing diabase. The metavolcanics are carbonatized, heavily sheared in a northwesterly direction, and are cut by numerous bodies and dikes of porphyry, the general trend of which is parallel to the shearing.

The main showing consists of mineralized quartz-carbonate veinlets in a flat-lying sheet-like body of albite porphyry which cuts a zone of amygdaloidal and ellipsoidal lavas in carbonate schist. The mineralized zone has been exposed for 250 feet and shows a maximum width of 30 feet. Mineralization consists mainly of pyrite. Grab samples assayed as high as 0.32 ounce of Au per ton.

HISTORY: Circa 1922: Pitting and trenching by Borgford and Thelma Mining Company.

1936: Pitting and trenching by Erie Canadian Mines Limited.

1940: Trenching and diamond-drilling by Agaura Explorations Limited.

1962-1965: 23 diamond-drill holes (5,970 feet) by Libby and associates.

REFERENCES: ODM 1922, Vol.31, pt.3, p.11 (Borgford).

ODM 1941, Vol.50, pt.4, p.34-36.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

CATHARINE TOWNSHIP
(NTS 31M/13W, 32D/4W)

Gold Hill Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 14 miles southeast of Kirkland Lake, in lots 7-9, concession V, Catharine Township. Shaft in patented claim L10715, SW¼, N½, lot 9, concession V. Latitude 47.99°, Longitude 79.85°.

Map reference: ODM 2043, Catharine and Marter Townships.

GEOLOGY: In the vicinity of the shaft, Early Precambrian mafic to intermediate metavolcanics are cut by small bodies of diorite porphyry and diabase. Lenses and veins of interbanded quartz and sulphides occupy shear zones in the metavolcanics. Sulphide mineralization consists of pyrite with minor chalcopryite, molybdenite, and galena.

On surface, an 1,100-foot length of the mineralized zone assayed 0.75 ounce of Au per ton across 1.7 feet. Channel samples taken underground assayed from trace to 5.6 ounces of Au per ton across similar widths.

OWNERSHIP: Robert B. Tuer.

HISTORY: 1927-1929: Geological survey and 3,600 feet of diamond-drilling. Two-compartment shaft to 1,200 feet and 6,000 feet of underground lateral development. 100-ton mill installed in fall of 1927 and operated during winter of 1927-1928. All work by Gold Hill Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1927-1928	660	4,616	0.14

REFERENCES: GSC 1936, Memoir 192, p.17.

ODM 1963, GR18, p.13.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Catharine Township, Gold Hill Mines Limited (1929).

Moncrief Prospect

MAIN METALS: Au

LOCATION: Approximately 14 miles southeast of Kirkland Lake, in lots 5-8, concessions I-IV, Catharine Township. Shaft in SW¼, N½, lot 6, concession III. Latitude 47.97°, Longitude 79.82°.

Map reference: ODM 2043, Catharine and Marter Townships (Canoro (Ostrom)).

GEOLOGY: Keewatin mafic metavolcanics (pillow lava, basalt, and diabase) are intruded by elongated bodies of gabbro, small bodies of syenite, and Nipissing Diabase. More than 30 veins of varying widths have

been discovered on the property. Some are barren, while others are mineralized with pyrite, minor chalcopryite and specularite, and occasionally visible gold. Crossing the S½ of lot 7, concession IV is a wide mineralized zone consisting of rusty-weathering carbonate cut by numerous quartz stringers.

Assays from underground workings on the No.12 Vein ranged from 0.17 ounce to 2.60 ounces of Au per ton with one of 7.85 ounces of Au per ton. The best assay obtained from diamond-drill core was 0.085 ounce of Au per ton over 6 inches.

HISTORY: 1923-1924: Surface work.

1926-1927: Nine diamond-drill holes (2,293 feet), inclined shaft to 525 feet with levels at 200, 350 and 500 feet, and 1,300 feet of lateral development on the 500-foot level, by Ostrom Gold Mines Limited. 1956: Geological and electromagnetic surveys, and diamond-drilling.

1963: Geological survey and four diamond-drill holes (604 feet) by Primary Gold Mines Limited. 1970: Geological and airborne electromagnetic surveys by Moncrief Uranium Mines Limited.

1972-1973: Five diamond-drill holes (1,404 feet) by Moncrief Uranium Mines Limited.

REFERENCES: ODM 1963, GR18, p.11, 12 (Canoro (Ostrom)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Catharine Township, Moncrief (1973), Ostrom Gold Mines Ltd. (1935).

Turzene Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 14 miles southeast of Kirkland Lake, in S½, lot 10, concession V and S½, lots 10 and 11, concession VI, Catharine Township. Patented claims T47290-T47295, T47653, and T47657. Shaft in patented claim T47653. Latitude 47.99°, Longitude 75.87°.

Map reference: ODM 2043, Catharine and Marter Townships.

GEOLOGY: Keewatin metavolcanics (including basalt, diabase, agglomerate, and andesite) are intruded by dikes of diorite, feldspar porphyry, lamprophyre and diabase, most of which trend northwest. A series of narrow lenticular quartz veins strikes N60°W for over 3,000 feet across the southwestern part of the property. Mineralization consists of pyrite, chalcopryite, and minor sphalerite.

Assays of diamond-drill core samples ranged from trace to 0.44 ounce of Au per ton; a 6-inch intersection from one hole assayed 13.39 ounces of Au per ton. A grab sample from the shaft assayed 0.47 ounce of Au per ton, 0.53 ounce of Ag per ton, and

1.76 percent Cu.

HISTORY: 1926-1928: Three-compartment shaft to 688 feet with levels at 140 and 265 feet, and an unknown amount of lateral development by Hilltop Gold Mines Limited.

1960: Geological survey, trenching and 14 diamond-drill holes (1,435 feet) by Turzone Explorations Limited.

REFERENCES: ODM 1963, GR18, p.16, 17.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Catharine Township, Turzone Explorations Limited (1960).

DACK TOWNSHIP

(NTS 31M/13W, 41P/16E)

Solomino Prospect

MAIN METALS: Au

LOCATION: Approximately 3 miles northwest of Englehart, in N½, lot 5, concession VI, Dack Township, and extending into Chamberlain Township. Shaft in NE¼, N½, lot 5, concession VI, Dack Township. Latitude 47.84°, Longitude 79.93°. Map reference: ODM 50j, Bryce-Robillard Area (Hillcrest Mining Syndicate).

GEOLOGY: The property is underlain by highly altered mafic metavolcanics which are intruded by narrow dikes of feldspar porphyry, aplitic porphyry, lamprophyre, and diabase. The metavolcanics are in contact with a granitic intrusive 2,000 feet northwest of the shaft.

The main showing consists of a 2- to 3-foot wide quartz vein which has been exposed by trenching for at least 300 feet and contains pyrite mineralization. Sampling in 1929 indicated that a 200-foot length of the vein averaged 0.20 ounce of Au per ton across a width of 2.8 feet. Drilling during 1939-1941 returned intersections ranging from 0.02 to 0.24 ounce of gold per ton across a true width of 5 feet and for a distance of 225 feet.

HISTORY: 1929: Sampling by C.L. Heath.

Pre-1939: 45-foot shaft.

1934: Three diamond-drill holes (727 feet) by Hillcrest Mining Syndicate.

1939-1941: 17 short diamond-drill holes by Alfred Coutts for Hillcrest Mining Syndicate.

1944: Seven diamond-drill holes (2,636 feet) plus ten other diamond drill holes (footage not recorded) by Dack Creek Mines Limited.

1945: Three diamond-drill holes (550 feet) by Dack Creek Mines Limited.

1962: Geological survey of two claim groups in area by Solomino Gold Mines Limited.

1969: Shaft claim staked and some trenching by

Kimo Gold Mines Limited.

1970: Claim to west of shaft staked and some trenching by H.D. Griffin.

REFERENCES: ODM 1922, Vol.31, pt.3, p.12 (McPherson).

ODM 1941, Vol.50, pt.4, p.31, 32 (Hillcrest Mining Syndicate).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Dack Township, Dack Creek Mines Limited (1940).

EBY TOWNSHIP

(NTS 42A/1E)

Baldwin Prospect

MAIN METALS: Au

LOCATION: Approximately 7 miles west-southwest of Kirkland Lake, in NW¼, N½, lot 1, N½, lot 2, and NW¼, NE¼, SE¼, N½, lot 3, concession VI, Eby Township. Shaft in N½, lot 2, concession VI. Latitude 48.10°, Longitude 80.16°.

Map reference: ODMNA 2239, Eby-Otto Area.

GEOLOGY: The property lies on the contact between Keewatin metavolcanics and Timiskaming conglomerate, greywacke, and tuffaceous sediment. The contact is erratically carbonatized and lenticular bodies of syenite and syenite porphyry are intruded along it. In the vicinity of the mine workings the rocks are folded and overturned. Various sets of shear zones and faults cut across the rock formations on surface and underground.

There are two ages of vein material. The later veins form a system approximately 250 feet in length which trends N65°E and dips 70°S, individual veins range from a few inches to more than 2 feet in width and are mineralized with pyrite. The best gold values occur where this system is intersected by a zone of fracturing and faulting which trends N20°E.

ECONOMIC FEATURES: One ore shoot was outlined between the 200- and 300-foot levels. "Indicated" ore was reported to be 5,040 tons averaging 0.64 ounce of Au per ton (Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake).

HISTORY: 1911: Gold found by Baldwin.

1917-1919: Two-compartment shaft to 200 feet, with 340 feet of lateral development on the 100- and 200-foot levels.

1922-1924: Shaft dewatered and deepened to 300 feet, and 1,100 feet of lateral development done on 100- and 200-foot levels by Baldwin Gold Mining Company Limited.

1929: Shaft deepened to 415 feet, with new levels at 300 and 400 feet, and 2,760 feet of lateral de-

velopment on all four levels by Baldwin Kirkland Gold Mines Limited.

1934: Shaft dewatered and resampled, and 100 feet of drifting done on 400-foot level by Lucky Kirkland Gold Mines Limited.

Circa 1944: Eight diamond-drill holes (1,897 feet) on Rosa Brown property by Sylvanite Gold Mines Limited; this property became part of the Baldwin Prospect.

1946: Up to this date, a total of 12,000 feet of surface and underground diamond-drilling had been done by previous owners. Dewatering and resampling of shaft, surface and underground geological surveys, and 1,300 feet of diamond-drilling by Baldwin Consolidated Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1929, 1938	43	81	0.53

REFERENCES: ODM 1964, MRC3, p.13, 14.

ODMNA 1972, GR99, p.18-20.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Eby Township, Erie Consolidated Mines Limited (1946).

Rogick-Clark-Elliot Prospect

MAIN METALS: Au

LOCATION: Approximately 8½ miles west-southwest of Kirkland Lake, in N½, S½, lots 4 and 5, concession VI, Eby Township. Latitude 48.09°, Longitude 80.19°.

Map reference: ODMNA 2239, Eby-Otto Area.

GEOLOGY: A contact between carbonate rocks and a small syenite body is cut by numerous quartz stringers containing pyrite and visible gold. Assays of grab samples from trenches ranged from 0.06 to 0.49 ounce of Au per ton. The best diamond-drill core intersections were 0.64 ounce of Au per ton over 2.0 feet and 0.70 ounce of Au per ton over 10.0 feet.

HISTORY: 1938: Discovery of several large angular pieces of gold-bearing float.

1939: 14 diamond-drill holes (footage unknown) by Pioneer Gold Mines Limited. Geological survey and trenching by Sylvanite Gold Mines Limited. Nine diamond-drill holes (footage unknown) by Beaucoeur.

1944-1945: Four diamond-drill holes (1,878 feet) by Siscoe Gold Mines Limited.

REFERENCES: ODMNA 1972, GR99, p.22, 23.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Eby Township, Rogick-Clarke-Elliot (1939, 1945).

Walters Prospect

MAIN METALS: Au

LOCATION: Approximately 8½ miles west-southwest of Kirkland Lake, in S½, S½, lot 5, concession VI and lot 5, concession V, Eby Township. Main showings in S½, S½, lot 5, concession VI and NE¼, N½, lot 5, concession V. Latitude 48.08°, Longitude 80.19°.

Map reference: ODMNA 2239, Eby-Otto Area (Walters, George W; Barker, Mrs. Cora K.).

GEOLOGY: Keewatin metavolcanics and metasediments are cut by several gabbro-diorite stocks, numerous small syenite bodies, and north-trending diabase dikes.

Two quartz veins cut basalt in S½, S½, lot 5, concession VI. A sample taken across a 2.5-foot width of one of the veins assayed 0.17 ounce of Au per ton. Seven hundred feet to the south, finely-divided gold is associated with narrow quartz stringers in a carbonate body. Bulk samples from the east end of the body assayed 0.06 ounce and 2.74 ounces of Au per ton.

HISTORY: 1935: Geological survey and sampling by Sylvanite Gold Mines Limited.

1938: Surface work, bulk sampling, and eight diamond-drill holes (approximately 3,000 feet) by D.M. Hogarth and associates.

REFERENCES: ODM 1964, MRC3, p.72, 73.

ODMNA 1972, GR99, p.25, 26.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

GAUTHIER TOWNSHIP

(NTS 32D/4W)

Anoki Prospect

MAIN METALS: Au

LOCATION: Approximately 9 miles east of Kirkland Lake, 2 miles northeast of Lake Mousseau, in southwest-central Gauthier Township. Shaft in patented claim L3894. Latitude 48.13°, Longitude 79.84°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: Keewatin mafic metavolcanics with intercalated metasediments are cut by a variety of intrusive rocks, including syenite porphyry, gabbro, lamprophyre, and diabase. These rocks are separated from Timiskaming conglomerate to the north by a 350-foot wide shear zone which trends east-southeast and dips 30°SW. The zone contains a central lens of green carbonate rock bordered by talc-chlorite schist.

The ore zone occurs within a light-coloured rock which is probably an altered intrusive. The rock

within the zone is mineralized (mainly pyrite), silicified, and cut by quartz stringers.

ECONOMIC FEATURES: An ore shoot containing marginal grade ore was outlined on the 350- and 475-foot levels. The following summary of ore development is taken from the annual report of Bankfield Consolidated Mines, May 7, 1940:

Level	Ore shoot	Length (feet)	Width (feet)	Grade (ounce of Au per ton)
350-foot	A	70	5.5	0.21
	B	95	12	0.15
475-foot	A	90	6	0.25
	B	175	17.3	0.23

HISTORY: 1916: Discovery of gold and subsequent trenching by Elstone-Kirkland Mines Limited.

1917-1937: Surface work and diamond-drilling at various times by various companies.

1938-1940: Three-compartment shaft to 754 feet, with levels at 200, 350, 475, 600 and 735 feet, and 2,314 feet of lateral development. Underground diamond-drilling totalled 5,313 feet in 36 holes. All work by Anoki Gold Mines Limited.

1946: Property sold to Queenston Gold Mines Limited. For work subsequent to 1946 and ore reserves see Queenston Mine.

REFERENCES: ODM 1941, Vol.50, pt.1, p.3.

ODM 1941, Vol.50, pt.8, p.13-15.

ODM 1964, MRC3, p.11, 12.

Biroco Prospect

MAIN METALS: Au

LOCATION: Approximately 6 miles east of Kirkland Lake, straddling the Lebel-Gauthier township boundary, in western Gauthier Township. Latitude 48.13°, Longitude 79.89°.

Map reference: ODM 50c, Township of Gauthier (prospect not shown on map).

GEOLOGY: The property is largely covered by the Munro Esker. Diamond-drilling indicates the major rock types to be trachyte tuff and agglomerate, syenite, feldspar porphyry, and talc-chlorite-carbonate schist. Sulphide mineralization consists of pyrite with minor galena. The best assay from diamond-drill core was 0.07 ounce of Au per ton over 4.9 feet of silicified syenite.

HISTORY: 1944: Geophysical survey by Biroco Kirkland Mines Limited.

1944-1950: 12 diamond-drill holes (13,048 feet) by Biroco Kirkland Mines Limited.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Cooper (1944) and McBean, Beckman, and Savage (1949-1950).

Brock Prospect

MAIN METALS: Au

LOCATION: Approximately 9 miles east of Kirkland Lake, 2 miles west of Little Larder Lake, in west-central Gauthier Township. Shaft in patented claim L8372. Latitude 48.14°, Longitude 79.84°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: Timiskaming metavolcanics (trachyte, trachytic agglomerate and breccia, and tuff) and meta-sediments (conglomerate and greywacke) are cut by irregularly shaped intrusive bodies including syenite, syenite porphyry, and diabase.

Surface work and diamond-drilling revealed two roughly parallel zones of quartz veins and sulphide mineralization. Scattered gold values were reported from the two zones, but no ore was reported from underground development.

HISTORY: 1938-1941: Surface work and 17 diamond-drill holes (11,779 feet). Three compartment shaft to 630 feet, with levels at 200, 325, 450 and 575 feet, and 3,176 feet of lateral development on the 325- and 575-foot levels. All work by Brock Gold Mines Limited.

1946: Surface and underground diamond-drilling by Upper Canada Mines Limited. The underground drilling was done from underground works on the Upper Canada (Eastward) Mine property.

REFERENCES: ODM 1941, Vol.50, pt.8, p.18.

ODM 1964, MRC3, p.18, 19.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Carley "A" Prospect

MAIN METALS: Au

LOCATION: Approximately 11½ miles east of Kirkland Lake, ½ mile east-northeast of Little Larder Lake, in eastern Gauthier Township. 12 patented claims including L8796. Latitude 48.15°, Longitude 79.78°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: The property is underlain by Keewatin felsic metavolcanics which are intruded by small bodies of Algoman syenite porphyry and quartz porphyry. Quartz veins and stringers cut these rocks at an unknown location on the property. Assays of diamond-drill core were generally in the range 0.01 to 0.03 ounce of Au per ton. The best assay was 0.75 ounce of Au per ton, 4.6 ounces of Ag per ton, and 0.99 percent Cu.

HISTORY: 1943-1947: 26 diamond-drill holes (9,598 feet).

1950: Five diamond-drill holes (3,851 feet) by Mary Ann Mines Limited.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Mary Ann Mines Limited (1947).

Carley "B" Prospect

MAIN METALS: Au

LOCATION: Approximately 12 miles east of Kirkland Lake, adjacent to the 2-mile post on the Gauthier-McVittie township boundary, in eastern Gauthier Township. Latitude 48.13°, Longitude 79.76°.

Map reference: ODM 50c, Township of Gauthier and ODM 50b, Township of McVittie (prospect not shown on maps).

GEOLOGY: The property is underlain by Timiskaming felsic metavolcanics, including trachyte and trachytic breccia and agglomerate. Quartz veins and stringers cut these rocks.

"Interesting" assays were obtained from quartz veins on surface. Assays of diamond-drill core ranged from 0.01 to 0.03 ounce of Au per ton.

HISTORY: Circa 1938: Geological survey, pitting, and trenching by Sylvanite Gold Mines Limited. 1943-1947: Surface work, three diamond-drill holes (2,415 feet), and additional diamond-drill holes for which there are no records in the Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Mary Ann Mines Limited (1947).

Kelkirk Prospect

MAIN METALS: Au

LOCATION: Approximately 9½ miles east of Kirkland Lake, in southern Gauthier Township. Latitude 48.11°, Longitude 79.82°.

Map reference: ODM 50c, Township of Gauthier (prospect not shown on map).

GEOLOGY: The property is mainly drift-covered. A low ridge of syenite and syenite porphyry is cut by an east-trending diabase dike. Traces of sulphides and a few quartz stringers occur in the syenite near the diabase contact. Low gold values reported from surface sampling. Diamond-drill core samples yielded 0.19 ounce of Au per ton across 5.5 feet of silicified syenite.

HISTORY: 1938: Surface work.

1944: 11 diamond-drill holes (footage unknown) by Lower Canada Gold Mines Limited.

1959-1960: Magnetic surveys and 16 diamond-drill holes (4,240 feet) by Kelkirk Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.8, p.19 (Lower Canada Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Moody (1947).

Kentlake Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles east of Kirkland Lake, 1 mile southeast of south end of Victoria Lake, in west-central Gauthier Township. Diamond-drilling in claim L27330. Latitude 48.15°, Longitude 79.86°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: The property is entirely covered by sand of the Munro Esker. Diamond-drilling indicates the presence of syenite porphyry, trachyte, and porphyritic trachyte. Assays of diamond-drill core samples (from 1944 drilling) containing pyrite and minor galena ranged from trace to 0.17 ounce of Au per ton.

HISTORY: 1938: Two diamond-drill holes (approximately 2,000 feet) by Kentlake Gold Mines Limited. 1944: Five diamond-drill holes (3,971 feet) by Kentlake Gold Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.8, p.19.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Pain (1944).

Northland Prospect

MAIN METALS: Au

LOCATION: Approximately 7 miles east of Kirkland Lake, 1½ miles east-southeast of south end of Victoria Lake, in central Gauthier Township. Main (No.1) Shaft in claim L8689. Latitude 48.16°, Longitude 79.85°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: Most of the property is drift-covered. It is underlain by fine-grained Timiskaming metasediments which are intruded by a body of syenite and syenite porphyry. On the 1,000-foot level in the No.1 Shaft, a strong fault appears as a "mud seam" striking N80°W, dipping steeply south, and having a maximum width of 2 feet. The wallrock is mineralized.

Drilling in 1949 outlined a zone 750 feet long which averaged 0.21 ounce of Au per ton across a width of 2 feet.

HISTORY: 1922-1929: Surface work and 17 diamond-drill holes. No.1 Shaft to 1,020 feet, with levels at 250, 500, 750 and 1,000 feet. Most of the 4,973

feet of lateral development was done on the 1,000-foot level. No.2 Shaft to 50 feet, possibly with 336 feet of drifting. All work by Northland Gold Mines Limited.

1940, 1944-1949: Surface exploration and 2,686 feet of diamond-drilling by Northland Mines (1940) Limited.

REFERENCES: Financial Post Survey of Mines 1954, p.235.

ODM 1941, Vol.50, pt.8, p.19, 20.

ODM 1964, MRC3, p.57, 58.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Heisey (1923).

Olivet Prospect

MAIN METALS: Au

LOCATION: Approximately 11½ miles east of Kirkland Lake, ½ mile west-northwest of Fork Lake, in south-eastern Gauthier Township. Claims L13437-L13439 and L17327. Latitude 48.10°, Longitude 79.77°. Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: Timiskaming metasediments and metavolcanics are intruded by syenite, syenite porphyry, and diorite. A zone of intense shearing and carbonatization, believed to be part of the Larder Lake "break", trends southeasterly across the property. Assays of diamond-drill core samples ranged from trace to 0.015 ounce of Au per ton.

HISTORY: 1928: Trenching and pitting by Olivet Gold Mines Limited.

1939: Geophysical survey and 11 diamond-drill holes (3,000 feet) by Ventures Limited (under option from Olivet Gold Mines Limited).

1945: 14 diamond-drill holes (footage unknown) by Olivet Gold Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.8, p.20.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Anonymous (1944).

Princeton Prospect

MAIN METALS: Au

LOCATION: Approximately 11½ miles east of Kirkland Lake, 2 miles northwest of Fork Lake, in southeast-central Gauthier Township. Ritchie (main) Shaft in claim L9296; Victoria Creek Shaft in claim L529. Latitude 48.12°, Longitude 79.80°.

Map reference: ODM 50c, Township of Gauthier (Ritoria).

GEOLOGY: The Larder Lake "break", trending southeasterly across the property, represents the faulted

contact between Timiskaming metasediments and metavolcanics to the north and Keewatin metavolcanics to the south. The "break" consists of a zone of shearing and intense alteration (talcoschist, gouge, and "dolomite") up to several hundred feet wide.

Scattered gold values were obtained in surface diamond-drilling done in 1936, along the Larder Lake "break", in a contact zone between metasediments and felsic Algoman intrusive rocks.

HISTORY: 1912: Two-compartment shaft to 100 feet, with 240 feet of lateral development on levels at 40 and 100 feet by Victoria Creek Gold Mines Limited.

1929: 2,000 feet of diamond-drilling, two-compartment shaft to 528 feet, and 1,226 feet of lateral development on the 500-foot level by Ritchie Gold Mines Limited.

1936: Ritchie Shaft dewatered, 785 feet of lateral development, 4,225 feet of underground diamond-drilling, and 3,903 feet of surface diamond-drilling by The Consolidated Mining and Smelting Company of Canada Limited.

1944: 20 diamond-drill holes (footage unknown) by Ritoria Gold Mines Limited.

1947: Diamond-drilling (amount unknown) by Princeton Gold Mines Limited.

REFERENCES: ODM 1923, Vol.32, pt.4, p.83 (Victoria Creek).

ODM 1937, Vol.46, pt.1, p.119 (Ritchie Mine).

ODM 1941, Vol.50, pt.8, p.22 (Ritoria Gold Mines Limited).

ODM 1964, MRC3, p.62, 63 (Ritoria Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Queenston Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 9½ miles east of Kirkland Lake, 2¼ miles northwest of Fork Lake, in central Gauthier Township. No.1 Shaft in claim L9613; No.2 Shaft in claim L8366. Latitude 48.13°, Longitude 79.82°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: The Larder Lake "break", which trends east-southeast across the property, consists of a 300-foot width of highly sheared carbonate rocks dipping steeply south. The carbonate rocks form a central lens, 50 to 100 feet in width, which is interbedded with talc-chlorite schist. Rocks to the north of the "break" consist of Timiskaming metasediments, both fine-grained and conglomeratic, and interbedded andesitic lavas and tuffs. To the south

of the "break", ultramafic and mafic intrusive rocks are cut by an irregular complex of syenite intrusions. The entire carbonate zone contains disseminated sulphide mineralization (mainly pyrite).
ECONOMIC FEATURES: Gold occurs throughout the carbonate zone but "ore" grade is attained only where quartz-filled fractures occur within and adjacent to numerous dikes of syenite. A pipe-like body of medium grade ore was outlined on the 125- and 250-foot levels. Developed ore reserves are estimated to be 330,000 tons grading 0.14 ounce of Au per ton (Canadian Mines Handbook 1973-1974, p.284).

OWNERSHIP: Queenston Gold Mines Limited (controlled by Upper Canada Resources Limited).

HISTORY: 1928: Diamond-drilling and a shaft (Queenston No.1) to 650 feet, with 2,000 feet of lateral development on the 600-foot level. A second shaft (Queenston No.2) to 100 feet with 146 feet of lateral development on the 94-foot level. All work by Murphy Mines Limited.

1941: Additional claims acquired and four diamond-drill holes (2,350 feet). Due to encouraging results, No.2 Shaft deepened to 272 feet, with 748 feet of lateral development on levels at 125 and 250 feet, and 2,776 feet of underground diamond-drilling in 41 holes. Mining plant installed. All work by Queenston Gold Mines Limited.

1946-1947: Anoki Gold Mines Limited property acquired and Anoki (Queenston No.3) Shaft dewatered and sampled. 1,627 feet of lateral development from No.2 Shaft. Shaft No.4 sunk to 267 feet with a level at 260 feet. Diamond-drilling amounted to 16 holes (8,950 feet) from surface and 241 holes (28,754 feet) from underground.

1950-1951: A total of 11,063 feet of underground lateral development carried out from Shafts Nos. 3 and 4. Diamond-drilling amounted to 11 holes (3,269 feet) from the surface and 415 holes (53,929 feet) from underground.

Circa 1960: Geological surveys and diamond-drilling (amount unknown).

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1941	177	1054	0.17

REFERENCES: Canadian Mines Handbook 1973-1974, p.284.

ODM 1941, Vol.50, pt.8, p.20, 21.

ODM 1964, MRC3, p.61, 62.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Tobico Prospect

MAIN METALS: Au

LOCATION: Approximately 10 miles east of Kirkland Lake, immediately south of the Upper Canada Mine, in central Gauthier Township. Patented claims L9232, L9531, L9532. Dobie Townsite located on property. Latitude 48.13°, Longitude 79.82°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: The property is underlain by Timiskaming metavolcanics (trachytic breccia and agglomerate) and metasediments (conglomerate and greywacke) which are intruded by a syenite porphyry plug. In claim L9532, red feldspar porphyry is cut by an east-trending fault containing quartz stringers. A sample from the prospect shaft yielded 0.13 ounce of Au per ton. Assays of diamond-drill core samples ranged from trace to 0.03 ounce of Au per ton.

HISTORY: 1921: Gold found. 25-foot prospect shaft by George Tough.

1941-1942: Ten diamond-drill holes (4,832 feet) by Tobico Consolidated Gold Mines Limited.

1944: Approximately 4,500 feet of diamond-drilling.

1950: Diamond-drilling (number of holes and footage unknown).

REFERENCES: ODM 1923, Vol.32, pt.4, p.83.

ODM 1941, Vol.50, pt.8, p.22, 23.

ODM 1964, MRC3, p.68, 69.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Buffam (1944), Flaherty (1944).

Upper Beaver Mine (Past Producer)

MAIN METALS: Au, Ag, Cu

LOCATION: Approximately 12 miles east of Kirkland Lake, adjacent to the Gauthier-McVittie township boundary, in northeastern Gauthier Township. Patented claims L2586, L2587, L2601, and L2602. Main (No.3) Shaft in claim L2587. Latitude 48.17°, Longitude 79.77°.

Map reference: ODM 50c, Township of Gauthier (Beaverhouse Lake).

GEOLOGY: Andesitic pillow lava is overlain by felsic volcanic tuff and breccia. The northwest-striking andesite is intruded by syenite porphyry and the whole assemblage cut by a north-trending diabase dike. All rocks except the diabase are cut by a series of shear zones containing quartz-carbonate and sulphide veins.

The mineralization occurs in bedded cherty tuff and in the following types of veins:

1. Narrow massive sulphide veins consisting of chalcopyrite and magnetite, with minor quartz, calcite,

and pyrite. Gold content is proportional to the amount of quartz present.

2. Quartz-carbonate veins, up to 3 feet in width, containing disseminations of chalcopyrite, pyrite, molybdenite, and visible gold.

3. Streaks of molybdenite and gold.

ECONOMIC FEATURES: During the period 1913 to 1944, the ore was mined primarily for its gold content. However from 1967 to 1972 copper was the most important product. During the second period, the average recovered grade was 1.40% Cu and 0.18 ounce of Au per ton.

OWNERSHIP: Upper Beaver Mines Limited (wholly owned subsidiary of Upper Canada Resources Limited).

HISTORY: 1912-1919: Trenching, pitting, two shallow shafts, two adits, and some production by La Mine D'Or Huronia Limited.

1919-1935: No. 3 shaft to 520 feet, with levels at 80, 200, 350 and 500 feet. Winze sunk from the 500-foot level to 1,250 feet, with levels at 625, 750, 875, 1000, 1125, and 1250 feet. Several thousand feet of lateral development. 200-ton mill built in 1923. All production during the period 1919 to 1930, except for the years 1921 and 1922, was by Argonaut Gold Mines Limited.

1937-1939: Exploration work on 200- and 350-foot levels by Toburn Gold Mines Limited.

1939: Workings dewatered to 500-foot level, 800 feet of lateral development, and surface and underground diamond-drilling by Ventures Limited.

1950-1951: Geological and geophysical surveys, and 16 diamond-drill holes (5,401 feet) by Toburn Gold Mines Limited.

1961-1962: Surface exploration, workings dewatered, 607 feet of drifting, and 64 underground diamond-drill holes (14,815 feet) by Augustus Explorations Limited.

1964: Airborne geophysical survey by Upper Canada Mines Limited, who formed a subsidiary, Upper Beaver Mines Limited, to operate the property under a profit-sharing arrangement, with ore to be treated at Upper Canada's mill.

1964-1972: Mine dewatered to 1,250-foot level, No.3 Shaft deepened to 605 feet, 22,457 feet of lateral development, 768 underground diamond-drill holes (161,715 feet), and seven surface diamond-drill holes (3,534 feet) by Upper Beaver Mines Limited. Mine closed in January, 1972.

1972: Rock geochemical survey by Upper Beaver Mines Limited.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Copper (pounds)	Ore Milled (tons)	R.G. (oz./t)
1913-1944 (intermittent)	38,347	3,512	1,030,783	131,585	0.29

1965-1972	102,362	55,655	10,924,529	448,977	0.23
Total	140,709	59,167	11,955,312	580,562	0.24

REFERENCES: ODM 1941, Vol.50, pt.8, p.16-18 (Beaverhouse Lake Gold Mines Limited).

ODM 1964, MRC3, p.47 (Lake Beaverhouse Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Derry (1939).

Upper Canada (Eastward) Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 8 miles east of Kirkland Lake, 2½ miles southeast of the south end of Victoria Lake, in west-central Gauthier Township. Latitude 48.13°, Longitude 79.84°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: The property is largely drift-covered, the only bedrock exposure being several outcrops of Timiskaming metasediments in the northeastern corner. Diamond-drilling indicated the presence of interbedded trachyte and metasediments, intruded by syenite and diorite and cut by a later north-trending diabase dike. Underground work by the Upper Canada Mine on the westward extension of its 2,750-foot level revealed the presence of a vertical kimberlite dike averaging 2.5 feet in width.

ECONOMIC FEATURES: Diamond-drilling returned values of 0.18 ounce of Au per ton over 9.2 feet and 0.35 ounce of Au per ton over 6.5 feet, indicating two "veins" 80 feet apart. The Upper Canada Mine drifted onto the property from its 2,750-foot level and mined some ore. Underground diamond-drilling indicated the presence of ore down to the 4,000-foot level.

OWNERSHIP: Upper Canada Resources Limited.

HISTORY: 1941: Diamond-drilling, financed and directed by Noranda Mines Limited, established the westward extension of the Upper Canada "break" on the Eastward Mines Limited property.

1946: Property acquired by Upper Canada Mines Limited who carried out some underground development, diamond-drilling and production.

PRODUCTION: Included in figures for the Upper Canada Mine.

REFERENCES: ODM 1941, Vol.50, pt.8, p.18.
ODM 1964, MRC3, p.23, 24.

Upper Canada Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 9 miles east of Kirkland

Lake, 1¼ miles west-southwest of Little Larder Lake, in central Gauthier Township. All claims patented. No.1 Shaft in claim L6314; No.2 Shaft in claim L6321. Exploration shafts in claims L6316, L15584, and L15585. Latitude 48.14°, Longitude 79.82°.

Map reference: ODM 50c, Township of Gauthier.

GEOLOGY: In the vicinity of the mine workings, east-northeast-trending Timiskaming metavolcanics (trachytic breccia and agglomerate) are overlain by Timiskaming metasediments (greywacke and conglomerate) on the north limb of a major syncline. These rocks are intruded by Algoman porphyry bodies and later diabase dikes. Much of the property is covered by sand and swamps.

The orebodies occur along a wide zone of schistosity which strikes east-northeast through the centre of the property. The core of this zone is occupied by the Upper Canada "break", a system of narrow gouge-filled fractures in highly altered tuff, trachyte, trachyte porphyry, and syenite porphyry. Alteration consists of carbonatization, sericitization and silicification. Gold occurs in relatively late fractures in silicified zones and pyrite.

ECONOMIC FEATURES: The orebodies occur in six vertically dipping main vein zones: L, H, B, C, M and K. The "L" zone, striking east and having an average length of 1,800 feet, was the strongest and most productive ore zone in the mine. It is continuous from surface to the deepest level of the mine.

OWNERSHIP: Upper Canada Resources Limited.

HISTORY: Early 1920s: Surface trenching.

1928: Surface work, shaft (Upper Canada No.1) to 134 feet, and some lateral development on the 125-foot level by East Main Gold Mines Limited. This work resulted in the location of the "M" zone.

1936-1941: "H" zone located by surface diamond-drilling. No.1 Shaft deepened to 1,000 feet with levels at 125-foot intervals by Upper Canada Mines Limited. "L" zone located by surface diamond-drilling. To develop this, No.2 Shaft (2,900 feet west of No.1 Shaft) was sunk.

1941-1972: Levels opened from No.1 Shaft to a depth of 3,625 feet; subshaft below No.1 reached a depth of 6,296 feet. No.2 Shaft reached a depth of 1,877 feet. Drifting, crosscutting, and raising totalled 170,364, 44,399, and 52,313 feet respectively. Salvaging completed and mine closed in 1972.

PRODUCTION:

Years	Gold	Silver	Ore milled	Recovered Grade
	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1938-				
1971	1,398,291	589,696	4,734,617	0.30

REFERENCES: ODM 1941, Vol.50, pt.8, p.23-26.

ODM 1964, MRC3, p.70, 71.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Holbrooke (1938).

Wadasa Prospect

MAIN METALS: Au

LOCATION: Approximately 11 miles east of Kirkland Lake, ¾ mile southwest of Little Larder Lake, in east-central Gauthier Township. Latitude 48.14°, Longitude 79.80°.

Map reference: ODM 50c, Township of Gauthier (Fork Lake, Duffet *et al.*).

GEOLOGY: Lenses of Timiskaming metavolcanics (trachyte and pyroclastics) occur in Timiskaming metasediments (greywacke with lenses of conglomerate). The sedimentary rocks are sheared, slightly carbonatized, and cut by quartz stringers. A small syenite porphyry plug is present in the easternmost claim. The nature of the mineralization is not known.

Assays of channel samples ranged from trace to 0.49 ounce of Au per ton; a 3-inch length of diamond-drill core assayed 0.70 ounce of Au per ton.

HISTORY: Circa 1930: Surface work by G. Duffet.

1939: Five diamond-drill holes (2,477 feet) by Oro Plata Mining Corporation Limited under option from Fork Lake Gold Mines Limited.

1940: Magnetic and "electrical" surveys, and six diamond-drill holes (4,891 feet) by Toburn Gold Mines Limited under option from Fork Lake Gold Mines Limited.

1944-1946: G. Duffet *et al.* and Fork Lake Gold Mines Limited claims acquired and 25 diamond-drill holes (14,190 feet) by Wadasa Gold Mines Limited.

1949-1950: Diamond-drilling (footage unknown) by Kirkland Larder Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.8, p.19 (Fork Lake Gold Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Gauthier Township, Holbrooke (1937) and McBean (1945).

GRENFELL TOWNSHIP

(NTS 42A/1E)

Campbell Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles west-southwest of Kirkland Lake, 1½ miles northeast of the eastern end of Kenogami Lake, in southeastern Grenfell Township. Shaft in claim L14821. Latitude

48.18°, Longitude 80.18°.

Map reference: ODM 2060, Bompas and Grenfell Townships.

GEOLOGY: Northwest-trending Keewatin mafic metavolcanics are overlain, in the southern part of the property, by flat-lying Cobalt sedimentary rocks. The "veins" encountered during underground exploration consist of varying widths of quartz veinlets and pyritized wallrock, generally occupying shear zones.

Assays of samples taken from the veins on surface ranged from trace to 0.72 ounce of Au per ton; samples from underground assayed from trace to 0.55 ounce of Au per ton.

HISTORY: 1917: Surface work.

1926-1928: Shaft to 536 feet with levels at 125, 250, 375 and 500 feet, and 2,500 feet of lateral development by Four Nations Reserve Mining Company Incorporated.

1933-1934: Shaft dewatered, 2,516 feet of lateral development, and some diamond-drilling by Four Nations Consolidated Gold Mines Limited.

REFERENCES: GSC 1936, Memoir 192, p.40, 41 (Four Nations Consolidated Gold Mines Limited). ODM 1964, GR30, p.13, 14.

ODM 1964, MRC3, p.24, 25 (Four Nations Gold Mines Ltd.).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Grenfell Township, Hurst (1945).

Grenfell-Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 8¼ miles west of Kirkland Lake, 2 miles south of south end of Seseikinika Lake, in central Grenfell Township. Latitude 48.14°, Longitude 80.22°.

Map reference: ODM 2060, Bompas and Grenfell Townships.

GEOLOGY: Mafic metavolcanics, including pillowed and porphyritic lavas, are cut by a north-trending diabase dike. Two fracture zones are mineralized with quartz and iron carbonate.

A 3.15 metric ton bulk sample taken in 1915 yielded 3.11 ounces of Au per ton. Samples taken around 1920 reportedly yielded assays of up to 84 ounces of Au per ton. Samples taken in 1937 yielded assays ranging from trace to 0.06 ounce of Au per ton.

HISTORY: 1912: Prospect shaft and trenching by Stitt. 1914-1915: No.1 Shaft sunk from the bottom of an open cut measuring 45 feet long by 6 to 15 feet deep.

1922-1923: Shaft dewatered and some lateral

development done on 100-foot level by Grenfell-Kirkland Gold Mines Limited.

1928: No.2 Shaft to 76 feet.

Note: There has been some disagreement in various reports as to the depths of these shafts.

1932: No.2 shaft dewatered and 50 feet of drifting on the 70-foot level.

1945-1946: Diamond-drilling by Grengold Mines Limited.

1972: Rock trenching by T. Sullivan.

REFERENCES: Canadian Mines Handbook 1932, p.55.

Canadian Mines Handbook 1962, p.106.

GSC 1936, Memoir 192, p.43.

ODM 1929, Vol.38, pt.1, p.107.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Grenfell Township, Anonymous (1937), Campbell (1915).

Kiryan Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles west-northwest of Kirkland Lake, 4/5 mile southwest of south end of Wewegimak Lake, in northern Grenfell Township. Latitude 48.18°, Longitude 80.19°.

Map reference: ODM 2060, Bompas and Grenfell Townships.

GEOLOGY: The property is underlain by Keewatin mafic metavolcanics. Mineralization consists of massive and disseminated sulphides (pyrrhotite, pyrite, sphalerite, and galena) in quartz veins and highly silicified wallrock. Scheelite occurs as thin plates and sparsely disseminated within the quartz. Gold has reportedly been found in the quartz veins.

HISTORY: 1932: Two-compartment shaft to 60 feet by Woodward-Kirkland Syndicate.

1933-1935: Shaft deepened to 265 feet and 2,129 feet of lateral development on levels at 60,150 and 250 feet. Diamond-drilling totalling 3,270 feet from underground and 2,886 feet from the surface. All work by Kirkland Consolidated Gold Mines Limited.

1937: Pitting, and some ore shipped by D.E. Sirola.

1938: Diamond-drilling (footage unknown) by Kiryan Gold Mines Limited.

1941: Shaft dewatered and 30 feet of drifting and raising done on the 60-foot level, by D.S. Baird and T.M. Church.

1954: Magnetic survey and diamond-drilling (footage unknown) by New Kelore Mines Limited.

REFERENCES: GSC 1936, Memoir 192, p.43 (Kirkland Consolidated Gold Mines, Limited).

ODM 1942, Vol.51, pt.1, p.69 (Baird and Church).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Grenfell Township, Salton (1954).

Magni Prospect

MAIN METALS: Au

LOCATION: Approximately 5½ miles west of Kirkland Lake, ¾ mile north-northeast of Cook Lake, in eastern Grenfell Township and western Teck Township. Latitude 48.16°, Longitude 80.15°.

Map reference: ODM 2060, Bompas and Grenfell Townships.

GEOLOGY: Keewatin mafic metavolcanics and gabbro are cut by small dikes of porphyry and diabase. Several east-trending mineralized zones, associated with shearing in the metavolcanics and porphyry, consist of quartz stringers with chalcopyrite, pyrite, pyrrhotite, and minor amounts of gold.

Three of the mineralized zones each average 3 feet in width and have been traced for approximately 800 feet. Assays of up to 1.25 ounces of Au per ton have been obtained from the No.1 zone. Gold has reportedly been panned across the entire width of the No.2 zone. Samples taken from the No.3 zone on the 125-foot level yielded assays of up to 2.30 ounces of Au per ton.

HISTORY: 1920-1929: Two-compartment shaft sunk on the No.3 zone to a depth of 135 feet, with 40 feet of drifting on the 125-foot level. A second shaft, 34 feet deep, was sunk on the No.1 zone (Note: Records are incomplete and there is some confusion as to the depths of the shafts and who did the work.)

1934: Surface work by James Kirkland Mines Limited.

1960-1961: Geological, magnetic, electromagnetic and self-potential surveys, and six diamond-drill holes (520 feet) by Magni Mining Corporation.

REFERENCES: GSC 1936, Memoir 192, p.43 (James Kirkland Mines, Limited).

ODM 1964, GR30, p.14.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Grenfell Township, Reid (1929) and Wagner (1961).

Mylake Prospect

MAIN METALS: Au

LOCATION: Approximately 7¼ miles west of Kirkland Lake, 1¼ miles west-southwest of Cook Lake, in east-central Grenfell Township. Latitude 48.14°, Longitude 80.19°.

Map reference: ODM 2060, Bompas and Grenfell Townships.

GEOLOGY: Keewatin metavolcanics (interbanded pillow lavas, massive basalt flows, and occasional narrow agglomerate bands) and gabbro underlie the property. Two sets of quartz veins are present: one

set trends N50-60°W and dips vertically or steeply southwest; the other trends N78°E and dips vertically. Mineralization consists of sparse pyrite and visible gold. Samples from the No.1 and No.2 veins assayed 0.12 ounce and 1.34 ounces of Au per ton respectively. Assays of diamond-drill core samples ranged from trace to 0.34 ounce of Au per ton.

HISTORY: 1913: Prospect staked by Clarence Alschbach.

1922: Surface work by Alschbach Gold Mining Company Limited.

1928-1929: Two-compartment shaft to 160 feet, with 600 feet of lateral development on the 125-foot level by Alschbach Gold Mining Company Limited.

1933-1935: Shaft deepened to 250 feet, with 315 feet of additional lateral development on the 125- and 250-foot levels. Two underground diamond-drill holes. All work by Kirkland Hudson Bay Gold Mines Limited under option from Alschbach Gold Mining Company Limited.

1936: Mine dewatered and re-examined by Alschbach Gold Mining Company Limited.

1944: Geological surveys by Brewis and White Corporation and by Mylake Mines Limited.

1945: 33 surface diamond-drill holes (8,769 feet) by Mylake Mines Limited.

1957: Geological survey.

1958: Underground workings dewatered and sampled.

REFERENCES: ODM 1964, GR30, p.14.

ODM 1964, MRC3, p.9, 10 (Alschbach Gold Mining Co. Ltd.).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Grenfell Township, Holbrooke (1945).

HEARST TOWNSHIP

(NTS 32D/4E)

Knudson Prospect

MAIN METALS: Au

LOCATION: Approximately 1 mile southeast of Larder Lake village, in northern Hearst Township. Showings in claim L1054 and on Island M in Larder Lake. Latitude 48.08°, Longitude 79.70°.

Map reference: ODM 1947-1, Township of Hearst and portion of Township of McFadden.

GEOLOGY: In claim L1054, highly-sheared Keewatin lava and greywacke are intruded by syenite which, in places, is mineralized and contains irregularly distributed quartz veins. Gold values reported from these veins.

On Island M, a north-trending shear zone cuts

syenite in and near inclusions of 'greenstone'. The syenite near the shear zone has been slightly carbonatized and mineralized with some quartz and disseminated pyrite.

Assays of surface samples ranged from 0.12 to 0.38 ounce of Au per ton. Gold values reported from diamond-drilling.

HISTORY: 1933: Geological survey and trenching by McRae and Hopkins.

1935: Trenching, sampling, and seven diamond-drill holes (2,639 feet) by McCrear and Hopkins and by Sylvanite Gold Mines Limited (under option).

1937: Four diamond-drill holes (1,062 feet) by Knutson Mining Corporation Limited.

1939: Trenching and sampling by Sylvanite Gold Mines Limited.

REFERENCES: ODM 1947, Vol.56, pt.8, p.24, 25.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Hearst Township, Shaw (1939).

Korola-Larder Prospect

MAIN METALS: Au

LOCATION: Approximately 3 miles south of Larder Lake village, in west-central Hearst Township. Showings in patented claims L24421, L26792, L26843, and L30692. Latitude 48.06°, Longitude 79.70°.

Map reference: ODM 1947-1, Township of Hearst and portion of Township of McFadden.

GEOLOGY: Keewatin mafic pillow lavas and Timiskaming greywacke and conglomerate are intruded by syenite and lamprophyre dikes. In claims L24421 and L30693, a band of carbonate rock and areas of carbonatized lavas yielded only low gold values. The "Martin" Vein, in claim L26843, strikes N25°E and consists of a series of quartz stringers and lenses. The best grab sample assayed 0.50 ounce of Au per ton; the best channel sample averaged 0.16 ounce of Au per ton across 7 feet.

HISTORY: Pre-1936: Prospect shaft and test pits by Dominion Gold Leaf Syndicate.

1938: Surface work and 15 diamond-drill holes (3,400 feet) by Korola-Larder Mines Limited.

REFERENCES: ODM 1947, Vol.56, pt.8, p.25.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Hearst Township, McClastey (1936).

Laguerre Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately ½ mile east of Larder Lake village, astride the McVittie-Hearst township boundary near the 2½ mile post, in northern Hearst Township and southern McVittie Township. Laguerre Shaft in patented claim L1053; Raven River Shaft in claim L5360. Latitude 48.10°, Longitude 79.70°.

Map reference: ODM 1947-1, Township of Hearst and portion of Township of McFadden.

GEOLOGY: Keewatin metavolcanics and Timiskaming metasediments (conglomerate, tuff, and highly schistose rocks) are intersected by numerous dikes and irregularly shaped Algoman intrusive bodies, mainly syenite, felsite, diorite, and lamprophyre. The Laguerre Shaft was sunk on the north extension of the No.2 vein zone which lies within the boundaries of a pink syenite dike. The dike has been traced for more than ¼ mile and varies in width from 3 to 75 feet. Gold values occur throughout the dike on the 250-foot level where it has been fractured, pyritized, and cut by quartz stringers. No ore shoot was outlined.

In the Raven River Mine two pipe-like bodies of greatly altered syenite are bordered by green carbonate, talc-chlorite, 'greenstone', and lamprophyre. The ore occurs in quartz veins in these syenite bodies.

ECONOMIC FEATURES: In 1939, the estimated reserves in the ore zone were 11,000,000 tons averaging 0.05 ounce of Au per ton. These features suggest that the deposit belongs to the gold-porphry type.

OWNERSHIP: Open for staking as of July 15, 1971. History: 1908: 10-ton stamp mill on Harris-Maxwell claims.

1912-1913: Shaft to 438 feet, with 3,000 feet of lateral development on five levels. Small amount of ore milled. Work by Associated Goldfields Mining Company Limited.

1936-1939: Shaft dewatered, winze sunk from 420 to 716 feet, two new levels, 8,000 feet of lateral development, and an unspecified amount of underground diamond-drilling. Gold production from 50- to 70-ton mill. All work by Raven River Gold Mines Limited.

1939-1941: Laguerre Shaft to 281 feet on the Knutson claim, with lateral development on the 250-foot level.

1946-1947: Laguerre Shaft dewatered and deepened to 778 feet, with levels at 420, 590 and 760 feet, and 2,443 feet of lateral development. Surface and underground diamond-drilling. All work by Laguerre Gold Mines Limited.

1970: Trenching and two diamond-drill holes (830 feet) by R.A. MacGregor.

1973: Magnetic and electromagnetic surveys by R.A. MacGregor.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore milled (tons)	Recovered Grade (ounce of Au per ton)
1937-1939	7,568	1,383	40,514	0.19

REFERENCES: ODM 1941, Vol.50, pt.7, p.76-80.

ODM 1947, Vol.56, pt.8, p.25, 26.

ODM 1964, MRC3, p.45, 46.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Martin-Bird Prospect

MAIN METALS: Au

LOCATION: Approximately 3¼ miles southeast of Larder Lake village, ½ mile east of south end of Southwest Arm of Larder Lake, in central Hearst Township. Shafts in patented claim L23717. Latitude 48.05°, Longitude 79.66°.

Map reference: ODM 1947-1, Township of Hearst and portion of Township of McFadden.

GEOLOGY: Keewatin pillow lavas are overlain by Timiskaming metasediments (greywacke and minor pebble conglomerate). These rocks are intruded by bodies of Algonian syenite porphyry with associated small masses of lamprophyre, and by later diabase dikes.

Each of the three vein zones consists of irregular quartz veins and stringers in a shear zone which strikes N60°E and dips steeply northwest. Mineralization consists of gold along the edges of the veins and associated with sulphides in the nearby metasediments.

ECONOMIC FEATURES: In 1945 possible ore reserves amounted to 157,600 tons averaging 0.14 ounce of Au per ton and 23,500 tons averaging 0.21 ounce of Au per ton.

HISTORY: 1934-1939: Two shafts, each to a depth of 400 feet, with levels at 125, 250, and 375 feet and 16,062 feet of lateral development. Shafts linked underground. Development raise from 375 foot level with sublevel at 320 feet. Diamond-drilling totalled 29,696 feet from underground and 16,940 from the surface. Trenching and surface work. All work by Martin-Bird Gold Mines Limited.

1974: Mill tests by Kerr Addison Mines Limited.

REFERENCES: ODM 1935, Vol.44, pt.2, p.56-58.

ODM 1947, Vol.56, pt.8, p.26, 27.

ODM 1964, MRC3, p.54.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Hearst Township, Pain (1945).

Mitchell-Hearst Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles south-southwest of Larder Lake village, ½ mile northwest of Estrangement Lake, in western Hearst Township. Main showing in patented claim L13927. Latitude 48.07°, Longitude 79.73°.

Map reference: ODM 1947-1, Township of Hearst and portion of Township of McFadden.

GEOLOGY: Much of the property is drift-covered. Keewatin mafic metavolcanics and minor Timiskaming greywacke are cut by a north-northeast-trending zone of syenite and syenite porphyry. Trenching and diamond-drilling have revealed an irregular zone, 30 to 125 feet in width, containing quartz stringers and sulphides in sediments, lavas, carbonatized intrusives, and green siliceous and carbonate material.

Assays of samples from pits and trenches ranged from 0.02 to 0.31 ounce of Au per ton. The best diamond-drill core intersection was 0.33 ounce of Au per ton over a 1.4-foot section of quartz and green carbonate.

HISTORY: 1928: Pitting and trenching by Mitchell Mines Limited.

1938: Trenching, sampling, and one diamond-drill hole (320 feet) by Erie Canadian Mines Limited.

1944: Seven diamond-drill holes (2,025 feet) by Mitchell-Hearst Gold Mines Limited.

REFERENCES: ODM 1947, Vol.56, pt.8, p.27, 28.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Hearst Township, Anonymous (1944).

INGRAM TOWNSHIP

(NTS 31M/13E)

Marshall Prospect

MAIN METALS: Au, Ag, Pb, Zn, Co

LOCATION: Approximately 10 miles east of Englehart, immediately south of Mallard Lake, in lots 10 and 11, concession VI, Ingram Township. Latitude 47.83°, Longitude 79.65°.

Map reference: ODM P.1249, Englehart-Earlton Area.

GEOLOGY: The property is mostly covered by overburden except for a ridge of Nipissing Diabase southwest of Mallard Lake. Diamond-drilling intersected Cobalt sedimentary rocks (argillite, greywacke, conglomerate, and "black shales").

The main mineralization occurs in two quartz-carbonate veins cutting the diabase. The "Silver Vein",

in S½, lot 10, yielded values of 0.38 ounce of Au per ton, 0.65 ounce of Ag per ton, and 4.5 percent Co. The "Galena Vein" assayed 0.03 ounce of Au per ton, 3.77 ounces of Ag per ton, 2.01 percent Zn, and 22.43 percent Pb. A cross-fracture on surface yielded 0.98 ounce of Au per ton, 1.72 ounces of Ag per ton, 0.36 percent Cu, 0.41 percent Co, and 0.24 percent Pb.

HISTORY: Circa 1920: Trenching and prospect shaft.

1937: Surface work on "Galena Vein" by J. Marshall.

Circa 1955: Surface work and three diamond-drill holes (121 feet) on Silver Vein by Hamason Mines Limited.

1962: Four diamond-drill holes (449 feet).

1963: 19 diamond-drill holes (2,538 feet) by Tinex Development Exploration Limited.

1966, 1967, 1973: 11 diamond-drill holes (3,525 feet) by F.D. Marshall and J.A. Marshall.

REFERENCES: ODM 1922, Vol.31, pt.3, p.16 (Ingram Township).

ODM 1977, MP69, p.10, 11.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Ingram Township, Anonymous (1951), Bayne (1962), Gerrie (1954), Holbrooke (1963), F. Marshall, J. Marshall, and W. Marshall (1966-1973).

KATRINE TOWNSHIP

(NTS 32D/4E, 32D/5E)

Wadge Prospect

MAIN METALS: Au

LOCATION: Approximately 8 miles northeast of Larder Lake village, ¾ mile south of Mulven Lake, in southeastern Katrine Township and southwestern Ossian Township. Shaft in claim L72715 (L7786). Latitude 48.20°, Longitude 79.64°.

Map reference: ODM 2061, Arnold and Katrine Townships.

GEOLOGY: Keewatin metavolcanics (andesite, basalt, and related fragmentals) have been intruded by a north-trending body of syenite and syenite porphyry which is up to 2,000 feet in width. Quartz veins (from a few inches to 3 feet wide) and breccia zones occupy near-vertical, northwest-trending fractures in the intrusive body. Each of four main veins reportedly contains pyrite, chalcopyrite, and minor galena. Assays of samples taken in 1928 and 1939 ranged from 0.21 to 1.55 ounce of Au per ton and from 0.15 ounce to 0.95 ounces of Au per ton respectively. Several ore shoots, varying from 50 to 80 feet in length and averaging 0.75 ounce of Au per ton across widths of 4.5 to 5.0 feet, were outlined (Northern Miner, August 18, 1960).

HISTORY: 1919: Trenching by Nipissing Mining Company Limited.

1923-1924: 2,000 feet (by some reports up to 6,000 feet) of diamond-drilling by Anglo-Canadian Explorers.

1925-1929: Two-compartment shaft to 515 feet, with 1,815 feet (by some reports 1,330 feet) of lateral development on levels at 130, 250, 375, and 500 feet by Walsh Katrine Gold Mines Limited.

1939: Diamond-drilling (footage reported in Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake varies from 2,000 to 4,196 feet) by Baghdad Gold Mines Limited.

1960: Two diamond-drill holes (206 feet) by Mid North Engineering Services.

1963: Four diamond-drill holes (452 feet) by Mid North Engineering Services.

REFERENCES: ODM 1964, GR29, p.13.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Katrine Township, Morrison (1939), Strong (1928).

KNIGHT TOWNSHIP

(NTS 41P/10W, 41P/11E)

Decker Prospect

MAIN METALS: Au

LOCATION: Approximately 13 miles east of Gowganda, ¼ mile northwest of Moon Lake, in the southwestern corner of Knight Township. Latitude 47.68°, Longitude 81.07°.

Map reference: ODM P.1037, Knight Township (Timiskaming Nickel Ltd.).

GEOLOGY: The property is underlain by Timiskaming-type trachyte, trachyte breccia, tuff, and agglomerate with occasional inliers of Keewatin fragmental and spherulitic lava, breccia, and agglomerate. Mineralization occurs in two shear zones.

The "East Shear", a green carbonate-quartz zone varying in width from 4 inches to 2.5 feet, trends N20°E in trachyte and carbonatized fragmental lava. A 3-foot surface channel sample yielded 0.67 ounce of Au per ton. Two diamond-drill core samples assayed 0.62 ounce of Au per ton over 4.5 feet and 0.71 ounce of Au per ton over 7 feet.

The "West Shear" strikes north through spherulitic lava and contains a 4-inch wide massive sulphide zone. A grab sample yielded 0.90 ounce of Au per ton; a 4.2-foot section of diamond-drill core averaged 1.21 ounces of Au per ton.

HISTORY: 1939: Trenching and sampling by Hollinger Consolidated Gold Mines Limited.

1944-1945: 22 diamond-drill holes (2,051 feet) by Camdekk Gold Mines Limited.

1950: Nine diamond-drill holes (2,505 feet) by

Becnite Mines Limited.

1958: Five diamond-drill holes (500 feet) by Wexford Mines Limited.

1965: Six diamond-drill holes (2,646 feet) by Initiative Explorations Limited.

1967-1970: Airborne geophysical survey and diamond-drilling on ground adjacent to the gold showings by W.D. Sutherland and Associates and by Timiskaming Nickel Limited.

REFERENCES: Marginal Notes, ODM Map P.1037, Knight Township.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Knight Township, Hurd and Beckwith (1944), Mather (1965), Stroud (1946) and others.

Gardner Prospect

MAIN METALS: Au

LOCATION: Approximately 14 miles west of Gowganda, ¾ mile east of the southern end of Arthur Lake, in southwestern Katrine Township. Showings and diamond-drilling in claims MR34254 and MR34257-MR34259. Latitude 47.69°, Longitude 81.04°. Map reference: ODM P.1037, Knight Township (Metikemedo Mines Ltd.).

GEOLOGY: Keewatin metavolcanics and intercalated metasediments are cut by metamorphosed ultramafic and mafic intrusive rocks. Visible gold is reportedly associated with quartz stringers and finely-disseminated pyrite in a 22-foot wide carbonatized zone within a porphyry dike.

Assays of grab samples ranged from 0.04 to 0.16 ounce of Au per ton. A 3.5-foot section of diamond-drill core averaged 0.50 ounce of Au per ton.

HISTORY: Circa 1936: Pitting and trenching by D.H. Gardner.

1959: 17 diamond-drill holes (1,335 feet) by Courageous Gold Mines Limited.

1964: Five diamond-drill holes (1,086 feet) by New Senator-Rouyn Limited.

1966-1968: Airborne electromagnetic and magnetic surveys by Timiskaming Nickel Limited.

REFERENCES: Marginal Notes, ODM Map P.1037, Knight Township.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Knight Township, Holbrooke (1936), Hurd (1959) and Parcher (1964).

Wahbic Prospect

MAIN METALS: Au

LOCATION: Approximately 13 miles west of Gowganda, on the east shore of Pigeon Lake at its southern end,

in southwest-central Knight Township. Main showing in claim GG6083. Latitude 47.69°, Longitude 81.03°.

Map reference: ODM P.1037, Knight Township (Wahbic Explorations Ltd.).

GEOLOGY: In the vicinity of the showing, Keewatin metavolcanics (mainly basalt) are intruded by a hornblende syenite-quartz syenite body. These rocks are unconformably overlain by Cobalt Group metasediments (mainly argillite, siltstone, and arkose).

The main vein, striking N6°E and dipping 80°W, lies in a fracture zone in the intrusive body and has been offset by faults at two points. It consists of quartz mineralized with pyrite, chalcopyrite, molybdenite, and in places visible gold. One channel sample across 8 inches of the vein assayed 0.75 ounce of Au per ton. Assays of diamond-drill core ranged from trace to 0.7 ounce of Au per ton.

HISTORY: 1931: Stripping and trenching by R.E. Hore.

1965: Two diamond-drill holes (1,253 feet) by Whitegate Mining Company Limited.

1967: Two diamond-drill holes (1,037 feet) by Whitegate Mining Company Limited.

1968: Three diamond-drill holes (1,632 feet) by Wahbic Explorations Limited.

1971-1972: Geological, magnetic, and electromagnetic surveys by Amax Potash Limited.

REFERENCES: ODM 1932, Vol.41, pt.2, p.59, 60.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Knight Township, Grady (1965), Jordan (1936).

LEBEL TOWNSHIP

(NTS 32D/4W, 42A/1E)

Bidgood Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 5½ miles east of Kirkland Lake, between Mud Lake and McTavish Lake, in northeastern Lebel Township. No.1 Shaft in patented claim L6976, No.2 Shaft in patented claim L9882. Latitude 48.17°, Longitude 79.91°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Conglomerate, greywacke, tuff, and trachyte of the Timiskaming series are intruded by masses of feldspar porphyry, quartz porphyry, diorite, and syenite.

Most of the ore produced came from seven quartz veins occupying northeast-striking and northwest-dipping thrust fault fractures in the diorite stock which underlies most of claim L9882. Mineralization in the veins consists of calcite, pyrite, molyb-

denite, and chalcopyrite.

ECONOMIC FEATURES: Numerous offsets of the ore zones, resulting from post-ore cross-faulting, caused difficulty during mining operations.

OWNERSHIP: Yorkshire Resources Limited.

HISTORY: Circa 1920: Prospecting and surface work by Bidgood Gold Mines Limited.

1923-1924: No.1 Shaft to 600 feet with 3,400 feet of lateral development on levels at 300, 400, and 600 feet by Bidgood Gold Mines Limited.

1927-1931: Surface trenching, No.1 Shaft dewatered and deepened to 725 feet, 3,669 feet of underground lateral development, and 1,720 feet of underground diamond-drilling by Bidgood Consolidated Gold Mines Limited. Bidgood Consolidated acquired the neighbouring property of Cambro Kirkland Mines Limited who had sunk a shaft (what was to become the Bidgood No.2) to 75 feet. Bidgood Consolidated had deepened the No.2 Shaft to 500 feet by the time they suspended operations in 1931.

1933-1949: No.1 Shaft deepened to 855 feet and underground development to 1940, when the shaft was closed, consisted of a winze and 8,145 feet of crosscutting, drifting, and raising on 9 levels. No.2 Shaft dewatered in 1933 and all production during the period 1934-1949 came from this shaft which was deepened to 855 feet. Underground development consisted of three winzes, 36,399 feet of drifting, 16,282 feet of crosscutting, 7,970 feet of raising, and considerable diamond-drilling on 22 levels and sublevels to a maximum depth of 2,075 feet. All work by Bidgood Kirkland Gold Mines Limited.

1958: One diamond-drill hole (801 feet) by C.W. Tully.

There are certain discrepancies between the information given in the various references, particularly with respect to shaft depths during the period 1927-1931.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1934-				
1939,	160,184	72,468	586,367	0.27

1951 These figures include a small amount of production from the Gordon-Lebel property.

REFERENCES: ODM 1923, Vol.32, pt.4, p.73, 74.

ODM 1928, Vol.37, pt.2, p.155-157.

ODM 1950, Vol.59, pt.2, p.5, 6.

ODM 1964, MRC3, p.16, 17.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Parsons (1950).

Continental Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles northeast of Kirkland Lake, north of the eastern arm of Gull Lake, in northwestern Lebel Township. No.1 Shaft in patented claim L2257, No.2 Shaft in patented claim L2807. Latitude 48.17°, Longitude 80.00°. Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Sedimentary rocks, tuffs, and trachytic flows of Timiskaming age are intruded by Algoman basic syenite, syenite, and feldspar porphyry. The eastern part of the property is mainly drift-covered; mining operations have been confined to the western part.

No.2 Shaft was sunk to investigate the northeast-trending north branch of the Murdoch Creek Fault. No.1 Shaft was put down to explore two faults, ¼ mile apart, running parallel to this fault. Grab samples from the No.1 Shaft assayed from 0.40 ounce to 1.95 ounces of Au per ton. The best result from underground diamond-drilling was 0.24 ounce of Au per ton from a 2.4-foot section of core on the 800-foot level.

HISTORY: 1922-1925: Continental Mines Limited acquired a group of 27 claims from 18 different owners. Considerable surface work, No.1 Shaft to 825 feet, and lateral development on several levels. 1927-1929: No.2 Shaft to 500 feet, lateral development on the 500-foot level, and 4,000 feet of surface diamond-drilling by Continental-Kirkland Mines Limited.

1936-1938: No.1 Shaft dewatered, 2,418 feet of lateral development on the 800-foot level and 925-foot sublevel, and 6,778 feet of underground diamond-drilling. All work done jointly by American Smelting and Refining Company, Premier Gold Mining Company Limited and Toburn Gold Mines Limited under direction of the latter.

1947: Underground diamond-drilling from Toburn property.

1962: Surface diamond-drilling.

REFERENCES: ODM 1923, Vol.32, pt.4, p.68, 69.

ODM 1928, Vol.37, pt.2, p.154, 155.

ODM 1938, Vol.47, pt.1, p.108, 109, 219.

ODM 1940, Vol.49, pt.1, p.105, 209.

ODM 1948, Vol.57, pt.2, p.90.

ODM 1964, MRC3, p.22, 23.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Glenora Prospect

MAIN METALS: Au

LOCATION: Approximately 1½ miles northeast of

Kirkland Lake, immediately north of western arm of Gull Lake, in western Lebel Township. Shaft in claim L2412. Latitude 48.15°, Longitude 80.00°. Map reference: ODM 53a, Township of Lebel.

GEOLOGY: East-trending Timiskaming metasediments (conglomerate, tuffaceous conglomerate, and greywacke) are intruded by a basic syenite body and feldspar porphyry dikes, both of Algoman age. The northeast-striking Murdoch Creek Fault Zone crosses the property.

The shaft was sunk on the most encouraging vein which strikes N85°E and dips steeply south along a tuff-conglomerate contact. On surface the vein reportedly assayed 0.259 ounce of Au per ton across 1.5 feet for a length of 265 feet. On the 150-foot level, a 45-foot section of vein yielded 0.2 ounce of Au per ton across a width of 3.5 feet. Drilling in 1945 failed to locate the mineralized veins.

HISTORY: 1912: Claim L2412 staked by T.H. Tough. 1924: 45-foot inclined shaft by London Gull Lake Mines Limited.

1936-1937: Surface work consisting of 2,000 feet of trenching and 694 feet of diamond-drilling. Three-compartment shaft to 465 feet with 2,578 feet of lateral development on levels at 150, 300, and 450 feet, and 7,924 feet of underground diamond-drilling. 351 tons of ore hoisted. All work by Glenora Gold Mines Limited.

1945: Four diamond-drill holes (4,770 feet) to explore the Murdoch Creek Fault Zone by Glenora Gold Mines Limited.

1972-1973: Trenching by Ernest Deloye and Conrad Allard.

REFERENCES: ODM 1925, Vol.34, pt.1, p.125 (London Gull Lake Mines).

ODM 1937, Vol.46, pt.1, p.136, 137.

ODM 1938, Vol.47, pt.1, p.125, 126.

ODM 1964, MRC3, p.25, 26.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Hogg (1939, revised 1951).

Gordon Lebel Prospect

MAIN METALS: Au

LOCATION: Approximately 5¼ miles east-northeast of Kirkland Lake, immediately south of McTavish Lake, in northeastern Gauthier Township. Underground workings in patented claims L14678 and L14682. Latitude 48.17°, Longitude 79.91°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: The contact between Keewatin metavolcanics (mainly pyroclastics) to the north and Timiskaming rocks (sediments, pyroclastics, and

flows) to the south trends east-southeast across the property. These rocks are intruded by Algoman diorite and porphyry. Exploration was concentrated along the Bidgood "break" which enters the property from the southwest.

A small tonnage of ore was taken from a stope above a drift which had been extended onto the property from the 2,025-foot level of the Bidgood Mine. Production figures were included with those for the Bidgood Mine.

A chip sample taken from a 12-foot width of tuffaceous greywacke on claim L14682 assayed 0.09% U₃O₈.

HISTORY: 1927: Two diamond-drill holes (approximately 665 feet) by Gordon Lebel Mines Limited.

1936-1937: Geological survey, trenching, and 21 diamond-drill holes (11,880 feet) by Gordon Lebel Mines Limited.

1946-1949: Property explored from the underground workings of the Bidgood Mine. Two drifts extended from the Bidgood 2,025-foot level and a small stope was mined out.

PRODUCTION: Included in figures of the Bidgood Mine.

REFERENCES: ODM 1937, Vol.46, pt.1, p.140, 141.

ODM 1964, MRC3, p.30, 31.

Resident Geologist's Files, Kirkland Lake. Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Butterfield (1937).

Hargreaves Prospect

MAIN METALS: Au

LOCATION: Approximately 4½ miles northeast of Kirkland Lake, 9/10 mile northeast of Heart Lake, in northern Lebel Township. Shaft in claim L8084. Latitude 48.19°, Longitude 79.94°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: East- to northeast-trending Keewatin metavolcanics (mainly andesite) and east- to south-east-trending Timiskaming metasediments (conglomerate, greywacke, and tuff) are intruded by Algoman feldspar porphyry and by a large mass of quartz gabbro.

The shaft was sunk at one end of the quartz gabbro body, on a carbonatized zone which is cut by numerous irregular and narrow quartz and quartz-carbonate stringers containing disseminated pyrite. The zone assayed 0.09 ounce of Au per ton. Grab samples from the dump assayed as high as 743 ounces of Au per ton, but many of the specimens appeared to be foreign to the area and may have been from an abandoned rock and mineral collection.

HISTORY: 1928: Shaft to 162 feet by Ed. Hargreaves Kirkland Gold Mines Limited.

1934: Crosscut opened to vein on 160-foot level by Ed. Hargreaves Kirkland Gold Mines Limited.

1936: Shaft deepened to 300 feet by Ed. Hargreaves Kirkland Gold Mines Limited.

1959: Geological survey and sampling of dump by Sogemines Development Company Limited.

1961: Two diamond-drill holes (1,000 feet) by Gauvreau.

1972: Electromagnetic and magnetic surveys by Toronado Mines Limited.

REFERENCES: ODM 1935, Vol.44, pt.1, p.92.

ODM 1937, Vol.46, pt.1, p.130, 131.

ODM 1964, MRC3, p.31, 32.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Sogemines Development Company (1959).

King Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 3½ miles east-northeast of Kirkland Lake, ½ mile southwest of Mud Lake, in north-central Lebel Township. Shaft in claim L8002. Latitude 48.16°, Longitude 79.95°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: East-trending Timiskaming metavolcanics and metasediments (trachyte flows and sills, greywacke, and tuffaceous conglomerate) are intruded by "porphyrite" (Algonian porphyry and altered country rock).

More than 30 narrow parallel veins, striking northeast and dipping steeply northwest, were discovered in the porphyrite. They consist mainly of quartz, calcite, barite, iron carbonate, and occasionally disseminated pyrite and visible gold. Most have widths of only a few inches. Two channel samples taken across the No.5 Vein at depths of 60 and 90 feet assayed 1.50 ounces of Au per ton across 1.2 feet and 1.23 ounces of Au per ton across 2 feet, respectively.

HISTORY: 1920-1922: Veins discovered by systematic surface trenching. Inclined shaft to 400 feet with levels at 90 and 400 feet by King Kirkland Gold Mines Limited.

1923: 2,350 feet of lateral development on the 400-foot level by Tonopah Mining Company.

1936: Surface diamond-drilling and shaft dewatered and sampled by Kirkking Mines Limited.

REFERENCES: ODM 1923, Vol.32, pt.4, p.70-72.

ODM 1964, MRC3, p.36, 37.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Craig (1921), Gillanders (1937).

Kirgood Prospect

MAIN METALS: Au

LOCATION: Approximately 4½ miles northeast of Kirkland Lake, ¾ mile northeast of Heart Lake, in northern Lebel Township. Showings in claims L8680 and L9250. Latitude 48.17°, Longitude 79.94°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Northeast-trending Keewatin metavolcanics (andesite flows and fragmental rocks) and southeast-trending Timiskaming metasediments (greywacke, conglomerate and tuff) are intruded by Algonian feldspar porphyry and quartz diorite.

A narrow shear zone, 150 feet north of the Murdoch Creek Fault, contains pyrite mineralization. Assays of samples from pits and diamond-drill core ranged from trace to 0.01 ounce of Au per ton.

HISTORY: Pre-1935: Trenching, pitting, and 40-foot prospect shaft.

1937: Pits and prospect shaft dewatered and re-sampled, and four diamond-drill holes (2,400 feet) by Kirgood Gold Mines Limited.

1972: Electromagnetic and magnetic surveys by Toronado Mines Limited.

REFERENCES: ODM 1964, MRC3, p.38.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Harding (1939), Sutton (1937).

Kirkroyale Prospect

MAIN METALS: Au

LOCATION: Approximately 2¾ miles east-northeast of Kirkland Lake, 9/10 mile west-southwest of Mud Lake, in central Lebel Township. Shaft in claim L3686. Latitude 48.15°, Longitude 79.96°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Timiskaming metasediments and metavolcanics, including greywacke, tuff breccia, agglomerate, tuffaceous conglomerate and trachytic flow rocks, are intruded by "porphyrite" (Algonian porphyry and altered country rock). An irregular quartz vein, dipping 80°S, occupies a contact between trachytic lava flows and conglomerate. The wallrocks near the vein are highly altered and impregnated with carbonates and fine pyrite.

No gold assays appear in any of the references but it is likely that some values were encountered.

HISTORY: Pre-1926: Shaft to 300 feet and 1,690 feet of lateral development on the 300-foot level by Kirk Gold Mines Limited.

1926-1928: Shaft deepened to 565 feet and 2,468 feet of lateral development on levels at 300 and

500 feet. Winze from 550-foot level to a depth of 1,115 feet. 3,755 feet of diamond-drilling. All work by Conroyal Mines Limited.

1937: Underground workings dewatered and re-sampled and a diamond-drilling program by Kirkroyale Gold Mines Limited.

1950: One diamond-drill hole (528 feet).

1959-1963: Ten diamond-drill holes (1,461 feet) by G.E. Harrison.

1970-1972: Some trenching and three diamond-drill holes (726 feet) by Thomas Martin.

REFERENCES: ODM 1923, Vol.32, pt.4, p.72 (Kirk Gold Property (L.3, 686)).
ODM 1926, Vol.35, pt.1, p.110 (Kirk Gold Mines, Limited).
ODM 1928, Vol.37, pt.2, p.157, 158 (Conroyal Mines, Limited).
ODM 1938, Vol.47, pt.2, p.147, 148 (Kirkroyale Gold Mines, Limited).
ODM 1964, MRC3, p.44, 45.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Lakeside-Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 2½ miles east-northeast of Kirkland Lake, ¼ mile southeast of eastern end of Gull Lake, in west-central Lebel Township. Shafts in claim L2924. Latitude 48.16°, Longitude 79.97°. Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Timiskaming conglomerate, greywacke and pyroclastics are intruded by Algoman quartz porphyry and mafic syenite. One branch of the "Middle Harvey fault" trends northeast in the vicinity of the No.1 Shaft.

The No.1 vein, striking northeast and dipping 68° NW, roughly follows the fault along a porphyry-conglomerate contact. It is a quartz-carbonate vein, varies from 2 to 4 feet in width, and contains minor molybdenite, pyrite, galena, sphalerite, and chalcopyrite. Low gold values were obtained. A series of similar veins, parallel to the No.1, were encountered on the 300-foot level.

HISTORY: 1921-1923: No.1 Shaft to 321 feet, 600 feet of lateral development on levels at 200 and 300 feet, and underground diamond-drilling by Queen Lebel Gold Mines Limited and by Anglo-Canadian Syndicate under option from Queen Lebel Gold Mines Limited.

1934: 600 feet of lateral development on 300-foot level and considerable underground diamond-drilling by Lakeside-Kirkland Gold Mines Limited.

1936: No.2 Shaft to 78 feet by Lakeside-Kirkland Gold Mines Limited.

1938: No.2 Shaft deepened to 575 feet and 240 feet of lateral development on levels at 300 and 550 feet by Lakeside-Kirkland Gold Mines Limited.

1941: Trenching, No.1 Shaft and associated workings dewatered, 300-foot level resampled, and some underground diamond-drilling done by Mining Research Corporation.

1950: Two diamond-drill holes (600 feet) by Lakeside-Kirkland Gold Mines Limited.

1955 and 1962: Two diamond-drill holes (245 feet) by C.L. Boland.

REFERENCES: ODM 1923, Vol.32, pt.4, p.69, 70 (Queen Lebel).
ODM 1939, Vol.48, pt.1, p.140, 141.
ODM 1942, Vol.51, pt.1, p.135, 136.
ODM 1964, MRC3, p.49, 50.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Lebel Oro Prospect

MAIN METALS: Au

LOCATION: Approximately 3¼ miles east-northeast of Kirkland Lake, ¼ mile west of Mud Lake, in central Lebel Township. Shaft in claim L3191. Latitude 48.16°, Longitude 79.94°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: The northern part of the property is underlain by northwest-trending Timiskaming conglomerate, tuff, tuff breccia, and agglomerate. The southern part of the property is underlain by "porphyrite" (Algoman porphyry and altered country rock).

The shaft was sunk on one of three parallel quartz veins, striking N30°E and dipping 65-70°NW, which probably occupy faults or shear zones. The vein, 1.5 feet wide and exposed on surface for 200 feet, is accompanied by mineralized schist across a total width of 6 feet between carbonatized wallrocks. Pyrite is the main sulphide mineral. Stringers of dark-coloured quartz seem to contain the best gold values. The best channel sample assay was 1.48 ounces of Au per ton across 9 inches.

HISTORY: 1921: Inclined shaft to 60 feet by Lebel Oro Mines Limited.

1923-1927: Shaft deepened to vertical depth of 203 feet and 1,350 feet of underground development on levels at 100 and 200 feet by Lebel Oro Mines Limited.

1928: Six surface diamond-drill holes (5,149 feet) by the Nipissing Mining Company Limited.

1936: Mine dewatered, 1,800 feet of underground diamond-drilling, and 900 feet of surface diamond-drilling by Lebel Oro Mines Limited.

1948: Geological, magnetic and resistivity surveys, and six diamond-drill holes (3,015 feet) by Lebel

Oro Mines Limited.

REFERENCES: ODM 1923, Vol.32, pt.4, p.72, 73.

ODM 1964, MRC3, p.51, 52.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Geo-Technical Development Company Limited (1948), Murdock (1928), Smith (1924), Todd (1928).

Moffatt-Hall Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 5½ miles east-northeast of Kirkland Lake, ½ mile south of the eastern end of McTavish Lake, in northeastern Lebel Township. Shaft in claim LS4. Latitude 48.17°, Longitude 79.91°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: Timiskaming metavolcanics and metasediments (conglomerate, greywacke, pyroclastics, and massive and porphyritic trachyte) are intruded by "porphyrite" (Algoman porphyry and altered country rocks).

The No.1 vein, striking northeast and dipping steeply northwest, consists of fractured and altered wallrock heavily mineralized with pyrite and cut by dark quartz stringers. To the northeast, the vein has been developed on the Bidgood property and, to the southwest, it is cut off by a cross-fault.

ECONOMIC FEATURES: Assays from underground ranged from 0.09 to 0.75 ounce of Au per ton. The best ore was found where the vein occupied a sheared contact between a narrow porphyry dike and the Bidgood diorite body.

OWNERSHIP: Open for staking as of January 1, 1953.

HISTORY: 1917-1918: Property staked by F.C. Bidgood.

Circa 1920: Trenching revealed No.1 vein.

1923: Surface prospecting by Tonopah Mining Company (under option).

1928: Unspecified development by McIntyre Porcupine Mines Limited (under option).

1931-1932: Two-compartment shaft to 570 feet and 2,800 feet of lateral development on levels at 150, 300, 425, and 550 feet by Moffat-Hall Gold Mines Limited.

1934: Property leased to H. Jardin who shipped 3,178 tons of ore to the Noranda mill.

1934-1935: Raise driven to connect Moffat-Hall 425-foot level with Bidgood 500-foot level, and small amount of production by Bidgood Kirkland Gold Mines Limited (under lease).

1936: Operations resumed for short time by Moffat-Hall Mining Company Limited. During the life of

the mine there was 4,365 feet of underground lateral development and 3,464 feet of underground diamond-drilling in 21 holes.

1938: Six surface diamond-drill holes (1,031 feet).

1941: Six surface diamond-drill holes (12,837 feet).

1964: Geological survey and trenching by Consolidated Virginia Mining Corporation.

1965-1966: Six diamond-drill holes (690 feet) by Tegen Gold Mines Limited.

1973: Trenching and stripping by E.C. Deloye.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1934-1935	4,768	1,149	16,388	0.29

REFERENCES: ODM 1923, Vol.32, pt.4, p.75.

ODM 1928, Vol.37, pt.2, p.157.

ODM 1935, Vol.44, pt.2, p.59, 60.

ODM 1949, Vol.58, Table II in back pocket.

ODM 1964, MRC3, p.55, 56.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Buffam (1938) and others.

Morris Kirkland Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 5 miles east of Kirkland Lake, ¾ mile southeast of Mud Lake, in east-central Lebel Township. Shafts Nos.1 and 2 in claim L7479. Latitude 48.15°, Longitude 79.92°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: The entire property is underlain by Timiskaming metavolcanics and metasediments (greywacke, tuff breccia, agglomerate, and massive and porphyritic trachyte) which are intruded by small bodies of Algoman porphyry.

The ore is associated with a fault zone called the "Main break" which strikes approximately N30°E and dips vertically in trachytic flow rocks. The ore zone is terminated to the northeast by a fault and has been traced to the southwest for 750 feet. It consists mainly of sulphides, with pyrite being most common; quartz was relatively rare.

ECONOMIC FEATURES: The average grade of ore from the upper levels was 0.16 ounce of Au per ton; ore from the lower levels averaged 0.12 ounce of Au per ton.

OWNERSHIP: Federal Trading and Regency Company Limited.

HISTORY: Circa 1922: No.1 Shaft to 100 feet and 30 feet of underground development by Wood Kirkland Gold Mines Limited.

1923: Trenching by Tonapah Mining Company.

1929-1934: No.2 Shaft to 768 feet and 4,356 feet of lateral development on levels at 125-foot inter-

vals by Kirkland Gold Belt Mines Limited.

1935-1941: No.2 Shaft deepened to 1,651 feet, 18,133 feet of underground development concentrated on the 125-, 750- and 1,250-foot levels and more than 200 underground diamond-drill holes by Morris Kirkland Gold Mines Limited. A 100-ton mill processed ore during the period 1936-1938. Mill then leased to Upper Canada Mines Limited while underground development continued. Milling of Morris Kirkland ore resumed during the period 1940-1942.

Circa 1948: Custom milling of ore from small mines in the Kirkland Lake camp was tried without success.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Copper (pounds)	Ore Milled (tons)	R.G. (oz./t)
1936-1938, 1940-1942	16,681	29,754	13	127,253	0.13

REFERENCES: ODM 1923, Vol.32, pt.4, p.75 (Wood-Kirkland).

ODM 1928, Vol.37, pt.2, p.158 (Kirkland Gold Belt Mining Company).

ODM 1936, Vol.45, pt.1, p.141.

ODM 1942, Vol.51, pt.1, p.162.

ODM 1964, MRC3, p.56.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Hogg (1950).

Pawnee-Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 3½ miles east of Kirkland Lake, 4/5 mile south-southwest of Mud Lake, in central Lebel Township. Shaft in patented claim LS466. Latitude 48.15°, Longitude 79.95°.

Map reference: ODM 53a, Township of Lebel.

GEOLOGY: The property is entirely underlain by Timiskaming metavolcanics and metasediments (trachytic flows, and sills, tuff breccia, agglomerate, and greywacke).

An east-trending vein, exposed on surface for several hundred feet, occupies a fracture in trachytic flow rocks and, beneath the surface, in metasediments. The wallrocks on either side of the vein contain quartz-carbonate stringers and disseminated pyrite.

ECONOMIC FEATURES: The following sampling results were reported in 1933:

Level (feet)	Length (feet)	Width (feet)	Grade (ounce of Au per ton)
125	111	2.4	0.55
250	128	2.5	0.57
500	48.5	3.1	0.38

750 94.1 2.5 0.23

More recently, Labrador Mining and Exploration (Ontario) Limited outlined three lenses of ore in sheared layered pink trachyte containing fine-grained pyrite and cut by quartz stringers.

HISTORY: Circa 1923: Surface work by Pawnee-Kirkland Gold Mines Limited.

1927-1928: Shaft to 779 feet and 3,223 feet of lateral development on levels at 125-foot intervals by Pawnee-Kirkland Gold Mines Limited. Four diamond-drill holes by Lucky Tiger Combination Gold Mining Company.

1936: Underground workings dewatered and re-sampled, 550 feet of lateral development, and 1,025 feet of underground diamond-drilling by Regal Kirkland Gold Mines Limited.

1963: Induced polarization survey and five diamond-drill holes by Labrador Mining and Exploration (Ontario) Limited under option from Upper Canada Mines Limited.

1966: Underground workings dewatered and mapped, 3,000 feet of lateral development, and underground diamond-drilling by Labrador Mining and Exploration (Ontario) Limited.

REFERENCES: ODM 1923, Vol.32, pt.4, p.75.

ODM 1928, Vol.37, pt.2, p.158.

ODM 1937, Vol.46, pt.1, p.196, 197 (Regal Kirkland Gold Mines Limited).

ODM 1964, MRC3, p.59, 60.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Lebel Township, Langford (1928), Salkeld (1933).

McELROY TOWNSHIP

(NTS 32D/4W)

Cathroy Larder Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 7¾ miles southwest of Larder Lake village, adjacent to the 3-mile post on the McElroy-Catharine township boundary, in southern McElroy Township and northern Catharine Township. Shaft in patented claim L26272. Latitude 48.02°, Longitude 79.83°.

Map reference: ODM 1950-3, Township of McElroy, and portion of Township of Boston.

GEOLOGY: Keewatin intermediate to felsic metavolcanics (mainly fragmental rocks, some rhyolite), striking N70°W and dipping north, are intruded by small dikes of syenite porphyry, diorite, and lamprophyre. In the vicinity of the shaft, several shear zones parallel the trend of the metavolcanics.

The ore zones mined by Yama Gold Mines Limited in the shaft area occurred as a series of roughly parallel mineralized zones in moderately schistose

fragmental metavolcanics. Each zone consisted of several narrow fractures heavily mineralized with gold-bearing sulphides.

The zone mined by Cathroy Larder Mines Limited consisted of seams and irregular masses of gold-bearing sulphides (pyrite with some chalcopyrite and sphalerite) in highly altered and sheared fragmental metavolcanics.

ECONOMIC FEATURES: Diamond-drilling in 1964 indicated ore reserves of 435,000 tons averaging 0.23 ounce of Au per ton (Northern Miner, March 14, 1968; January 24, 1971). An estimate made in 1972 placed ore reserves at 650,000 tons averaging 0.204 ounce of Au per ton (Northern Miner, August 31, 1972).

OWNERSHIP: Royado Mines Limited (subsidiary of Mirado Nickel Mines Limited).

HISTORY: 1915: Property initially staked by E.R. Ostrom.

1918-1933: Unspecified work by a number of operators.

1937-1943: Considerable surface trenching and diamond-drilling. Shaft to 528 feet with lateral development on levels at 125, 250, 375, and 500 feet. Small amounts of production from 50-ton test mill during the period 1941-1943. All work by Yama Gold Mines Limited.

1943-1948: 15,000 feet of surface diamond-drilling outlined a new gold-bearing zone in claim L24690. This resulted in 11,620 feet of lateral development and at least 12,000 feet of underground diamond-drilling, mainly on the 250- and 500-foot levels. Production during 1944 and 1947. All work by Cathroy Larder Mines Limited.

1957: Small amount of production by Cathroy Larder Mines Limited.

1961: Extensive program of surface and underground diamond-drilling by Mirado Nickel Mines Limited who had optioned and subsequently bought the property.

1963: 16 diamond-drill holes (15,373 feet) by Broulan Reef Mines Limited.

1964: Surface work by Mirado Nickel Mines Limited.

PRODUCTION:

Years	Gold	Silver	Ore Milled	Recovered Grade
(ounces)	(ounces)		(tons)	(ounce of Au per ton)
1941-1944,	3,227	993	22,250	0.15
1947,1957				

REFERENCES: Northern Miner, March 14, 1968; January 24, 1971; August 31, 1972.

ODM 1950, Vol.59, pt.6, p.39-44.

ODM 1964, MRC3, p.20-21.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McElroy Township, Johnston (1947-1948), Keating (1948) and others.

Hartford-MacClure Prospect

MAIN METALS: Au

LOCATION: Approximately 6 miles southwest of Larder Lake village, 2 miles northeast of the Cathroy Larder Mine, in southeastern McElroy Township. Showings in patented claims L37486 and L37487. Latitude 48.03°, Longitude 79.81°.

Map reference: ODM 1950-3, Township of McElroy and portion of Township of Boston.

GEOLOGY: Keewatin mafic to intermediate metavolcanics (mainly mafic flow rocks) are in faulted contact with Timiskaming metasediments (conglomerate, greywacke, and arkose). The Timiskaming rocks are intruded by a small stock of lamprophyre which is cut by a carbonatized zone and by several quartz veins ranging up to 4 feet in width. Mineralization in both cases consists of pyrite.

Assays from adits Nos. 1 and 2 ranged from 0.01 ounce to 8.5 ounces of Au per ton; assays of diamond-drill core ranged from 0.01 ounce to 12.2 ounces of Au per ton.

HISTORY: 1936-1938: Stripping, 16 diamond-drill holes, No.1 adit to 189 feet with a 33-foot shaft, and No.2 adit to 23 feet by Hartford McClure Gold Mines Limited.

1951: Two diamond-drill holes (1,000 feet).

REFERENCES: ODM 1950, Vol.59, pt.6, p.46.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McElroy Township, Swann (1938).

McGARRY TOWNSHIP

Arjon Prospect

MAIN METALS: Au

LOCATION: Approximately ¾ mile northwest of Virginiatown, 1 mile east of the eastern end of Bear Lake, in west-central McGarry Township. Patented claims L899 (HS167), L935, and L25194-L25196. Latitude 48.14°, Longitude 79.59°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: The property is underlain by Keewatin metavolcanics (mafic lavas) and Timiskaming metavolcanics and metasediments (trachyte, trachytic breccia and agglomerate, tuff, conglomerate, and greywacke). The Keewatin rocks are intruded by irregularly shaped bodies of syenite porphyry and cut by bodies of carbonate rock which seem to be localized along pre-existing shear zones.

Some quartz veins and sulphide mineralization occur along one of these carbonate bands (in claim L25195) and in the adjoining lava. Assays of dia-

mond-drill core samples ranged from trace to 0.08 ounce of Au per ton.

HISTORY: Circa 1920: Pitting and trenching by Cockshutt and McCallum.

1937-1938: Surface trenching and 18 diamond-drill holes (8,880 feet) by Arjon Gold Mines Limited.

Circa 1945: Eight diamond-drill holes (9,327 feet).

1949-1951: 465-foot exploratory crosscut from the 2,500-foot level of the Kerr-Addison Mine and some underground diamond-drilling by Arjon Gold Mines Limited.

REFERENCES: ODM 1924, Vol.33, pt.3, p.24 (Cockshutt-McCallum).

ODM 1938, Vol.47, pt.1, p.48.

ODM 1941, Vol.50, pt.7, p.44, 45.

ODM 1964, MRC3, p.12, 13.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McGarry Township, Roger (1937).

Armistice Prospect

MAIN METALS: Au

LOCATION: Approximately ½ mile west of Virginiatown, immediately east of the eastern end of Barber Lake, in southwest-central McGarry Township. Majority of work in claims T1886 and T1932. Latitude 48.13°, Longitude 79.61°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: The majority of the property is underlain by Keewatin mafic metavolcanics intruded by irregular masses of syenite porphyry; in the southeast corner, Timiskaming metavolcanics and metasediments (mafic lava, agglomerate, tuff, and greywacke) are found.

The contact between Timiskaming metavolcanics and metasediments is occupied by the Larder Lake "break", a vertical carbonatized fault zone which strikes N65°E. A parallel sheared and faulted zone lies about 400 feet to the south. Some small veins and lenses of quartz occur in the shear zones. Scattered low gold values (trace to 0.08 ounce of Au per ton) were reported from surface work and diamond-drilling, but no orebodies have been found.

HISTORY: 1906-1910: Surface work in claims T1886 and T1932 by M.T. Culbert and W. Petkethly respectively.

1937: Stripping and 16 diamond-drill holes (6,415 feet) in claim T1932 by Armistice Gold Mines Limited.

1941: 8,105 feet of diamond-drilling in claim T1932 by Armistice Gold Mines Limited.

1945-1948: Surface diamond-drilling program followed by a shaft to 1,281 feet, 6,853 feet of under-

ground development on eight levels, and 74 underground diamond-drill holes (13,311 feet) by Armistice Gold Mines Limited.

1951: One diamond-drill hole deepened by Armistice Gold Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.7, p.57.

ODM 1949, Vol.58, pt.2, p.5.

ODM 1964, MRC3, p.13.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Barber-Larder Prospect

MAIN METALS: Au

LOCATION: Approximately 1¼ mile west-southwest of Virginiatown, immediately south of Barber Lake, in southwestern McGarry Township. Shaft in claim L24536 (L25536 on ODM Map 50a). Latitude 48.12°, Longitude 79.61°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: Most of the property is underlain by Timiskaming fine-grained metasediments. Immediately south of Barber Lake, a zone of Timiskaming metavolcanics and carbonate rock, 200 to 400 feet in width and striking N65°E, follows the Larder Lake "break".

The favourable gold-bearing horizon lies within a band of lava flows and breccias located on the southern edge of the above zone. The average width is 220 feet and continuity has been established for a distance of more than 3,000 feet. Gold occurs in scattered sulphide bodies which replace either flows or flow breccias and consist of disseminated masses throughout the host rock or a series of interlocking veinlets. Sulphide mineralization comprises pyrite, pyrrhotite, and minor chalcopyrite. The carbonate body adjoining the ore-bearing horizon contains disseminated mineralization but no ore.

ECONOMIC FEATURES: A 1939 report indicated an orebody of approximately 84,000 tons averaging 0.18 to 0.19 ounce of Au per ton (ODM 1941, Vol.50, pt.7, p.48). A more recent report (Canadian Mines Handbook 1973-1974, p.27) indicated total reserves for the Barber-Larder and Fernland properties of 46,367 tons averaging 0.198 ounce of Au per ton.

HISTORY: 1938-1939: Diamond-drilling program followed by a shaft to 410 feet with 4,748 feet of lateral development on levels at 125, 250 and 400 feet. Work by Barber-Larder Gold Mines Limited with financing by The Consolidated Mining and Smelting Company of Canada Limited. 1942: Property acquired and some diamond-drilling by Amalgamated Larder Mines Limited.

REFERENCES: ODM 1940, Vol.49, pt.1, p.78, 79.
 ODM 1941, Vol.50, pt.7, p.45-49.
 ODM 1964, MRC3, p.10, 11 (Amalgamated Larder
 Mines Limited).
 Resident Geologist's Files, Ontario Ministry of Na-
 tural Resources, Kirkland Lake.

Chesterville Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately ¾ mile northeast of Virgin-
 iatown, immediately northeast of the Kerr-Addison
 Mine, in central McGarry Township. Shaft and
 underground workings in patented claim L1860
 (HF404) which is completely surrounded by Kerr-
 Addison property. Remaining claims extend to
 the northeast. Latitude 48.14°, Longitude 79.56°.
 Map reference: ODM 50a, Township of McGarry.

GEOLOGY: The property is underlain by Timiskaming
 metasediments (mainly greywacke) and metavol-
 canics (mafic lava, trachyte, trachytic breccia and
 agglomerate, and tuff). The regional strike direction
 is N60-70°E.

All of the orebodies occur in claim T1860 within
 the gold-bearing horizon of altered lavas and car-
 bonate rocks adjacent to the Larder Lake "break".
 This same horizon hosts the Kerr Addison orebodies
 immediately to the west. Three of the orebodies
 consist of quartz stringers and disseminated sul-
 phides (pyrite with traces of chalcopyrite, pyrroho-
 tite, and magnetite) in fine-grained basaltic lava.
 Gold values are mainly associated with the sul-
 phides. The other three orebodies consist of stock-
 works of quartz veins in green siliceous carbonate
 rock. The gold occurs in the native state distributed
 erratically throughout the quartz.

OWNERSHIP: Kerr Addison Mines Limited.

HISTORY: 1906: 50-foot adit, 50-foot shaft, mill in-
 stalled and a few ounces of gold recovered by Lucky
 Bay Mining Company. (The original source of this
 information is not known).

1907: Two 30-foot prospect shafts in claim T1860
 by The Chesterville Larder Lake Gold Mining Com-
 pany Limited.

1937: Diamond-drilling program by The Chester-
 ville Larder Lake Gold Mining Company Limited
 outlined more than 1,000,000 tons of ore.

1938-1952: Shaft to 2,799 feet with 53,378 feet
 of lateral development and 26,293 feet of raising on
 18 levels. 500-ton mill installed in 1938; capacity
 increased to 700 tons in 1940. Operations ceased
 in 1952. All work by Chesterville Larder Lake
 Gold Mining Company Limited (name changed to
 Chesterville Mines Limited in 1946).

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1939-				
1952	358,615	19,371	3,260,439	0.11

REFERENCES: ODM 1924, Vol.33, pt.3, p.23, 24.

ODM 1941, Vol.50, pt.7, p.59-63.

ODM 1953, Vol.62, pt.2, p.14-16.

ODM 1964, MRC3, p.21, 22.

Kerr Addison Mine (Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately ¼ mile north-northwest of
 Virginiatown, ¼ mile northwest of the tip of the
 Northeast Arm of Larder Lake, in central McGarry
 Township. Main shaft on boundary between patent-
 ed claims L1751 (HJB30) and L1850 (HS166);
 underground workings in patented claims L1848
 (HS165), L1850 (HS166) and L1905 (HJB29).
 Latitude 48.14°, Longitude 79.58°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: The Larder Lake "break", striking N60°E
 through the centre of the property and dipping 75-
 80°N, represents the faulted contact between Timis-
 kaming metasediments on the north and Keewatin
 metavolcanics on the south. In the vicinity of the
 mine workings, the hanging wall of the "break" con-
 sists of intensely sheared greywacke. The footwall
 comprises a highly altered green and brown "car-
 bonate zone", up to 600 feet in width, which con-
 tains irregular lenses of talc-chlorite schist and small
 irregularly shaped bodies of altered syenite intrusive
 rocks. South of this zone are bedded tuffs. Inter-
 banded with the tuffs, and lying south of them, are
 basic lava flows.

The orebodies are of two different types. The car-
 bonate type consists of irregular lenses of gold-bear-
 ing quartz stockworks lying within the highly altered
 and brecciated carbonate zone. Gold occurs in the
 free state randomly distributed throughout the
 quartz. The flow type of orebody consists of lenses
 of mineralized and silicified flow rock lying in the
 less altered flows and tuffs south of the carbonate
 zone. Pyrite mineralization, which is uniformly
 disseminated throughout the ore zone, contains
 most of the gold.

The fracturing that permitted the formation of ore-
 bodies can nearly all be associated with movements
 along the Kerr-Addison Fault and subsidiary faults,
 all of which are components of the Larder Lake
 "break".

ECONOMIC FEATURES: The mine is Canada's largest
 gold producer. The average recovered grade of the
 34,228,275 tons of ore milled during the period
 1938-1973 was 0.27 ounce of Au per ton. Ore re-
 serves in 1976 stood at 502,560 tons averaging

0.611 ounce of Au per ton and 330,170 tons averaging 0.238 ounce of Au per ton (Canadian Mines Handbook 1977-78, p.172).

OWNERSHIP: Kerr Addison Mines Limited.

HISTORY: 1906-1907: Kerr-Addison and Reddick claim groups staked. Surface work done.

1908-1911: Reddick and Kerr-Addison properties acquired by Associated Goldfields Mining Company Limited. Diamond-drilling and shaft (No.2) to 86 feet with 2,200 feet of lateral development on 83-foot level.

1920-1921: Shaft (No.1) to 325 feet with 1,085 feet of lateral development on levels at 60, 175 and 300 feet. During the period 1914-1921 more than 16,000 feet of diamond-drilling failed to intersect any orebodies. Work by Associated Goldfields Mining Company Limited.

1936: Large scale sampling from four adits, 400 feet apart, driven into the hillside. Results not encouraging. One deep diamond-drill hole intersected 150 feet of ore grade material. No.1 Shaft dewatered and workings resampled. Shaft deepened to 716 feet with new level at 500 feet.

1937-present: No.3 Shaft to 3,995 feet with an internal shaft from 3,850-foot level to a depth of 6,022 feet. Underground development totalled 477,596 feet on 39 levels. 500-ton mill installed and commenced production in 1938. Capacity expanded to a maximum of 4,556 tons per day in 1960. Production steadily declined since 1961 to 935 tons per day at end of 1975.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1911,				
1938-	9,652,173	531,561	35,040,174	0.28
1976				

In 1976, the mill was handling ore at an average rate of 730 tons per day.

REFERENCES: Canadian Mines Handbook 1977-78, p.172.

OBM 1909, Vol.18, pt.1, p.130, 131.

ODM 1924, Vol.33, pt.3, p.23 (Kerr Addison; Reddick).

ODM 1941, Vol.50, pt.7, p.64-75.

ODM 1964, MRC3, p.35, 36.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kerrigan Prospect

MAIN METALS: Au

LOCATION: Approximately 3½ miles north-northeast of Virginiatown, between Foxearth and Shaver Lakes, in northeastern McGarry Township. Recent diamond-drilling in claims L341734 and L341735.

Latitude 48.18°, Longitude 79.54°.

Map reference: ODM 50a, Township of McGarry (prospect not shown on map).

GEOLOGY: The property is underlain by Keewatin mafic metavolcanics (pillowed, spherulitic, amygdaloidal, and fragmental lava) which are cut by syenite dikes. The northern contact of an extensive band of Timiskaming metasediments and metavolcanics trends east-northeast across the southern part of the property.

Diamond-drilling revealed gold values, ranging from trace to 0.19 ounce of Au per ton, which were confined to a fracture zone in a coarse porphyry-pebbled conglomerate.

HISTORY: 1947: 20 diamond-drill holes (6,361 feet) by Kerrigan Gold Mines Limited.

Circa 1953: Three diamond-drill holes (531 feet) by J.O. Walker.

1972-1973: Four diamond-drill holes (431 feet) by J.O. Walker.

REFERENCES: Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McGarry Township, Kerrigan Gold Mines Ltd. (1947).

Lar-Add Prospect

MAIN METALS: Au

LOCATION: Approximately 2½ miles west-southwest of Virginiatown, immediately north of the Northeast Arm of Larder Lake, in southwestern McGarry Township and southeastern McVittie Township. Majority of surface work in patented claims L12003, L27250-L27252 (L26250-L26252 on ODM Map 50b), and L31309. Latitude 48.11°, Longitude 79.63°.

Map reference: ODM 50a, Township of McGarry, and 50b, Township of McVittie.

GEOLOGY: The property is underlain by Timiskaming metasediments (greywacke, quartzite, and slate) which are intruded by small bodies and dikes of mica syenite and lamprophyre. The intrusive rocks are generally carbonatized and cut by networks of quartz veins. There is occasional sulphide mineralization in the carbonatized zones.

Chip samples from the quartz stockworks assayed from trace to 0.40 ounce of Au per ton.

HISTORY: Circa 1934: Pitting and trenching by Lar-Add Mines Limited.

1937: Surface exploration and sampling by the Nipissing Mines Company Limited.

1943-1944: Eight diamond-drill holes (6,572 feet) by Lar-Add Mines Limited.

1945: Magnetic survey by Koulamzine and Company.

1952: Five diamond-drill holes (2,346 feet).

REFERENCES: ODM 1941, Vol.50, pt.7, p.80.
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McGarry Township, Adamson (1934).

Sheldon-Larder Prospect

MAIN METALS: Au

LOCATION: Approximately ½ mile southwest of Virginiatown, south and southeast of the eastern end of Barber Lake, in southwest-central McGarry Township. Showings in patented claims L5499, L5500 (CE31), L5792 (CE33), L6464 (CE34), L30691, and T1955 (HS916). Latitude 48.13°, Longitude 79.59°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: Timiskaming metavolcanics and metasediments (mafic lava, agglomerate, greywacke, quartzite, and slate) are folded into a southwest-plunging syncline. These rocks are cut by dikes of mica syenite, lamprophyre and diorite, and by a carbonate body (altered lava).

Three separate gold-bearing zones, varying from 100 to 200 feet in length and from 2 to 10 feet in width, have been outlined within the carbonate body. They average less than 0.09 ounce of Au per ton and contain 225 to 250 tons per vertical foot. A fourth zone in the carbonate body, 5.5 feet wide by 40 to 50 feet long, averaged approximately 0.11 ounce of Au per ton. Bulk sampling of an altered diorite or gabbro dike in claims L5499 and L5500 outlined an ore shoot 121 feet long and 3.3 feet wide which averaged 0.21 ounce of Au per ton. A lamprophyre dike in claim L5792 yielded values of less than 0.11 ounce of Au per ton over widths of 1.5 to 3.0 feet.

HISTORY: 1908: Surface work, shallow shaft, and minor amounts of production from southeast corner of claim L4898 (CE37) by Property Mines Limited.

1937-1938: Surface work and 60 diamond-drill holes (22,143 feet) by Sheldon-Larder Mines Limited. Circa 1960 to present: Rented by Kerr-Addison Mines Limited for tailings disposal.

PRODUCTION: 31 ounces of gold and silver in 1908.

REFERENCES: ODM 1924, Vol.33, pt.3, p.22, 23 (Urquhart-Costello (C.E.37); Sheldon (L.5499)). ODM 1941, Vol.50, pt.7, p.90-92.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McGarry Township, Anonymous (1938), Butterfield (1937).

Wesley Prospect

MAIN METALS: Au

LOCATION: Approximately 1¼ miles east-northeast of Virginiatown, ½ mile northeast of the Northeast Arm of Larder Lake, in central McGarry Township. Drilling in patented claim L32732. Latitude 48.14°, Longitude 79.58°.

Map reference: ODM 50a, Township of McGarry.

GEOLOGY: The entire property is underlain by relatively flat-lying Cobalt sedimentary rocks. Diamond-drilling beneath these cover rocks revealed steeply-dipping Timiskaming metasediments and metavolcanics. A wide band of talc-chlorite schist, carbonatized in places, strikes N55°E across the corner of claim L32732. It could be the eastern extension of the southern shear zone on the Kerr-Addison property.

Diamond-drilling revealed several places along the shear zone which were carbonatized, mineralized with pyrite, and cut by quartz stringers. Core lengths of 60 feet and 24.3 feet averaged 0.08 and 0.07 ounce of Au per ton respectively.

HISTORY: 1937-1938: 14 diamond-drill holes (11,792 feet) by Wesley Gold Mines Limited.

1941: Small amount of diamond-drilling (details unknown).

REFERENCES: ODM 1941, Vol.50, pt.7, p.93.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McGarry Township, Lee (1938).

McNEIL TOWNSHIP (NTS 42A/2W)

Golddyke Prospect

MAIN METALS: Au

LOCATION: Approximately 16 miles northwest of Matachewan, 2 miles southwest of Whitefish Lake, in southeast-central McNeil Township. Showings in claims TRP9790, TRP9794, TRP9813, and TRP9815. Latitude 48.13°, Longitude 80.84°. Map reference: ODM 2205, Timmins-Kirkland Lake.

GEOLOGY: Keewatin metavolcanics (coarse massive lava and spherulitic pillow lava), striking N70°E, are cut by felsite and quartz porphyry dikes. Quartz stringers and veins fill cross fractures in the dikes. The metavolcanics in the vicinity of these dikes are altered to a grey-green carbonate rock. Zones of carbonate rocks, which are apparently not associated with the dikes, occur in the southern part of the property.

Gold occurs in the dikes; both in the native state and associated with coarse pyrite mineralization. Assays of samples from pits ranged from trace to 0.30 ounce of Au per ton. Diamond-drill core samples assayed from trace to 0.137 ounce of Au

per ton.

HISTORY: 1923-1924: Trenching and two prospect shafts (60 and 65 feet) by McNeil Development Syndicate.

1935: Pit and the 60-foot shaft deepened to 120 feet by D.G. Oliver.

1946: 46 diamond-drill holes (8,375 feet) by Goldyke Mines Limited.

REFERENCES: ODM 1924, Vol.33, pt.3, p.38, 39 (McNeil Syndicate).

ODM 1935, Vol.44, pt.2, p.48, 49 (McNeil Syndicate and Oliver Gold Syndicate).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McNeil Township, Hogg and Arnott (1946).

McVITTIE TOWNSHIP

(NTS 32D/4E)

Cheminis Prospect

MAIN METALS: Au

LOCATION: Approximately 2¾ miles east-northeast of Larder Lake village, ¾ mile west of the southern end of Bear Lake, in southeastern McVittie Township. Orebodies in patented claims L336, L374, and L452. Latitude 48.12°, Longitude 79.65°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: The property is underlain by interbedded Timiskaming metasediments and metavolcanics which trend east and dip steeply south. These are cut by occasional narrow dikes of diorite and lamprophyre. The gold-bearing horizon is confined to a band of basic lavas and cherty tuffs, which are highly sheared and carbonatized, and are cut by a stockwork of barren quartz veins. This band is locally called "dolomite".

The ore occurs in irregular bodies along the mineralized zone and is bounded by assay walls. The best gold values are found within fine-grained sulphide mineralization which occurs as irregular patches, in veinlets, or in banded zones running parallel to the schistosity.

ECONOMIC FEATURES: Underground development has indicated approximately 321,607 tons of ore, to a depth of 700 feet, with an uncut average grade of 0.158 ounce of Au per ton (ODM 1941, Vol.50, pt.7, p.52).

HISTORY: 1937-1938: Diamond-drilling (footage and number of holes unknown) by Cheminis Gold Mines Limited.

1938-1940: Three compartment shaft to 553 feet, 4,929 feet of lateral development on levels at 150, 275, 400 and 525 feet, and 127 underground diamond-drill holes (10,319 feet). Work financed

by The Consolidated Mining and Smelting Company of Canada Limited.

1941: Property acquired and some diamond-drilling done by Amalgamated Larder Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.1, p.22, 23.

ODM 1941, Vol.50, pt.7, p.49-53.

ODM 1964, MRC3, p.10, 11 (Amalgamated Larder Mines Ltd.).

Fernland Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles northeast of Larder Lake village, 1½ miles west of the western end of Tournene Lake, in southern McVittie Township. Orebodies in patented claims LS1, L531, and L532. Latitude 48.11°, Longitude 79.68°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: Timiskaming metavolcanics and metasediments, trending east and dipping steeply south, are intruded by a body of syenite and quartz syenite. Two bands of carbonate rock or "dolomite", produced by extensive shearing of the metavolcanics and metasediments, extend onto the property from the Cheminis claims to the east. The southern carbonate band contains the gold-bearing horizon on both properties.

Diamond-drilling along the gold-bearing horizon indicated two possible low grade ore shoots. The main zone follows a band of tuffs and lavas which have been highly carbonatized and silicified, especially on the upper levels. The best gold values occur in sections where coarse-grained pyrite is present. Chalcopyrite, arsenopyrite, and sphalerite also occur.

ECONOMIC FEATURES: Ore shoots having average uncut grades ranging from 0.093 to 0.330 ounce of Au per ton were outlined on the 275- and 400-foot levels. Total tonnage estimates are unavailable because the vertical continuity of the ore was not established. However, it is known that the grade of the main ore shoot diminishes with depth.

HISTORY: 1922: One diamond-drill hole (footage unknown) by Coniagas Mines Limited.

1923: One diamond-drill hole (800 feet) by S. and J. Cohen.

1924: Surface work by M.J. O'Brien Limited.

1937: Surface trenching and diamond-drilling by Fernland Gold Mines Limited.

1938-1939: Three-compartment shaft to 547 feet, 2,807 feet of lateral development on levels at 275, 400 and 525 feet, and 4,321 feet of underground diamond-drilling. Work financed by The Consolidated Mining and Smelting Company of Canada Limited.

1941: Property acquired and some diamond-drilling done by Amalgamated Larder Mines Limited.

REFERENCES: ODM 1924, Vol.33, pt.3, p.20, 21 (Johnson).

ODM 1940, Vol.49, pt.1, p.116.

ODM 1941, Vol.50, pt.7, p.53-56.

ODM 1964, MRC3, p.10, 11 (Amalgamated Larder Mines Ltd.).

Larmont (Thib) Prospect

MAIN METALS: Au

LOCATION: Approximately 1½ miles east of Larder village, on Enright Point on the north shore of Larder Lake, in northern Hearst Township and southern McVittie Township. Latitude 48.10°, Longitude 79.68°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: East-trending Timiskaming greywacke and slate are intruded by a body of Algoman diorite which, in places, is carbonatized and cut by quartz stringers.

The extension of a gold showing in a test pit on the southeast shore of Enright Point was explored by diamond-drilling. Gold values were reported from some cores over considerable widths in greywacke, or in diorite near the greywacke contact. Assays of core ranged from trace to 0.16 ounce of Au per ton with one value of 0.71 ounce of Au per ton.

HISTORY: Pre-1938: Pitting and trenching by E. Thib. 1938: Ten diamond-drill holes (3,806 feet) by Thib Gold Mines Limited.

1943: Geological survey and 12 diamond-drill holes (at least 4,728 feet) by Larmont Mines Limited.

REFERENCES: ODM 1941, Vol.50, pt.7, p.92, 93.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Legardo Prospect

MAIN METALS: Au

LOCATION: Approximately 1¼ miles northwest of Larder Lake village, ¾ mile east of Diamond Lake, in southwestern McVittie Township. Diamond-drilling in patented claims L22980, L25554, L25555, L26269, and L26270. Latitude 48.11°, Longitude 79.73°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: Most of the property is covered by overburden and underlain by Timiskaming arkose and greywacke. Diamond-drilling revealed an east-trending zone of shearing and carbonatization which probably occupies a narrow band of basic lavas. The zone has been traced for a distance of 3,000 feet, is 250

feet wide in the central part, and narrows to 100 feet near the ends.

Green carbonate with associated quartz stringers was found in four holes over a strike length of 850 feet. One assay value of 0.07 ounce of Au per ton over 5.5 feet of core was obtained.

HISTORY: 1937-1938: Six diamond-drill holes (footage unknown) by Lardego Gold Mines Limited.

1938-1939: 12 diamond-drill holes (5,882 feet) by E.N. Thomson and Associates.

1953: Eight diamond-drill holes (1,557 feet) by Tenendo Mining Corporation Limited.

REFERENCES: ODM 1941, Vol.50, pt.7, p.80, 81.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Omega Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 1½ miles north-northeast of Larder Lake village, ½ mile east of Pancake Lake, in southern McVittie Township. No.1 Shaft in patented claim LS191; No.2 Shaft in patented claim L1794. Latitude 48.12°, Longitude 79.69°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: East- to northeast-trending Timiskaming metasediments and metavolcanics are in fault contact, along the Larder Lake "Break", with Kewatin metavolcanics to the south. Syenite underlies the southeastern part of the property, and smaller bodies of syenite and related rocks are intrusive into the metasediments and metavolcanics.

The ore horizon lies within the Larder Lake "Break" which consists of a wide zone of carbonate-chlorite schist containing a later graphitic fault and a band of carbonate rock ("dolomite"). Most of the developed ore occurred as large irregular replacement bodies within two narrow dacitic lava flows. Typically, the ore material was reddish and greyish rock containing considerable fine-grained sulphide mineralization and cut by a few narrow fractures filled with quartz and calcite. In addition, a small amount of ore was found in "dolomite" at the east end of the mine. In this orebody, gold values were associated with parallel and interlocking quartz stringers containing some sulphide mineralization.

ECONOMIC FEATURES: The tailings dump contains approximately 60,000 tons of material averaging 0.1 ounce of Au per ton (Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake).

OWNERSHIP: Open for staking as of January 1, 1960.

HISTORY: 1914: Gold discovered in claim L1794 by Jack Costello.

1921-1928: Three-compartment shaft (Omega No.

1) to 1,200 feet with 8,960 feet of lateral development on levels at 125-foot intervals by Crown Reserve Mines Limited. Three-compartment shaft (Omega No.2) to 1,050 feet with at least 1,200 feet of lateral development on seven levels by Canadian Associated Goldfields Mining Company Limited. Small amounts of ore milled by Canadian Associated Goldfields during 1926-1928. During 1922-1923, unknown amount of diamond-drilling by Coniagas Mines Limited and 2,000 feet of diamond-drilling by Anglo-Canadian Explorers Limited.

1934: Sampling by Noranda Mines Limited.

1936-1947: No.1 Shaft deepened to 1,592 feet, winze from 1,550 to 2,000 feet with three new levels, and 72,664 feet of underground development. Production throughout entire period. Original 300-ton mill enlarged to handle 500 tons. All work by Omega Gold Mines Limited.

1950: Surface diamond-drilling (footage and number of holes unknown) by Lomega Gold Mines Limited.

1966: Two diamond-drill holes (230 feet) by R. Newman.

1968-1972: Stripping and trenching by R. Fernholm, L. Loew, and R. Bustraen.

1973: Stripping by R. Kasner.

PRODUCTION:

Years	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1913,	214,098	29,290	1,615,081	0.13
1926- 1928, 1936-1947				

The 1913 production was from the Raven River Mine being operated by Canadian Associated Goldfields Mining Company Limited.

REFERENCES: ODM 1924, Vol.33, pt.3, p.11-20 (Pancake Lake Area; Costello Graphite Fault; Associated Goldfields (Costello Property); Crown Reserve).

ODM 1941, Vol.50, pt.7, p.82-87.

ODM 1964, MRC3, p.58, 59.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McVittie Township, Card Lake Copper Mines Limited Prospectus (1972).

Sudbury Contact Prospect

MAIN METALS: Au

LOCATION: Approximately 1¾ miles east-northeast of Larder Lake village, ½ mile north of Enright Point, in southern McVittie Township. Latitude 48.11°, Longitude 79.63°.

Map reference: ODM 50b, Township of McVittie.

GEOLOGY: Timiskaming conglomerates, greywackes, slates and tuffs, and minor Keewatin mafic meta-

volcanics, tuffs, and pyroclastics are closely folded into pitched synclines and anticlines, and cut by oblique faults. These rocks are intruded by stocks and dikes of syenite and diorite. Outliers of Cobalt Group sedimentary rocks occur in the southern part of the property.

In the western part of the property, the syenite bodies are carbonatized and cut by networks of quartz stringers. Diamond-drill core contained minor galena and sphalerite, and yielded values ranging from trace to 0.4 ounce of Au per ton.

HISTORY: 1936: Trenching.

1943: Seven diamond-drill holes (5,641 feet) by Moosewood Gold Mines Limited.

1949-1950: 14 diamond-drill holes (10,254 feet) by Great Larder Gold Mines Limited.

1973: Magnetic and electromagnetic surveys by R.A. MacGregor.

REFERENCES: ODM 1941, Vol.50, pt.7, p.81, 82 (Moosewood Gold Mines, Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: McVittie Township, Scott (1943).

MAISONVILLE TOWNSHIP

(NTS 42A/1E, 42A/8E)

Bennett Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 1¼ miles north of Sese-kinika, in W½, N½, lot 9 and E½, N½, lot 10, concession II, Maisonville Township. Shaft in NW¼, N½, lot 9, concession II. Latitude 48.22°, Longitude 80.24°.

Map reference: ODMNA 2215, Benoit and Maisonville Townships (Bennett Mining Co. Ltd. and Labine-Smith).

GEOLOGY: Keewatin mafic metavolcanics are intruded by an irregularly shaped body of diorite. These rocks are in turn cut by syenite dikes and quartz veins. A narrow quartz vein carries free gold and yielded values ranging from trace to 0.32 ounce of Au per ton and from 0.4 to 0.8 ounce of Ag per ton.

HISTORY: Circa 1914: pitting, trenching, and 80-foot inclined shaft by Labine-Smith.

1927: Shaft to 530 feet with lateral development (amount unknown) on levels at 125-foot intervals by Bennett Mining Company Limited.

1958: Three diamond-drill holes (629 feet) by S.A. Pain.

REFERENCES: ODMNA 1971, GR92, p.26; 28, 29 (Labine-Smith).

Resident Geologist's Files, Ontario Ministry of Na-

tural Resources, Kirkland Lake: Maisonville Township, Labine and Smith (1914), Pain, S.A. (1958).

Golden Summit Prospect

MAIN METALS: Au

LOCATION: Approximately 1¼ miles east of Sesekinika, in N½, lot 6, concession I, Maisonville Township. Shaft in SE¼, N½, lot 6, concession I. Latitude 48.21°, Longitude 80.20°.

Map reference: ODMNA 2215, Benoit and Maisonville Townships.

GEOLOGY: Keewatin andesitic flows and dioritic intrusive rocks are cut by dikes of Algoman lamprophyre and porphyry, and by several Matachewan diabase dikes. The gold occurs in east-trending, pyrite-bearing quartz-carbonate veins. The most important vein varies from 2 to 10 inches in width; the adjacent wall rocks are highly fractured and contain gold. Assays ranging from trace to 0.16 ounce of Au per ton were obtained from the shaft station on the 125-foot level. Samples taken along the crosscut yielded values ranging from trace to 0.08 ounce of Au per ton.

HISTORY: 1919-1921: Pitting and trenching by The Golden Summit Mining Company Limited.

Circa 1927-1929: Two shafts, one to 42 feet and the other to 125 feet with 86 feet of crosscutting, by Golden Summit Mines Limited.

1932-1937: The 125-foot shaft deepened to 405 feet with new levels at 250 and 375 feet and 4,344 feet of underground development. Small mill installed in 1935, processed some ore in 1936 and 1937. All work by Golden Summit Mines Limited.

1945: Clean-up of mill by Golden Summit Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1936-1937, 1945	57	737	0.08

REFERENCES: ODM 1953, Vol.62, pt.1, p.16.

ODM 1964, MRC3, p.28, 29.

ODMNA 1972, GR92, p.27.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Maisonville Township, Odell (1930).

Lakeland Prospect

MAIN METALS: Au

LOCATION: Approximately 4¼ miles north-northeast of Sesekinika, in lot 5, concessions V and VI, Maisonville Township. Latitude 48.10°, Longitude

80.19°.

Map reference: ODMNA 2215, Benoit and Maisonville Townships (Langs, John G., trustee).

GEOLOGY: The property is underlain by Keewatin metavolcanics (mainly amygdaloidal basalt) intruded by bodies of diorite. These rocks are in turn cut by dikes of syenite and Matachewan diabase.

In the northern part of lot 5, concession V (north showings), three parallel northwest-striking quartz veins cut schistose pyrite-bearing amygdaloidal basalt. No gold values were reported but the amount of work done suggests that some values must have been encountered.

In the NE¼, S½, lot 5, concession V (south showing), gold-bearing quartz veins and stockworks cutting syenite were stripped for 400 feet. Assay plans of Lakeland Gold Mines Limited apparently showed ore-grade assays. However, the best results obtained by Noranda Mines Limited in 1936 were 0.18 and 0.12 ounce of Au per ton over narrow widths. Diamond-drill core assays ranged from 0.04 to 0.15 ounce of Au per ton.

HISTORY: Pre-1914: Trenching and 50 foot shaft on north showing by Dane Copper Mining Company Limited.

1917-1919: Shaft on north showing deepened to 227 feet and lateral development on levels at 50, 100, and 200 feet by Murray-Mogridge Mines Limited.

1931-1934: Shaft on north showing deepened to 825 feet, 3,484 feet of lateral development on seven levels, and 6,454 feet of diamond-drilling. Shaft to 200 feet on south showing and unknown amount of lateral development on two levels. Construction of 100-ton mill started but never completed. All work by Lakeland Gold Mines Limited.

1936: Resampling of underground workings on north showing and at least seven diamond-drill holes by Noranda Mines Limited.

REFERENCES: ODMNA 1971, GR92, p.29 (John G. Langs, Trustee).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Maisonville Township, Oille (1937).

MIDLOTHIAN TOWNSHIP
(NTS 41P/14E, 41P/15W)

Laroma Prospect

MAIN METALS: Au

LOCATION: Approximately 16½ miles west-southwest of Matachewan, ¼ mile southwest of Roche Bay of Midlothian Lake, in central Midlothian Township. Showings in claims MR13317 and MR13320. Latitude 47.90°, Longitude 80.99°.

Map reference: ODM 2187, Halliday and Midlothian Townships.

GEOLOGY: The northeastern part of the property is underlain by Timiskaming metasediments and the southwestern part by Keewatin felsic metavolcanics which are altered to chlorite-sericite schist. These rocks are cut by north-trending Matachewan diabase dikes. A zone of green carbonate rock, 2,000 feet long and 250 to 350 feet wide, occurs along a drag fold in the metavolcanic-metasediment contact. Narrow quartz veins and stringers are scattered throughout the zone.

In places, minor amounts of pyrite, chalcopyrite and sphalerite occur in quartz veins and in the dolomitic wallrock. A chip sample taken from a pit in claim MR13320 assayed 1.34 ounces of Au per ton. Visible gold was reported from a ¼-inch wide quartz vein in a network of narrow quartz veins in claim MR13317. A 60-pound bulk sample assayed 0.76 ounce of Au per ton.

HISTORY: 1944-1945: Gold discovered by Felix Roche. Geological mapping, stripping, trenching and 17 diamond-drill holes (7,214 feet) by Laroma Midlothian Mines Limited.

1946: Stripping and trenching.

1962-1964: Airborne geophysical survey, stripping, trenching and at least six diamond-drill holes (2,051 feet) by Laroma Midlothian Mines Limited.

REFERENCES: Northern Miner, December 5, 1963, p. 13.

ODM 1947, Vol.56, pt.5, p.18.

ODM 1970, GR79, p.22.

Riocanex Prospect

MAIN METALS: Au

LOCATION: Approximately 17¾ miles west of Matachewan, in the vicinity of Holbrooke, Strike, and Tory Lakes, in northwestern Midlothian Township. Latitude 47.93°, Longitude 81.04°.

Map reference: ODM 2187, Halliday and Midlothian Townships.

GEOLOGY: Timiskaming metasediments (greywacke, slaty argillite, conglomerate, and pyroclastics) are

cut by a wide northeast-trending zone of shearing (Wood Lake shear zone).

Diamond-drilling at the eastern end of the shear zone returned a value of 0.53 ounce of Au per ton over an 8-foot section of sheared carbonatized conglomerate. Visible gold occurs in a zone of carbonatized metasediments situated between Strike and Tory Lakes. An assay value of 0.14 ounce of Au per ton was obtained.

HISTORY: 1945: Stripping and trenching by Freeport Exploration Company.

1946: Stripping and trenching by V. Clement.

1962: Airborne geophysical survey and five diamond-drill holes by Stairs Exploration and Mining Company Limited.

1963-1964: Geological and geochemical surveys, stripping, trenching and six diamond-drill holes (3,263 feet) by Riocanex Limited.

REFERENCES: Northern Miner, November 15, 1962, p.13.

ODM 1947, Vol.56, pt.5, p.17 (Clement-Hill Claims).

ODM 1970, GR79, p.23.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Stairs Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 19 miles west of Matachewan, immediately northeast of Frank Lake, in northwestern Midlothian Township. Shaft on boundary between claims MR26663 and MR 26665. Latitude 47.90°, Longitude 81.06°.

Map reference: ODM 2187, Halliday and Midlothian Townships.

GEOLOGY: The mine is located on the southern edge of a belt of steeply dipping Timiskaming metasediments (conglomerate, greywacke, arkose, slate, and green carbonate rocks) which disconformably overlies Keewatin metavolcanics (rhyolite and rhyolite breccia).

The ore zone is confined to the trough of a westward-plunging right-lateral drag fold on the south limb of an east-plunging syncline. The drag-folded metavolcanic-metasedimentary contact trends

N80°W and dips steeply north. Gold-bearing quartz veins emanate from the hanging wall of a unit of unshaped rhyolite breccia and form tight fracture-fillings in a northeast-trending shear zone which intersects the trough of the plunging drag fold.

The 'A' Zone consists of the Pope Vein and two subsidiary veins, the Marcasite and Chromic Veins. The Pope Vein strikes N55°E, dips 75°NW, is 1 to 2 feet in width, and consists of chalcopyrite, sphalerite, galena, tetrahedrite, gold, and gold-silver

electrum in a gangue of quartz, calcite, siderite, and sericite. The 10-inch wide Marcasite Vein is subparallel to the Pope Vein and merges with it at depth. The 6-inch wide Chromic Vein has not been mined.

ECONOMIC FEATURES: Assays of samples from surface trenches mainly ranged from trace to 0.14 ounce of Au per ton. There were several high values, including one of 55 ounces of Au per ton. Reserves, to the 500 foot level, of proven and probable ore are 45,200 tons averaging 0.88 ounce of Au per ton and 95,700 tons averaging 0.25 ounce of Au per ton.

OWNERSHIP: Leased by Stairs Exploration and Mining Company Limited.

HISTORY: 1944-1945: Prospecting and trenching by Upper Canada Mines Limited.

1947: Geological survey by Sherwood Gold Mines Limited.

Circa 1956: 12 diamond-drill holes (470 feet) by Anderson and Clark.

1959: Six diamond-drill holes (551 feet) by I.C. Stairs.

1962: Airborne geophysical survey and prospecting. Surface diamond-drilling indicated gold-filled fracture zone. Adit (inclined 20°) to vertical depth of 100 feet and some crosscutting and horizontal adit of unknown length. Shaft to 700 feet, levels at 80, 200, 350, 500 and 650 feet, 7,391 feet of underground development, 7,647 feet of underground diamond-drilling, and 35,729 feet of surface diamond-drilling. A 50- to 75-ton mill was installed underground on the 80-foot level. Production during 1965 and 1966. All work by Stairs Exploration and Mining Company Limited.

1966: Mine closed and program to investigate several conductive zones (indicated by 1963 airborne geophysical survey) by Stairs Exploration and Mining Company Limited.

1968: Mine equipment sold.

1973: Option agreement with Conmont Mining Properties Limited.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1965-				
1966	3,573	1,767	15,835	0.23

REFERENCES: ODM 1947, Vol.56, pt.5, p.20 (Sherwood Gold Mines Limited).

ODM 1970, GR79, p.23-29.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Midlothian Township, Stairs Exploration and Mining Co.

MORRISETTE TOWNSHIP

(NTS 32D/4W, 32D/5W, 42A/1E, 42A/8E)

Goodfish Prospect

MAIN METALS: Au

LOCATION: Approximately 3¼ miles north-northeast of Kirkland Lake, east and northeast of Goodfish Lake, in the southwest corner of Morrisette Township. No.1 Shaft in patented claim L2194, No.3 Shaft in patented claim L2232. Latitude 48.20°, Longitude 80.01°.

Map reference: ODM 2193, Bernhardt and Morrisette Townships (Murray, C.L. (Goodfish Mine)).

GEOLOGY: Keewatin mafic to intermediate metavolcanics are intruded by dikes and irregular masses of Algoman quartz-feldspar porphyry. The main Costello Vein Zone occupies a strong fracture in Keewatin lavas close to the contact with a quartz-feldspar porphyry body. It strikes N55°W and dips approximately 75°N. Narrow quartz stringers containing pyrite, molybdenite and gold occur on the hanging wall side of the break. Along the heavily fractured zone, which is 2,000 feet in length, there are also several narrow lenticular quartz masses containing patches of low grade material.

ECONOMIC FEATURES: Samples containing visible gold and minor chalcopryrite assayed from trace to 5.7 ounces of Au per ton. Channel samples from a small lens measuring 100 feet by 24 feet averaged 0.379 ounce of Au per ton. Work on the 300- and 600-foot levels outlined a gold-bearing structure trending N65°W and dipping 65-85°NE. The best results, obtained on the 300-foot level, indicated about 18 tons per vertical foot with a width of 2 to 3 feet and a cut grade of approximately 0.50 ounce of Au per ton.

HISTORY: 1912: Gold discovered in Costello claim (L2194).

1915: Surface work and prospect shaft in claim L2194.

Circa 1922-1923: No.3 Shaft, inclined 70°NW, to a vertical depth of 180 feet, a winze from 180-foot level to depth of 350 feet, and 3,250 feet of lateral development on levels at 180 and 350 feet by Goodfish Gold Mines Limited.

1927-1929: No.1 Shaft to 620 feet with approximately 4,400 feet of lateral development on levels at 150, 300, 450 and 600 feet by Goodfish Gold Mines Limited.

1935-1936: Shafts Nos. 1, 3, and 5 dewatered and resampled. 1,361 feet of lateral development on the 180-foot level of the No.3 Shaft by Goodfish Mining Company Limited.

1938: Diamond-drilling (amount unknown).

1940: Geological survey, trenching, and nine dia-

mond-drill holes (1,043 feet) by Kirkland-Hudson Bay Gold Mines Limited.

Note: The depths, dates of development, and amounts of lateral work for Shafts Nos. 2, 4 and 5 are not known.

REFERENCES: ODM 1964, MRC3, p.29, 30.

ODM 1970, GR84, p.21, 22 (C.L. Murray (Goodfish Gold Mines).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Morrisette Township, Lees (1940-1941), Robson (1941).

Mallard Lake Prospect

MAIN METALS: Au, Ag, Cu, Pb, Zn

LOCATION: Approximately 4½ miles northeast of Kirkland Lake, ½ mile southeast of Morrisette Lake, in southern Morrisette Township. Part of showing covered by patented claim L3837. Latitude 48.19°, Longitude 79.95°.

Map reference: ODM 2193, Bernhardt and Morrisette Townships.

GEOLOGY: Schistose Keewatin metavolcanics and carbonate rocks are cut by a quartz porphyry dike and by several quartz-carbonate-barite veins. The main showings are on two diverging vertical veins 1 to 5 feet in width. Mineralization consists of masses of galena and sphalerite, fine chalcopyrite, and a little pyrite.

Five channel samples, taken at 10-foot intervals down the shaft, averaged 0.16 ounce of Au per ton, 10.9 ounces of Ag per ton, 5.71 percent Pb and 0.43 percent Cu across widths of 2 to 3 feet. Diamond-drill core samples of the vein yielded average values of less than 0.01 ounce of Au per ton and 2.57 ounces of Ag per ton.

HISTORY: Pre-1920: Pitting, trenching, and 62-foot shaft with unknown amount of lateral development on the 50-foot level.

1935: Geological survey and sampling by Erie Canadian Mines Limited.

1956: Four diamond-drill holes (850 feet) by Macassa Mines Limited.

1967: 12 diamond-drill holes by Black River Mining Limited and Coastal Mining Limited.

1968: Two diamond-drill holes (786 feet) by R. Newman and G. Potter.

1969: Electromagnetic and magnetic surveys by Toronado Mines Limited.

REFERENCES: ODM 1969, MRC12, p.365.

ODM 1970, GR84, p.20, 21.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Morrisette Township, Mallard Lake Gold Mines Limited, Newman and Potter.

OSSIAN TOWNSHIP

(NTS 32D/4E, 32D/5E)

Natjo Prospect

MAIN METALS: Au

LOCATION: Approximately 7½ miles north-northeast of Virginiatown, on the west shore of Labyrinth Lake, in eastern Ossian Township. Diamond-drilling in patented claims L43507, L53227, L53243 and L53247. Latitude 48.24°, Longitude 79.53°. Map reference: ODM 2296, Pontiac and Ossian Townships (Allingham, D.J. (Natjo Gold Mines Ltd.)).

GEOLOGY: Keewatin intermediate and felsic metavolcanics are intruded by sills of diorite and quartz diorite and northeast-trending diabase dikes, and are cut by schist zones and carbonatized shear zones. Quartz veins are present, but their geological setting is not known. Assays of samples from pits and trenches ranged from 0.06 to 0.17 ounce of Au per ton.

HISTORY: 1946: Prospecting and geophysical work by Natjo Gold Mines Limited.

1950: Six diamond-drill holes (4,285 feet) by Natjo Gold Mines Limited.

REFERENCES: ODM 1975, GR125, p.28, 29 (D.J. Allingham (Natjo Gold Mines Limited)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Ossian Township, Anonymous (1936).

Ossian Prospect

MAIN METALS: Au

LOCATION: Approximately 8 miles north of Virginiatown, 1¼ miles southeast of Mist Lake, in north-west-central Ossian Township. Claims L11131 and L11132. Latitude 48.25°, Longitude 79.59°.

Map reference: ODM 2296, Pontiac and Ossian Townships.

GEOLOGY: Keewatin rhyolite porphyry is cut by an east-trending quartz vein which dips 55°N, averages 4 feet in width, and has been traced for several hundred feet on surface. The vein consists of quartz, sericite and calcite, with pyrite as the main sulphide mineral.

A channel sample taken in 1939 assayed 0.63 ounce of Au per ton over a width of 4 feet. Most assays of diamond-drill samples were less than 0.10 ounce of Au per ton, the highest value was 1.04 ounces of Au per ton over 8 inches.

HISTORY: 1924-1927: Trenching, 19 diamond-drill holes (5,000 feet), two-compartment shaft to 210 feet, and 800 feet of lateral development on levels

at 90 and 200 feet by Ossian Gold Mines Limited.
 1936: Four diamond-drill holes (footage unknown) by Ossian Mines Limited.
 1938: Trenching and two diamond-drill holes (footage unknown).
 1939: Surface work by Sylvanite Gold Mines Limited and Dome Mines Limited.

REFERENCES: ODM 1975, GR125, p.30, 31.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Ossian Township, Minedel Mines Limited, Ossian Gold Mines Limited.

OTTO TOWNSHIP

(NTS 42A/1E)

Todora Prospect

MAIN METALS: Au, Ag, Cu, Ni, Co, V

LOCATION: Approximately 6¼ miles southwest of Kirkland Lake, 1¼ miles southwest of Vigrass Lake, in S½, N½, lot 12, concession V, Otto Township and SW¼, N½, lot 1, concession V, Eby Township. Latitude 48.08°, Longitude 80.14°.

Map reference: ODMNA 2239, Eby-Otto Area.

GEOLOGY: Keewatin mafic metavolcanics are bounded to the north and south by quartz diorite bodies and intruded by a small body of syenite and trachyte, and by a north-trending diabase dike. A shear zone in metavolcanics and iron formation is occupied by quartz stringers and quartz porphyry mineralized with chalcopyrite, molybdenite and gold.

Surface grab samples assayed from 5.32 to 13.39 percent Cu and at least 0.01 ounce of Au per ton. The best results from a 1930 diamond-drilling program are as follows: 2.5 ounces of Au per ton, 2.5 percent Cu, and 3.5 percent V over 25 feet in hole No.1; 0.4 ounce of Au per ton, 32 ounces of Ag per ton, 0.5 percent Cu, 3 percent Ni and 0.5 percent Co over 5 feet in hole No.7. There is considerable doubt as to the validity of these values since Wright-Hargreaves Mines Limited did not find such high values in a diamond-drill hole put down to check the above-mentioned No.7.

HISTORY: 1930: Seven diamond-drill holes (3,002 feet) by Cheltonia-Swastika Mines Limited.

1935: Shaft to 105 feet and 60 feet of drifting on the 100-foot level by Selected International Mines Limited (under option from Cheltonia-Swastika Mines Limited).

1947: Surface work.

1948: Geological survey and four diamond-drill holes (1,368 feet) by Macassa Mines Limited.

1957: One diamond-drill hole (400 feet) by Wright-Hargreaves Mines Limited.

1970: Trenching by C. Luke.

REFERENCES: ODM 1936, Vol.45, pt.1, p.156-157 (Selected International Mines Limited).

ODMNA 1972, GR99, p.24, 25.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Otto Township, Todora Kirkland Prospecting Syndicate.

PACAUD TOWNSHIP

(NTS 31M/13W, 32D/4W, 41P/16E, 42A/1E)

Allied Prospect

MAIN METALS: Au

LOCATION: Approximately 11½ miles southeast of Kirkland Lake, in N½, lot 1, concession VI, Pacaud Township. Patented claims L17936-L17939. Shaft in patented claim L17937. Latitude 48.01°, Longitude 79.76°.

Map reference: ODM 1957-4, Boston Township and part of Pacaud Township.

GEOLOGY: Northwest-striking Keewatin mafic metavolcanics are intruded by small masses of granitic rock and by dikes of syenite porphyry and diabase. One showing in the south-central part of the property consists of a 60-foot wide zone of quartz stringers in altered basalt. Mineralization consists of pyrite and some chalcopyrite. Low gold values were obtained in the fractured zone. In the southeastern part of the property, narrow quartz veins containing some visible gold and a telluride occur near a contact between basalt and a small irregular body of granite.

HISTORY: 1918-1919: Trenching and 100-foot shaft by Allied Gold Mines Limited.

1927: Surface work by Bennett-Pacaud Mines Limited.

1934: Shaft dewatered, winze sunk from 100-foot level to 321 feet, 1,234 feet of lateral development on 100-foot level, and 400 feet of surface diamond-drilling by Miller Independence Mines (1924) Limited.

REFERENCES: OBM 1919, Vol.28, pt.1, p.115 (Allied). ODM 1935, Vol.44, pt.1, p.127 (Miller Independence Mines (1924) Limited).

ODM 1957, Vol.66, pt.5, p.46, 47.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Barry Hollinger Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 10½ miles south-southeast of Kirkland Lake, in lot 3, concession VI and SE¼, N½, lot 4, concession VI, Pacaud Township. Shaft

in NW¼, N½, lot 3, concession VI (patented claim L17930). Latitude 48.01°, Longitude 79.92°.

Map reference: ODM 1957-4, Boston Township and part of Pacaud Township.

GEOLOGY: The Pacaud Fault, assumed to strike south-east through the center of the property, separates sheared and altered tuffs and tuffaceous sediments on the southwest from Keewatin mafic lava flows to the northeast. These rocks are intruded by a hornblende-serpentine sill in the northeast corner of the property and by small masses and dikes of syenite porphyry.

Twelve veins have been found on the property but underground development and mining was confined to the No.7 Vein. It strikes N57°E, dips 70°S, is up to 8 feet in width, and consists of parallel veinlets or irregular lenses of quartz in a green schist. Mineralization includes pyrite and some chalcopyrite and visible gold. The presence of gold is largely dependent on the quartz and seems to be associated with the presence of chalcopyrite rather than pyrite.

OWNERSHIP: R.S. Martin.

HISTORY: 1917-1918: Trenching, two-compartment shaft to 215 feet, and at least 300 feet of lateral development on levels at 100 and 200 feet. Approximately 500 ounces of Au produced in 50-ton mill. Work by Patricia Syndicate.

1919: Mine buildings destroyed by fire.

1925-1936: Shaft deepened to 1,000 feet, winze from 1,000-foot level to 2,250 feet and 23,581 feet of lateral development on numerous levels. Small test mill, operated during 1925-1926, was replaced by a 150-ton mill in 1926. Continuous production from 1925 to 1936. Work by Barry-Hollinger Gold Mines Limited.

1944-1946: Mill cleaned up.

1962: Two diamond-drill holes (405 feet) by A. Bargnesi.

1969-1970: Trenching and one diamond-drill hole (110 feet) by A. Bargnesi.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1918,	69,891	8,502	267,741	0.26
1925-1936, 1944-1946				

REFERENCES: OBM 1918, Vol.27, pt.1, p.101, 102 (Patricia Syndicate).

ODM 1957, Vol.66, pt.5, p.45, 46.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirkland Lake, in S½, lot 1, concession VI, Pacaud Township. Latitude 48.01°, Longitude 79.76°.

Map reference: ODM 1957-4, Boston Township and part of Pacaud Township.

GEOLOGY: The property is largely underlain by Keewatin mafic flows which strike northwest and dip northeast. These are intruded by a hornblende-serpentine sill, located in the western part of the property, and by several dikes of feldspar porphyry. The east-trending No.1 Vein dips north, has been traced for 600 feet, and averages 1 foot in width. The vein material is white quartz and the mineralization, consisting of chalcopyrite, pyrite, specular hematite, galena, tellurides and native gold, is concentrated along the footwall of the vein. Diamond-drill core samples assayed 2.07 ounces of Au per ton over 1.2 feet and 0.57 ounce of Au per ton over 3.4 feet.

The Independence Vein, striking N20°E and dipping 55°E, consists of a zone, up to 4 feet in width, of narrow quartz veinlets containing pyrite, chalcopyrite, telluride, and native gold.

ECONOMIC FEATURES: Some high grade ore from the No.1 Vein was bagged and a small amount of gold produced. A small shoot of exceptionally high-grade ore was found between the depths of 30 and 100 feet in the Independence Vein.

HISTORY: 1915: Gold discovered by Joseph McDonough. Pitting, trenching, and some high-grade ore bagged by F.M. Connell.

1918-1922: Vertical two-compartment A Shaft to 515 feet with 2,856 feet of lateral development on the 500-foot level. B Shaft, inclined 25°, to 100 feet. Inclined C Shaft to 110 feet with 392 feet of lateral development on levels at 44 and 110 feet. D Shaft, inclined 45°, to 210 feet with 405 feet of lateral development on levels at 100 and 200 feet. All work by Miller Independence Mines Limited.

1929: Diamond-drilling (amount unknown).

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1918	58.5	70	31	1.89

REFERENCES: OBM 1916, Vol.25, pt.1, p.255.

OBM 1918, Vol.27, pt.1, p.100, 101.

OBM 1919, Vol.28, pt.1, p.116.

ODM 1957, Vol.66, pt.5, p.48, 49.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Pacaud Township, Hotchkin (1937).

Miller Independence Prospect

MAIN METALS: Au, Ag

LOCATION: Approximately 11½ miles southeast of

POWELL TOWNSHIP
(NTS 41P/15, 42A/2)

British Matachewan Prospect

MAIN METALS: Au

LOCATION: Approximately 4½ miles northwest of Matachewan, 1 mile north of the west end of Davidson Lake, in south-central Powell Township. Latitude 47.94°, Longitude 80.73°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: The property is almost entirely underlain by a 200- to 1,000-foot thickness of Cobalt Group sedimentary rocks (quartzite and conglomerate). These rocks presumably overlie Timiskaming metasediments cut by north-trending Matachewan diabase dikes.

A quartz vein encountered in a diamond-drill hole assayed 0.09 ounce of Au per ton.

HISTORY: All work done by British Matachewan Gold Mines Limited.

1964: Two diamond-drill holes (2,232 feet).

1966: Five diamond-drill holes (1,625 feet).

1969: One diamond-drill hole (1,001 feet).

1970: Magnetic and electromagnetic surveys.

1971: One diamond-drill hole (836 feet).

1973: Induced polarization survey.

REFERENCES: ODM 1967, GR51, p.37.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Powell Township, British Matachewan Gold Mines Limited.

Culver Prospect

MAIN METALS: Au

LOCATION: Approximately 1½ miles northwest of Matachewan, ¼ mile east of Otisse Lake, in southeastern Powell Township. Showing in claim MR 5651. Latitude 47.95°, Longitude 80.66°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: Tightly folded Timiskaming greywacke and conglomerate are cut by small bodies of syenite and syenite porphyry. Quartz veins containing chalcopyrite and gold are associated with a 1.5 mile long shear zone which extends east-northeast from the Young-Davidson Mine. Assays of samples from pits and trenches in red syenite porphyry ranged from trace to 0.16 ounce of Au per ton.

HISTORY: 1914: Surface work by John Hollinger.

1933-1934: Trenching, shaft to 120 feet, and 5,000 feet of diamond-drilling by O'Connell Gold Mines Limited.

1938: Shaft deepened to 150 feet and diamond-

drilling by Bloom Lake Consolidated Gold Mines Limited.

1945-1946: Surface work and 6,000 feet of diamond-drilling by Culver Gold Mines Limited.

REFERENCES: ODM 1967, GR51, p.36, 37.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Powell Lake, Anonymous (date uncertain).

Matachewan Consolidated Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 1½ miles west-northwest of Matachewan, ¼ mile south of Otisse Lake, in southeastern Powell Township. Shafts Nos. 1, 2, and 3 in claim MR5830. Latitude 47.95°, Longitude 80.68°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: The orebodies are close to a contact between a belt of tightly folded Timiskaming metasediments that strike east and dip steeply south, and Keewatin metavolcanics (andesite, basalt, tuff, and agglomerate). These rocks are intruded by dikes and cupolas of Algoman syenite porphyry. All rocks are cut by north-trending Matachewan diabase dikes. Cobalt Group sedimentary rocks mantle the older formations ½ mile south of the shaft.

ECONOMIC FEATURES: The orebodies were of two types:

- 1) Those within metavolcanics were irregular and had limited vertical extent. They consisted of a series of gently dipping quartz stringers and adjacent lavas and/or tuffs that were fractured, bleached, and mineralized with pyrite and gold. With an average gold content of 0.16 ounce of Au per ton, they were of higher grade than the second type and were the main source of ore during the first 5 years of production.
- 2) Those within the porphyry masses occurred mainly in the western part of the property and were similar to the orebodies at the Young-Davidson Mine. Most of the porphyry is fractured to some extent and the fractures are filled with quartz and gold-bearing pyrite. In some zones, this fracturing is sufficiently intense and the gold content sufficiently high to make ore.

OWNERSHIP: Leased by Matachewan Consolidated Mines Limited.

HISTORY: 1917: Gold discovered by Sam Otisse.

1918-1919: Vertical two-compartment No.1 Shaft to 170 feet with 800 feet of lateral development on the 160-foot level. No.2 Shaft, inclined 70°, to 33 feet. Work by Matachewan Gold Mines Limited.

1923-1924: Three properties merged to form Matatchewan Canadian Gold Mines Limited. Diamond-drilling, totalling 5,455 feet, by The Porcupine Goldfields Development and Finance Company Limited.

1933-1954: Underground workings dewatered, three-compartment vertical No.3 Shaft to 2,432 feet, 60,663 feet of underground development and extensive underground diamond-drilling and sampling. Continuous production from 1934 to 1952 when mine was put on a salvage basis. All work by Matatchewan Consolidated Mines Limited.

1969-1970: Diamond-drilling (amount unknown) by Matatchewan Consolidated Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1934-				
1954	370,427	133,710	3,525,200	0.11

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.638-640.

ODM 1935, Vol.44, pt.2, p.36-42.

ODM 1967, GR51, p.32-36.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Ryan Lake Mine (Past Producer)

MAIN METALS: Cu, Ag, Au, Mo

LOCATION: Approximately 3 miles northwest of Matatchewan, ¼ mile north of Ryan Lake, in central Powell Township. Shaft in claim MR12528. Latitude 47.97°, Longitude 80.79°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: The property straddles the contact between tightly folded Timiskaming metasediments and Keewatin metavolcanics to the north. An ultramafic intrusive body occurs along the contact, several syenite cupolas intrude the sedimentary, volcanic and ultramafic intrusive rocks, and north-trending diabase dikes cut all of the above rocks.

The two orebodies are related to east-trending, steeply dipping shear zones. The "main ore zone" occupies a 4- to 5-foot wide vertically dipping shear zone in porphyry and serpentized peridotite. Quartz veins and lenses are mineralized with molybdenite, chalcopyrite, and a little pyrite. The "north mineral zone" consists of several parallel shears in andesitic metavolcanics, 200 feet north of the main zone.

ECONOMIC FEATURES: The estimated average grade of the ore at the start of underground operations was 1.25 percent Cu, 0.5 percent Mo and 0.03 ounce of Au per ton.

OWNERSHIP: Extender Minerals of Canada Limited.

HISTORY: 1947: Diamond-drilling (amount unknown) by Ryan Lake Mines Limited.

1948: Magnetic and self-potential surveys, and 50 diamond-drill holes by Teck Exploration Company Limited.

1950-1957: Trenching, test-pitting, and open pit mining. Two-compartment shaft to 480 feet, 8,563 feet of lateral development on levels at 92, 192, 317, and 442 feet. 21,378 feet of underground diamond-drilling, and 16,140 feet of surface diamond-drilling. 75-ton mill installed, 163,490 tons of ore milled, and concentrates shipped to Noranda. Work by New Ryan Mines Limited (name changed to Min-Ore Mines Limited in 1955).

1958-1959: 167 feet of drifting, 6,790 feet of underground diamond-drilling, 850 feet of surface diamond-drilling, and mill tests by International Ranwick Limited.

1962: Ore for mill tests mined from open pit by Pax International Mines Limited.

1964-1966: Geochemical survey, 650 feet of underground development, and 13,167 feet of underground and surface diamond-drilling. Limited production from a 150-ton mill. Ore (5,938 tons) and old tailings (14,025 tons) treated in roasting and leaching plant. Work by Pax International Mines Limited.

1966-1967: Geological, geochemical and geophysical surveys, and 15 diamond-drill holes (8,929 feet) by Cominco Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Copper (pounds)	Mo (lbs.)	O.M. (tons)
1948-1957,	1,352	36,141	4,995,745	11,393	184,790
1962-1964					

REFERENCES: ODM 1967, GR51, p.37, 38 (Pax International Mines Limited).

ODM 1969, MRC12, p.369.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Welsh-Sauve Prospect

MAIN METALS: Zn, Pb, Ag, Au

LOCATION: Approximately 3½ miles northwest of Matatchewan, 3/5 mile west-northwest of Ryan Lake, in central Powell Township. Showing in claim MR16422. Latitude 47.97°, Longitude 80.71°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: The property straddles the contact between Keewatin mafic to felsic flows and tuffs and, to the south, Timiskaming greywacke and conglomerate. As at the Ryan Lake Mine, a serpentized

ultramafic body occupies the contact, there are small bodies of syenite porphyry, and all of the rocks are cut by north-trending Matachewan diabase dikes.

The ultramafic body is cut by numerous shear zones containing quartz veins and stringers. Mineralization consists of chalcopyrite, molybdenite, galena, sphalerite, pyrrhotite, silver, and minor amounts of gold. Samples from pits and trenches assayed up to 0.23 ounce of Au per ton; diamond-drill core samples assayed up to 0.05 ounce of Au per ton, 1.08 ounce of Ag per ton, 9.6 percent Zn and 3.86 percent Pb.

HISTORY: Circa 1948: Geological survey.

1952: Nine diamond-drill holes (3,879 feet) by Welsh-Sauve Copper Gold Mines Limited.

1958: Geological survey.

1960: Three diamond-drill holes (607 feet) by Westwind Explorations Limited and two diamond-drill holes (700 feet) by Nasso.

1964: Four diamond-drill holes (1,069 feet) by Welsh-Sauve Copper Gold Mines Limited.

REFERENCES: ODM 1967, GR51, p.43, 44.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Powell Township, Matheson (1951).

Young-Davidson Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 2 miles west-northwest of Matachewan, ¾ mile southwest of Otisse Lake, in southeastern Powell Township. Shaft in claim MR5372. Open pit in claims MR5372 and MR5374. Latitude 47.95°, Longitude 80.69°.

Map reference: ODM 2110, Powell and Cairo Townships.

GEOLOGY: The ore occurs in a stock (actually several parallel east-trending dikes which branch in places) of syenite porphyry which lies along the southern contact of the southern belt of Timiskaming meta-sediments with Keewatin metavolcanics. About 300 feet south of the open pit and shaft, Cobalt Group sedimentary rocks overlie all other formations.

The main orebody is a tapering cone extending downward in the syenite porphyry beneath the open pit. The syenite porphyry consists of two main phases: the brown syenite porphyry which is the older of the two and the brick red syenite porphyry which hosts the ore and is intrusive into the brown variety.

ECONOMIC FEATURES: The ore-bearing syenite porphyry contains 2 percent disseminated pyrite which carries 30 to 50 percent of the gold as fine included

grains. Superimposed on this mineralization are near-microscopic fractures containing visible gold. The disseminated pyrite containing these fractures is ore if it averages more than 0.11 ounce of Au per ton. These features suggest that the orebody was a porphyry gold deposit.

OWNERSHIP: Young-Davidson Mines Limited.

HISTORY: 1916: Discovery of gold on Davidson Creek by Jake Davidson.

1923-1925: Shaft to 200 feet, 1,747 feet of lateral development, and 6,659 feet of diamond-drilling by The Porcupine Goldfields Development and Finance Company Limited.

1933-1956: 600-ton mill erected in 1933 and open pit operations begun in 1934. On completion of mining in the open pit (from surface to the 865-foot level), shaft sunk to 1,075 feet, winze sunk from 463-foot level to depth of 1,530 feet and 26,202 feet of underground development carried out on seven levels. Work by Hollinger Consolidated Gold Mines Limited under an option agreement with Young-Davidson Mines Limited.

1964: One diamond-drill hole (607 feet) by Young-Davidson Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1934-				
1957	585,690	131,939	6,128,272	0.10

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.635.

ODM 1935, Vol.44, pt.2, p.31-36.

ODM 1967, GR51, p.39-43.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

SKEAD TOWNSHIP

(NTS 31M/13E)

La Fond Prospect

MAIN METALS: Au

LOCATION: Approximately 7 miles south-southeast of Larder Lake village, ¼ mile southwest of Grace Lake, in lot 10, concessions V and VI, Skead Township. Patented claims T44414-T44417. Shaft in SE¼, S½, lot 10, concession VI (patented claim T44417). Latitude 48.00°, Longitude 79.66°.

Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: Keewatin mafic to felsic metavolcanics and Timiskaming greywackes are intruded by syenite and granite porphyry. A large pink granite or syenite dike strikes N20°W, has been traced for 3,000 feet along strike, and has a maximum width of 400 feet.

The dike is cut by a series of transverse quartz veins

which are mineralized with pyrite, chalcopyrite, molybdenite, tellurides, and free gold. Grab samples of vein material from the dump assayed greater than 0.7 ounce of Au per ton. Channel samples ran as high as 0.6 ounce of Au per ton over 5.8 feet. Diamond-drilling in 1960 yielded values ranging from trace to 0.69 ounce of Au per ton; samples from holes drilled in 1962 assayed from trace to 0.02 ounce of Au per ton.

HISTORY: 1918-1920: Shaft to 130 feet and 100 feet of drifting on the 112-foot level by Wisconsin-Skead Mines Limited and Crawford Skead Gold Mines Limited.

1922: Slashing on walls of 112-foot level by Lockwood Gold Mines Limited.

1927-1928: Shaft deepened to 530 feet and 1,500 feet of lateral development on levels at 112, 329, and 494 feet by Grace Lake Mines Limited.

1941: Six diamond-drill holes (150 feet) by La Fond Gold Mines Limited.

1958: Geological survey and unspecified manual work.

1960: Three diamond-drill holes (1,254 feet) by Elgo Mines Limited.

1962: One diamond-drill hole (309 feet) by Elgo Mines Limited.

REFERENCES: ODM 1929, Vol.38, pt.6, p.113 (Grace Lake).

ODM 1949, Vol.58, pt.6, p.31-33.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Skead Township, Elgo Mines Limited, LaFond Gold Mines Limited.

Manor Prospect

MAIN METALS: Au

LOCATION: Approximately 6½ miles south of Larder Lake village, 1¼ miles north-northeast of the northern end of St. Anthony Lake, in S½, lot 6, concession VI, Skead Township. Shaft in former patented claim LS128. Latitude 48.00°, Longitude 79.69°.

Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: Keewatin mafic to felsic metavolcanics and Timiskaming metasediments are intruded by Algoman syenite porphyry and lamprophyre dikes. A major fault which trends southeast across the property forms the contact between syenite porphyry and greenish carbonate rock containing pyrite. A considerable amount of fine-grained gold occurs along the contact and in seams in the carbonate rock within a few inches of the contact. There is apparently no well-defined vein.

HISTORY: 1919: "Spectacular visible gold showing" (ODM 1921, Vol.30, pt.6, p.24) discovered by

Walter Manley.

1923-1924: Two-compartment shaft to 240 feet and 393 feet of lateral development on the 215-foot level by Manley-O'Reilly Gold Mines Limited.

1926: Shaft deepened to 375 feet, new level at 350 feet, and 600 feet of lateral development by Manley-O'Reilly Gold Mines Limited.

1927: Shaft deepened to 500 feet, new level at 475 feet, and 490 feet of lateral development by Manor Gold Mines Limited.

1938: Diamond-drilling (amount unknown) on the 215-foot level by Manor Gold Mines Limited.

REFERENCES: ODM 1921, Vol.30, pt.6, p.24 (Manley-O'Reilly).

ODM 1929, Vol.38, pt.6, p.111.

ODM 1949, Vol.58, pt.6, p.34, 35.

New Telluride Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 10 miles south of Larder Lake village, in lots 1-3, concession II, Skead Township. Shaft located 500 feet northwest of Skidoo Lake in patented claim L8846. Latitude 47.95°, Longitude 79.75°.

Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: The property is underlain by Keewatin metavolcanics (andesite, dacite, and dacite breccia). The most abundant rock type is the pyroclastic breccia. The southern end of the Telluride-Denique-Nigger shear zone, striking north and dipping vertically, crosses the shaft claim. Chalcopyrite, pyrite, and specularite stringers and veinlets occur in the shear zone.

Assays of diamond-drill core samples ranged from trace to 0.36 ounce of Au per ton. "Character" samples assayed from 0.50 to 1.0 ounce of Au per ton and from 2 to 15 percent Cu. A chip sample taken across 1.25 feet of mineralized lava in a small stope on the 150-foot level assayed 0.35 ounce of Au per ton.

HISTORY: 1927-1929: Two-compartment shaft to 375 feet, 1,995 feet of lateral development on levels at 90, 150, 250, and 350 feet, and 50-ton mill installed by Telluride Gold Mines Limited.

1930: 500 tons of ore milled.

1931-1932: Limited production of gold and silver and 104 tons of concentrates shipped to Noranda.

1946: Shaft dewatered, 12 surface diamond-drill holes (5,684 feet), and approximately 1,500 feet of underground diamond-drilling by New Telluride Gold Mines of Canada Limited.

1951: One diamond-drill hole (footage unknown).

1956-1957: Shaft dewatered and unspecified amount of lateral development on 250-foot level.

PRODUCTION: In 1931-1932, 62 ounces of Au and 50 ounces of Ag were produced and 104 tons of concentrates shipped to Noranda (from which 3,904 pounds of Cu was recovered).

REFERENCES: ODM 1949, Vol.58, pt.6, p.35-37.

ODM 1969, MRC12, p.370, 371.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Skead Township, New Telluride Gold Mines Limited.

Nigger Prospect

MAIN METALS: Au

LOCATION: Approximately 9½ miles south of Larder Lake village, ½ mile north of Skidoo Lake, in S½, lot 2, concession III, Skead Township. Patented claim MR3. Latitude 47.96°, Longitude 79.74°. Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: Keewatin massive dacite, andesite, and fragmental and porphyritic lavas are intruded by lamprophyre dikes and cut by the weak northeast-trending Telluride-Denique-Nigger shear zone.

The zone, which has been traced for 1,500 feet across the property, contains some barren quartz-carbonate stringers. Mineralization consists of stringers and veinlets, up to 1 inch wide, of sulphides, mainly chalcopyrite and pyrite with some specularite. Assays of grab samples ranged from trace to 3.0 ounces of Au per ton. Channel samples averaged 0.45 ounce of Au per ton across 3 feet. Diamond-drill core samples assayed from trace to 0.52 ounce of Au per ton.

HISTORY: Circa 1900: Sufficient work to bring claim MR3 to patent.

1939: Trenching and diamond-drilling by Zonic-Larder Mining Syndicate Limited.

1940: 11 diamond-drill holes (footage unknown).

1944: Diamond-drilling (amount unknown).

1946: Surface work and seven diamond-drill holes (2,986 feet) by Lake-Ridge Mines Limited.

REFERENCES: ODM 1949, Vol.58, pt.6, p.33 (Lake-Ridge Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Skead Township, Anonymous (1940 and 1950), Zonic Larder Syndicate.

Skead Consolidated Prospect

MAIN METALS: Au, Cu

LOCATION: Approximately 9¼ miles south of Larder Lake village, ¼ mile north of Skidoo Lake, in N½, lots 2 and 3, concession II, Skead Township. Patented claims LS29, LS30 and L7968-L7971.

Latitude 47.96°, Longitude 79.75°.

Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: Keewatin dacite, andesite, trachyte and pyroclastics are intruded by feldspar porphyry and lamprophyre dikes and cut by the northeast-trending Telluride-Denique-Nigger shear zone. The zone consists of sheared and altered lavas and contains chalcopyrite-pyrite-specularite replacement stringers and lenses which roughly parallel the trend of the shears.

Gold values are associated with the sulphide mineralization. Two grab samples of heavily mineralized material from the dump at the main shaft assayed 0.20 ounce of Au per ton and 14.03 percent Cu, and 0.22 ounce of Au per ton and 10.47 percent Cu, respectively.

HISTORY: 1919-1921: Stripping, trenching, pitting, and three prospect shafts by Skead Gold Mines Limited.

1922: Five diamond-drill holes (2,075 feet) by New York Porcupine Company Limited.

1924-1925: Surface work by Skead Consolidated Mining Company Limited.

1939: Shaft to 125 feet and 140 feet of lateral development on the 100-foot level by Skead Consolidated Mining Company Limited.

1947: Underground workings dewatered and some surface and underground diamond-drilling by Denique Gold Mines of Canada Limited.

REFERENCES: ODM 1949, Vol.58, pt.6, p.30 (Denique Gold Mines of Canada, Limited).

ODM 1969, MRC12, p.380 (Orbit (Denique)).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Skead Township, Anonymous (1964).

Tyon Prospect

MAIN METALS: Au

LOCATION: Approximately 6 miles south-southwest of Larder Lake village, adjacent to the 1-mile post on the Hearst-Skead township boundary, in N½, lots 2 and 3, concession VI, Skead Township. Patented claims L6741 and L6743. Latitude 48.01°, Longitude 79.75°.

Map reference: ODM 1949-3, Township of Skead.

GEOLOGY: Keewatin metavolcanics and Timiskaming metasediments are intruded by a body of syenite which is sheared and carbonatized. Quartz-calcite stringers in andesite contain massive sulphide mineralization and assayed 0.22 ounce of Au per ton.

HISTORY: 1946: Trenching, pitting, and five diamond-drill holes (5,000 feet) by Tyon Gold Mines Limited.

REFERENCES: ODM 1947, Vol.56, pt.8, p.29.

ODM 1949, Vol.58, pt.6, p.37, 38.

TECK TOWNSHIP
(NTS 42A/1E)

Amalgamated Kirkland Prospect

MAIN METALS: Au

LOCATION: Between $\frac{3}{4}$ and $2\frac{1}{2}$ miles southwest of Kirkland Lake, in southeast-central Teck Township. Shafts in patented claims L5688 and L6687, and claim T16621 of a 17 claim group. Latitude 48.14° , Longitude 80.05° .

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Surface exposures consist of Timiskaming metasediments (including tuffs) intruded by bodies of syenite, syenite porphyry, and basic syenite. Diabase dikes cut all other rock types. An elongated, irregularly shaped mass of syenite porphyry and basic syenite extends across the northern part of the property. The northern contact of a syenite stock lies near the property's southern boundary. Between these intrusions, the interbedded metasediments and tuffs have been extensively faulted and drag folded.

The Amalgamated Kirkland-Blanche River Fault extends west-southwest across the northern part of the property. It offsets a diabase dike in the northern part of claim T16621. Elsewhere on the property it has been located by diamond-drilling.

The carbonatized fault zone that follows the southern contact of the band of Timiskaming metasediments may extend through low ground in claims L15396, L5689, and L6768. This is an older type of fault which is part of the Larder Lake fault system. The Larder Lake "Break" is frequently obliterated by syenite and porphyry intrusions in townships to the east; such may be the case on this property.

Quartz-carbonate veining occurs principally in syenite, but is also found in the adjacent greywacke-conglomerate units. Mineralization consists of fine pyrite, hematite, and occasionally molybdenite. Fine visible gold has been reported in surface showings.

Diamond-drilling returned values ranging from 0.01 to 0.83 ounce of Au per ton over widths of 1.2 to 5.0 feet. One intersection averaged 0.21 ounce of Au per ton over 15.7 feet.

HISTORY: Pre-1935: Shaft to 816 feet in claim L6687 with 2,102 feet of lateral development on levels at 80, 250, 400 and 800 feet, shaft to 150 feet in claim L5688 with 400 feet of lateral development on levels at 65 and 125 feet, and 8,000 feet of diamond-drilling by Canadian Kirkland Mines Limited. Shaft to 500 feet in claim T16621, inclined winze from 375 to 675 feet, winze from 675 to 725 feet, 1,562 feet of underground development on levels at 85, 125, 375 and 500 feet and 9,570

feet of diamond-drilling by Kirkland-Hunton Mines Limited. Pitting and shallow prospect shaft in claim L5433 by Honer-Kirkland Gold Mines Limited. 1939-1940: Properties and assets of the above companies taken over by Amalgamated Kirkland Mines Limited. 27 surface diamond-drill holes (12,215 feet). Under an agreement with Macassa Mines Limited, a crosscut was to be extended from the Macassa 3,000-foot level into Amalgamated Kirkland ground. It was started, but never reached Amalgamated Kirkland property.

1944: Two underground diamond-drill holes (2,769 feet) from the Macassa 3,000-foot level.

1945: 14 surface diamond-drill holes (4,281 feet) by Frobisher Exploration Company Limited.

1972: 11 surface diamond-drill holes (2,805 feet) by Mayfield Explorations and Development Limited.

REFERENCES: GSC 1936, Memoir 192, p.51 (Canadian Kirkland Mines, Limited), 53 (Kirkland Hunton Mines, Limited).

Northern Miner, October 12, November 23, November 30, December 7, and December 21, 1939. ODM 1923, Vol.32, pt.4, p.48-51 (Hunton, Kirkland Kalgoorlie (Honer), Canadian Kirkland).

ODM 1941, Vol.50, pt.1, p.2, 3.

ODM 1948, Vol.57, pt.5, p.34-36.

ODM 1964, MRC3, p.10.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Black Prospect

MAIN METALS: Au

LOCATION: Immediately east of Kirkland Lake, adjacent to the 3-mile post on the Teck-Lebel township boundary, in eastern Teck Township and western Lebel Township. Shaft in claim L2728. Western half of the property is occupied by a residential section of Kirkland Lake. Latitude 48.15° , Longitude 80.03° .

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Timiskaming greywacke, tuff, and conglomerate are intruded by bodies of Algoman syenite porphyry. The Murdock Creek Fault crosses the property in a northeasterly direction and dips northwest. The location of the fault is indicated by a topographic depression and by variation in the character and strike of the strata adjacent to it. The fault was represented in diamond-drill hole 1 by a 39-foot width of broken rock replaced by quartz and calcite carrying low gold values, in the range 0.10 ounce of Au per ton.

ECONOMIC FEATURES: On the 125-foot level, most of the No.2 (main) Vein is narrow and consists of

fractured stringers containing auriferous pyrite. The pyrite carries gold values over an average width of 6 inches. According to Hopkins (Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake) the values were consistent for the exposed length of the vein, but when recalculated to a mining width of 3 feet, the results were considerably lower:

Vein	Location	Length (feet)	Width (feet)	Grade (ounce of Au per ton)
No.2	East Drift	200	3	0.07
No.2	West Drift	95	3	0.07

HISTORY: Work has been largely confined to claim L2728.

Circa 1917: Inclined shaft to 125-feet on No.1 Vein with approximately 40 feet of drifting and No.2 vein, 125 feet to the south, opened on surface for a distance of 320 feet.

1932: Five diamond-drill holes by Black Gold Mines Syndicate. No.1 hole sectioned claim L2728 from north to south and revealed gold values in veins Nos.1 and 2.

1935: Crosscut driven to No.2 Vein on 125-foot level and 295 feet of drifting along the vein by Black Gold Mines Limited.

1937: Eight diamond-drill holes (5,548 feet) by Black Gold Mines Limited.

REFERENCES: ODM 1948, Vol.57, pt.5, p.37, 38.

ODM 1964, MRC3, p.17, 18.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Teck Township, Baker (1936), Hopkins (1934).

Casakirk Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles west of Kirkland Lake, adjoining the Macassa property on the north-west, in central Teck Township. Shaft in claim L1429. Latitude 48.15°, Longitude 80.08°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The northern part of the property is underlain by massive diorite and gabbro, and minor 'greenstone'. South of these mafic intrusions are tuff and conglomerate horizons and, further south, an irregularly shaped mass of syenite porphyry and mafic syenite with interspersed metasediments. Near the railroad line, prospecting has revealed several veins and shear zones. There is some shearing immediately north of the shaft in claim L1429. A narrow quartz vein in lamprophyre was exposed in a drift from the 3,000-foot level of the Macassa workings. It varies from 1 to 6 inches in width and has a 2- to 10-inch wide selvage of pyritized carbonate rock on either side. Molybdenite occurs in some

parts of the vein. Assays of samples taken in the drift ranged from 0.01 to 0.84 ounce of Au per ton. Diamond-drill hole intersections ranged from 0.01 to 0.25 ounce of Au per ton over widths of 0.5 to 1.5 feet.

HISTORY: 1928: Shaft to 115 feet by Abba Mines Limited.

1936: Casakirk Gold Mines Limited organized to consolidate a group of claims including the former Clark, Devellierrs, Belcher, Barney, Barnette Legris and Abba properties.

1940-1943: Crosscut driven into property from 3,000-foot level of the Macassa workings, drifting along above-mentioned vein, and six diamond-drill holes (3,619 feet) by Macassa Mines Limited and Hollinger Consolidated Gold Mines Limited.

REFERENCES: ODM 1948, Vol.57, pt.5, p.40.

ODM 1964, MRC3, p.19, 20.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Teck Township, Gustafson (1941) and others.

Federal Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 1 mile north of Kirkland Lake, immediately west of the western end of O'Connell Lake, in eastern Teck Township. Shaft in claim L6527. Latitude 48.16°, Longitude 80.03°. Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Basic syenite and lamprophyre underlie much of the property, and a 500-foot wide band of syenite porphyry crosses it in an easterly direction. Patches of Timiskaming metasediments and tuffs occur around the intrusive bodies.

The shaft is adjacent to a vein on which considerable trenching was done. The vein occupies a fracture zone and consists of quartz stringers mineralized with pyrite and chalcopyrite. It is vertical on surface and dips 60°S on the 200-foot level where it is bounded on the north by porphyry and on the south by lamprophyre. On the 700-foot level, the vein was reached by an 80-foot crosscut which also intersected an unimportant southward-dipping fracture.

Visible gold is present in the quartz veining, but values were generally low. No gold assays have been published.

HISTORY: 1913: Trenching and surface sampling in claims L6526 and 6527 under the direction of H.E.T. Haultain.

1919-1920: Sampling, diamond-drilling, shaft to 200-feet, and a 106 foot crosscut on the 200-foot level by Kirkland Combined Mines Limited.

Circa 1928: Shaft deepened to 740 feet and 2,455

feet of underground development on levels at 200, 550, and 700 feet by Federal Kirkland Mining Company Limited.

1937: Shaft dewatered, 50 feet of surface trenching, and 9,328 feet of surface diamond-drilling by Federal Kirkland Mining Company Limited.

1938: Three underground diamond-drill holes (3,112 feet) by Federal Kirkland Mining Company Limited.

1939-1940: Under an agreement with Toburn Gold Mines Limited and Kirkland Combined Mines Limited, an exploratory crosscut was driven into the property from the Toburn 1,100-foot level and 1,584 feet of underground development and seven diamond-drill holes (3,022 feet) were completed. Work presumably carried out by Toburn Gold Mines Limited.

Circa 1946: Exploratory crosscut driven into the property from the Toburn 2,475-foot level and three underground diamond-drill holes completed, presumably by Toburn Gold Mines Limited.

1947: A diamond-drill hole from the Toburn 2,475-foot level penetrated 859 feet into Federal Kirkland ground.

REFERENCES: GSC 1936, Memoir 192, p.52.

ODM 1920, Vol.29, pt.4, p.42 (Kirkland Combined).

ODM 1923, Vol.32, pt.4, p.47 (Kirkland Combined).

ODM 1928, Vol.37, pt.2, p.150, 151.

ODM 1948, Vol.57, pt.5, p.40, 41.

ODM 1964, MRC3, p.24.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Teck Township, Erie Canadian Mines Limited (1935) and others.

Florena Prospect

MAIN METALS: Au

LOCATION: Approximately 2 miles southwest of Kirkland Lake, in southeastern Teck Township. Shaft in claim L16555. Latitude 48.13°, Longitude 80.06°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The southern boundary of the belt of Timiskaming rocks trends roughly east across the northern part of the property. South of the contact, the property is underlain by Algoman syenite and hybrid intrusive rocks with a few small remnants of Keewatin metavolcanics.

The eastern claims contain numerous exposures of carbonate rocks with quartz stockworks. These rocks are localized along the Larder Lake Fault which forms the sheared southern contact of the

belt of Timiskaming rocks. This sheared zone appears to have been offset about 600 feet by cross faulting along Murdock Creek. To the west these carbonate rocks are partially cut out by a later syenite intrusion.

Assays of up to 0.15 ounce of Au per ton were reported from a number of veins on the property. Values of up to 0.15 ounce of Au per ton were encountered in a crosscut and a 30-foot width of low-grade vein material was intersected. A few encouraging assays and several sections carrying low values were reported from diamond-drilling in 1922. However diamond-drilling in 1936 and 1937 reportedly returned best values of only 0.06 ounce of Au per ton.

HISTORY: 1922-1923: Four diamond-drill holes (3,200 feet) in claims L1356, L15752 and L15753, 4,000 feet of surface trenching, a shaft (inclined 65°S) to 60 feet, and an unspecified amount of lateral development on the 60-foot level by Highland-Kirkland Gold Mines Limited.

1936-1937: Geophysical survey and seven diamond-drill holes (7,860 feet) by Florena Gold Mines Limited.

REFERENCES: ODM 1923, Vol.32, pt.4, p.51 (Highland Kirkland).

ODM 1948, Vol.57, pt.5, p.41, 42.

ODM 1964, MRC3, p.33 (Highland-Kirkland Mines Ltd.).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Goldbanks Prospect

MAIN METALS: Au

LOCATION: Approximately 4½ miles west of Kirkland Lake, immediately east of Perron Lake, in western Teck Township. No.1 Shaft in claim L24284; No.2 Shaft in claim L1218. Latitude 48.14°, Longitude 80.13°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The northern half of the property is underlain by Keewatin metavolcanics. East-northeast-trending Timiskaming metasediments (including tuffs), intruded by syenite porphyry, lamprophyre and diabase, occur in the southern half.

Vein quartz, accompanied by pyrite and minor chalcopyrite, molybdenite and visible gold, occurs on either side of a narrow syenite porphyry dike within the main shear zone in the vicinity of Shafts Nos.1 and 2. Sericite and chlorite are developed in the quartz veining and in the wallrock, which consists of sheared pyritized volcanic breccia.

The No.2 Shaft was sunk on a strong shear containing lenses of quartz and a 1-inch wide mud

seam. Samples taken across this shear zone between depths of 20 and 40 feet in the shaft gave values ranging from 0.10 to 0.20 ounce of Au per ton.

HISTORY: 1929-1931: Approximately 2,100 feet of surface trenching, No.1 shaft to 73 feet with 200 feet of lateral development on the 60-foot level, and No.2 Shaft to 45 feet by Goldbanks Syndicate.

1935-1936: No.2 Shaft deepened to 60 feet and 1,800 feet of diamond-drilling by Goldbanks-Kirkland Mines Limited.

1937-1940: 18 diamond-drill holes (7,000 feet) by Goldbanks Mines Limited.

1946: Geophysical survey.

1961: Three diamond-drill holes (323 feet).

1964: Two diamond-drill holes (243 feet).

1965: One diamond-drill hole (160 feet).

REFERENCES: ODM 1948, Vol.57, pt.5, p.42.

ODM 1964, MRC3, p.26, 27.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Golden Gate Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 4 miles southwest of Kirkland Lake, north of Otto Lake, in southern Teck Township and northern Otto Township. Shafts in patented claim T2692 (old Lucky Cross Mine) in Teck Township and patented claim L9592 (old Swastika Mine) in Otto Township. Village of Swastika occupies part of the property. Latitude 48.11°, Longitude 80.10°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The property is underlain by Keewatin metavolcanics, Timiskaming metasediments (including tuffs), carbonates, various types of felsic intrusive rocks and later diabase and lamprophyre dikes. At the Golden Gate Mine, the veins lie in an area where many irregularly shaped bodies of syenite porphyry intrude the mafic metavolcanics. The veins trend approximately N53°E and dip steeply north. They have been cut off by a wide zone of faulting, known as the "A" Fault, which dips 45°S. The productive veins have not been found on the footwall side of the "A" Fault where another approximately parallel fault with a slightly steeper dip occurs. This fault, known as the Valley Fault, was mapped at surface in the northern part of the property as a strong shear zone with siliceous carbonate alteration located at or near the Timiskaming-Keewatin contact. The Valley Fault is the continuation of the Larder Lake "Break" west of the Amikoungami Creek crossfault. Underground diamond-drilling intersected green carbonates and quartz stringers with low gold values in the Valley

Fault.

Geological conditions at the Crescent Kirkland Mine (old Swastika Mine) are quite similar to those at the Golden Gate Mine. The rocks in the mine workings consist of Keewatin metavolcanics intruded by irregularly shaped bodies of diorite, granodiorite, and lamprophyre. Quartz veins intersect all these formations. The vein quartz is locally mineralized with pyrite and small amounts of galena and molybdenite. The entire vein zone has been badly disturbed by a system of post-ore faults; the strongest of these strike northeast and are close to vertical. Because gold values occur along certain of these structures, either some of the movement may have been pre-ore or some gold deposition occurred later than that of the main veins.

OWNERSHIP: Gateford Mines Limited.

HISTORY:

a) of the old Swastika (Crescent Kirkland) Mine:

1908-1912: Gold discovered in claim T9592. Three-compartment shaft (Golden Gate No.3) to 400 feet and approximately 3,000 feet of underground development on levels at 35, 100, 200, 300, and 400 feet. Two-stamp mill installed in 1909 and some ore milled; five-stamp mill installed in 1911 and 520 tons of ore milled; ten-stamp mill under construction in 1912 but probably never finished. All work by Swastika Mining Company Limited.

1936-1939: Underground workings dewatered, re-conditioned, and sampled, 1,512 feet of lateral development, 1,866 feet of underground diamond-drilling, 4,584 feet of surface diamond-drilling and 2,000 feet of surface trenching by Crescent Kirkland Gold Mines Limited.

1940-1942: Adit with 640 feet of lateral development in claims L9591 and L9759 and 993 feet of underground development on the 200- and 300-foot levels of the No.3 Shaft by Golden Gate Mining Company Limited. Some gold produced from ore removed through the adit. Underground operations suspended in April 1942.

1943-1944: Considerable surface diamond-drilling by Golden Gate Mining Company Limited.

1945: 434 feet of underground development on the 100-, 300-, and 400-foot levels and five surface diamond-drill holes (4,800 feet) by Golden Gate Mining Company Limited.

1946-1949: Golden Gate No.3 Shaft deepened to 676 feet with new levels at 525 and 650 feet, 6,477 feet of underground development and 164 underground diamond-drill holes (31,849 feet). Some ore milled in 1947. Work by Kirkland Golden Gate Mines Limited. Underground development to December 31, 1948 totalled 4,780 feet of drifting, 6,979 feet of crosscutting and 982 feet of raising. Mine closed in 1949.

b) of the old Lucky Cross Mine:

1910-1912: Gold discovered in claim T2692. Shaft (Golden Gate No.1), inclined 65°, to 200 feet with at least 800 feet of lateral development on the 100-foot level. Five-stamp mill erected and some gold recovered. Work by Lucky Cross Mines Limited.

1915-1916: Works dewatered and 200 feet of lateral development on the 100-foot level by Tretheway Silver-Cobalt Mining Company Limited.

1922-1923: Shaft deepened to 360 feet, lateral development on the 100-, 200-, and 350-foot levels, and diamond-drilling by Kirkland Gateway Gold Mines Limited.

1936-1942: No.1 Shaft dewatered and reconditioned, new three-compartment shaft (Golden Gate No.2) to 971 feet, 17,893 feet of underground development on eight levels, 33,552 feet of underground diamond-drilling, 10 surface diamond-drill holes (1,120 feet) and 1,500 feet of trenching. 100-ton mill installed in 1938 and operated from 1938 to 1941. Work by Golden Gate Mining Company Limited. Mine and mill closed in April 1942.

c) of work on both properties after consolidation:

1941-1942: 118 underground diamond-drill holes (14,242 feet), 13 surface diamond-drill holes (2,786 feet), and 500 feet of trenching by Golden Gate Mining Company Limited.

1950: Nine diamond-drill holes (5,658 feet) by Gateford Mines Limited.

1974: Geophysical surveys and diamond-drilling by Gateford Mines Limited.

1975: Surface work and diamond-drilling (10,548 feet) by Dickenson Mines Limited.

Please note: The above information was compiled from accounts given in ODM Annual Reports. The accuracy of some of the data, particularly for work performed prior to 1920, is suspect due to obvious discrepancies between references which could not be resolved.

PRODUCTION:

Year	Lucky Cross Section		Swastika Section	
	Value	Ore Milled	Value	Ore Milled
(dollars)		(tons)	(dollars)	(tons)
Prior to 1922	14,006	2,500	11,457	2,190
1933-1937	175,277	11,376	—	—
1939-1942	765,415	75,074	51,977	6,265
1943-1944	2,340	clean up	—	—
1947	—	—	42,507	6,288
TOTAL	957,038	88,950	105,941	14,734

Thus total production from the two properties was \$1,062,979 from 103,684 tons of ore. This agrees very well with the figures given for Kirkland Golden Gate and Swastika in ODM 1954, Vol.63, pt.1, p.13 and 14, respectively. It is not possible to give production in terms of the amounts of gold and silver, since most annual production was reported

only as a dollar figure. However, it is known that the average recovered grades for the Lucky Cross and Swastika sections were 0.31 and 0.21 ounce of Au per ton respectively, for an overall weighted average recovered grade of 0.29 ounce of Au per ton.

REFERENCES: Mineral Deposit Files, Geoscience Data Centre, Ontario Geological Survey, Toronto: Teck Township, Golden Gate, Harper (1974).

ODM 1948, Vol.57, pt.5, p.47-49 (Kirkland Golden Gate Mines Limited).

ODM 1954, Vol.63, pt.1, p.13 (Kirkland Golden Gate), 14 (Swastika).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirana Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 2½ miles north-northeast of Kirkland Lake, immediately north of Gami Lake, in the northeast corner of Teck Township and the northwest corner of Lebel Township. Patented claims L1686-L1688 and L1751 in Teck Township. Shaft in patented claim L1751. Latitude 48.19°, Longitude 80.02°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Most of the property is underlain by Kewatin mafic and intermediate metavolcanics intruded by dikes and small irregular bodies of quartz porphyry. Diorite occurs in the western part of the property.

The mineralization occurs along a contact, dipping 60-70°N, between quartz porphyry on the hanging wall and altered basalt on the footwall. The basalt near the contact is strongly altered to a greyish rock high in silica, calcite, and other carbonates. It is in this altered zone that streaks or bands of blackish material form the higher grade portion of the deposit. These streaks contain films of molybdenite, to which the dark colour is due, abundant pyrite, quartz and calcite, and occasional specks of visible gold. The high-grade streaks vary from a fraction of an inch to a foot in width; low gold values occur in the intervening silicified material.

ECONOMIC FEATURES: The narrow high-grade streaks or bands reportedly yielded values ranging from 0.97 ounce to 7.26 ounces of Au per ton; in some sections, a probable average of 0.73 to 0.87 ounce of Au per ton over widths of 7 to 10 feet was given. Later reports gave values of up to 0.66 ounce of Au per ton. Ore reserves were reported to be approximately 50,000 tons grading 0.4 ounce of Au per ton (Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake).

HISTORY: 1912-1916: Considerable diamond-drilling, numerous pits and shafts less than 50 feet deep, B Shaft to 55 feet, C Shaft to 100 feet, and inclined A Shaft to 340 feet with levels at 100, 270 and 340 feet and 1,200 feet of lateral development on the 100- and 270-foot levels. Work by La Belle Kirkland Mines Limited.

1936-1937: Underground workings dewatered, shaft reconditioned to the 270-foot level, and 820 feet of crosscutting on this level by Kirana Kirkland Gold Mines Limited.

REFERENCES: ODM 1916, Vol.25, pt.1, p.262 (La Belle Kirkland).

ODM 1921, Vol.30, pt.2, p.26 (Goodfish Lake).

ODM 1948, Vol.57, pt.5, p.44.

ODM 1964, MRC3, p.37, 38.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Teck Township, Loring (1936), Nelson (1947).

Kirkland Basin Prospect

MAIN METALS: Au

LOCATION: Approximately ¾ mile northwest of Kirkland Lake, in east-central Teck Township. Most of the property is occupied by the slimes basin which was once Kirkland Lake. Patented claims L1754, L2832, L3301 and L3442. Latitude 48.15°, Longitude 80.05°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Timiskaming conglomerate and tuff, trending east-northeast, were encountered in the crosscut driven into the property from the 3,075-foot level of the Lake Shore Mine. The metasediments are cut by dikes and sills of augite porphyry and by later quartz and feldspar porphyry. All other rocks are cut by a narrow north-trending diabase dike which is step-faulted.

Near the northern edge of the metasediments, the crosscut intersected a sheared and carbonatized zone containing quartz veins. A number of gold-bearing fractures were exposed, but because the gold values were erratic, no ore was developed.

HISTORY: Pre-1938: Considerable surface diamond-drilling by Kirkland Basin Gold Mines Limited (controlled by Kirkland Lake Gold Mining Company Limited).

1938-1940: Crosscut driven into the property from the Lake Shore 3,075-foot level. Total of 3,114 feet of lateral development and 12,049 feet of underground diamond-drilling on the property by Lake Shore Mines Limited.

REFERENCES: Canadian Mines Handbook 1940, p.110.

ODM 1948, Vol.57, pt.5, p.45.

ODM 1964, MRC3, p.39.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirkland Gateway Prospect

MAIN METALS: Au

LOCATION: Approximately 3¼ miles west-southwest of Kirkland Lake, immediately east and south of Elsie Lake, in southwest-central Teck Township. Diamond-drilling in patented claims L6822, T16509, and T16513-T16515. Latitude 48.12°, Longitude 80.11°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Most of the property is underlain by Timiskaming tuff, greywacke and conglomerate, which in places are intruded by narrow dikes of syenite porphyry, basic syenite, and lamprophyre. The northern part is occupied mainly by jasper-bearing conglomerate. The contact between this and the tuff to the south is indistinct due to banding of the two rock types.

The most interesting feature on the property is a fault which is apparently the westward continuation of the Kirkland Lake "Main Break". It is exposed in claim L6882, is marked by strong shearing and alteration, and consists of sparsely mineralized quartz in brecciated porphyry. Throughout most of the drilled area, sediments occur on both walls of the fault, but sometimes they are of different composition.

Five of the diamond-drill holes intersected the fault where it cuts altered conglomerate, contains quartz and carbonate stringers, and is mineralized with fine-grained pyrite. Gold values in this zone ranged from 0.04 ounce of Au per ton over 3.5 feet to 0.14 ounce of Au per ton over 1.2 feet. The drilling indicated a westward-plunging 250- to 300-foot wide gold-bearing zone.

HISTORY: 1937-1938: Surface work and 27 diamond-drill holes (15,281 feet) by Kirkland Gateway Gold Mines Limited.

REFERENCES: ODM 1948, Vol.57, pt.5, p.45-47.

ODM 1964, MRC3, p.39, 40.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirkland Gold Rand Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Immediately south of Kirkland Lake, in eastern Teck Township. Shaft in patented claim L2679. Latitude 48.12°, Longitude 80.03°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The majority of the property is underlain by Timiskaming metasediments (including tuffs) intruded by irregularly shaped bodies of syenite porphyry. The southeast corner is underlain by Keewatin metavolcanics intruded by syenite and syenite porphyry. The rocks in the vicinity of the mine workings are Timiskaming metasediments intruded by syenite porphyry.

The North, Middle, and South Harvey Faults, all trending N55-65°E, cross the property. Crossfaults, known to occur in the Wright-Hargreaves and Sylvanite Mines, apparently continue south through the claims.

Most of the known gold-bearing zones occur in the syenite porphyry. They consist of quartz stringers, striking east and dipping steeply north, in fracture zones. The gold appears to be associated with the pyrite and chalcopryite mineralization which accompanies the stringers.

ECONOMIC FEATURES: The company's annual report, dated February 6, 1947, stated that, assuming continuity of ore between levels, a minimum stoping width of 3 feet, and a dilution of 15 percent, there was "room to expect" approximately 45,000 tons of ore grading 0.22 ounce of Au per ton above the 800-foot level. The report emphasized that this estimate was only an expectation and that no ore had definitely been blocked out by raising.

OWNERSHIP: Consolidated Canorama Explorations Limited.

HISTORY: 1918-1922: No.1 Shaft to 450 feet, No.2 Shaft to 450 feet, and 5,395 feet of lateral development on levels at 100, 150, 300 and 450 feet. In 1921, 100-ton mill installed and 3,000 to 4,000 tons of ore milled by February 1922 when operations ceased. Work by Ontario Kirkland Gold Mines Limited.

1922-1924: Winze from 450-foot level to a depth of 550 feet with a new level at 550 feet, approximately 3,000 feet of lateral development on the 300-, 450-, and 550-foot levels, and diamond-drilling by Montreal-Ontario Mines Limited.

1924-1926: Shaft deepened to 800 feet with a new level at 800 feet and 3,030 feet of lateral development on the 550- and 800-foot levels by Kirkland Rand Limited.

1927-1929: Underground workings dewatered and 2,890 feet of underground development by Kirkland Premier Mines Limited before operations ceased in June 1929.

1936-1938: Shaft dewatered and reconditioned, winze from the 800-foot level to a depth of 1,436 feet with levels at 1,175, 1,300 and 1,425 feet, 1,938 feet of underground development, and 11,658 feet of underground diamond-drilling by Kirkland

Gold Rand Limited.

1946-1947: Mine dewatered to the 800-foot level, 1,420 feet of lateral development on the 675- and 800-foot levels, and 51 underground diamond-drill holes (5,582 feet) by Hudson-Rand Gold Mines Limited.

1951-1952: Under an agreement with Lake Shore Mines Limited, a crosscut from the Lake Shore 6,575-foot level was driven 902 feet into the property.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1922	483	143	6,496	0.07

REFERENCES: ODM 1948, Vol.57, pt.5, p.42-44 (Hudson-Rand Gold Mines Limited).

ODM 1964, MRC3, p.40,41.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirkland-Hudson Bay Prospect

MAIN METALS: Au

LOCATION: In the town of Kirkland Lake, in eastern Teck Township. Patented claims L1403, L1404, L2553, L2566, L2672, and L2757. Latitude 48.15°, Longitude 80.04°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The majority of the property is underlain by northeast-trending greywacke and conglomerate. A narrow band of Timiskaming tuff crosses the southeast corner. These rocks are cut by syenite porphyry dikes and, to the northwest (along the boundary with the Lake Shore property), by patches of augite syenite.

The Murdock Creek Fault, striking northeast and dipping northwest, crosses the southeast corner of the property, where it appears to form the footwall of the above-mentioned band of tuff. This fault offsets orebodies in the Wright-Hargreaves Mine. Several north-trending faults, known to offset veins in the producing mines, also cross the property.

A number of quartz veins carrying low gold values were encountered in crosscuts from the 1,000-, 2,700-, and 4,450-foot levels of the Lake Shore Mine and in underground diamond-drilling. A 6-foot wide quartz vein with some good values was explored by drifting on the 2,700-foot level.

HISTORY: 1926-1928: Surface trenching and diamond-drilling, and two long underground diamond-drill holes from a drift on the Lake Shore 1,000-foot level by Kirkland-Hudson Bay Gold Mines Limited. 1933: A crosscut from the east drift on the Lake Shore 2,700-foot level was extended 500-feet into

the property.

1938: Diamond-drill holes extended into the property from a crosscut on the Lake Shore 4,450-foot level.

REFERENCES: Northern Miner, May 17, 1956.

ODM 1928, Vol.37, pt.2, p.150.

ODM 1948, Vol.57, pt.5, p.49, 50.

ODM 1964, MRC3, p.41, 42.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Kirkland Lake Gold Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 1 mile west of Kirkland Lake, in central Teck Township. Patented claims L1236, L1643, L1850, L2604, L2644, and L2771. Main shaft in patented claim L1236. Latitude 48.15°, Longitude 80.06°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Timiskaming conglomerate, greywacke, and tuff are intruded by augite syenite, syenite, syenite porphyry, and quartz-feldspar porphyry of Algoman age, and by younger diabase. Ore is found in all formations except the diabase.

On surface, the Kirkland Lake "Main Break" follows the north contact of a sill-like mass of augite syenite which is bordered to the north and south by boulder conglomerate and tuff respectively. The augite syenite body widens somewhat with depth. In the upper part of the mine, it is intruded by a westward-pitching irregular pipe-like body of red syenite which outcrops on the Teck-Hughes property, crosses the Kirkland Lake Gold property and continues into the Macassa property at depth. This pitching body of syenite has been sliced in two along its long dimension by the "Main Break", the southern or hanging wall part having been thrust upward roughly 1,500 feet.

Syenite porphyry intrudes both the syenite and augite syenite and increases in amount with depth. In the lower part of the mine, conglomerate, greywacke, and tuff occur in a pitching anticlinal structure, the core of which consists of syenite porphyry and quartz-feldspar porphyry.

The most important structure on the property is the Kirkland Lake vein-fault or "Main Break". This fault crosses the entire property and has an average dip of 75°S from surface to the bottom of the workings. In the upper half of the mine, the productive veins were found chiefly within the zone of fracturing in the two faulted parts of the syenite body.

Below the 3,400-foot level, the veins occur in a different environment. The No.6 "Break" branches

from the main fault with a flatter dip, thus forming a split structure straddling the pitching anticlinal structure. Productive veins occurred in the folded tuff and sediments of this structure, and in the wedge-shaped block above which is bounded by the main fault and the No.6 "Break". The vein in the latter was not very productive; however, the No. 5 Vein, lying above the No.6 "Break" and more or less parallel to it, was an important source of ore.

There is little post-ore faulting in the upper part of the mine. At depth, some of the veins have been displaced a small amount.

OWNERSHIP: Lamaque Mining Company Limited (wholly owned subsidiary of Teck Corporation Limited).

HISTORY: 1911: Claim L1236 (what was to become the shaft claim) staked by C.A. McKane.

1912: Main break discovered on the claim.

1913: Two-compartment shaft (to become Kirkland Lake Gold No.1) to 80 feet by Kirkland Gold Mines Limited.

1915: No.1 Shaft deepened to 200 feet and level established at 175 feet by Beaver Consolidated Mines Limited (under option from Kirkland Lake Gold Mines Limited).

1916-1918: No.1 Shaft deepened to 700 feet, three-compartment No.2 (Main) Shaft to 500 feet with levels at 300, 400 and 500 feet (which are connected with No.1 Shaft), and at least 6,000 feet of underground development. 150-ton mill installed and production begun in 1918. Work by Kirkland Lake Gold Mining Company Limited (controlled by Beaver Consolidated Mines Limited).

1919-1960: No.1 Shaft, which eventually became inactive, reached a final depth of 894 feet. No.2 (Main) Shaft reached a final depth of 2,666 feet. Five winzes: No.1 from 2,475-foot level to 5,897 feet, No.2 from 4,900-foot level to 5,897 feet, No.3 from 3,600-foot level to 4,487 feet, "1,000" from 1,000-foot level to 1,134 feet and No.4 from 4,750 foot level to 6,003 feet. Underground development on 61 levels totalled 113,730 feet of drifting, 39,752 feet of crosscutting and 26,065 feet of raising. Except for 1925 when the property was optioned to Anglo-French Exploration Company Limited, the mine was in continuous production from 1919 until September 1960. Production reached a peak in 1940 with 137,986 tons of ore being processed. All work by Kirkland Lake Gold Mining Company Limited (name changed to Kirkland Minerals Corporation Limited in 1956).

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1916-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1960	1,172,955	130,579	3,141,051	0.37

REFERENCES: CIMM 1948, Structural Geology of Ca-

nadian Ore Deposits, Vol.1, p.644-653.
 ODM 1920, Vol.29, pt.4, p.26-29.
 ODM 1923, Vol.32, pt.4, p.29-31.
 ODM 1928, Vol.37, pt.2, p.93-98.
 ODM 1948, Vol.57, pt.5, p.133-140.
 ODM 1961, Vol.70, p.37-39 (Kirkland Minerals Corporation Limited).
 ODM 1964, GC11, p.25-29 (Kirkland Minerals Corporation Limited).
 ODM 1964, MRC3, p.42, 43.

Kirkland Townsite Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Located in the northeastern part of the town of Kirkland Lake, in eastern Teck Township. Patented claim L1438, L1635, and L2192. Shaft in patented claim L1635. Latitude 48.15°, Longitude 80.03°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The large mass of syenite porphyry extending east from the Lake Shore Mine through Wright-Hargreaves and Sylvanite Mines to the To-burn property also occupies most of the northern quarter of the Kirkland Townsite property. The remainder of the property is underlain by Timiskaming greywacke cut by dikes of the syenite porphyry. Several north-trending post-ore faults cross the property.

ECONOMIC FEATURES: A zone of alteration and mineralization with occasional low gold values was indicated by drilling. Production has been entirely from a subsidiary vein of the Wright-Hargreaves South Vein system where it crosses a corner of the Kirkland Townsite property between the 2,850- and 3,000-foot levels.

OWNERSHIP: K.T. Mining Limited.

HISTORY: 1923-1924: Two-compartment shaft to 317 feet with 1,175 feet of lateral development and two short winzes on levels at 150 and 300 feet by Anglo-Canadian Explorers Limited (under option from Kirkland Townsite Gold Mines Limited).

1926-1927: Shaft deepened to 695 feet, 436 feet of crosscutting to the south of the shaft on a new level at 675 feet, and considerable surface and underground diamond-drilling (including a 1,600-foot hole from surface and a long hole from a drift on the Wright-Hargreaves 1,250-foot level) by Kirkland Townsite Gold Mines Limited.

1931: Shaft enlarged from two to three compartments to a depth of 150 feet by Kirkland Townsite Mines Limited.

1956-1960: Agreement made with Wright-Hargreaves Mines Limited that any ore extending from their workings into the property would be mined by

them with 25 percent of the net profit going to Kirkland Townsite Mines Limited. In 1956, 112 feet of drifting from the Wright-Hargreaves 3,000-foot level and 4,776 feet of diamond-drilling carried out by Wright-Hargreaves Mines Limited.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1958-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1959	1,921	168	4,230	0.45

These figures may represent less than the total amount extracted from the Kirkland Townsite property, since production figures have been included with those of the Wright-Hargreaves Mine.

REFERENCES: Northern Miner, February 9, 1956, April 14, 1960.

ODM 1928, Vol.37, pt.2, p.149, 150.

ODM 1948, Vol.57, pt.5, p.50.

ODM 1964, MRC3, p.44.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Lake Shore Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Immediately west of Kirkland Lake, in west-central Teck Township. Patented claims L1557, L2606, L2645, L16633-L16635, and L16726 and patented fractional claims L2242, L2243, and L2605. No.1 Shaft in patented claim L1557 and No.3 Shaft in patented claim L2606. Latitude 48.15°, Longitude 80.05°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Shafts No.1 and No.3 were sunk at the west end of the main stock of Algoman syenite porphyry in the Kirkland Lake camp. This intrusive body trends N65°E, or approximately parallel to the vein system, and dips steeply south. Because the south contact has a shallower dip than the north boundary, the body widens with depth. West of the shaft section, it interfingers with augite syenite and syenite and has an almost vertical plunge.

This area of complexly intermingled intrusives has been highly productive ground. The syenite porphyry is the predominant host rock of the veins in the mine and has replaced all other rock types in the eastern half of the mine and on the lower levels. Quartz-feldspar porphyry is found as small irregular bodies within the syenite porphyry. A diabase dike occurs near the west boundary of the property and cuts all other rock types, as well as veins and ore-bodies. This dike is nearly vertical and strikes roughly normal to the veins. The main syenite porphyry intrusive and the interfingered intrusives to the west are flanked by Timiskaming metasediments and tuffs. The North (No.2) Vein Zone, which lies along the

main Kirkland Lake Fault, is the strongest and most productive structure in the mine. The fracture pattern associated with it includes the less continuous South (No.1) Vein Zone and various diagonal vein fractures lying between them. This broad zone of fracturing, located largely on the Lake Shore property, is the result of the transfer of the main faulting movement from the North Vein in the western part of the camp to the South Vein in the eastern part. The productive veins occur along the fracture system described above and are found in all rock types within the fractured zone except the diabase. The veins range in size from narrow high-grade quartz stringers to quartz stockworks and quartz breccia bodies having widths up to 70 feet.

Post-ore faults are well-defined planes of movement and may be classified as strike faults, oblique faults, and cross faults. The most important post-ore fault is a steeply dipping cross fault, known as the Lake Shore Fault, occurring near the east end of the mine. At a depth of 3,000 feet, this fault splits into two branches. The effect of movement along these is that the South (No.1) Vein, which was faulted from Lake Shore ground into the Wright-Hargreaves property east of the Lake Shore Fault, is, below the junction with the L Fault, retained on Lake Shore property several hundred feet farther east.

ECONOMIC FEATURES: An estimated 330,000 tons of ore averaging 0.42 ounce of Au per ton remain in the old workings above the 4,000-foot level (Northern Miner, July 11, 1974). Diamond-drilling indicates ore grade values to a depth of 400-feet below the 8,075-foot level (bottom level of the mine), but economic considerations have precluded further development. There are 3,302,460 tons of tailings slimes averaging 0.072 ounce of Au per ton (Northern Miner, May 10, 1973).

OWNERSHIP: Lake Shore Mines Limited.

HISTORY: 1911: Gold discovered in claim L1557 by Harry Oakes.

1913: The adjoining claim to the west (L16635) purchased by Harry Oakes.

1914-1918: No.1 Shaft to 400 feet on the South (No.1) Vein Zone and 7,464 feet of underground development on levels at 100, 200, 300, and 400 feet. A 65-ton mill was installed and milling begun in 1918. All work by Lake Shore Gold Mines Limited.

1919-1965: The mine was eventually serviced by four surface shafts and three internal shafts. The original No.1 Shaft and its extension were both inactive during the latter years of operations. The No.4 Shaft, collared at 4,325-foot level, took the workings to a depth of 8,150 feet. Underground development was carried out on 57 levels and, during the life of the mine, totalled: 279,238 feet

of drifting, 108,317 feet of crosscutting, and 154,547 feet of raising. Milling capacity was gradually increased to a maximum of 2,400 tons per day and production was continuous until the mine closed in July 1965. Ore from the Wright-Hargreaves Mine was treated at the Lake Shore mill from 1957 until the closure of that mine in March 1965.

1965-1968: A small amount of gold was produced through mill cleanup in 1965. A feasibility study, carried out during the summer of 1965, indicated that reprocessing of the mine tailings would be feasible at a rate of 1,500 to 2,000 tons per day. Reprocessing was carried out during a 5-month period from 1966 to 1968, when it was decided that the price of gold could not justify the cost of the operation.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1918-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1965	8,499,199	1,955,132	16,620,903	0.51

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.644-653.

Northern Miner, May 10, 1973; July 11, 1974.

ODM 1920, Vol.29, pt.4, p.33-36.

ODM 1928, Vol.37, pt.2, p.112-125.

ODM 1948, Vol.57, pt.5, p.150-160.

ODM 1964, GC11, p.33-41.

ODM 1964, MRC3, p.47-49.

ODM 1965, Vol.75, p.35-37.

ODM 1968, Vol.78, p.21.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Macassa Mine (Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 1½ miles west of Kirkland Lake, in central Teck Township. No.1 Shaft in patented claim L2837; No.2 Shaft in patented claim L4186; Elliot Shaft in claim L1617. Latitude 48.14°, Longitude 80.07°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The property is underlain by Timiskaming metasediments (including tuffs) and a variety of intrusive rocks. The predominant metasediment is boulder and pebble conglomerate. Most of the mine workings lie within augite syenite, syenite, syenite porphyry, and diabase intrusive rocks. The augite syenite forms an elongated tabular mass of irregular outline which parallels the trend of the metasediments (N60-80°E) and dips steeply south. It is the most widespread of the intrusive rock types and is itself intruded by a westward-pitching pipe-like mass of syenite. The Kirkland Lake "Main Break" cuts the augite syenite along its length, with the

southern part having been thrust upward about 1,500 feet. The syenite porphyry occurs as dikes cutting the syenite and augite syenite. Only one narrow diabase dike has been found in the mine workings. It cuts all other rock formations.

The most important structural control in the mine is the Kirkland Lake Fault, or "Main Break", which has an average dip of 80°S to a depth of 3,500 feet. Below this depth, the dip begins to decrease. Most of the early ore was found along the "Main Break" and in hanging wall subsidiaries. In recent years, the majority of the mill feed came from veins on and adjacent to an important footwall subsidiary of the "Main Break" at depth. This structure is known as the "04 Break". It is being mined, along with its subsidiaries below the 4,625-foot level, in the vicinity of the No.2 winze. Some of its veins extend into the Tegen property to the west.

The productive veins are always quartz-filled fractures. They occur in every type of country rock in the zones of fracturing with the exception of the diabase. In longitudinal section, the upper extremity of the ore bodies in the mine rakes to the west at about 40°, and no ore has been found above the 1,300-foot horizon. The rake roughly parallels the margin of the main intrusive body and may have been controlled by this structural feature. The displacement of veins, ore shoots, and structures by post-ore faulting is small.

Vein filling classed as ore consists of quartz of different generations, inclusions of wall rock, some carbonates, and minor sulphides, tellurides and native gold. The principal sulphide is finely disseminated pyrite which averages less than 2 percent of the ore. Sericite and chlorite occur in the ore and wall rocks, and molybdenite is largely confined to slips in the fractured quartz. Gold was deposited very late in the sequence of mineralization and is mainly confined along fractures in the quartz, although it also occurs in the pyrite and tellurides. The most common tellurides are altaite and the gold telluride, calaverite.

ECONOMIC FEATURES: As of December 31, 1976, ore reserves stood at 270,530 tons averaging 0.561 ounce of Au per ton (Canadian Mines Handbook 1977-78, p.323 (Willroy Mines Limited)).

OWNERSHIP: Willroy Mines Limited.

HISTORY: 1911: Easternmost claims of the property (L1616 and L1617) staked by Dave Elliot.

1916-1919: Elliot Shaft to 523 feet and 1,369 feet of lateral development on levels at 100, 200, 300, 400, and 500 feet by Elliot-Kirkland Gold Mines Limited.

1926-1927: Elliot-Kirkland property and additional claims to the west taken over, 4,833 feet of lateral development on the 300-, 400-, and 500-foot levels,

one underground diamond-drill hole (767 feet) and 14 surface diamond-drill holes (7,014 feet) by Macassa Mines Limited.

1931-1933: Three-compartment Macassa No.1 Shaft to 2,500 feet, a long drift connecting this shaft with the Kirkland Lake Gold 2,500-foot level, 4,504 feet of underground development on levels at 500, 1,000, 1,750, 2,000 and 2,500 feet and sublevels at 2,000, 2,175 and 2,325 feet, and 941 feet of diamond-drilling. In 1933, a 200-ton mill was completed and production started. All work by Macassa Mines Limited.

1934-present: The mine is serviced by two shafts and two winzes (the Elliot Shaft is no longer used). The No.2 winze, collared at the 4,625-foot level, has taken the workings to the 6,900-foot level. Total underground development to the end of 1976, below the 750-foot level, is as follows: 209,301 feet of drifting, 58,759 feet of crosscutting, and 45,559 feet of raising. Milling capacity was increased from 200 tons per day in 1933 to 500 tons per day in 1952. In 1976, an average of 250 tons of ore per day was being milled. Production has been continuous from 1933 to date. Under a 1971 agreement, Macassa mines and mills ore from the Tegen Goldfields Limited property (immediately to the west) on a royalty basis. From 1970 to 1976, Upper Canada Resources Limited managed the operation in exchange for 50 percent of the profits. When Willroy Mines Limited assumed this role in 1976, exploration and development were accelerated.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1933-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1976	2,201,432	5,339,753	5,005,993	0.44

These figures include production from the Tegen Mine which began in 1971.

In 1976, the mill was processing an average of 250 tons of ore per day.

REFERENCES: Canadian Mines Handbook 1977-78, p.322, 323 (Willroy Mines Limited).

ODM 1920, Vol.29, pt.4, p.26 (Elliot Kirkland).

ODM 1928, Vol.37, pt.2, p.147, 148.

ODM 1948, Vol.57, pt.5, p.125-132.

ODM 1964, GC11, p.15-25.

ODM 1964, MRC3, p.52, 53.

Sylvanite Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Immediately north of the town of Kirkland Lake, in eastern Teck Township. No.2 (Main) Shaft in patented claim L2100; No.4 Shaft in patented claim L2101 (claim L11398 on ODM Map 1945-1). Latitude 48.15°, Longitude 80.02°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The southern part of the property is underlain by part of the main Algoman syenite porphyry stock in the Kirkland Lake camp. Flanking the main intrusive body to the north is a complex mixture of Timiskaming metasediments (mainly greywacke and conglomerate) and intrusive rocks. These northern intrusions consist of augite syenite and syenite porphyry, both of which form dikes trending N20°E or approximately parallel to the long axis of the main porphyry stock.

The strongest and most persistent break in the mine is the zone of maximum displacement of the Kirkland Lake Fault which occurs near the south side of a 1,500-foot wide zone of pre-ore faulting and fracturing. Most of the fractures dip south, some steeply and others at flatter angles. Veins are found in all rock formations within the fractured zone and pass from one rock type into another without any apparent change in strength. The ore shoots were not continuous over great distances, but were a series of bodies having irregular outlines. The Kirkland Lake Fault dips south in the upper part of the mine but swings through the vertical and continues with a northerly dip below the 3,000-foot level. The rocks on the south side of the fault have been thrust upwards with respect to those on the north side. Several post-ore strike faults in the mine dip to the north. The general direction of movement along this set of faults is north side up. Crossfaults, the most important of which are the K and Sylvanite Faults, displace the strike faults.

OWNERSHIP: J.H. Botsford.

HISTORY: Pre-1913: Considerable work on the Wright and Robbins claims without any very encouraging results.

1913-1914: Trenching and two prospect shafts (40 and 50 feet) by Sylvanite Gold Mines Limited.

1916-1917: Shaft (possibly Sylvanite No.2) is 120 feet and 169 feet of lateral development on the 100-foot level by Sylvanite Gold Mines Limited.

1922-1927: No.2 Shaft to 1,526 feet, No.3 Shaft to 118 feet, 29,025 feet of underground development on levels at 129, 260, 393, 500, 750, 875, 1,000, 1,250, 1,375 and 1,500 feet, and at least 9,000 feet of diamond-drilling. 200-ton mill put into operation in May 1927. All work by Sylvanite Gold Mines Limited.

1928-1961: The mine was serviced by four shafts (the Nos.1 and 3 Shafts were inactive when the mine closed), and by a winze from the 3,150-foot level which took the works to a depth of 5,550 feet. Underground development was carried out on 41 levels and, during the life of the mine, totalled: 233,104 feet of drifting, 70,648 feet of crosscutting, and 74,718 feet of raising. Production

was continuous from 1927 until the mill closed down in September 1961. During the last 7½ months of operation, the mill handled an average of 446 tons of ore per day, compared to a maximum of 600 tons per day in 1940.

1964: All interests sold, assets distributed to shareholders, and charter surrendered.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1927-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1961	1,667,520	337,956	5,049,536	0.33

REFERENCES: Canadian Mines Handbook 1961, p.234.

CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.644-653.

ODM 1928, Vol.37, pt.2, p.134-140.

ODM 1948, Vol.57, pt.5, p.177-183.

ODM 1963, Vol.71, p.62-64.

ODM 1964, MRC3, p.65, 66.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Teck-Hughes Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately ¾ mile west of Kirkland Lake, in east-central Teck Township. Central and Orr Shafts in patented claim T16626; No.1 and No.3 Shafts in patented claim L1238; South Shaft in patented claim T16625. Latitude 48.15°, Longitude 80.05°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The property is underlain by Timiskaming metasediments (including tuffs) intermingled with elongate bodies of Algoman intrusive rocks. North of the "Main Break" at surface, these rocks strike N65°E or roughly parallel to the break; south of fault system they trend approximately N80°E. Most of the mine workings are in the intrusive rocks.

The main intrusive body is an irregularly shaped mass, sill-like in outline and consisting of augite syenite intermingled with syenite and syenite porphyry. The syenite is confined to the upper levels and is part of the faulted westward-pitching pipe-like body that crosses the neighbouring Kirkland Lake Gold and Macassa properties. The augite syenite and syenite porphyry are intricately inter-fingered throughout the entire mine. Because the proportion of syenite porphyry to augite syenite in the vicinity of the "Main Break" increases with depth, most of the workings in the lower half of the mine are in syenite porphyry. A diabase dike, approximately 80 feet in width, strikes north across the property and dips 75°W. It cuts all the rock types, veins, and ore bodies, but has been offset

by later fault movements on the "Main Break" and subsidiary faults.

The most important structure in the mine is the Kirkland Lake Fault or "Main Break", which dips 75-80°S. The bulk of the gold production has come from the No.3 Vein system associated with this fault. The Teck-Hughes veins generally contain quartz, although the amount may vary greatly.

Most of the subsidiary veins branch off the hanging wall of the "Main Break" and have a flatter dip than that structure. An exception is the No.1 Vein, discovered by Sandy McIntyre. It appears in outcrops about 100 feet north of the main fault and joins it at depth. Approximately 600 feet to the south, a parallel structure occurs; it is called the No.4 Break and is generally considered to be the westerly extension of the South (No.1) Vein from the Lake Shore Mine, but it has produced no ore in the Teck-Hughes Mine. Another prominent structure is the No.6 Break in the west end of the mine. This is an extension of a structure of the same name from the Kirkland Lake Gold Mine.

The veins and ore bodies are not greatly disturbed by post-ore movement. Where displacement occurs, the amount is never more than 45 feet.

OWNERSHIP: Lamaque Mining Company Limited (wholly owned subsidiary of Teck Corporation Limited).

HISTORY: 1911: Three claims (T16624-T16626), which were to form the most important part of the mine, staked by Stephen Orr. Three neighbouring claims (L1238-L1240) staked by John Reamsbottom.

1912: Gold discovered in claim L1238 by James A. Hughes and Sandy McIntyre. Prospecting, surface trenching, and 35-foot shaft by Teck-Hughes Gold Mines Limited.

1913: No.1 Shaft to 212 feet with 203 feet of drifting on the 200-foot level and No.2 Shaft to 75 feet with 500 feet of lateral development on the 75-foot level by Teck-Hughes Gold Mines Limited.

1914-1915: No.3 Shaft to 124 feet, 85-foot winze from second level, and 1,360 feet of lateral development in No.1 and No.3 Shafts by Nipissing Mining Company (under option from Teck-Hughes Gold Mines Limited).

1915-1917: Underground workings dewatered, No.3 Shaft to 400 feet with winze to 600 feet, and 1,804 feet of lateral development. In 1917, 50-ton mill installed and milling begun. Work by Teck-Hughes Gold Mines Limited.

1918-1968: The mine was serviced by three shafts (the No.1 Shaft having been inactive for many years) and seven winzes, only two of which were active in 1968. The inclined No.3 winze took the workings to a depth of 6,148 feet. Underground development was carried out on 50 levels and, during the life of

the mine, totalled: 148,007 feet of drifting, 58,584 feet of crosscutting, and 95,216 feet of raising. Production was continuous from 1917 to 1968 and attained a maximum in 1932 with an average of 1,300 tons per day being milled. Operations, on a salvage basis since 1951, ceased in 1968.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1917-				
1968	3,688,664	501,657	9,686,825	0.38

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.644-653.

ODM 1920, Vol.29, pt.4, p.29-32 (Orr, Teck Hughes).

ODM 1923, Vol.32, pt.4, p.31-34.

ODM 1928, Vol.37, pt.2, p.98-111.

ODM 1948, Vol.57, pt.5, p.141-149.

ODM 1964, GC11, p.29-32.

ODM 1964, MRC3, p.66, 67.

ODM 1970, Vol.78, p.33-35.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Tegren Mine (Producer)

MAIN METALS: Au, Ag

LOCATION: Approximately 2 miles west-southwest of Kirkland Lake, in central Teck Township. Underground workings extend into patented claim L2831 from Macassa Mine to the east. Latitude 48.14°, Longitude 80.09°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The property is underlain by Timiskaming metasediments (mainly conglomerate and tuff) intruded by numerous dikes and irregularly shaped bodies of syenite porphyry and basic syenite. The Kirkland Lake "Main Break" has been traced from the Macassa boundary west-southwest across the property to Amikougami Creek, where it is offset southward by a cross fault. A parallel zone of faulting has been found in claim L2762, 500 feet to the north of the "Main Break".

The gold-bearing quartz veins which have been mined are the westerly extension of the ore structures on the adjoining Macassa property. On the Tegren property they are found mainly below the 5,450-foot level.

ECONOMIC FEATURES: In 1972, ore reserves totalled 56,000 tons averaging 0.78 ounce of Au per ton (Canadian Mines Handbook 1972-73, p.318 (Teck Corporation Ltd., Tegren Div.)).

OWNERSHIP: Tegren Goldfields Limited (owned by Teck Corporation Limited).

HISTORY: Pre-1945: Claims acquired in the early days of the camp by Harry Oakes. Tegren Gold Mines

Limited, a private company, was formed by Oakes to take over and develop the claims. Surface prospecting and shallow diamond-drilling along the "Main Break".

1964: Geological and magnetic surveys, and nine diamond-drill holes (8,867 feet) in preparation for a program of underground development from the Macassa workings. This was the result of an agreement between the Oakes Estate and Teck Corporation Limited under which Teck would finance the work.

1965-1967: Underground development totalling 3,800 feet was carried out on the property from the 4,750-, 5,025-, 5,600-, and 6,025-foot levels of the Macassa Mine. Also, 24,000 feet of underground diamond-drilling was done on these same levels. The amount of ore outlined, 56,000 tons averaging 0.78 ounce of Au per ton, was insufficient to justify the sinking of a new shaft.

1971: Agreement reached between the Oakes Estate, Teck Corporation Limited (through Tegren Goldfields Limited), and Upper Canada Mines Limited (name changed to Upper Canada Resources Limited in 1972) under which Upper Canada contracted to operate the Macassa Mine and, as part of the operation, to mine the ore on the Tegren property under a ten-year lease. Tegren was to receive a royalty of 2 dollars per ton on the first 50,000 tons of ore, nil on the next 50,000 tons, and 1 dollar per ton on all ore over the amount of 100,000 tons (Canadian Mines Handbook 1973-1974, p.328 (Teck Corporation Limited, Tegren Div.)).

PRODUCTION: Figures are included with those for the Macassa Mine.

REFERENCES: Canadian Mines Handbook 1972-73, p.318 (Teck Corporation Ltd., Tegren div.); 1973-1974, p.328 (Teck Corporation Ltd., Tegren Div.). DEMR Ottawa, Mineral Development Sector Files, Au 19, 42A/1, Tegren, August 1973. Northern Miner, August 30, 1973, p.22. ODM 1948, Vol.57, pt.5, p.52. ODM 1964, MRC3, p.67,68. Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Toburn Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Immediately east of Kirkland Lake, in eastern Teck Township and western Lebel Township. No.3 (main) Shaft in patented claim L1823. Latitude 48.16°, Longitude 80.00°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The Toburn Mine is the easternmost of the

seven contiguous mining properties along the "Main Break" at Kirkland Lake. It lies at the eastern end of the main Algoman syenite porphyry stock in the Kirkland Lake camp. The porphyry intrudes Timiskaming metasediments (including tuffs, which predominate toward the east). Other intrusives include dike-like bodies of augite syenite and quartz-feldspar porphyry. A few small minette dikes occur in the northwest corner of the property, and a near vertical diabase dike, about 8 feet wide, trends north through the mine workings.

The property lies at the eastern end of the Kirkland Lake vein-fault and vein-fracture system. On passing eastward through the main syenite porphyry stock, the displacement on the various branches of the Kirkland Lake Fault either decreases in magnitude or dies out completely. The south branch of the Kirkland Lake "Main Break" is the strongest and most persistent structure in the Toburn Mine. It is locally called the South Vein. It dips steeply south and the south side has been thrust vertically upward for a distance of approximately 350 feet. This fault is on the hanging wall side of a fracture system, up to 1,500 feet in width, which extends slightly north of east across the western part of the property. This fracture system contains most of the gold-bearing veins. It has an overall southerly dip, but individual breaks may range from vertical to almost horizontal. The ore shoots were numerous but generally small. The widths of the gold-bearing veins were generally less than 8 inches. The ore bodies in the porphyry were, on the whole, wider than those in the sediments. Several post-ore strike faults occur and there are two main post-ore cross faults, known as the Dike and O'Connell Lake Faults.

OWNERSHIP: Arcadia Minerals Limited.

HISTORY:

a) of the Tough-Oakes Mine:

1912: "A" Shaft (inclined) to 115 feet on No.2 Vein and 5-stamp mill installed by C.A. Foster. 73.85 tons of ore from the shaft and an open cut yielded 1,637 ounces of Au and 2,300 ounces of Ag. This represents the first production in the Kirkland Lake camp.

1913-1919: "A" Shaft deepened to 322 feet with levels at 85, 171, 247, and 319 feet. "B" Shaft to 666 feet. Approximately 16,000 feet of underground development from the two shafts. In 1914-1915, 3,706 tons of ore yielded 5,524 ounces of Au and 6,634 ounces of Ag. New mill installed in 1915 and production continued until July 1918 when mine closed down. Mining resumed from March to June, 1919. All work by Tough-Oakes Gold Mines Limited (controlled by Kirkland Lake Proprietary Limited). Negotiations for amalgama-

tion with Burnside begun in 1919.

1921-1922: Workings dewatered, at least 1,320 feet of underground development, surface plant reconditioned, and 125-ton mill installed by Tough-Oakes Gold Mines Limited (owned by Kirkland Lake Proprietary (1919) Limited). All ore handled through Burnside No.3 Shaft. Some production in 1922.

b) of the Burnside Mine:

Pre-1914: No.1 Shaft to 70 feet, No.2 Shaft to 90 feet with 190 feet of lateral development on the 75-foot level, and 500 feet of diamond-drilling by Burnside Gold Mines Limited (controlled by Kirkland Lake Proprietary Limited).

1914: Surface work by Burnside Gold Mines Limited.

1917-1918: No.2 Shaft dewatered and deepened to 255 feet with 555 feet of lateral development on levels at 90 and 152 feet. No.3 Shaft to 337 feet with 398 feet of lateral development on levels at 120, 220 and 320 feet. Mill installed but no production recorded. Work by Aladdin Cobalt Mining Company (under option from Burnside Gold Mines Limited).

c) of the Tough-Oakes Burnside or Toburn Mine (an amalgamation of the Tough-Oakes and Burnside properties):

1923-1928: Burnside No.3 Shaft deepened to 1,025 feet with levels at 667, 792, 893 and 1,018 feet. Interior shaft from the 1,090-foot level to a depth of 1,900 feet with six levels. Levels at 1,225 and 1,345 feet opened up by an inclined winze. Underground development and diamond-drilling totalled 30,336 and 5,620 feet respectively. Production continuous from 1924 and 1928. Work by Tough-Oakes Burnside Gold Mines Limited.

1931-1953: During this period the mine was serviced by two surface shafts, the Tough-Oakes "A" Shaft and Burnside No.3 Shaft, and a subshaft which was collared on the 1,090-foot level and took the workings to a depth of 2,475 feet. Underground development was carried out on 23 levels and, during the life of the mine, totalled: 52,799 feet of drifting, 22,984 feet of crosscutting, and 16,624 feet of raising. In addition to this, long drifts and crosscuts were extended into neighbouring properties in which Toburn held an interest. Production began in 1932 and was continuous until the mine closed in 1953.

1956-1957: Arcadia Nickel Corporation Limited, the owner of the property, arranged to have Sylvanite Gold Mines Limited drift into the property from the Sylvanite 5,500 foot level.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1912-1918,				
1922,	570,659	135,238	1,186,316	0.48
1924-1928,				
1932-1953				

1912-1918,

1922, 570,659 135,238 1,186,316 0.48

1924-1928,

1932-1953

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.644-653.

GSC 1936, Memoir 192, p.54,55.

ODM 1948, Vol.57, pt.5, p.184-188.

ODM 1954, Vol.63, pt.2, p.96, 97.

ODM 1964, GC11, p.48.

ODM 1964, MRC3, p.69, 70.

Ventura Kirkland Prospect

MAIN METALS: Au

LOCATION: Approximately 3½ miles southwest of Kirkland Lake, immediately northeast of Swastika, in southern Teck Township. Claims L4485, L4486, L6833, L6866, and L16031. Latitude 48.12°, Longitude 80.10°.

Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: The majority of the property is underlain by Timiskaming metasediments (including tuffs) intruded by large bodies of syenite porphyry and augite porphyrite, and cut by a northeast-trending diabase dike. Keewatin andesite occurs in the southeastern corner of the property.

The fault in the Sahtram underground workings extends southwest across the property and then swings west along the Blanche River. The porphyry adjacent to the fault is altered and sheared. Narrow quartz veins are found in the altered porphyry and adjacent sediments. These carry small quantities of pyrite, chalcopyrite, molybdenite, galena, and traces of gold. Another strong southwest-trending fault, intersected by drilling beneath Amikougami Creek in claim L4486, is considered to be part of the Larder Lake Fault which follows the southern margin of the band of Timiskaming rocks. A fault found near the bottom of the hole is probably the north-trending Amikougami Creek crossfault.

ECONOMIC FEATURES: According to a report on the property by R.J. Henry in 1928, the highest reliable assay obtained from surface sampling was 0.1 ounce of Au per ton. The drilling operations did not yield any encouraging gold values.

HISTORY: Circa 1928: Following a gold discovery on the neighbouring Trout Creek (Sahtram) property, surface exploration carried out and eight diamond-drill holes put down by Ventura Kirkland Mines Limited.

REFERENCES: ODM 1948, Vol.57, pt.5, p.52.

ODM 1964, MRC3, p.71, 72.

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake.

Wright-Hargreaves Mine (Past Producer)

MAIN METALS: Au, Ag

LOCATION: Immediately north of Kirkland Lake, in eastern Teck Township. Patented claims L1829-L1831 and L2103. No.4 (main) Shaft in patented claim L1829. Latitude 48.15°, Longitude 80.04°. Map reference: ODM 1945-1, Township of Teck.

GEOLOGY: Almost all of the three claims straddling the "Main Break" is underlain by the main Algomian syenite porphyry stock in the camp. Other rock types encountered underground include Timiskaming conglomerate and greywacke, and Algomian augite syenite.

The Kirkland Lake Fault or "Main Break" trends N67°E through the centre of the property. It bisects the syenite porphyry stock along its long axis and, in section, parallels the north contact of the stock. In spite of a southerly dip in part of its downward course, post-ore faults have moved the structure northward, so that at depth the fault is still almost vertically beneath its position on surface. Other ore-bearing structures are found not only in faults that have branched off the "Main Break", but also in parallel faults and tension fractures. Fissure-filling gold-bearing quartz veins are the most common type of vein; the larger ore bodies on the various faults are of this type. Lodes, stockworks, and breccia and gash veins are found on subsidiary structures.

Numerous post-ore faults occur on the property. The strike and transverse faults have different characteristics. Most of the strike faults dip north, exhibit shearing, and contain late quartz and calcite. On the transverse faults, brecciation rather than shearing is more common and gouge is often present; these faults rarely contain quartz and calcite. The north-northeast-trending Lake Shore Fault (a transverse fault), which enters the property in the southwest corner, is the most important post-ore fault.

Although much ore was mined from the Kirkland Lake Fault, the most productive structure has been the North Vein, which branches off the north side of the main fault just west of the Wright-Hargreaves property.

OWNERSHIP: Wright-Hargreaves Mines Limited.

HISTORY: 1911: First discovery of gold in the Kirkland Lake camp made in claim L1830 by W.H. Wright.

1913: Shaft (Wright-Hargreaves No.1) to 85 feet with 110 feet of drifting on the 75-foot level and another shaft to 20 feet by "Cartwright interests" (ODM 1914, Vol.23, pt.1, p.169).

1916-1921: No.1 Shaft deepened to 400 feet, No.2 Shaft to 320 feet, No.3 Shaft to 425 feet, and a

total of 3,900 feet of lateral development. In 1921, mill completed and milling started at 175 tons per day. Work by Wright-Hargreaves Mines Limited. 1922-1965: Mine serviced by four shafts and two winzes. The No.4 Shaft, started in 1931, became the main production shaft and eventually reached a depth of 4,089 feet. The No.6 Winze, collared on the 7,050 foot level, took the workings to a depth of 8,100 feet (and continued to 8,222 feet). Underground development was carried out on 57 levels and, during the life of the mine, totalled: 257,623 feet of drifting, 92,200 feet of crosscutting, and 82,669 feet of raising. Mill capacity reached a maximum of 1,200-1,250 tons per day in 1940. The mill closed in 1957 and from that time until mining operations ceased in 1965, ore was shipped to the Lake Shore mill.

PRODUCTION:

Year	Gold	Silver	Ore Milled	Recovered Grade
1921-	(ounces)	(ounces)	(tons)	(ounce of Au per ton)
1965	4,817,680	853,643	9,734,402	0.49

REFERENCES: CIMM 1948, Structural Geology of Canadian Ore Deposits, Vol.1, p.644-653.

ODM 1923, Vol.32, pt.4, p.39-41.

ODM 1928, Vol.37, pt.2, p.125-133.

ODM 1948, Vol.57, pt.5, p.161-176.

ODM 1964, GC11, p.41-44.

ODM 1964, MRC3, p.73, 74.

ODM 1965, Vol.75, p.63-65.

TUDHOPE TOWNSHIP

(NTS 41P/9E)

Trihope Prospect

MAIN METALS: Au

LOCATION: West of Honeymoon Lake, in lots 1-3, concession IV, Tudhope Township. Latitude 47.72°, Longitude 80.15°.

Map reference: ODM 50j, Bryce-Robillard Area.

GEOLOGY: Keewatin mafic metavolcanics, including pillow lavas, are intruded by dikes of feldspar porphyry, carbonatized porphyry, syenite, lamprophyre, and Nipissing Diabase.

In the S½, lot 2, concession IV, a quartz porphyry dike is cut by a quartz vein which trends N10°W and is 120 feet long and 6 inches wide. Sampling yielded moderate gold values over narrow widths. In the N½, lots 1 and 2, concession IV, massive dioritic flows are cut by a narrow shear zone which trends N60°E and has been traced for at least 1,000 feet. The zone is occupied by a 3- to 12-inch wide quartz-carbonate vein mineralized with pyrite. A sample of massive pyrite from the vein assayed 3.02 ounces of Au per ton.

Assays of samples from various diamond-drilling programs yielded the following results: in 1962, trace to 0.43 ounce of Au per ton and trace to 0.30 ounce of Ag per ton; in 1967, trace Au and 0.06 percent Cu; in 1973, trace to 0.02 ounce of Au per ton.

HISTORY: Circa 1940: Trenching and diamond-drilling (amount unknown) by W.A. Taylor, Paul Des Ormeaux, Stuart Miskimins and A. Chalut.

1954: Three diamond-drill holes (footage unknown) by Mayer Mining Company Limited.

1955-1956: 23 diamond-drill holes (1,669 feet) by Red Lake Mines Limited.

1962: Six diamond-drill holes (1,697 feet) by Fatima Mining Company Limited.

1963: Four diamond-drill holes (footage unknown) by Mayer Mining Company Limited.

1967: Geological, magnetic and electromagnetic surveys, and one diamond-drill hole by Trihope Mining and Exploration Limited.

1972-1973: Soil geochemistry and electromagnetic surveys, and two diamond-drill holes (438 feet) by Consolidated Boeing Holdings and Resources Limited.

REFERENCES: ODM 1941, Vol.50, pt.4, p.29 (Des Ormeaux-Miskimins-Chalut Group) and 43 (W.A. Taylor Group).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Tudhope Township, Gledhill (1973), McConnell (1962), Willars (1967).

TYRRELL TOWNSHIP

(NTS 41P/10W, 41P/11E)

Matona Prospect

MAIN METALS: Au

LOCATION: Approximately 11½ miles northeast of Shining Tree, 1 mile northeast of Thorn Lake, in northwestern Tyrrell Township. Shaft in claim GG5962. Latitude 47.64°, Longitude 81.06°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Reford Mines Ltd.).

GEOLOGY: A mineralized shear zone, trending N20°W, occupies a contact between Keewatin intermediate and felsic metavolcanics. It dips vertically, is up to 5 feet in width, and contains numerous parallel and intersecting veins and veinlets of quartz which carry pyrite and visible gold.

ECONOMIC FEATURES: The Main (No.1) Vein, striking N40-70°W and dipping vertically, is 600 feet long at surface and 8 to 12 inches wide. On the 125-foot level, three shoots of possible ore grade were outlined. The first contained a possible 30,000 tons averaging 0.30 ounce of Au per ton; the other

two, of unspecified tonnages, averaged 0.15 and 0.11 ounce of Au per ton. A diamond-drill core intersection below the 215-foot level assayed 1.93 ounces of Au per ton over 3.6 feet.

HISTORY: 1930-1936: Prospecting and surface work by Matona Gold Mines Limited.

1936-1938: Trenching, four diamond-drill holes (1,284 feet), two-compartment shaft to 231 feet, and 738 to 1,994 feet of underground development (there is some disagreement between ODM reports and company records) on levels at 125 and 215 feet. Work by Matona Gold Mines Limited.

1934: Sampling by Sylvanite Gold Mines Limited.

1946: Trenching by Matona Gold Mines Limited.

REFERENCES: ODM 1932, Vol.41, pt.2, p.58 (Tough-Regan-Summerville).

ODM 1977, GR152, p.49, 50 (Reford Mines Limited).

Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Tyrrell Township, Matona Gold Mines Limited.

Minto Prospect

MAIN METALS: Au

LOCATION: Approximately 13½ miles east-northeast of Shining Tree, ¼ mile south-southeast of Gordon Lake, in north-central Tyrrell Township. Claims GG5840, GG5841, GG5909, and GG5910. Latitude 47.64°, Longitude 81.00°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Dalhousie Oil Company Ltd.).

GEOLOGY: Keewatin intermediate and mafic metavolcanics (mainly andesite and rhyolite) are intruded by feldspar porphyry. Much of the property is mantled by boulder clay.

The showing consists of a rhyolite plug, 60 feet in diameter, which intrudes the metavolcanics close to a porphyry dike. The central part is brecciated, replaced by quartz and carbonates, and mineralized with pyrite. Several channel samples averaged 0.14 ounce of Au per ton.

ECONOMIC FEATURES: The rhyolite plug reportedly contains 70,000 tons of ore averaging 0.21 ounce of Au per ton (Canadian Mines Handbook 1940, p.137).

HISTORY: 1931: Trenching and 1,000 feet of diamond-drilling by Gordon Syndicate.

1940: Shaft to 20 feet by Minto Gold Mines Limited.

1946: Trenching and diamond-drilling (amount unknown).

REFERENCES: Canadian Mines Handbook 1940, p.137. ODM 1932, Vol.41, pt.2, p.52-54 (Gordon Syndicate).

ODM 1977, GR152, p.41, 42 (Dalhousie Oil Com-

pany Limited).
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Tyrrell Township, Wolfe (1946).

Tyranite Mine (Past Producer)

MAIN METALS: Au

LOCATION: Approximately 14 miles northeast of Shining Tree, adjacent to the 4-mile post on the Knight-Tyrrell township boundary, in northern Tyrrell Township. Shaft in claim GG5801. Latitude 47.67°, Longitude 81.00°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships.

GEOLOGY: Keewatin mafic to intermediate metavolcanics, lying 500 feet west of a contact with Cobalt Group sedimentary rocks, are intruded by several bodies of peridotite (now altered to serpentinite) a granodiorite stock, and numerous lamprophyre and feldspar porphyry dikes.

For two-thirds of its 950 foot length, a mineralized fracture zone occurs along the carbonatized and silicified contact between the peridotite intrusion and an andesite flow. Gold values are associated with the presence of pyrite, which occurs in quartz-carbonate veinlets in the fracture zone and in the rock adjacent to them.

ECONOMIC FEATURES: Underground development showed that the deposit consisted of two parallel north-trending carbonatized and pyritized shears. At surface the south orebody was 400 by 39 feet and the north orebody measured 200 by 20 feet. The gold occurred in heavily mineralized zones which formed pods and lenses. Before the mine closed in 1942, gold values of 0.20 ounce of Au per ton were encountered during drilling to a depth of 1,400 feet.

OWNERSHIP: Leased by Tyranite Mines Limited.

HISTORY: 1930: Part of property staked and some surface work by L.O. Hedlund.

1931: Trenching and nine diamond-drill holes (2,200 feet) by Waite Syndicate, Ventures Limited, and Nipissing Mining Company Limited.

1933: Diamond-drilling (amount unknown) by McIntyre Porcupine Mines Limited.

1934: Surface work and diamond-drilling (amount unknown) by Consolidated Smelters.

1936-1942: Three-compartment shaft to 1,151 feet, inclined two-compartment 350-foot winze from the 525-foot level, and 12,378 feet of underground development on seven levels. Surface and underground diamond-drilling (amount unknown). 200-ton mill installed. Work by Tyranite Mines Limited.

PRODUCTION:

Year	Gold (ounces)	Silver (ounces)	Ore Milled (tons)	Recovered Grade (ounce of Au per ton)
1939-				
1942	30,352	4,860	223,810	0.14

REFERENCES: ODM 1932, Vol.41, pt.2, p.49-52, (Hedlund Property).

ODM 1977, GR152, p.55, 56.

Welsh-Mac Prospect

MAIN METALS: Au

LOCATION: Approximately 13½ miles east-northeast of Shining Tree, ¾ mile west-southwest of Owl Lake, in southern Tyrrell Township. Claims MR-11569 (Welsh-Regan showing) and L318348-L318351 (Anglehart showing). Latitude 47.60°, Longitude 80.97°.

Map reference: ODM 2365, Macmurchy and Tyrrell Townships (Anglehart, E. and Welsh-Regan Prospect).

GEOLOGY: Keewatin intermediate to felsic metavolcanics are intruded by narrow dikes of feldspar porphyry and a diorite-like rock.

The Welsh-Regan showing consists of a shear zone which strikes N60°W, dips 80°S to vertically, is 1,000 feet long, and averages 12 feet in width. Lenticular bodies of quartz are enclosed by carbonate schist. Mineralization consists of disseminated pyrite and chalcopyrite, and gold which is concentrated in narrow quartz veinlets. A value of 0.44 ounce of Au per ton over 5 feet was reported.

The Anglehart showing is a quartz-carbonate vein occupying a shear zone which trends N70°W and dips 80°S in felsic metavolcanics. The vein contains pyrite and gold, and reportedly yielded up to 0.20 ounce of Au per ton.

HISTORY: All work on Welsh-Regan showing unless otherwise indicated.

1931: Trenching by B. Garvey.

1934-1935: Trenching and pitting by Welsh-Regan and Welsh-Mac Companies.

1937: 5,000 feet of diamond-drilling by Teck-Hughes Mines Limited.

1939: Several thousand feet of diamond-drilling by Hollinger Consolidated Gold Mines Limited.

1944-1945: Pitting and trenching by Welsh-Mac Mines Limited.

1945: Sampling, adit, and diamond-drilling (amount unknown) by Siscoe Gold Mines Limited.

1946: Eight diamond-drill holes (footage unknown) by Welsh-Mac Mines Limited.

1972-1975: Geological, geochemical, electromagnetic, and magnetic surveys on Anglehart property by M. Juby and E. Anglehart.

REFERENCES: ODM 1977, GR152, p.36 (Anglehart,

E.); 56, 57 (Welsh-Regan Prospect).
Resident Geologist's Files, Ontario Ministry of Natural Resources, Kirkland Lake: Tyrrell Township, McBean (1945), Wolfe (1946), Getty Mines Limited, Anglehart, E.

TIMISKAMING DISTRICT OCCURRENCES

ALMA TOWNSHIP

(NTS 42A/2E)

Name and Location	References	Metals	Remarks
Brookbank Occurrence: Southeast corner of Alma Tp. Claim T17801. Lat. 48.02°, Long. 80.54°.	ODM 1967, GR51, p.32. ODM Map 2109, Baden and Alma Townships.	Au Ag Cu Pb	An 8-foot wide fracture zone in silicified syenite contains quartz-carbonate stringers. Mineralization consists of chalcopyrite and galena. The average of 5 grab samples was 0.27 oz. Au/ton and 12 oz. Ag/ton. 1917: Pitting.
Chief Occurrence: 1 mile south of south end of Chief Lake, in eastern Alma Tp. Lat. 48.04°, Long. 80.54°.	OBM 1918, Vol.27, pt.1, p.231 (Chief Claim). ODM 1967, GR51, p.32 (McIntyre Porcupine Mines Ltd.). Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2109, Baden and Alma Townships (McIntyre Porcupine Mines Ltd.).	Au	Pit sunk in syenite porphyry. Grab sample taken from dump in 1918 assayed 0.22 oz. Au/ton. Grab samples taken in 1963 yielded trace amounts of Au, Mo, Cu. 1961: Geological survey by Triana Exploration Ltd.
Rodie Occurrence: 1 mile south of south end of Separation Lake, in southeast-central Alma Tp. Claims MR5612 and MR7081. Lat. 48.04°, Long. 80.58°.	ODM 1967, GR51, p.32. ODM Map 2109, Baden and Alma Townships.	Au	Pyrite mineralization occurs in silicified rock along a diabase-syenite contact. Grab samples assayed from trace to 0.06 oz. Au/ton.

ARGYLE TOWNSHIP

(NTS 42A/2W)

Fox Occurrence: Approximately 1 mile northwest of Tomfox Lake, in northwestern Argyle Tp. Lat. 48.07°, Long. 80.91°.	ODM 1932, Vol.41, pt.2, p.18,19. ODM Map 41a, Bannockburn Gold Area (occurrence not shown on map).	Au	Carbonate schist contains quartz-carbonate stringers. Grab sample assayed 0.02 oz. Au/ton.
Garvey Occurrence: 2¼ miles west-southwest of Argyle Lake, in the southwestern corner of Argyle Tp. Lat. 48.02°, Long. 80.91°.	ODM 1932, Vol.41, pt.2, p.17. ODM Map 41a, Bannockburn Gold Area.	Au Pb	Quartz vein, approximately 300 feet long and 1 foot wide, occurs in fractured and silicified basalt. Mineralization consists of pyrite, specularite, galena, and visible gold.
Thompson Occurrence: ½ mile southwest of 4-mile post on Argyle-Baden township boundary, in eastern Argyle Tp. Lat. 48.07°, Long. 80.79°.	ODM 1932, Vol.41, pt.2, p.18. ODM Map 41a, Bannockburn Gold Area.	Au Cu Mo	Quartz vein occurs in a shear zone in medium- to coarse-grained hornblende granite. Grab samples mineralized with pyrite, chalcopyrite, and molybdenite assayed 0.12 oz. Au/ton; channel sample taken across 3 feet assayed 0.20 oz. Au/ton.
Witherspoon Occurrence: 3 miles south of Whitefish Lake in the northeast corner of Argyle Tp. Additional claims in Baden, McNeil, and Robertson Tps. Lat. 48.10°, Long. 80.82°.	Resident Geologist's Files, OMNR, Kirkland Lake: Argyle Tp., Kell (1947). ODM Map 41a, Bannockburn Gold Area (occurrence not shown on map).	Au	Small massive sulphide lens occurs in a talcose mafic dike cutting diorite breccia. Grab sample assayed 0.14 oz. Au/ton and 3.82 oz. Ag/ton. 1951: Magnetic survey by Banting. 1951-1952: 12 diamond-drill holes (5,178 feet) by Hoyle Mining Co. Ltd. 1973: Magnetic and electromagnetic surveys by Mid-North Engineering Services Ltd. on 24-claim group

Name and Location	References	Metals	Remarks in Argyle Tp.
ARMSTRONG TOWNSHIP (NTS 31M/12E)			
Tinney Occurrence: N½, lot 12, con. II, Armstrong Tp. Lat. 47.69°, Long. 79.88°.	Resident Geologist's Files, OMNR, Kirkland Lake: Armstrong Tp., Tinney (1946, 1953). ODM Map 2205, Timmins-Kirkland Lake Sheet (occurrence not shown on map).	Au Cu	1946: Gold panned from gravel. Pit sunk but bedrock not encountered. 1953: Pit sunk in Nipissing Diabase cut by quartz-carbonate veins which contain chalcopyrite and yielded a trace of gold.
ARNOLD TOWNSHIP (NTS 32D/4, 32D/5)			
Fockler-Little-Lowe-Garvie Occurrence: ¼ mile north of the North Arm of Misema Lake and 1/5 mile west of the Arnold-Katrine township boundary, in eastern Arnold Tp. Lat. 48.23°, Long. 79.76°.	ODM 1964, GR29, p.12. Resident Geologist's Files, OMNR, Kirkland Lake: Arnold Tp., Fockler-Little-Lowe-Garvie (1947). ODM Map 2061, Arnold and Katrine Townships.	Au	Mafic metavolcanics yielded values ranging from trace to 0.02 oz. Au/ton. 1947: Pitting and 4 diamond-drill holes (1,068 feet).
St. Pierre Occurrence: North and northwest of Side Lake, in north-eastern Arnold Tp. Lat. 48.27°, Long. 79.79°.	Resident Geologist's Files, OMNR, Kirkland Lake: Arnold Tp., St. Pierre, J.O. (1948). ODM Map 2061, Arnold and Katrine Townships (occurrence not shown on map).	Au	Assays of quartz stringers in intermediate metavolcanics ranged from 0.02 to 0.23 oz. Au/ton. 1948: Pitting by J.O. St. Pierre.
BADEN TOWNSHIP (NTS 42A/2)			
Arbade Occurrence: ¾ mile south of the west end of Belt Lake, in western Baden Tp. Shaft in claim MR6686. Lat. 48.05°, Long. 80.78°.	ODM 1967, GR51, p.29, 30 (F.W. Hines). Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2109, Baden and Alma Townships (Hines, F.W.).	Au	Keewatin tuff is intruded by fine-grained pink syenite and porphyritic syenite. A stockwork of quartz stringers has a width of up to 6 feet, is mineralized with pyrite and visible gold, and yielded values ranging from trace to 0.49 oz. Au/ton. 1931: 12 diamond-drill holes (2,000 feet) by Arno Mines Ltd. 1935: 56-foot shaft by Arbade Gold Mines Ltd. 1938: 10 diamond-drill holes (3,000 feet) by Lake Shore Mines Ltd.
Baden Creek Occurrence: East shore of northern end of Matachewan Lake, in northern Baden Tp. Claim MR26098 (MR9601). Lat. 48.09°, Long. 80.74°.	Resident Geologist's Files, OMNR, Kirkland Lake: Baden Tp., Baden Creek. ODM Map 2109, Baden and Alma Townships.	Au	Quartz vein occurs in syenite porphyry. Diamond-drill core intersection averaged 0.06 oz. Au/ton across a 2-foot width of the vein. 1959: 2 diamond-drill holes (260 feet).
Baden Syndicate Occurrence: Immediately east of Belt Lake, in northwestern Baden Tp. Showings in claims MR7915, MR8156, and MR8157. Lat. 48.08°, Long. 80.76°.	ODM 1967, GR51, p.28. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2109, Baden and Alma Townships.	Au Cu	Nine quartz veins occur in andesite tuff and agglomerate, and syenite. Mineralization consists of pyrite, and in some cases minor chalcopyrite and visible gold. Assays ranged from trace to 0.65 oz. Au/ton.

Name and Location	References	Metals	Remarks
			Circa 1932: Stripping, trenching, and pitting on No.3 and No.4 Veins. Trenching, pitting, and 30-foot shaft on No.6 Vein. All work by Baden Syndicate. 1933-1934: Pitting, trenching, and 3 diamond-drill holes by Baden Syndicate.
French Occurrence: 1½ miles south-southeast of Belt Lake, in west-central Baden Tp. Claim MR21186. Lat. 48.05°, Long. 80.77°.	Assessment Files Research Office, Ontario Geological Survey, Toronto: Baden Tp., Technical Survey File 63.3213. ODM 1967, GR51, p.29 (J.E. McVittie). ODM Map 2109, Baden and Alma Townships (McVittie, J.E.).	Au Ag	Gold-bearing quartz veins and stockworks occur in a contact zone between massive Keewatin metavolcanics and a syenite porphyry body. Channel sampling indicated that a 90-foot length of the vein averaged 1.5 oz. Au/ton across a width of 11 inches. Grab sample of vein material taken in 1963 assayed 8.41 oz. Au/ton and 9.79 oz. Ag/ton. Circa 1927: Surface sampling and diamond-drilling by Hollinger Consolidated Gold Mines Ltd.
King Occurrence: 1 mile northwest of Matachewan Falls, in southeast-central Baden Tp. Lat. 48.05°, Long. 80.72°.	ODM 1967, GR51, p.31. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2109, Baden and Alma Townships.	Au	Andesite and syenite are cut by a 30- to 50-foot wide shear zone containing quartz stringers. Grab samples gave values ranging from trace to 0.45 oz. Au/ton. 1940: Trenching by Theodore Kallies. 1971: Trenching by M. King.
O'Neill Occurrence: Northwest of north end of Mistinikon Lake, in west-central Baden Tp. Claims MR6613, MR6628 and MR6635. Lat. 48.05°, Long. 80.76°.	ODM 1967, GR51, p.30 (C.A. Floyd). ODM Map 2109, Baden and Alma Townships (Floyd, C.A.).	Au	Quartz stringers and lenses, occurring in metavolcanics, syenite porphyry and along their mutual contact, contain minor amounts of pyrite. Grab samples assayed from 0.08 to 0.35 oz. Au/ton across widths ranging from 4 to 20 inches. Circa 1938: 3,007 feet of diamond-drilling. Assays ranged from trace to 0.02 oz. Au/ton.
Quilty Occurrence: 3/5 mile west of north end of Mistinikon Lake, in west-central Baden Tp. Lat. 48.05°, Long. 80.77°.	ODM 1967, GR51, p.30. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2109, Baden and Alma Townships.	Au	A 2-foot wide breccia zone with quartz matrix, well mineralized with pyrite, strikes N60°W in andesite. Channel samples, taken over widths of 3 feet, yielded values of 0.08 and 0.74 oz. Au/ton.
Richore Occurrence: ¼ mile north of the east end of Belt Lake, in north-western Baden Tp. Claim MR7101. Lat. 48.09°, Long. 80.77°.	ODM 1967, GR51, p.26, 27. Resident Geologist's Files, OMNR, Kirkland Lake: Baden Tp., Richore Gold Mines Ltd. (1966). ODM Map 2109, Baden and Alma Townships.	Au	A sheared fractured zone, about 300 feet long and 3 feet wide, cuts metavolcanics and granite, and contains some quartz-carbonate stringers and minor pyrite. Assays of grab samples from the dump ranged from 0.10 to 0.27 oz. Au/ton. Diamond-drilling revealed a few quartz stringers, up to 0.6 feet in width, containing pyrite and very minor chalcopyrite. Best assays were 0.01 oz. Au/ton. 1966: 7 diamond-drill holes (1,498 feet) by Richore Gold Mines Ltd.
Woman River Occurrence: West shore of Matachewan Lake, in southeastern	ODM 1967, GR51, p.31 (S. Stanwick).	Au	Basalt and andesite are cut by Matachewan diabase dikes. Visible gold

Name and Location	References	Metals	Remarks
Baden Tp. Main showing in claim MR10401. Lat. 48.03°, Long. 80.69°.	Resident Geologist's Files, OMNR, Kirkland Lake: Baden Tp., Woman River Gold Mines Ltd. ODM Map 2109, Baden and Alma Townships (Stanwick, S.).		reported in 1.3-foot wide quartz vein. Diamond-drill intersection averaged 1.14 oz. Au/ton over 40 feet. No other significant values found. 1936: 4 diamond-drill holes by Woman River Gold Mines Ltd. 1971: Magnetic and electromagne- tic surveys by Melville Mines & Industries Ltd.

BANNOCKBURN TOWNSHIP
(NTS 41P/15W, 42A/2W)

Aldermac Occurrence: ¼ mile south of south end of Ashley Lake, in northern Bannockburn Tp. Claim MR8374. Lat. 48.01°, Long. 80.84°.	ODM 1932, Vol.41, pt.2, p.18. Au ODM Map 41a, Bannockburn Gold Area (occurrence not shown on map).		A 2-foot wide quartz vein strikes N50°E in andesite. Grab sample assayed 0.01 oz. Au/ton.
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BARTLETT TOWNSHIP
(NTS 42A/3)

Cameron-Porcupine Occurrence: 1¼ miles west-southwest of south end of Marceau Lake, in west-central Bartlett Tp. Work concentrated in claim TRP8992. Lat. 48.16°, Long. 81.14°.	ODM 1926, Vol.35, pt.6, p.55. Au ODM 1978, GR161, p.42, 43 (Canadian North Inca Mines Limited). Regional Geologist's Files, OMNR, Timmins: Bartlett Tp., T58. ODM Map 2364, Bartlett and Geikie Townships (Canadian North Inca Mines Limited).		A granitoid intrusive is cut by a mineralized zone consisting of quartz stringers interbanded with schist and porphyry. Visible gold reported. 1923: Trenching, 30-foot shaft, and diamond-drilling by Cameron- Porcupine Gold Mines Ltd.
Hull-St. Paul Occurrence: Adjacent to the McArthur-Bartlett township boundary, in the northeast corner of Bartlett Tp. Main showing in claim TRP6057. Lat. 48.18°, Long. 81.05°.	ODM 1926, Vol.35, pt.6, p.53. Au ODM 1978, GR161, p.61 (Tex- mont Mines Limited). Regional Geologist's Files, OMNR, Timmins: Bartlett Tp., T281. ODM Map 2364, Bartlett and Geikie Townships (Texmont Mines Limited (1970)).		A northwest-trending band of iron formation contains flat 1-inch wide quartz veins spaced several feet apart. Mineralization consists of py- rite. Some gold reportedly panned but pyrite-rich samples yielded no gold when assayed. 1938: Diamond-drilling by Erie Canadian Mines Ltd.

BAYLY TOWNSHIP
(NTS 31M/13E)

Bute Larder Occurrence: ½ mile north of Wendigo Lake, in central Bayly Tp. Lat. 47.88°, Long. 79.69°.	Resident Geologist's Files, OMNR, Kirkland Lake: Bayly Tp., Holbrooke (1938). ODM Map P.1198, Bayly Township.	Au Cu	Fracture zone striking N25°W and dipping from 80°W to vertically in Keewatin metavolcanics has been traced for 770 feet. Irregular quartz lenses ranging in width from 2 to 18 inches contain pyrite and chal- copyrite mineralization. Assays ranged from trace to 0.48 oz. Au /ton.
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BERNHARDT TOWNSHIP
(NTS 42A/1E, 42A/8E)

Ansara, Moses Occurrence: West shore of Centre Arm of Amikou- gami Lake, in southern Bernhardt Tp. Lat. 48.19°, Long. 80.08°.	ODM 1970, GR84, p.18. Au Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2193, Bernhardt		East-trending dikes of feldspar por- phyry intrude Keewatin basalts. Grab samples, taken in 1935, of shattered basalt and of quartz-
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Name and Location	References and Morrisette Townships.	Metals	Remarks
			carbonate veins adjacent to porphyry dikes yielded values of 0.07 oz. Au/ton. Circa 1935: Trenching and sampling. Circa 1959: 4 diamond-drill holes. No mineralization encountered.
Assad Occurrence: Immediately north of the channel linking the Northwest and Centre Arms of Amikougami Lake, in southern Bernhardt Tp. Lat. 48.20°, Long. 80.09°.	ODM 1970, GR84, p.18. Resident Geologist's Files, OMNR, Kirkland Lake: Bernhardt Tp., Assad (1946). ODM Map 2193, Bernhardt and Morrisette Townships.	Au	Keewatin metavolcanics are cut by a shear zone containing quartz veins. Assays ranged from trace to approximately 0.16 oz. Au/ton. Circa 1946: 42-foot shaft.
Bourzk-Mondoux Occurrence: North end of Northwest Arm of Amikougami Lake, in south-central Bernhardt Tp., Lat. 48.20°, Long. 80.09°.	ODM 1970, GR84, p.18 (Bourzk Lake-Northwest Arm Area). Resident Geologist's Files, OMNR, Kirkland Lake: Bernhardt Tp., Bourzk and Mondoux (1916). ODM Map 2193, Bernhardt and Morrisette Townships (Koury, W.G.).	Au Cu	Keewatin metavolcanics are cut by quartz veins ranging in width from 1 inch to 2 feet. Mineralization consists of pyrite, chalcopyrite, and rare visible gold. Assays of channel samples ranged from trace to 0.13 oz. Au/ton.
Kinika Occurrence: 300 feet east of the Maisonville-Bernhardt township boundary, in the northwest corner of Bernhardt Tp.; and 1¼ miles west-northwest of Bernhardt Lake, in northwestern Bernhardt Tp. Lat. 48.27°, Long. 80.14°.	ODM 1970, GR84, p.19,20. Resident Geologist's Files, OMNR, Kirkland Lake: Bernhardt Tp., Kinika (1937). ODM Map 2193, Bernhardt and Morrisette Townships.	Au	A mafic metavolcanic sequence is intruded by dikes of syenite porphyry and Matachewan diabase. Northwestern showing (near township boundary) consists of a fractured, slightly schistose flow top cut by many rusty carbonate stringers. Assays ranged from 0.01 to 0.40 oz. Au/ton with one of 86 oz. Au/ton. Southeastern showing comprises quartz veins containing pyrite mineralization. Best assay was 0.40 oz. Au/ton. 1920-1925: Pitting, trenching, and 30-foot shaft on southeastern showing. On northwestern showing, pitting, trenching, and 55-foot shaft with 45-foot crosscut on 50-foot level. Work by various operators including Ontario Gold Vein Ltd. 1937: Pitting by Kinika Gold Mines Ltd. 1973: Resampling of northwestern shaft by Ajax Minerals Ltd.
Mosher Occurrence: ½ mile east-southeast of Lancaster Lake, in southeastern Bernhardt Tp. Claim L5834. Lat. 48.21°, Long. 80.04°.	ODM 1921, Vol.30, pt.6, p.60. ODM 1970, GR84, p.21. ODM Map 2193, Bernhardt and Morrisette Townships.	Au Ag	Keewatin metavolcanics are cut by a quartz-carbonate vein which reportedly assayed 0.10 oz. Au/ton and 37.5 oz. Ag/ton.

BOMPASS TOWNSHIP

(NTS 42A/1W)

Tomlinson Occurrence: 3/5 mile southwest of north end of Kenogami Lake, in southeastern Bompas Tp. Lat. 48.12°, Long. 80.28°.	ODM 1964, GR30, p.15. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2060, Bompas and Grenfell Townships.	Au Ag Cu Pb	Arkose of the Cobalt Group is cut by quartz veins which strike N30°W, dip 75°SW, and have an aggregate width of 2 feet. Mineralization consists of pyrite and chalcopyrite; gold values reported. A brecciated frac-
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Name and Location	References	Metals	Remarks
			ture zone containing pyrite, chalcopyrite, galena, gold, and silver intersects the vein zone at right angles. 2 shafts, 40 and 50 feet deep, sunk at intersection of the 2 zones.
BOSTON TOWNSHIP (NTS 32D/4W)			
Boston Creek Occurrence: Southern Boston Tp. Patented claim L3665. Lat. 48.02°, Long. 79.94°.	ODM 1957, Vol.66, pt.5, p.32. Au ODM Map 1957-4, Boston Township and part of Pacaud Township.		Property underlain by Keewatin mafic to intermediate metavolcanics and minor bedded tuff. Kenzie Vein extends into the claim from the R.A.P. Prospect. A few minor ore shoots found. 1916: Underground work done through R.A.P. shaft by extending 100- and 200-foot levels. 200-foot winze from 200-foot level with levels at 300 and 400 feet, and 975 feet of lateral development on all 4 levels. Work by Boston Creek Mining Co. Ltd.
Currie Occurrence: Southern Boston Tp. Patented claim L5037. Lat. 48.02°, Long. 79.93°.	ODM 1957, Vol.66, pt.5, p.32 Au (Claim L.5037 Currie Property). ODM Map 1957-4, Boston Township and part of Pacaud Township.		Keewatin mafic and intermediate metavolcanics contain rusty schist bands which are heavily mineralized with pyrite and cut by quartz stringers. Grab sample assayed 0.11 oz. Au/ton; channel samples taken across 2 feet and 3.6 feet yielded 0.07 and 0.03 oz. Au/ton respectively.
Gogita Occurrence: Southern Boston Tp. Patented claims L2000, L2582 and L4902. Lat. 48.02°, Long. 79.94°.	ODM 1957, Vol.66, pt.5, p.36. Au Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., Gogita Mining Syndicate Ltd. (1945). ODM Map 1957-4, Boston Township and part of Pacaud Township.		Mafic metavolcanics are cut by an east-trending shear zone which has been traced for 275 feet and is 5 to 10 feet wide. Some "ore-grade" assays were obtained from zones of quartz-sulphide mineralization within the shear. South of the main showing, a 1.5-foot wide quartz vein containing pyrite mineralization reportedly yielded "ore-grade" assays. 1939: Diamond-drilling by Quebec Pre-Cambrian Corp. 1946: Pitting and trenching by Gogita Mining Syndicate Ltd. 1947: 4 diamond-drill holes (455 feet) by Sylvanite Gold Mines Ltd.
Ivanhoe-Boston Occurrence: Southeast corner of Boston Tp. Patented claim L5079. Lat. 48.02°, Long. 79.91°.	ODM 1957, Vol.66, pt.5, p.32 Au (Claim L.5079 (Ivanhoe-Boston Occurrence)). ODM Map 1957-4, Boston Township and part of Pacaud Township (Claim L.5079).		Keewatin mafic to intermediate metavolcanics are cut by a quartz vein which ranges from a few inches to 4 or 5 feet in width. High values in gold and silver reported from one part of vein. Pits and trenches of unknown age.
Kennedy Occurrence: 3 miles east of Smith Lake, in the southeast corner of Boston Tp. Patented claim L5078. Lat. 48.02°. Long. 79.91°.	Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., Kennedy-Shortt (1935). ODM Map 1957-4, Boston	Au	Keewatin metavolcanics are cut by porphyry dikes. Channel sample assayed 0.7 oz. Au/ton over 0.7 feet. 1935: Pitting, trenching, and sam-

Name and Location	References	Metals	Remarks
	Township and part of Pacaud Township.		pling by Erie Canadian Mines Ltd.
McCrea Occurrence: Southeastern Boston Tp. Main showing in patented claim L26692. Lat. 48.04°, Long. 79.93°.	Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., McCrea (1939). ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au	Keewatin intermediate metavolcanics are cut by a shear zone which strikes N20°E, dips 60°E, and is 450 feet in length. Channel samples assayed from 0.01 to 1.75 oz. Au/ton over unspecified widths. 1939: Stripping and trenching by McCrea.
Montario Occurrence: 2½ miles east-northeast of Round Lake, in south-central Boston Tp. Lat. 48.04°, Long. 79.96°.	Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., Montario Exploration Ltd. (1953). ODM Map 1957-4, Boston Township and part of Pacaud Township (occurrence not shown on map).	Au Cu	Basalt and andesite pillow lava are cut by feldspar porphyry dikes containing quartz-carbonate stringers. Gold is reportedly associated with chalcopyrite and pyrite mineralization. Pitting, trenching, and 250-foot shaft of unknown age.
Planet Occurrence: Southeast corner of Boston Tp. Patented claims L4737, L4906, and L5025. Lat. 48.02°, Long. 79.90°.	ODM 1957, Vol.66, pt.5, p.40. ODM 1964, MRC3, p.60,61. Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., Planet Gold Mines Ltd. (1941). ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au	Keewatin mafic to intermediate metavolcanics are cut by a small body of Algoman granite which contains numerous veins and small stringers of quartz. Several pyritic sulphide zones occur in the metavolcanics. Two bulk samples, each weighing more than 1½ tons, yielded values of 0.07 and 0.08 oz. Au/ton. 1937-1938: Pitting, trenching, diamond-drilling, and a 48-foot shaft by Planet Gold Mines Ltd. 1938-1939: Two bulk samples taken by Howey Gold Mines Ltd. 1946: Trenching and diamond-drilling by Lebon Gold Mines Ltd.
Sheroomac Occurrence: Between Round and Smith Lakes, in south-western Boston Tp. and northwestern Pacaud Tp. Lat. 48.02°, Long. 79.99°.	Northern Miner, June 19, 1952. ODM 1957, Vol.66, pt.5, p.41,42. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au Ag Cu Zn	Keewatin mafic metavolcanics and interbedded tuffaceous metasediments are intruded by sill-like masses of diorite and by dikes and small bodies of Algoman syenite porphyry, granite, and quartz-feldspar porphyry. Numerous shear zones, some of which contain quartz stringers, are mineralized with pyrite and chalcopyrite. Grab sample assayed 1.46% Cu, 1.50% Zn, 0.18 oz. Au/ton, and 0.84 oz. Ag/ton. Numerous pits, trenches and diamond-drill holes of unknown age.
Shunsby Occurrence: Central Boston Tp. Main showing on boundary between claims L1877 and L1878. Lat. 48.06°, Long. 79.95°.	ODM 1957, Vol.66, pt.5, p.42,43. Resident Geologist's Files, OMNR, Kirkland Lake: Boston Tp., Marshall (South Group). ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au	Quartz-sulphide mineralization occurs in intermediate to felsic metavolcanics. Minor amounts of gold reported. Pre-1957: Pitting, trenching, and diamond-drilling. 1959: Geological survey. 1965: Diamond-drilling by A. and R.J. Marshall.

Name and Location	References	Metals	Remarks
BRYCE TOWNSHIP (NTS 41P/9E)			
Bailey 'A' Occurrence: Lot 10, con. VI, Bryce Tp. Lat. 47.75°, Long. 80.12°.	ODM 1941, Vol.50, pt.4, p.21. ODM Map 50j, Bryce-Robillard Area.	Au Cu	A 2-foot wide barren quartz vein cuts mafic metavolcanics which contain chalcoppyrite, pyrite, and native gold.
Bailey 'B' Occurrence: W½, N½, lot 11, con. IV, E½, N½, lot 12, con. V, and S½, lot 12, con VI, Bryce Tp. Lat. 47.73°, Long. 80.12°.	ODM 1941, Vol.50, pt.4, p.33 (Krone Mining Syndicate Limited). ODM Map 50j, Bryce-Robillard Area (Krone Mining Syndicate Ltd.).	Au	Zone of pyrite mineralization follows a body of chlorite schist and altered banded tuff located at a pillow lava-agglomerate contact. Best assay from diamond-drill core was 0.05 oz. Au/ton. 5 diamond-drill holes of unknown age.
Bailey 'C' Occurrence: N½, lot 6, con. IV and S½, lot 6, con. V, Bryce Tp. Lat. 47.72°, Long. 80.08°.	ODM 1941, Vol.50, pt.4, p.21. ODM Map 50j, Bryce-Robillard Area.	Au Cu Co	A narrow vein containing chalcoppyrite, cobalt, and gold mineralization occurs in metavolcanics near a contact with Cobalt Group metasediments.
Clarapat Occurrence: Lots 7-9, con. VI, Bryce Tp. Main showing in W½, N½, lot 7, con. VI. Lat. 47.68°, Long. 80.22°.	ODM 1941, Vol.50, pt.4, p.27,28. Resident Geologist's Files, OMNR, Kirkland Lake: Bryce Tp., Sylvanite Miscellaneous (1948). ODM Map 50j, Bryce-Robillard Area.	Au Zn Pb	Keewatin metavolcanics (pillow lavas and diabasic flows) are cut by lamprophyre dikes, and by a north-trending shear zone in which are located two mineralized areas. The northernmost consists of pyrite and minor galena, sphalerite, and arsenopyrite in quartz veins and stringers, and in silicified host rock. Channel samples assayed from 0.02 to 0.10 oz. Au/ton over varying widths. Pits, trenches, and more than 2,000 feet of diamond-drilled of unknown ages.
Estival Occurrence: N½, lot 9, con.V, Bryce Tp. Lat. 47.74°, Long. 80.11°.	ODM 1941, Vol.50, pt.4, p.29,30. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 50j, Bryce-Robillard Area.	Au Cu Zn Pb	Keewatin metavolcanics are cut by a large porphyry body and by dikes of diabase, felsitic porphyry, hornblende syenite, and lamprophyre. Main showing consists of a 9-foot wide shear zone cut by quartz which contains pyrite, chalcoppyrite, galena, sphalerite and visible gold. 1934: Pitting by F. Estival. 1935: Trenching and diamond-drilling by Kirkland-Hudson Bay Gold Mines Ltd.
Heather Lake Occurrence: Lots 11 and 12, con. III, Bryce Tp. Lat. 47.70°, Long. 80.13°.	ODM 1941, Vol.50, pt.4, p.31. ODM Map 50j, Bryce-Robillard Area.	Au	Keewatin intermediate to felsic metavolcanics (including flows, breccia, agglomerate and tuff) are cut by northeast- and northwest-trending fracture zones. Gold values reported over narrow widths in "discovery vein". Circa late 1920s: Pitting, trenching, 50-foot shaft, and diamond-drilling by Heather Lake Mines Ltd.
Mearow-McCombe Occurrence: NW¼, N½, lot 12, con. VI, Bryce Tp. Lat. 47.74°, Long. 80.14°.	ODM 1941, Vol.50, pt.4, p.38,39. ODM Map 50j, Bryce-Robillard Area.	Au	Showing consists of a mineralized shear zone cut by pegmatite dikes and located near a granodiorite-hornblende schist contact. Miner-

Name and Location	References	Metals	Remarks
Palmer-Vaughan Occurrence: N½, lots 10-12, con. V, Bryce Tp. Lat. 47.74°, Long. 80.13°.	ODM 1941, Vol.50, pt.4, p.39-41. ODM Map 50j, Bryce-Robillard Area.	Au Cu Zn	alization consists of pyrite in quartz-carbonate lenses and stringers. Channel samples assayed from trace to 0.86 oz. Au/ton over widths of less than 1 foot.
Paquette Occurrence: N½, N½, lot 12, con. VI, Bryce Tp. Lat. 47.75°, Long. 80.14°.	ODM 1941, Vol.50, pt.4, p.41. ODM Map 50j, Bryce-Robillard Area.	Au Cu Zn	Keewatin mafic metavolcanics are cut by dikes of diabase, syenite, rhyolite, porphyry, and lamprophyre. Each of several showings consists of a shear zone occupied by lenses and stringers of quartz which contain pyrite, chalcopyrite or sphalerite, and gold. Channel samples ranged from trace to 1.05 oz. Au/ton over 10 inches. Assays of diamond-drill core ranged up to 0.33 oz. Au/ton over widths of 1 to 3 feet.
Westcott Occurrence: SW¼, S½, lot 10, con. V, Bryce Tp. Lat. 47.73°, Long. 80.07°.	ODM 1941, Vol.50, pt.4, p.45. ODM Map 50j, Bryce-Robillard Area.	Au	Zones of mineralization, up to 5 feet in width, occupy altered joints in granodiorite. Mineralization consists of chalcopyrite, pyrite and minor sphalerite in a gangue of quartz, carbonate, sericite, chlorite, and albite. "Unusually high gold values" (ODM 1941, Vol.50, pt.4, p.41) reported from grab samples.
			Mafic metavolcanics are cut by porphyry and lamprophyre dikes. Channel sample from a porphyry dike cut by quartz stringers assayed 0.19 oz. Au/ton over a width of 18 feet.

CAIRO TOWNSHIP
(NTS 41P/15E, 42A/2E)

Graig Occurrence: East shore of Cameroon Lake, in north-central Cairo Tp. Patented claim T16964. Lat. 47.98°, Long. 80.58°.	Geoscience Laboratories, OGS, Toronto: Assay Report B6629 (1964). ODM 1967, GR51, p.48. Resident Geologist's Files, OMNR, Kirkland Lake: Cairo Tp., Craig. ODM Map 2110, Powell and Cairo Townships.	Au Ag Cu Pb	Two showings, consisting of galena-chalcopyrite-gold-silver mineralization in quartz, occur in syenite. Favourable assays reported from grab and chip samples. Circa 1910: 60-foot shaft by Graig.
Margo Occurrence: 1 mile southwest of Cameroon Lake, in central Cairo Tp. Lat. 47.80°, Long. 80.60°.	ODM 1935, Vol.44, pt.2, p.43. ODM Map 44b, Matachewan-Kenogami Area.	Au	Gold values reported from quartz veins in syenite porphyry.
Matachewan Pioneer Occurrence: Approximately 1 mile west of Matachewan, north of the Montreal River, in southwestern Cairo Tp. Showing in claim HF13. Lat. 47.94°, Long. 80.62°.	ODM 1935, Vol.44, pt.2, p.43. ODM 1967, GR51, p.47 (Matachewan Hub Pioneer Syndicate). ODM Map 2110, Powell and Cairo Townships (Matachewan Hub Pioneer Syndicate).	Au	Greenstone traversed by bands of iron formation, reportedly yielded good gold values.
Morrison Lake Occurrence: Immediately south of Morrison Lake, in eastern Cairo Tp. Lat. 49.96°, Long. 80.55°.	ODM 1935, Vol.44, pt.2, p.43 (Cairo Group). DEMNR Ottawa, Mineral Development Sector Files:	Au	A 250-foot schist zone, located along the contact between Keewatin metavolcanics and a large body of syenite porphyry, yielded values up

Name and Location	References	Metals	Remarks
	Bloom Lake Consolidated Mines Ltd. ODM Map 2110, Powell and Cairo Townships.		to 0.10 oz. Au/ton. Circa 1925: Trenching and test-pitting.
Siscoe Occurrence: Straddles Hwy. 66, adjacent to the Cairo-Flavelle township boundary, in eastern Cairo Tp. Claim MR9907. Lat. 47.98°, Long. 80.55°.	Resident Geologist's Files, OMNR, Kirkland Lake: Cairo Tp., Siscoe Metals of Ontario Ltd. (1965). ODM Map 2110, Powell and Cairo Townships.	Au	Quartz veins in sheared Timiskaming metasediments reportedly yielded gold.

CATHARINE TOWNSHIP

(NTS 31M/13W, 32D/4W)

Benner Occurrence: S½, lots 4 and 5, con. II, Catharine Tp. Lat. 47.95°, Long. 79.81°.	Northern Miner, August 12, 1948. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2043, Catharine and Marter Townships (occurrence not shown on map).	Au	Narrow irregular breccia zone in andesite pillow lava is cut by a small quartz vein which yielded values ranging from trace to 0.05 oz. Au/ton.
Campbell Occurrence: N½, N¼, lot 12, con. VI, Catharine Tp. Lat. 48.01°, Long. 79.88°.	ODM 1963, GR18, p.11. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2043, Catharine and Marter Townships.	Au Cu	Keewatin metavolcanics (mainly basaltic lava) are cut by a southeast-trending, well-defined narrow fracture zone containing 1- to 2-inch wide parallel quartz veins. Mineralization consists of pyrite, minor chalcopyrite and occasional visible gold. Channel samples assayed 0.16 oz. Au/ton across narrow widths.
Catharine Gold Occurrence: N½, lot 10, con. V, Catharine Tp. Lat. 47.99°, Long. 79.86°.	ODM 1963, GR18, p.12. ODM Map 2043, Catharine and Marter Townships.	Au	Altered grey feldspar porphyry dike contains a network of quartz stringers mineralized with pyrite, tourmaline, and coarse gold.
Catharine Tp., Con. I, Lot 6, S½ Occurrence: Lat. 47.93°, Long. 79.82°.	ODM 1963, GR18, p.17. ODM Map 2043, Catharine and Marter Townships.	Au Cu Zn	Basic metavolcanics are cut by a shear zone mineralized with quartz, pyrite, chalcopyrite, and occasionally sphalerite. Several grab samples assayed 0.05 oz. Au/ton.
Connell-McDonough Occurrence: S½, lot 12, con. VI, Catharine Tp. Lat. 48.00°, Long. 79.88°.	ODM 1963, GR18, p.12. ODM Map 2043, Catharine and Marter Townships.	Au	Native gold observed at several places along the footwall of a nearly flat quartz vein which cuts Keewatin mafic metavolcanics.
Hounslow Occurrence: S½, lot 4, con. I, Catharine Tp. Lat. 47.93°, Long. 79.81°.	ODM 1963, GR18, p.13. ODM Map 2043, Catharine and Marter Townships.	Au	Altered basalt cut by 4 quartz stringers which strike north, dip 60°E, and contain coarse gold.
Kalniuk Occurrence: S½, lot 8, con. II, Catharine Tp. Lat. 47.95°, Long. 79.83°.	ODM 1963, GR18, p.14. ODM Map 2043, Catharine and Marter Townships.	Au Cu	Two closely spaced east-trending quartz veins in Keewatin diabase contain pyrite, minor chalcopyrite and gold. Sample from wider vein assayed 0.23 oz. Au/ton.
Kennedy-Boston Occurrence: S½, lot 11, con. VI, Catharine Tp. Lat. 48.01°, Long. 79.88°.	ODM 1963, GR18, p.14. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2043, Catharine and Marter Townships.	Au Cu	Andesite is cut by narrow dikes of diabase and porphyry, and by a 70-foot wide shear zone containing quartz veins. The veins contain pyrite, chalcopyrite, and occasionally free gold. Channel samples

Name and Location	References	Metals	Remarks
			assayed from trace to 1.03 oz. Au/ton. Circa 1918: 2-compartment shaft to 150 feet with 210 feet of drifting.
Kordol Occurrence: N½, lot 7, con. V and S½, lot 7, con. VI, Catharine Tp. Lat. 47.99°, Long. 79.83°.	ODM 1963, GR18, p.14 (Gold Bank); 15 (Gold Ridge). Resident Geologist's Files, OMNR, Kirkland Lake: Catharine Tp., Kordol Explorations Ltd. (1960). ODM Map 2043, Catharine and Marter Townships (Gold Bank, Gold Ridge).	Au Cu	Property largely drift-covered. Sheared felsic agglomerates are cut by feldspar porphyry dikes. Trenching has exposed a zone of quartz veining, 700 feet long, 4 inches to 2 feet wide, and striking N45-60°E. Mineralization consists of chalcopyrite and visible gold. Assays of diamond-drill core samples ranged from trace to 0.35 oz. Au/ton. Circa 1930: Stripping, trenching, and pitting by Gold Bank and Gold Ridge Syndicates. 1960: Geological survey and 10 diamond drill holes (1,000 feet) by Kordol Explorations Ltd. 1960: 2 diamond-drill holes (663 feet) by Bowers.
Ostrom Occurrence: NW¼, N½, lot 8, con. III, Catharine Tp. Lat. 47.97°, Long. 79.84°.	ODM 1963, GR18, p.15. ODM Map 2043, Catharine and Marter Townships.	Au	Basic to intermediate metavolcanics are cut by a narrow quartz porphyry dike and by quartz-carbonate veins containing pyrite. Grab samples assayed 0.04 and 0.09 oz. Au/ton.
Roger-Barnett Occurrence: W½, N½, lot 4 and N½, lot 5, con. II, Catharine Tp. Lat. 47.95°, Long. 79.81°.	ODM 1963, GR18, p.16. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2043, Catharine and Marter Townships.	Au	Basalt and diabase are cut by some narrow feldspar porphyry dikes, and by a mineralized zone which trends N25°E and is 500 feet long and 10 feet wide. Zone is altered to a rusty carbonate rock and contains numerous quartz veins and stringers mineralized with pyrite and occasional visible gold. Assays ranged from trace to 0.34 oz. Au/ton. Circa 1920: Pitting and trenching by W.G. Roger and F. Barnett. 1941: Trenching.
Ven Arman Occurrence: N½, lot 6, con. IV, Catharine Tp. Lat. 47.98°, Long. 79.81°.	DEMNR Ottawa, Mineral Development Sector Files: MR-Au-301.00 (Ontario-Timiskaming). Toronto Globe, Sept. 9, 1922. ODM Map 2043, Catharine and Marter Townships (occurrence not shown on map).	Au	Surface trenching has exposed 2 quartz schist veins containing visible gold and gold tellurides.
Walsh-Taylor Occurrence: S½, lot 5, con. III, Catharine Tp. Lat. 47.96°, Long. 79.81°.	ODM 1963, GR18, p.17. ODM Map 2043, Catharine and Marter Townships.	Au	Basic to intermediate metavolcanics are cut by a rusty carbonate zone containing quartz veins. Mineralization consists of pyrite and iron carbonates. Selected sample assayed 0.21 oz. Au/ton. Circa 1920: Pitting and trenching.

Name and Location	References	Metals	Remarks
CHAMBERLAIN TOWNSHIP (NTS 31M/13W, 41P/16E)			
Handley-Gerlach Occurrence: S½, lot 5, con. I, Chamberlain Tp. Lat. 47.85°, Long. 79.94°.	ODM 1941, Vol.50, pt.4, p.30. ODM Map 2205, Timmins-Kirkland Lake.	Au	Several quartz veins and silicified zones with widths of up to 6 feet cut hornblende schist. Some of these contain pyrite mineralization; occasional good assays reported.
Hillcrest Occurrence: NE¼, N¼, lot 5, con. VI, Chamberlain Tp. Lat. 47.93°, Long. 79.93°.	Resident Geologist's Files, OMNR, Kirkland Lake: Chamberlain Tp., Rice (1938). ODM Map 2205, Timmins-Kirkland Lake (occurrence not shown on map).	Au	Keewatin porphyry is cut by a quartz vein which strikes N75°E, is 215 feet long, and averages 2 feet in width. A 150-foot length of the vein averaged 0.08 oz. Au/ton across 2.3 feet. Circa 1938: 2-compartment shaft to 40 feet.
Leslie-McPherson Occurrence: NE¼, S½, lot 6, con. I, Chamberlain Tp. Lat. 47.93°, Long. 79.93°.	Resident Geologist's Files, OMNR, Kirkland Lake: Chamberlain Tp., Savage (1950). ODM Map 2205, Timmins-Kirkland Lake (shown on map as a Cu-Pb occurrence).	Au Ag Cu Pb	Trenching revealed 3 veins of white glassy considerably fractured quartz which trend N15-20°E and are 10, 20, and 30 feet wide. Mineralization is spotty and consists of pyrite, with minor chalcopyrite and galena. Picked samples reportedly assayed \$68 combined Au and Ag (Au at approximately \$38/oz.).
CLEAVER TOWNSHIP (NTS 42A/2W, 42A/3E)			
O'Connor Occurrence: Southwestern Cleaver Tp. Lat. 48.13°, Long. 80.05°.	ODM 1924, Vol.33, pt.3, p.39,40. ODM Map 2205, Timmins-Kirkland Lake (occurrence not shown on map).	Au	Gold observed in quartz veinlets cutting a narrow syenite dike in a basalt schist shear zone.
DACK TOWNSHIP (NTS 31M/13W, 41P/16E)			
Erie Canadian Occurrence: S½, lot 5, con. V, Dack Tp. Lat. 47.81°, Long. 79.93°.	ODM 1941, Vol.50, pt.4, p.44,45. Resident Geologist's Files, OMNR, Kirkland Lake: Dack Tp., Erie Canadian (1934). ODM Map 50j, Bryce-Robillard Area.	Au	Diamond-drilling revealed brecciated 'greenstone' cut by well-mineralized stringers of quartz and some of feldspar. Best assay from diamond-drill core was 0.46 oz. Au/ton over 1 foot. 1938: 8 diamond-drill holes (1,392 feet) by Erie Canadian Mines Ltd.
Parker Occurrence: NW¼, S½, lot 7, con. IV, Dack Tp. Lat. 47.80°, Long. 79.96°.	ODM 1941, Vol.50, pt.4, p.42. ODM Map 50j, Bryce-Robillard Area.	Au	Heavily sheared metavolcanics contain a 50- by 80-foot highly altered zone which is cut by quartz veinlets. These are up to 3 inches wide and contain pyrite. Grab samples assayed from 0.02 to 0.04 oz. Au/ton.
Ryan Occurrence: N¼, lot 11, con. IV, Dack Tp. Lat. 47.81°, Long. 79.99°.	ODM 1941, Vol.50, pt.4, p.26. ODM Map 50j, Bryce-Robillard Area.	Au	A carbonatized shear zone is cut by quartz stringers and heavily mineralized with pyrite. A 3-foot channel sample of well-mineralized material assayed 0.01 oz. Au/ton.

Name and Location	References	Metals	Remarks
EBY TOWNSHIP (NTS 42A/1E)			
Dominion Gulf Occurrence: Parts of lots 9-11, con. V, Eby Tp. Showing in claim L57608. Lat. 48.08°, Long. 80.24°.	ODMNA 1972, GR99, p.20. Resident Geologist's Files, OMNR, Kirkland Lake. ODMNA Map 2239, Eby-Otto Area.	Au	Property underlain by Keewatin metavolcanics (andesite and gabbro). Showing consists of sheared carbonate rock containing quartz stringers. A diamond-drill core intersection assayed 0.02 oz. Au/ton over 1.3 feet. Circa 1945: 4 diamond-drill holes (1,360 feet). 1952: Geological and magnetic surveys and 2 diamond-drill holes by Dominion Gulf Co.
Johnson Occurrence: E½, S½, lot 3, con. IV, Eby Tp. Lat. 48.06°, Long. 80.17°.	ODMNA 1972, GR99, p.21. Resident Geologist's Files, OMNR, Kirkland Lake. ODMNA Map 2239, Eby-Otto Area.	Au	A porphyry dike cutting Keewatin metavolcanics yielded values ranging from 0.1 to 0.3 oz. Au/ton. 1938: Surface work and pitting by A. Johnson.
Lemu Occurrence: N½, S½, lot 4, con. V, Eby Tp. Lat. 48.08°, Long. 80.19°.	ODMNA 1972, GR99, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Eby Tp., Lumsden (1944). ODMNA Map 2239, Eby-Otto Area.	Au	Keewatin mafic metavolcanics cut by red porphyry dike. Pink quartz vein in the dike assayed 0.14 oz. Au/ton. Pre-1944: 40-foot shaft by Lumsden.
Mundy Occurrence: NE¼, N½, lot 11, con. IV, Eby Tp. Lat. 48.08°, Long. 80.19°.	ODMNA 1972, GR99, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Eby Tp., Sylvanite Misc. (1938). ODMNA Map 2239, Eby-Otto Area.	Au	Keewatin metavolcanics and syenite are cut by quartz stringers. Assays of 3 grab samples ranged from trace to 0.02 oz. Au/ton. Circa 1928: Stripping, trenching, and pitting by Mundy.
Preston Occurrence: N½, lot 8, con. III, Eby Tp. Lat. 48.05°, Long. 80.23°.	ODMNA 1972, GR99, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Eby Tp., Preston East Dome Mines Ltd. (1950). ODMNA Map 2239, Eby-Otto Area.	Au	Keewatin metavolcanics cut by feldspar porphyry and north-trending diabase dikes. A narrow mineralized shear zone contains minor quartz and concentrated pyrite across a width of 2 feet and for an exposed length of 25 feet. Assays of diamond-drill core ranged from 0.01 to 0.10 oz. Au/ton over lengths of 0.5 to 1.0 foot. 1949: Geological survey. 1950: 3 diamond-drill holes (588 feet) by Preston East Dome Mines Ltd.
Sylvanite Occurrence: W½, N½, lot 7, con. V and lot 8, con. V, Eby Tp. Lat. 48.08°, Long. 80.23°.	ODMNA 1972, GR99, p.20. Resident Geologist's Files, OMNR, Kirkland Lake: Eby Tp., Sylvanite Gold Mines Ltd. (1949). ODMNA Map 2239, Eby-Otto Area.	Au	Keewatin metavolcanics are cut by diabase and syenite dikes and by a 30-foot wide shear zone which strikes east, dips steeply south, and contains quartz-veined green carbonate rock. Assays ranged from trace to 0.18 oz. Au/ton. 1944-1945: Geological survey and 4 diamond-drill holes (1,360 feet) by Sylvanite Gold Mines Ltd. 1952: Geological and magnetic surveys over northern half of property by Dominion Gulf Co. Ltd.

Name and Location	References	Metals	Remarks
FALLON TOWNSHIP			
(NTS 42A/2W, 42A/3E, 42A/6E, 42A/7W)			
Fallon Occurrence: Astride the Langmuir-Fallon township boundary, in northern Fallon Tp. Lat. 48.28°, Long. 81.02°.	ODM 1973, GR104, p.26 (Galena Occurrence). ODM Map 2239, Fallon and Fasken Townships.	Au Ag Pb	Sheared chloritized mafic metavolcanics cut by monzonitic dike and associated quartz-carbonate vein. Disseminated pyrite (2%) and galena (less than 0.5%) occur along narrow seams within the vein. Sample assayed 0.11 oz. Au/ton and 3.21 oz. Ag/ton.
FLAVELLE TOWNSHIP			
(NTS 41P/15E, 41P/16W, 42A/1W, 42A/2E)			
McChesney Occurrence: ½ mile southwest of Wyley Lake, in NW¼, N½, lot 11, con. V, Flavelle Tp. Lat. 48.00°, Long. 80.52°.	Marginal Notes, ODM Map P.264, Flavelle Township. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map P.264, Flavelle Township.	Au Ag Cu Pb	Shear zone with exposed length of 1500 feet trends N60°E across a contact between metavolcanics and syenite. Pyrite, chalcopyrite, galena, tourmaline and fluorite occur in quartz lenses in the shear zone. Average of 3 selected samples was 0.07 oz. Au/ton and 3.18 oz. Ag/ton. 1934: Pitting and trenching. Circa 1948: 3 diamond-drill holes (428 feet) by A.E. Bailey.
Veteran Occurrence: SE¼, N½, lot 2, con. V, Flavelle Tp. Lat. 47.99°, Long. 80.41°.	Resident Geologist's Files, OMNR, Kirkland Lake: Flavelle Tp., Veteran Gold Mines. ODM Map P.264, Flavelle Township.	Au	Gold values reported from 7-foot wide quartz veins in granite.
Welsh Occurrence: SW¼, N½, lot 10, con. V, Flavelle Tp. Lat. 47.99°, Long. 80.51°.	Resident Geologist's Files, OMNR, Kirkland Lake: Flavelle Tp., Chavigny Gold Mines Ltd. (1949). ODM Map P.264, Flavelle Township.	Au	Syenite porphyry cut by quartz veins which yielded assays ranging from 0.01 to 0.06 oz. Au/ton.
GAUTHIER TOWNSHIP			
(NTS 32D/4W)			
Doherty Occurrence: 1¼ miles northeast of Lake Mousseau, in southwest-central Gauthier Tp. 8 patented claims including L24388. Lat. 48.12°, Long. 79.84°.	Resident Geologist's Files, OMNR, Kirkland Lake: Gauthier Tp., Daigle-Cooper (1945). ODM Map 50c, Township of Gauthier.	Au	Property largely sand-covered. Timiskaming mafic metavolcanics, conglomerate, and north-striking banded iron formation are intruded by syenite porphyry, gabbro, and diorite. Chip samples assayed from trace to 0.01 oz. Au/ton. A 2 lb. sample assayed 5.22 oz. Au/ton. 1945: Stripping and trenching.
Kelsina Occurrence: Southwest corner of Gauthier Tp. Lat. 48.11°, Long. 79.88°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 50c, Township of Gauthier (occurrence not shown on map).	Au	Property largely sand-covered. Diamond-drilling indicates the presence of syenite, diorite, lamprophyre, and schist mineralized with pyrite. 200-foot wide mineralized zone reportedly intersected by drilling but no assay results available. 1947: Surface work and diamond-drilling.

Name and Location	References	Metals	Remarks
			1950: 2 diamond-drill holes (1,292 feet) by Kelsina Kirkland Gold Mines Ltd.
McCullough Occurrence: Southeast corner of Gauthier Tp. Lat. 48.10°, Long. 79.76°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 50c, Township of Gauthier (occurrence not shown on map).	Au	Property underlain by mafic metavolcanics, syenite, and diorite. Selected sample contained 0.45 oz. Au/ton (personal communication, D. Lowe). 1972: Trenching by E.W. McCullough.
Ryan Occurrence: Immediately south of Little Larder Lake, in east-central Gauthier Tp. Patented claim L39966. Lat. 48.15°, Long. 79.79°.	Resident Geologist's Files, OMNR, Kirkland Lake: Gauthier Tp., T. Ryan (1945). ODM Map 50c, Township of Gauthier.	Au Cu	Keewatin felsic fragmental metavolcanics are cut by syenite and syenite porphyry dikes and a 6-inch wide quartz vein which contains chalcopyrite and yielded an assay of 0.12 oz. Au/ton.
Upper Canada "A" Occurrence: In the vicinity of Victoria Creek, in north-central Gauthier Tp. Lat. 48.17°, Long. 79.81°.	Resident Geologist's Files, OMNR, Kirkland Lake: Gauthier Tp., Bragg (1966). ODM Map 50c, Township of Gauthier (occurrence not shown on map).	Au Cu	Keewatin felsic and mafic metavolcanics are cut by syenite porphyry and diorite dikes. Numerous quartz veins and stringers containing pyrite and minor chalcopyrite yielded assays ranging from trace to 0.02 oz. Au/ton. 1936: Trenching by Kirkland Consolidated Gold Mines Ltd. 1966: 2 diamond-drill holes by Upper Canada Mines Ltd. 1971: Geochemical survey. 1973: 1 diamond-drill hole (249 feet) by Upper Canada Mines Ltd.
Upper Canada "B" Occurrence: Immediately west of Little Larder Lake, in central Gauthier Tp. Lat. 48.17°, Long. 79.81°.	Resident Geologist's Files, OMNR, Kirkland Lake: Gauthier Tp., Malouf (date unknown). ODM Map 50c, Township of Gauthier (occurrence not shown on map).	Au	Property underlain by Timiskaming metasediments and felsic metavolcanics. Diamond-drill core assays ranged from trace to 0.02 oz. Au/ton. Circa 1940: Diamond-drilling (footage unknown) by Toburn Gold Mines Ltd. 1945: Diamond-drilling (footage unknown) by Scott-Chibougama Mines Ltd. 1958: Property acquired by Upper Canada Mines Ltd. and used for tailings.
Utah Occurrence: Near the 2-mile post on the Gauthier-McElroy township boundary, in southern Gauthier Tp. Lat. 48.10°, Long. 79.84°.	Resident Geologist's Files, OMNR, Kirkland Lake: Gauthier Tp., Utah Larder Gold Mines Ltd. ODM Map 50c, Township of Gauthier (occurrence not shown on map).	Au	Schistose chloritic 'greenstone' is in contact with syenite porphyry. Assays of samples from an 8-foot wide band of iron formation exposed in a pit ranged from trace to 0.13 oz. Au/ton. 1938: Surface work by Erie Canadian Mines Ltd. 1945: Surface work. 1948: Geophysical survey. 1950: 1 diamond-drill hole (99 feet) by Utah-Larder Gold Mines Ltd.

Name and Location	References	Metals	Remarks
GRENFELL TOWNSHIP			
(NTS 42A/1E)			
Elliot Occurrence: On Cook Lake, in eastern Grenfell Tp. Lat. 48.15°, Long. 80.16°.	ODM 1964, GR30, p.14. ODM Map 2060, Bompas and Grenfell Townships.	Au	Gold values reported from 4 veins in Keewatin mafic metavolcanics. Circa 1960: Magnetic and electrical surveys.
Hecmac Occurrence: 1 mile north of east end of Kenogami Lake, in southern Grenfell Tp. Lat. 48.11°, Long. 80.20°.	Resident Geologist's Files, OMNR, Kirkland Lake: Grenfell Tp., Hecmac (1959). ODM Map 2060, Bompas and Grenfell Townships.	Au	A silicified and brecciated zone containing quartz stringers occurs in Keewatin mafic metavolcanics. Assays ranged from trace to 0.1 oz. Au/ton.
Tremblay Occurrence: ½ mile north of east end of Kenogami Lake, in southern Grenfell Tp. Lat. 48.11°, Long. 80.20°.	Resident Geologist's Files, OMNR, Kirkland Lake: Grenfell Tp., Tremblay (1939). ODM Map 2060, Bompas and Grenfell Townships.	Au	Keewatin mafic metavolcanics are cut by a 4-foot wide silicified fracture zone. Assays of selected samples range up to 2.76 oz. Au/ton. 1939: Trenching and sampling by Sylvanite Gold Mines Ltd. 1940: Geological survey, trenching and 2 diamond-drill holes by Kirkland-Hudson Bay Gold Mines Ltd.
HEARST TOWNSHIP			
(NTS 32D/4E)			
Beach Occurrence: ½ mile north of Estrangement Lake, in northwest-central Hearst Tp. Lat. 48.08°, Long. 79.70°.	Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., Griffen and McRae (1958). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Keewatin mafic metavolcanics are intruded by syenite, syenite porphyry, and diorite. Best diamond-drill core intersection was 2.0 oz. Au/ton over 2 feet. 1958-1959: 4 diamond-drill holes (480 feet) by McCrea.
Combined Larder Occurrence: ¾ mile southeast of south end of Southwest Arm of Larder Lake, in southeast-central Hearst Tp. Lat. 48.04°, Long. 79.67°.	ODM 1924, Vol.33, pt.3, p.25. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Keewatin metavolcanics and Timiskaming metasediments are intruded by bodies of syenite and by later diabase dikes. Pillow lava is cut by an iron formation band containing quartz-carbonate stringers. Mineralization consists of pyrite, with minor pyrrhotite and magnetite. Representative sample from dump assayed 0.02 oz. Au/ton and 43% S. Circa 1911: Surface work and prospect shaft by Combined Larder Mines Ltd.
Corson Occurrence: 1¾ miles southwest of Fitzpatrick Bay of Larder Lake, in southwestern Hearst Tp. Showing in patented claim L25341. Lat. 48.03°, Long. 79.72°.	ODM 1947, Vol.56, pt.8, p.24. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Property underlain by Timiskaming metasediments (greywacke and conglomerate) which are intruded by syenite and diorite. A 10-inch wide vein containing minor pyrite has been trenched for 200 feet. Grab sample assayed 0.01 oz. Au/ton. Pre-1936: Surface work by Corson Gold Mines Ltd. 1936: 1 diamond-drill hole (802 feet) by Arc Mining Syndicate Ltd.
Dion Occurrence: ½ mile north of Estrangement Lake, in northwest-central Hearst Tp. Claims L30896,	Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., Anonymous	Au	Keewatin mafic metavolcanics are cut by porphyry dikes which are well mineralized with pyrite and

Name and Location	References	Metals	Remarks
L30897, L31079, L40820, and L40823. Lat. 48.08°, Long. 79.70°.	(1936). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.		contain quartz stringers. Assays ranged from trace to 0.10 oz. Au/ton. Circa 1936: Pitting and trenching by N. Dion.
Le Beouf Occurrence: 1¼ miles north of mouth of Sharp Creek, in central Hearst Tp. Lat. 48.07°, Long. 79.68°.	Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., Stelly (1935). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden (occurrence not shown on map).	Au	Contact between quartz porphyry and schist cut by lamprophyre dikes. Assays ranged from trace to 0.40 oz. Au/ton. Circa 1935: Pitting and trenching by LeBeouf.
Lucky Girl Occurrence: 1½ miles west-southwest of Big Pete Island, in eastern Hearst Tp. Possibly claim L51501. Lat. 48.06°, Long. 79.64°.	Northern Miner, Sept. 25, 1947. Au Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden (occurrence not shown on map).		Keewatin metavolcanics and Timiskaming metasediments are intruded by syenite. Diamond-drill core sample assayed 0.2 oz. Au/ton over 5 feet. 1947: 3 diamond-drill holes (1,522 feet) by Lucky Girl Mines Ltd. 1948: Geophysical survey.
MacDonald Occurrence: 1¼ miles south of mouth of Sharp Creek, in south-central Hearst Tp. Lat. 48.03°, Long. 79.68°.	Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., MacDonald (1936). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden (occurrence not shown on map).	Au	Keewatin metavolcanics are cut by syenite porphyry dikes containing quartz veins. An assay of 6.9 oz. Au/ton was reported.
Petrin-Mortson Occurrence: 1¼ miles southwest of western end of Estrangement Lake, in western Hearst Tp. Showing in patented claim L31629. Lat. 48.05°, Long. 79.75°.	ODM 1947, Vol.56, pt.8, p.28. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Keewatin metavolcanics are flanked by Timiskaming conglomerate and greywacke. Also several small syenite plugs. A shear zone, striking N37°E and dipping vertically, contains quartz stringers and pyrite. Fine-grained native gold occurs in the quartz and in chloritic slips adjacent to it. 1937: Trenching, channel sampling, and 7 diamond-drill holes (footage unknown) by Wright-Hargreaves Mines Ltd.
Siscoe Occurrence: 1 mile north-northwest of western end of Estrangement Lake, in north-western Hearst Tp. Lat. 48.08°, Long. 79.75°.	ODM 1947, Vol.56, pt.8, p.31 (Claim L.39,692). Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., Griffen and McRae (1958). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Keewatin metavolcanics and Timiskaming metasediments (greywacke and conglomerate) are cut by syenite and syenite porphyry dikes. Assays of diamond-drill core ranged from trace to 2.0 oz. Au/ton. 1944: Geological and electromagnetic surveys, and 3 diamond-drill holes (860 feet) by Siscoe Gold Mines Ltd. 1958-1959: 4 diamond-drill holes (725 feet) by McRae.
Torrens Occurrence: 2¼ miles southwest of Fitzpatrick Bay, in southwestern Hearst Tp. Lat. 48.03°, Long. 79.75°.	ODM 1947, Vol.56, pt.8, p.31. Au (Claims L.50,375, 50,376, 50,379, and 50,380). Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.		Keewatin metavolcanics and Timiskaming metasediments are cut by bodies of syenite porphyry and diorite, and by syenite and felsite dikes. Low gold values reported from a carbonatized conglomerate containing a few quartz stringers and minor sulphides.

Name and Location	References	Metals	Remarks
			1941: Surface work by McNeill. 1957: 2 diamond-drill holes (818 feet) by Hurd.
Tovarich-Larder Occurrence: North-western corner of Hearst Tp. and northeastern corner of McElroy Tp. Claim L8126. Lat. 48.08°, Long. 79.76°.	ODM 1950, Vol.59, pt.6, p.54,55. Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., Sylvanite Gold Mines Ltd. (1949). ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	Claims underlain by complex assemblage of Keewatin metavolcanics and Timiskaming metasediments cut by diorite, syenite, syenite porphyry, and lamprophyre. Diamond-drilling in 1949 intersected two closely spaced pink syenite dikes which yielded 8 gold-bearing intersections, the best being 0.19 oz. Au/ton over 4 feet. Diamond-drilling in 1949 yielded values ranging from trace to 0.8 oz. Au/ton. 1943-1944: 14,610 feet of diamond-drilling, mostly on the portion of the property in McElroy Tp. 1949: 5 diamond-drill holes (507 feet) by Sylvanite Gold Mines Ltd. 1968: Airborne and ground geophysics by Canadian Nickel Company. 1972: Electromagnetic survey by Cantech Resources Ltd.
Tyon Occurrence: West of Benson Creek, near the Hearst-Skead township boundary, in southwestern Hearst Tp. Showings in patented claims L3943 and L4041. Lat. 48.01°, Long. 79.81°.	ODM 1947, Vol.56, pt.8, p.29. Resident Geologist's Files, OMNR, Kirkland Lake: Hearst Tp., South Kirkland Mines Limited. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au Mo Pb	Timiskaming greywacke and conglomerate are intruded by quartz-feldspar porphyry and syenite porphyry. Green carbonate rock occurs as scattered remnants in and adjacent to the intrusive bodies. A stockwork of quartz stringers in claim L3943, sparsely mineralized with pyrite, molybdenite and galena, yielded values ranging from 0.10 to 0.18 oz. Au/ton over widths of from 0.4 to 4.4 feet. A zone of narrow quartz lenses in claim L4041 yielded a value of 0.12 oz. Au/ton across 3 feet. Circa 1940-1947: Surface work by Tyon Gold Mines Ltd.

HINCKS TOWNSHIP

(NTS 42A/2W, 42A/3E)

McCollum Occurrence: 1½ miles south-southeast of McWilliams Lake, in eastern Hincks Tp. Lat. 48.06°, Long. 80.94°.	ODM 1932, Vol.41, pt.2, p.20. ODM Map 41a, Bannockburn Gold Area.	Au	Keewatin metavolcanics (basalt and andesite) are intruded by a lens-shaped body of granite and by dikes of porphyry and granite. A 1-foot wide quartz vein, striking north and dipping 35°W in the granite body, yielded values of 1.07 and 0.35 oz. Au/ton. 1932: Trenching by McCollum Gold Mines Limited.
McGill Occurrence: ¾ miles south-southeast of McWilliams Lake, in southeastern Hincks Tp. Claims L8272 and L8273. Lat. 48.04°, Long. 80.93°.	ODM 1932, Vol.41, pt.2, p.19,20. ODM Map 41a, Bannockburn Gold Area.	Au	Keewatin basalt is cut by numerous porphyry and lamprophyre dikes, and by several quartz veins and zones of quartz stringers which strike N60-90°W. Mineralization

Name and Location	References	Metals	Remarks
			consists of pyrite, and native gold occurs in 3 of the veins. Assays from surface and diamond-drill core were low except for part of one vein in claim L8272. 1931: Trenching and 8 diamond-drill holes by Mining Corporation of Canada Ltd. for McGill Gold Mines Ltd.
HOLMES TOWNSHIP (NTS 42A/1W, 42A/2E)			
Brookbank Occurrence: SW¼, S½, lot 10, con. II, Holmes Tp. Patented claim MR6226. Lat. 48.03°, Long. 80.51°.	ODM 1966, GR44, p.15. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2078, Holmes-Burt Area	Au	Shear zone, 1 foot wide and striking N70°W, occupies a contact between syenite and greyish-white tuffaceous rock. Grab sample from zone assayed 0.06 oz. Au/ton. 1935: Pitting and trenching. 1953: Trenching by Matachewan Consolidated Mines Ltd.
Loki 'A' Occurrence: N¼, lot 8, con. II, Holmes Tp. Lat. 48.04°, Long. 80.48°.	ODM 1966, GR44, p.14. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2078, Holmes-Burt Area.	Au	Diamond-drilling intersected mineralized fractures in a syenite-mafic tuff complex. Best assay was 0.08 oz. Au/ton across 75 feet. 1946: 5 diamond-drill holes by Loki Mines Ltd.
Loki 'B' Occurrence: SW¼, N¼, lot 7 and NE¼, S½, lot 8, con. II, Holmes Tp. Lat. 48.04°, Long. 80.48°.	ODM 1966, GR44, p.14. ODM Map 2078, Holmes-Burt Area.	Au Pb Cu	Quartz veinlets containing pyrite and some chalcopyrite and galena occur at 2 locations in a feldspar porphyry body. Grab sample from SW¼, N¼, lot 7 assayed 0.63 oz. Au/ton and 6.8% Pb. In NE¼, S½, lot 8, visible gold reported and high assays obtained. Circa 1922: Diamond-drilling by Coniagas Mines Ltd. 1933: Channel-sampling by Agaura Explorations Ltd.
Loki 'C' Occurrence: NW¼, N¼, lot 9 and NE¼, N¼, lot 10, con. I, Holmes Tp. Lat. 48.03°, Long. 80.50°.	ODM 1966, GR44, p.14. ODM Map 2078, Holmes-Burt Area.	Au Cu	Contact between feldspar porphyry and 'greenstone' marked by a shear zone which is 2 feet wide, exposed for 15 feet, and mineralized with pyrite and quartz. Grab sample assayed 0.08 oz. Au/ton and 0.56 % Cu.
Loki 'D' Occurrence: S½, N¼, lot 10, con. I, Holmes Tp. Lat. 48.02°, Long. 80.51°.	ODM 1966, GR44, p.15. ODM Map 2078, Holmes-Burt Area.	Au Ag Cu	Sheared mafic metavolcanics cut by a quartz vein ranging in width from 3 inches to 1 foot and sparsely mineralized with pyrite and chalcopyrite. Grab sample assayed 2.2 oz. Au/ton and 3.9 oz. Ag/ton.
Geraldine Lake Occurrence: West shore of Geraldine Lake, in SE¼, N¼, lot 10, con. II, Holmes Tp. Lat. 48.04°, Long. 80.50°.	ODM 1966, GR44, p.13,14. ODM Map 2078, Holmes-Burt Area.	Au Cu	Syenite porphyry cut by a 4-foot wide fracture zone containing quartz veinlets and mineralized with disseminated pyrite and minor chalcopyrite. Grab sample assayed 0.10 oz. Au/ton and 0.79% Cu.

Name and Location	References	Metals	Remarks
KATRINE TOWNSHIP			
(NTS 32D/4E, 32D/5E)			
Callighan Occurrence: West end of Mulven Lake, in eastern Katrine Tp. Showing in patented claim L23551. Lat. 48.30°, Long. 79.64°.	ODM 1964, GR29, p.13. Resident Geologist's Files, OMNR, Kirkland Lake: Katrine Tp., J.A.M. (1939), Jordan (1934). ODM Map 2061, Arnold and Katrine Townships.	Au Cu	Keewatin mafic to intermediate metavolcanics intruded by a syenite porphyry body. Adjacent to the intrusion is a quartz vein, 900 feet long, 2 to 6 feet wide and striking N72°E, which contains pyrite and chalcopyrite. Assays of surface samples ranged from trace to 0.15 oz. Au/ton; diamond-drill core assays ranged from trace to 0.10 oz. Au/ton with one value of 16.7 oz. Au/ton. 1936: 1,056 feet of diamond-drilling by Erie Canadian Mines Ltd.
Lowe Occurrence: Approximately 2¼ miles north-northwest of the eastern end of Misema Lake, in central Katrine Tp. Lat. 48.24°, Long. 79.71°.	Resident Geologist's Files, OMNR, Kirkland Lake: Katrine Tp., Lowe-Katrine (1969). ODM Map 2061, Arnold and Katrine Townships (occurrence not shown on map).	Au	Intermediate to felsic metavolcanics cut by quartz-carbonate stringers. Assays of diamond-drill core ranged from trace to 0.05 oz. Au/ton. 1969: Electromagnetic survey and 2 diamond-drill holes (192 feet) by Kennco Explorations (Canada) Ltd.
Norwood Kirkland Occurrence: ½ mile east of eastern end of North Arm of Misema Lake, in western Katrine Tp. Showings in claims L21529 and L21832. Lat. 48.22°, Long. 79.74°.	ODM 1964, GR29, p.12. Resident Geologist's Files, OMNR, Kirkland Lake: Katrine Tp., Norwood Kirkland Gold Mines Ltd. (1931). ODM Map 2061, Arnold and Katrine Townships.	Au Pb Zn	Keewatin dacitic metavolcanics intruded by syenite porphyry dikes. Quartz schist contains pyrite with minor galena and sphalerite. Assays of chip and channel samples averaged 0.7 oz. Au/ton. Pre-1936: Trenching and test-pitting. 1936-1938: Pitting, trenching, and 14 diamond-drill holes by Norwood Kirkland Gold Mines Ltd. 1972: Trenching by G. Polson.
KNIGHT TOWNSHIP			
(NTS 41P/10W, 41P/11E)			
McIntyre Porcupine Occurrence: North end of McIntyre Lake, in southern Knight Tp. Claim GG6649. Lat. 47.67°, Long. 81.03°.	ODM 1932, Vol.41, pt.2, p.57. Resident Geologist's Files, OMNR, Kirkland Lake: Knight Tp., Anonymous (1938). ODM Map P.1037, Knight Township (Dalhousie Oil Company Ltd.).	Au Cu	A fracture zone containing quartz-carbonate veinlets and pyrite occurs at the contact between Keewatin metavolcanics and granodiorite, both of which are cut by lamprophyre and porphyry dikes. The veinlets contain minor pyrite, chalcopyrite, arsenopyrite, and in places visible gold. Channel sampling indicated low grade mineralization. Assays of diamond-drill core ranged from 0.04 to 0.88 oz. Au/ton. 1931: Stripping and trenching by McIntyre Porcupine Mines Ltd. Circa 1938: Trenching and diamond-drilling (footage unknown) by Noranda Mines Ltd. and Erie Canadian Mines Ltd.
Timiskaming Occurrence: 1½ miles southeast of Arthur Lake, in southwestern Knight Tp. Lat. 47.69°, Long. 81.04°.	Resident Geologist's Files, OMNR, Kirkland Lake: Knight Tp., Jordan (1936). ODM Map P.1037, Knight	Au	Free gold observed in a shear zone cutting granodiorite and Keewatin basalt. Assays ranged from 0.02 to 0.14 oz. Au/ton.

Name and Location	References	Metals	Remarks
	Township (Timiskaming Nickel Ltd.).		1935: Stripping and trenching by Erie Canadian Mines Ltd. 1967-1968: Airborne geophysical survey by W.D. Sutherland and Associates and Timiskaming Nickel Ltd.
LEBEL TOWNSHIP (NTS 32D/4W, 42A/1E)			
Belrosa-Rocamsa 'A' Occurrence: ¼ mile west of Turtle Lake, in central Lebel Tp. Claims L7748-L7750, L7752 and L7753. Lat. 48.14°, Long. 79.98°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Belrosa Mines Ltd. (1945). ODM Map 53a, Township of Lebel.	Au	East- to southeast-striking Timiskaming conglomerate and greywacke are cut by small bodies of acid syenite and feldspar porphyry, an offshoot of the Lebel syenite stock, and bodies of carbonate rock. Assays of diamond-drill core ranged from trace to 0.03 oz. Au/ton. 1918-1922: Unspecified amount of diamond-drilling by Brant. 1936-1937: Trenching, pitting, and diamond-drilling by Boyd Kirkland Gold Mines Ltd. 1944-1945: Stripping, trenching, magnetic survey, and 24 diamond-drill holes (6,444 feet) by Belrosa Mines Ltd. and Rocamsa Mines Ltd.
Belrosa-Rocamsa 'B' Occurrence: ¼ mile east of Turtle Lake, in central Lebel Tp. Claims L3096-L3098 and possibly patented claims L1055 and L3192. Lat. 48.14°, Long. 79.93°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Rocamsa Mines Ltd. (1945). ODM Map 53a, Township of Lebel.	Au	East-trending Timiskaming tuff is intruded by the Lebel syenite stock. Zone of carbonate rock occurs along a shear zone on south shore of Turtle Lake. Assays of diamond-drill core ranged from trace to 0.02 oz. Au/ton. 1913: Surface work by Bouzan. 1944-1945: Magnetic survey, surface prospecting, and 7 diamond-drill holes (2,738 feet) by Belrosa Mines Ltd. and Rocamsa Mines Ltd.
Crystal Kirkland Occurrence: North of the eastern half of Crystal Lake, in eastern Lebel Tp. Patented claims L9932-L9935. Lat. 48.16°, Long. 79.90°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 53a, Township of Lebel.	Au	Timiskaming metavolcanics and metasediments (trachyte flows and sills, tuff, and greywacke) are intruded by small bodies of quartz porphyry and feldspar porphyry. Diamond-drill core samples assayed 0.08 and 0.09 oz. Au/ton over 3-foot sections of feldspar porphyry containing quartz stringers.
Erin Occurrence: Between the 1- and 2-mile posts on the Lebel-Gauthier township boundary, in southeastern Lebel Tp. and southwestern Gauthier Tp. Lat. 48.13°, Long. 79.89°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Parsons and McLeod (1948). ODM Maps 53a, Township of Lebel, and 50c, Township of Gauthier (occurrence not shown on map).	Au Ag Pb	Much of property is drift-covered. Keewatin metavolcanics (tuff and agglomerate) are intruded by the Lebel syenite stock. Southwest-trending carbonate zone cut by a diabase dike has been inferred. Traces of galena and silver reported in diamond-drill core and assays ranged from 0.005 to 0.08 oz. Au/ton. 1940: 1 diamond-drill hole (150 feet). 1944: 10 diamond-drill holes (9,032 feet) by Erin Kirkland Mines Ltd.

Name and Location	References	Metals	Remarks
Gull-Kirkland Occurrence: South shore of eastern arm of Gull Lake, in west-central Lebel Tp. Claims LS202 and L2923. Lat. 48.16°, Long. 79.99°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 53a, Township of Lebel (occurrence not shown on map).	Au	Southeast-trending Timiskaming tuffaceous conglomerate, fragmental tuff, and greywacke intruded by two small stocks of basic syenite. No economic mineralization outlined. 1938: Surface exploration and 6,455 feet of diamond-drilling by Gull-Kirkland Mines Ltd.
Harrison Occurrence: Central Lebel Tp. Lat. 48.16°, Long. 79.96°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Savage (1953). ODM Map 53a, Township of Lebel (occurrence not shown on map).	Au Cu	Timiskaming tuff and tuff breccia intruded by basic syenite, feldspar, porphyry, and lamprophyre. Showing consists of quartz veins containing pyrite and chalcopyrite. Grab sample assayed 0.02 oz. Au/ton; diamond-drill core samples yielded low gold values. 1952: Trenching and 1 diamond-drill hole (133 feet).
Kaplan Occurrence: ¼ mile north of Crystal Lake, in eastern Lebel Tp. Lat. 48.16°, Long. 79.89°.	ODM 1968, MRC9, p.92. Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Holbrooke (1939). ODM Map 53a, Township of Lebel (occurrence not shown on map).	Au U	Timiskaming conglomerate, greywacke, argillite, and trachyte intruded by plugs and dikes of feldspar porphyry, syenite porphyry, mafic syenite, and lamprophyre. Diamond-drilling intersected a fracture zone containing quartz stringers. Assays ranged from 0.09 to 0.11 oz. Au/ton. Chip sample of tuffaceous greywacke assayed 2 lb. U ₃ O ₈ /ton. 1939: Geological survey and sampling by Sylvanite Gold Mines Ltd. 1966: Trenching and 7 diamond-drill holes (2,000 feet) by Rio Algom Mines Ltd.
Lebel Lode Occurrence: 1 mile north of eastern end of Gull Lake, in northwestern Lebel Tp. Showings in claims L2262 and L2909. Lat. 48.17°, Long. 79.98°.	ODM 1923, Vol.32, pt.4, p.69. ODM 1935, Vol.44, pt.2, p.61. ODM 1964, MRC3, p.50,51. Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Hopkins (1933), McNab (1939).	Au Cu	Northeast-trending Keewatin metavolcanics and southeast-trending Timiskaming metasediments and metavolcanics (conglomerate, greywacke, tuff, tuff breccia, and agglomerate) are intruded by Algoman diorite and feldspar porphyry. The No.4 vein, dipping 75°S and traced for 400 feet on surface, consists of carbonatized and silicified trachyte (porphyry) containing 5-40% fine-grained pyrite, traces of chalcopyrite and some irregular quartz veinlets. Assays ranged from trace to 1.75 oz. Au/ton. 1923: Trenching, test-pitting, and 4 diamond-drill holes by Lebel Lode Ltd. 1929: No.1 Shaft to 30 feet by Lebel Lode Ltd. 1933-1934: Geological survey and No.2 Shaft sunk on No.4 vein by Lebel Lode Ltd.
Mid-Kirk Occurrence: ½ mile south of western arm of Gull Lake, in western Lebel Tp. Claim L1904. Lat. 48.15°, Long. 80.01°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Campbell (1937). ODM Map 53a, Township of	Au	Property underlain by Timiskaming greywacke and trachytic sills which are cut by porphyry dikes. Shear zones in quartz and feldspar por-

Name and Location	References	Metals	Remarks
	Lebel.		phyry yielded values ranging from trace to 0.07 oz. Au/ton. Circa 1937: Pitting and trenching by Mid-Kirk Gold Mines Ltd.
Roche Occurrence: Southeastern Lebel Tp. Lat. 48.11°, Long. 79.90°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Whiteman (1949). ODM Map 53a, Township of Lebel (occurrence not shown on map).	Au	Finely bedded Keewatin tuff and iron formation, cut by syenite and diabase dikes, form a northeast-trending syncline. Assays of diamond-drill core ranged from 0.10 to 0.36 oz. Au/ton. Relogging of the core in 1951 did not confirm these values. Circa 1914: Prospecting and trenching. 1914-1946: Sporadic drilling reported but no records available. 1946: 3 diamond-drill holes (2,000 feet). 1949-1950: 4 diamond-drill holes (606 feet). 1960: Geological survey and 1 diamond-drill hole by Jalore Mining Co. Ltd.
Simpson Occurrence: West end of Crystal Lake, in east-central Lebel Tp. Patented claims LS272 and L2327. Lat. 48.15°, Long. 79.92°.	Resident Geologist's Files, OMNR, Kirkland Lake: Lebel Tp., Hogg (1950). ODM Map 53a, Township of Lebel.	Au	East-southeast-trending Timiskaming greywacke is intruded by "porphyrite" (Algoman porphyry and altered country rock). Low gold assays reported from diamond-drill core samples. 1940: 2 diamond-drill holes (883 feet) by Simpson Gold Mines Ltd.

LEE TOWNSHIP

(NTS 42A/1W, 42A/8W)

Campbell, N. (Boulder) Occurrence: 4/5 mile northwest of Swan Lake, in northeastern Lee Tp. Patented claims L16254 and L16270. Lat. 48.25°, Long. 80.28°.	ODMNA 1971, GR92, p.25. ODMNA Map 2214, Terry and Lee Townships.	Au	Quartz float, discovered near the common boundary of the 2 claims, assayed 0.08 and 0.17 oz. Au/ton. Circa 1940: Trenching by Sylvanite Gold Mines Ltd.
Lee Occurrence: ¾ mile north-northwest of Sucker Lake, in eastern Lee Tp. Shaft in claim L16275. Lat. 48.22°, Long. 80.28°.	ODMNA 1971, GR92, p.26. Resident Geologist's Files, OMNR, Kirkland Lake: Lee Tp., Sylvanite Gold Mines Ltd. ODMNA Map 2214, Terry and Lee Townships.	Au	Keewatin sheared altered basalt is cut by quartz-carbonate veins containing feldspar, pyrite, and gold. Assays were all low. 1931: Trenching, inclined shaft to 125 feet, and 250 feet of drifting on 125-foot level by Lee Gold Mines Ltd.

McARTHUR TOWNSHIP

(NTS 42A/3, 42A/6)

Claim TRP2984 Occurrence: 1/5 mile south of McArthur Lake, in the southeast corner of McArthur Tp. Lat. 48.20°, Long. 81.21°.	ODM 1926, Vol.35, pt.6, p.52. ODM 1978, GR161, p.62-65 (Theriault, A.). ODM Map 2363, McArthur and Douglas Townships.	Au	Geology and mineralization identical to that of Theriault Occurrence. Gold obtained by panning decomposed rock from pits sunk in a feldspar porphyry dike located 300 feet southeast of the southeastern corner of claim TRP2984.
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Name and Location	References	Metals	Remarks
Harrison Occurrence: 4/5 mile east of the narrows of Triple Lake, in southern McArthur Tp. Claim TRP10828. Lat. 48.20°, Long. 81.28°.	ODM 1926, Vol.35, pt.6, p.53. ODM 1978, GR161, p.52, 53 (Texas Gulf, Incorporated). ODM Map 2363, McArthur and Douglas Townships (Texas Gulf Incorporated).	Au Pb	Keewatin breccia and tuff are cut by an olivine diabase dike and a band of iron formation. A few quartz stringers in the iron formation contain some galena. High gold values reported.
Lohner Occurrence: ¼ mile west of south end of Triple Lake, in southwestern McArthur Tp. Lat. 48.19°, Long. 81.30°.	ODM 1926, Vol.35, pt.6, p.54. ODM Map 2363, McArthur and Douglas Townships (occurrence not shown on map).	Au	Slightly schistose 'greenstone' cut by a sugary quartz vein which strikes N15°E, dips 75°E and has a maximum width of 3 feet. Mineralization consists of minor sulphides and visible gold.
Theriault Occurrence: 1/8 mile south of McArthur Lake, in the southeast corner of McArthur Tp. Claim TRP3027. Lat. 48.19°, Long. 81.25°.	ODM 1926, Vol.35, pt.6, p.52. ODM 1978, GR161, p.62-65. Regional Geologist's Files, OMNR, Timmins: McArthur Tp., File T-139. ODM Map 2363, McArthur and Douglas Townships.	Au Cu	Keewatin ultramafic to felsic metavolcanics are intruded by trondhjemite quartz-feldspar porphyry. A set of parallel quartz veins is associated with northeast-trending feldspar porphyry dikes which cut the metavolcanics and the intrusion. The veins contain disseminated pyrite, chalcopyrite, and gold. In 1937, a channel sample yielded 0.25 oz. Au/ton across 5.2 feet. The felsic dikes also contain pyrite and yielded gold values.
Triple Lake Occurrence: East shore of Triple Lake, north of the narrows, in southwestern McArthur Tp. Showing in claim TRP11209. Shaft in claim TRP18110. Lat. 48.21°, Long. 81.28°.	ODM 1926, Vol.35, pt.6, p.53, 54. ODM 1978, GR161, p.44 (E.T. Donaldson). ODM Map 2363, McArthur and Douglas Townships, (Donaldson, E.T.).	Au Cu Zn	Keewatin intermediate to felsic metavolcanics are cut by a gabbro dike, and by a quartz vein which trends N65°E, dips 60°S to vertically, and varies from 2 to 5 feet in width. Mineralization consists of pyrite, chalcopyrite, pyrrhotite, minor sphalerite and some visible gold. Channel samples assayed up to 2.42 oz. Au/ton. Circa 1927: 55-foot shaft and 2 diamond-drill holes by Triple Lake Porcupine Gold Mines Ltd.

McELROY TOWNSHIP

(NTS 32D/4W)

Anderson-Deacon-Pollock Occurrence: ¾ mile north-northwest of Cathroy Larder Mine, in southern McElroy Tp. Lat. 48.03°, Long. 79.85°.	ODM 1950, Vol.59, pt.6, p.38,39 and 53 (Pollock). Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1950-3, Township of McElroy and portion of Township of Boston.	Au	A shear zone, 50 to 100 feet in width and striking S60°E, occurs near a contact between Keewatin diorite and felsic fragmental rocks. The zone is impregnated with quartz and mineralized with pyrite and some pyrrhotite. Grab sample assayed 0.01 oz. Au/ton. 1948: Trenching by Anderson, Deacon and Pollock. 1961: Turam survey by Johnston.
Charest Occurrence: 2¼ miles northwest of Cathroy Larder Mine, in southwest-central McElroy Tp. Claim L5305. Lat. 48.04°, Long. 79.86°.	ODM 1950, Vol.59, pt.6, p.44,45. ODM Map 1950-3, Township of McElroy and portion of Township of Boston.	Au Cu	Small stock of coarse-grained granite cut by a quartz vein, 300 feet long, averaging 1 inch in width and striking N30°W, which in places contains pyrite, chalcopyrite and visible gold. Circa 1920: Trenching and shaft (depth unknown).

Name and Location	References	Metals	Remarks
Erickson (Placer) Occurrence: 1¼ miles west of Grassy Lake in northern McElroy Tp. Lat. 48.10°, Long. 79.85°.	Resident Geologist's Files, OMNR, Kirkland Lake: McElroy Tp., Erickson (1968). ODM Map 1950-3, Township of McElroy and portion of Township of Boston (occurrence not shown on map).	Au	Depth of overburden checked with seismic and magnetic surveys, and the sand and gravel deposits were checked for gold and diamonds. Assays of sand and gravel ranged from trace to 0.58 oz. Au/ton. 1965-1966: Seismic and magnetic surveys by R.A. Erickson. 1967: Overburden drilling by R.A. Erickson. 1968: Radiometric survey and beneficiation studies by R.A. Erickson.
Hughes-McElroy Occurrence: 3¼ northwest of Cathroy Larder Mine, in western McElroy Tp. Patented claims L6998 and L6999. Lat. 48.05°, Long. 79.88°.	Northern Miner, June 22, 1939. Au ODM 1950, Vol.59, pt.6, p.47. Cu ODM Map 1950-3, Township of McElroy and portion of Township of Boston.		Keewatin mafic to intermediate metavolcanics cut by a small dike of syenite which contains quartz and is mineralized with pyrite and chalcopyrite. Sample assayed 0.03 oz. Au/ton. Circa 1938: Pitting and trenching.
Judge Occurrence: Adjacent to the 4-mile post on the McElroy-Catharine township boundary, in southern McElroy Tp. Patented claim L4409. Lat. 48.02°, Long. 79.85°.	ODM 1950, Vol.59, pt.6, p.47. Au ODM Map 1950-3, Township of McElroy and portion of Township of Boston.	Cu	Keewatin intermediate metavolcanics are cut by a quartz-carbonate vein which has a maximum width of 12 feet and contains pyrite, and minor bornite, chalcopyrite and malachite. Some values in gold obtained pre-1929. Grab sample taken in 1950 assayed 0.01 oz. Au/ton.
Meilleur Occurrence: Adjacent to the 1-mile post on the Boston-McElroy township boundary, in southwestern McElroy Tp. Patented claims L5128 and L5129. Lat. 48.03°, Long. 79.89°.	Resident Geologist's Files, OMNR, Kirkland Lake: McElroy Tp., Robb (1945). ODM Map 1950-3, Township of McElroy and portion of Township of Boston.	Au Mo	Keewatin andesite is cut by porphyry dikes and by a 3¼-inch wide quartz vein containing pyrite and molybdenite. Assays ranged from trace to 0.32 oz. Au/ton. Circa 1945: Pitting and trenching by Meilleur.
Mondoux Occurrence: 3 miles northwest of Cathroy Larder Mine, in southwestern McElroy Tp. Patented claims L37066, L39843, and claim L5266. Lat. 48.05°, Long. 79.88°.	ODM 1950, Vol.59, pt.6, p.51, 52. Au ODM Map 1950-3, Township of McElroy and portion of Township of Boston.	Cu Pb Zn Bi	Keewatin intermediate to felsic metavolcanics are cut by small bodies and dikes of granite, and by a lenticular quartz-carbonate vein which trends northeast and averages 6 inches in width. Near where the vein intersects a granite dike, an ore shoot containing chalcopyrite, pyrite, galena, sphalerite, pyrrotite, bismuth, and gold was found. Circa 1920: Pitting, trenching, and 250-foot shaft with lateral development on levels at 75, 125 and 250 feet. Some ore extracted from a stope between the 75- and 50-foot levels.
St. Jean Occurrence: 400 feet west of the 1-mile post on the Gauthier-McElroy township boundary, in northwestern McElroy Tp. Lat. 48.10°, Long. 79.76°.	ODM 1950, Vol.59, pt.6, p.54. Au Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1950-3, Township of McElroy and portion of Township of Boston.		Gold values reported from a quartz-sulphide zone in Keewatin brecciated pillow lava. Circa 1917: 30-foot prospect shaft. 1956: 1 diamond-drill hole (102 feet) by Hoshko.

Name and Location	References	Metals	Remarks
McFADDEN TOWNSHIP			
(NTS 32D/4E)			
Lucky Girl (Avery, R.W.?) Occurrence: On the large island situated 1 mile southwest of Big Pete Island in Larder Lake, in western McFadden Tp. Lat. 48.08°, Long. 79.63°.	ODM 1947, Vol.56, pt.8, p.6. ODM Map 1947-1, Township of Hearst and portion of Township of McFadden.	Au	A diamond-drill hole passed through Keewatin intermediate to felsic metavolcanics cut by syenite porphyry, felsite, and lamprophyre dikes. A 5-foot section of quartz veining assayed 0.2 oz. Au/ton. 1947: 3 diamond-drill holes (1,522 feet) by Lucky Girl Mines Limited.
McGARRY TOWNSHIP			
(NTS 32D/4E)			
Campbell Occurrence: ½ mile northeast of eastern end of Bear Lake, in western McGarry Tp. Patented claim L85100. Lat. 48.15°, Long. 79.60°.	Resident Geologist's Files, OMNR, Kirkland Lake: McGarry Tp., Campbell. ODM Map 50a, Township of McGarry.	Au	Interbedded Timiskaming greywacke and trachyte, striking N65°E and dipping south, are intruded by feldspar porphyry dikes. Assays of samples from quartz veins ranged from trace to 0.08 oz. Au/ton with one value of 1.3 oz. Au/ton. Circa 1920: Shaft (depth unknown). 1939: Surface work. 1941: 3 diamond-drill holes by Drummond. 1967: Stripping and 1 diamond-drill hole (156 feet) by Campbell.
Kerromac-Carbonate Occurrence: ¼ mile east and ¾ mile northeast of northeastern corner of Beaver Lake, in northwestern McGarry Tp. Claims L31808 and L40998. Lat. 48.16°, Long. 79.61°.	Resident Geologist's Files, OMNR, Kirkland Lake: McGarry Tp., Carbonate Larder Mines Ltd. ODM Map 50a, Township of McGarry (occurrence not shown on map).	Au	Southern part of property underlain by a large gabbro body which is in fault contact with Timiskaming metasediments to the south. Northern part underlain by Keewatin mafic metavolcanics cut by syenite dikes. Samples of carbonatized chlorite schist from claim L31808 assayed from trace to 0.06 oz. Au/ton. 1940: Pitting, trenching, and sampling by Preston East Dome Mines Ltd., and 2 diamond-drill holes (145 feet) by Carbonate Larder Mines Ltd. 1945: 10 diamond-drill holes (1,741 feet) by Kerromac Mining Co. Ltd.
Larder 'U' Island Occurrence: Northwestern part of Island 'U' in the Northeast Arm of Larder Lake, in southwestern McGarry Tp. Lat. 48.12°, Long. 79.60°.	Resident Geologist's Files, OMNR, Kirkland Lake: McGarry Tp., Larder 'U' Island Mines Ltd. ODM Map 50a, Township of McGarry (occurrence not shown on map).	Au	Cobalt Group sedimentary rocks are underlain by Keewatin metavolcanics cut by syenite and diabase dikes. Gold values encountered in 2 diamond-drill holes. Best assay was 0.28 oz. Au/ton over 0.5 feet. 1943-1945: 14 diamond-drill holes (more than 6,000 feet) by Larder U Island Mines Ltd.
Pelangio-Larder Occurrence: 1½ miles northeast of the tip of the Northeast Arm of Larder Lake, in eastern McGarry Tp. Diamond-drilling in patented claims	ODM 1941, Vol.50, pt.7, p.88,89. ODM Map 50a, Township of McGarry.		Steeply-dipping greywacke and slate, presumably Timiskaming, are overlain by 200-700 feet of Cobalt sedimentary rocks (greywacke, arkose, shale and conglomerate). Dia-

Name and Location	References	Metals	Remarks
L26338-L26340, L30763, L32753, L32767. Lat. 48.16°, Long. 79.61°.			mond-drilling revealed 2 narrow gold-bearing quartz stringers in the older metasediments; best assay was 0.44 oz. Au/ton over 1.3 feet. Scattered low gold values found near schist zones in older metased- iments. 1937-1938: 25 diamond-drill holes (15,338 feet) by Pelangio-Larder Mines Ltd.

McNEIL TOWNSHIP

(NTS 42A/2W)

Le Porte Occurrence: 1¼ miles west of Whitefish Lake, in central McNeil Tp. Claim TRP8191 (or TRP 8198). Lat. 48.15°, Long. 80.85°.	ODM 1924, Vol.33, pt.3, p.39. Au ODM Map 2205, Timmins- Kirkland Lake.		Visible gold reported from a felsite dike cutting Keewatin metabasalt.
McCall-Bromley Occurrence: Straddles the Whitefish River, in northwest- central McNeil Tp. Lat. 48.17°, Long. 80.90°.	Resident Geologist's Files, OMNR, Kirkland Lake: McNeil Tp., McCall and Bromley (1946). ODM Map 2205, Timmins- Kirkland Lake (occurrence not shown on map).	Au	Fracture in Keewatin metabasalt occupied by a 2- to 3-foot wide quartz vein. Bulk sample of 50 pounds assayed 0.30 oz. Au/ton.
Oliver Gold Syndicate Occurrence: 3½ miles southwest of Whitefish Lake, in southern McNeil Tp. Claims TRP9849 and TRP19410. Lat. 48.11°, Long. 80.85°.	ODM 1935, Vol.44, pt.2, p.49,50. ODM Map 2205, Timmins- Kirkland Lake (occurrence not shown on map).	Au Cu	Native gold reported from numer- ous quartz veins in claim TRP9849. In claim TRP19410, a 100-foot wide north-striking zone of altered and sheared 'greenstone' and tuff contains quartz, pyrite, and chalco- pyrite. Native gold and assays ranging from 0.06 to 0.26 oz. Au/ ton were reported. Circa 1935: Trenching by Oliver Gold Syndicate.

McVITTIE TOWNSHIP

(NTS 32D/4E)

Bear Lake Occurrence: Between Bear and Tournene Lakes, in southeastern McVittie Tp. Claim HS145 (L2044 on ODM Map 50b). Lat. 48.12°, Long. 79.64°.	ODM 1924, Vol.33, pt.3, p.21. Au ODM Map 50b, Township of McVittie (Sarcee).		Gold reported from a band of Ti- miskaming metavolcanics which is carbonatized and cut by quartz stringers. Pits and 90-foot shaft.
Biltmore Occurrence: ¾ mile west- southwest of Monocle Lake, in central McVittie Tp. Claim L12054 (in vicinity of patented claims L24273 and L39916 on ODM Map 50b). Lat. 48.15°, Long. 79.68°.	ODM 1924, Vol.33, pt.3, p.21 (Hall). Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Tatham (1946). ODM Map 50b, Township of McVittie (Biltmore, Kir Vit).	Au	Keewatin basaltic and dioritic lavas are intruded by small bodies and dikes of syenite porphyry and cut by diabase dikes. Basalt is cut by shear zones containing quartz, car- bonate, pyrite and visible gold. Assays of grab samples ranged from 0.02 to 4.7 oz. Au/ton; diamond- drill core samples ranged from trace to 0.27 oz. Au/ton. Circa 1924: Surface work by H.S. Hall. 1946: Pitting, trenching, and 3 diamond-drill holes (646 feet) by Biltmore.

Name and Location	References	Metals	Remarks
Bustraen 'A' Occurrence: Immediately southeast of Monocle Lake, in east-central McVittie Tp. Claim L37348. Lat. 48.15°, Long. 79.66°.	Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Bustraen (1970). ODM Map 50b, Township of McVittie.		1972: Trenching and 1 diamond-drill hole (103 feet) by M. Bustraen. Keewatin metavolcanics are intruded by syenite porphyry. Sample from a zone of carbonatization assayed 0.06 oz. Au/ton. 1924: Trenching. 1950: 1 diamond-drill hole by A. Bos. 1970-1973: Pitting, trenching, and 4 diamond-drill holes (709 feet) by M. Bustraen.
Bustraen 'B' Occurrence: ½ mile northwest of Monocle Lake, in central McVittie Tp. Patented claims L24501 and L24502. Lat. 48.18°, Long. 79.58°.	ODM 1924, Vol.33, pt.3, p.21 (Arthur-Costello (C.E. 125 and 126)). Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Bustraen (1973). ODM Map 50b, Township of McVittie (Kir Vit).	Au Cu	Keewatin metavolcanics and Timiskaming metasediments are intruded by fine-grained red feldspar porphyry which is fractured and cut by quartz-carbonate veinlets containing pyrite-chalcopyrite mineralization. Two diamond-drill core samples assayed 0.4 oz. Au/ton and 4% Cu, and 0.08 oz. Au/ton and 0.72% Cu. Circa 1924: Surface work by J. Arthur and J. Costello. 1970-1973: Trenching and 4 diamond-drill holes (569 feet) by M. Bustraen.
Dalby-Larder Occurrence: North and west of Blackwell Lake, in eastern McVittie Tp. Showing in patented claim L29859. Lat. 48.14°, Long. 79.62°.	ODM 1941, Vol.50, pt.7, p.63. ODM Map 50b, Township of McVittie.	Au	Property underlain by syenite porphyry and small masses of Keewatin metavolcanics. Low gold values reported from pits along a 40-foot wide shear zone on the north shore of Blackwell Lake.
Hersey Occurrence: On the large peninsula in the northern part of Beaverhouse Lake, in northwestern McVittie Tp. Patented claims L3631 and L5931. Lat. 48.18°, Long. 79.72°.	ODM 1924, Vol.33, pt.3, p.21. ODM Map 33b, Larder Lake Area.	Au	Keewatin basalt is intruded by a large body of syenite porphyry. Trenching along the contacts exposed heavily mineralized sections which yielded low gold values.
Imerson (Boulder) Occurrence: ¼ mile southeast of Pancake Lake, in southern McVittie Tp. Claim L8045 and patented claim L8046. Lat. 48.11°, Long. 79.71°.	ODM 1924, Vol.33, pt.3, p.20. ODM Map 50b, Township of McVittie.	Au	Property, which is mainly drift-covered is underlain by Timiskaming metavolcanics and metasediments and lies along the presumed location of the Larder Lake "Break". Rich gold-bearing float found, but diamond-drilling failed to intersect any mineralization in bedrock. 1922: Diamond-drilling (amount unknown) by Coniagas Mines Ltd. 1923: 2,000 feet of diamond-drilling by Anglo-Canadian Explorers Ltd.
Joy, W.C. Occurrence: South of western end of Beaverhouse Lake, in northwestern McVittie Tp. Claim L72774. Lat. 48.17°, Long. 79.75°.	Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Joy (1965). ODM Map 50b, Township of McVittie (marked as claim L35282).	Au	Assays of diamond-drill core samples were as follows: 0.02 oz. Au/ton over 5 feet of syenite and 0.35 oz. Au/ton over 1 foot of andesite. 1960-1964: 5 diamond-drill holes (576 feet) by W.C. Joy.
McVittie Kirkland Occurrence: South of the southern end of	ODM 1941, Vol.50, pt.7, p.81. ODM Map 50b, Township of	Au	Keewatin mafic metavolcanics and Timiskaming greywacke are intrud-

Name and Location	References	Metals	Remarks
Beaver Lake, in eastern McVittie Tp. Showing in claim L19096. Lat. 48.14°, Long. 79.63°.	McVittie.		ed by syenite porphyry. A narrow shear zone in the metavolcanics consists of quartz stringers in slightly mineralized, carbonatized schist. Low gold values over narrow widths reported from surface sampling and diamond-drilling. Best drill core intersection was 0.22 oz. Au/ton over 3 feet. 1937: Surface work and small amount of diamond-drilling by McVittie Kirkland Mines Limited.
Pancake Lake Occurrence: North of Pancake Lake, in southwestern McVittie Tp. Claim L35273 (patented claim L40312). Lat. 48.12°, Long. 79.71°.	ODM 1924, Vol.33, pt.3, p.20. ODM Map 50b, Township of McVittie.	Au	Encouraging gold values found in mineralized Timiskaming metasediments near the contact with a porphyry body.
Richardson Occurrence: ¼ mile north-east of Larder Lake village, adjacent to the McVittie-Hearst township boundary, in southern McVittie Tp. Patented claim T2041. Lat. 48.10°, Long. 79.70°.	ODM 1924, Vol.33, pt.3, p.21. ODM Map 50b, Township of McVittie.	Au	Good gold values obtained from a stockwork in carbonatized diorite porphyry.
Rose 'A' Occurrence: ¾ mile west of the western end of Malone Lake, in south-central McVittie Tp. Patented claim T2857. Lat. 48.13°, Long. 79.70°.	ODM 1941, Vol.50, pt.7, p.90. Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Sylvanite Miscellaneous. ODM Map 50b, Township of McVittie.	Au	Northern half of property underlain by Keewatin metavolcanics, the southern half by Timiskaming conglomerate, greywacke, and trachyte. Some carbonatization along the Keewatin-Timiskaming contact. Some gold values obtained from surface samples of small quartz veins. "Company assay reports show values but no locations" (Resident Geologist's Files, OMNR, Kirkland Lake). 1922: Diamond-drilling (amount unknown).
Rose 'B' Occurrence: ½ mile south-southwest of Pancake Lake, in southern McVittie Tp. Claim L8842. Lat. 48.12°, Long. 79.71°.	ODM 1924, Vol.33, pt.3, p.20 (Crown Reserve). ODM Map 50b, Township of McVittie.	Au	Timiskaming conglomerate cut by an altered quartz-feldspar porphyry dike containing pyrite, arsenopyrite, and some native gold. "Encouraging gold values (ODM 1924, Vol. 33, pt.3, p.20) found in the mineralized metasediments adjacent to the dike.
Shepherd Occurrence: Southeast shore of Binney Lake, in southwestern McVittie Tp. Patented claims L9084 and L10900. Lat. 48.13°, Long. 79.74°.	ODM 1924, Vol.33, pt.3, p.21. ODM Map 50b, Township of McVittie.	Au	Timiskaming trachyte cut by a quartz vein which strikes north-east, dips 65°N, and is 2 to 8 feet in width. Country rock near the vein is schistose and carries considerable pyrite. Sample assayed 0.11 oz. Au/ton.
Upper Canada Occurrence: ½ mile northwest of Spectacle Lake, in north-western McVittie Tp. Lat. 48.16°, Long. 79.72°.	Resident Geologist's Files, OMNR, Kirkland Lake: McVittie Tp., Bragg (1964). ODM Map 50b, Township of McVittie.	Au	Keewatin mafic metavolcanics are cut by a syenite dike which yielded assays ranging from trace to 0.02 oz. Au/ton. 1971-1974: Airborne and ground geophysics, and diamond-drilling (amount unknown) by Upper Canada Resources Limited.

Name and Location	References	Metals	Remarks
MAISONVILLE TOWNSHIP (NTS 42A/1E, 42A/8E)			
Elzina Occurrence: S¼, lot 10, con. IV, Maisonville Tp. Lat. 48.24°, Long. 80.25°.	ODMNA 1971, GR92, p.27. Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., Burke (1938). ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Quartz-carbonate veins occupy a narrow fracture zone which cuts hornblende syenite and gabbro. No.1 vein, striking N60°E and dipping 50-70°N, varies in width from 3 to 14 inches along its stripped length of 200 feet. Grab samples assayed from 0.02 to 0.25 oz. Au/ton. Circa 1938: Pitting, trenching, and 3 diamond-drill holes by Elzina Mines Ltd.
Erie Canadian Occurrence: SW¼, S½, lot 8, con. II, Maisonville Tp. Lat. 48.21°, Long. 80.23°.	ODMNA 1971, GR92, p.27 (Hastings-Moffatt). Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., O.R.W. (1934). ODMNA Map 2215, Benoit and Maisonville Townships (Hastings-Moffatt).	Au	Keewatin mafic to intermediate metavolcanics and altered mafic intrusive rocks are intruded by a small syenite body. The mafic intrusive rocks cut by quartz veins and stringers which yielded a best value of 0.1 oz. Au/ton. 1934: Pitting, trenching, and 5 diamond-drill holes (464 feet) by Erie Canadian Mines Ltd.
McDonnell Occurrence: S½, lot 4, con. II, Maisonville Tp. Lat. 48.21°, Long. 80.18°.	Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., McDonnell. ODMNA Map 2215, Benoit and Maisonville Townships.	Au Cu	Keewatin andesite and basalt are cut by quartz stringers containing pyrite, chalcopyrite, and minor bornite. Assays of surface samples ranged from trace to 0.14 oz. Au/ton. Circa 1917: 27-foot prospect shaft. Circa 1942: Pitting and trenching.
Russell Occurrence: SE¼, S½, lot 9, con. III, Maisonville Tp. Lat. 48.21°, Long. 80.18°.	ODMNA 1971, GR92, p.31. Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., Russell, J.E. ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Keewatin pillow lavas cut by a quartz vein which strikes north, dips 20-40°W, and is 4 to 6 inches wide. A narrow streak of darker pyrite-bearing quartz on the foot-wall reportedly carried gold and tellurides. 400 feet to the southwest, brecciated andesite is cut by a syenite dike and by quartz-carbonate-feldspar stringers which average 1 inch in width. Sample assayed 0.14 oz. Au/ton across 22 feet. Circa 1950: Pitting and trenching by J.E. Russell.
Sesekinika Townsite Occurrence: N½, lot 9, con. I and S½, lot 9, con. II, Maisonville Tp. Lat. 48.20°, Long. 80.24°.	ODMNA 1971, GR92, p.31. Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., Campbell (1934). ODMNA Map 2215, Benoit and Maisonville Townships.	Au	Free gold reported from a quartz vein cutting Keewatin basalt and rhyolite. 1914: Surface work by James Hughes.
Trapper Occurrence: S½, lot 12, con. III, Maisonville Tp. Lat. 48.22°, Long. 80.27°.	ODMNA 1971, GR92, p.30 (John E. Murray). Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., assay plan (1912), Gerrie (1952). ODMNA Map 2215, Benoit		Keewatin mafic to intermediate metavolcanics are cut by a quartz vein which yielded values ranging from nil to 0.28 oz. Au/ton across 1.5 feet and for a strike length of 200 feet. A hole drilled to cut the shaft vein intersected mafic meta-

Name and Location	References	Metals	Remarks
	and Maisonville Townships (Murray, John E.).		volcanics and reddish porphyry cut by quartz containing free gold. Circa 1912: Trenching and prospect shaft by Trapper. 1952: 1 diamond-drill hole (250 feet) by J.D. Watling.
Wickstead Occurrence: E½, S½, lot 9, con. VI, Maisonville Tp. Lat. 48.27°, Long. 80.24°.	ODMNA 1971, GR92, p.32. Resident Geologist's Files, OMNR, Kirkland Lake: Maisonville Tp., Savage (1948). ODMNA 2215, Benoit and Maisonville Townships.	Au	Keewatin mafic metavolcanics and gabbroic intrusive rocks are intruded by dikes and small bodies of syenite. These rocks are overlain by an outlier of Cobalt conglomerate. Showing consists of a shear zone which strikes N40°W, dips vertically, and contains quartz-carbonate lenses with a maximum width of 2 feet. Grab sample assayed 6.4 oz. Au/ton. Channel samples assayed 0.22 and 0.68 oz. Au/ton across 4 and 2 feet respectively. 1918: Trenching. Circa 1937: Trenching and prospect shaft. 1948: 4 diamond-drill holes (footage unknown) by Wickstead. 1972: Trenching by D. Hurd.

MARTER TOWNSHIP

(NTS 31M/13W)

Sawka-Allard Occurrence: On the bank of the Blanche River about 200 feet from the junction with the Misema River, in SW¼, S½, lot 11, con. V, Marter Tp. Lat. 47.90°, Long. 79.88°.	ODM 1963, GR18, p.16. Resident Geologist's Files, OMNR, Kirkland Lake: Marter Tp., Sawka, W., Allard, C. ODM Map 2043, Catharine and Marter Townships.	Au Fe	A 2- to 3-foot wide irregular rusty quartz vein cuts strongly schisted 'greenstone'. Pyrite-bearing iron formation present. Grab samples assayed 0.04 and 0.11 oz. Au/ton. 1954: Trenching by C. Allard and W. Sawka.
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MIDLOTHIAN TOWNSHIP

(NTS 41P/14E, 41P/15W)

Goodwin Occurrence: Immediately south of Elizabeth Lake, in east-central Midlothian Tp. Lat. 47.89°, Long. 80.95°.	ODM 1970, GR79, p.28 (Elizabeth Lake Showing). ODM Map 2187, Halliday and Midlothian Townships (shown as unnamed Au occurrence).	Au	Timiskaming metasediments (mainly greywacke) cut by a north-trending diabase dike and by quartz stringers containing pyrite and visible gold. 1945: Stripping and trenching by Goodwin. 1970: Geophysical surveys, trenching, and diamond-drilling by Glen Copper Mines Ltd., Newmont Mining Corp., and A. Rousseau.
Ragan Occurrence: 2/5 mile southwest of Patricia Lake, in western Midlothian Tp. Lat. 47.89°, Long. 81.07°.	ODM 1970, GR79, p.22 (Cominco Limited, Ragan Group). Resident Geologist's Files, OMNR, Kirkland Lake: Midlothian Tp., Gardiner (1946). ODM Map 2187, Halliday and Midlothian Townships (Cominco Ltd., Ragan Group).	Au	Sericite-chlorite schist is developed in a broad shear zone cutting Keewatin felsic metavolcanics. Chip sample from a pit assayed 0.44 oz. Au/ton.

Name and Location	References	Metals	Remarks
Sylvanite Occurrence: ¼ mile southwest of Groom Lake, in the northwest corner of Midlothian Tp. Lat. 47.93°, Long. 81.08°.	ODM 1970, GR79, p.28. Resident Geologist's Files, OMNR, Kirkland Lake: Midlothian Tp., Holbrooke (1945). ODM Map 2187, Halliday and Midlothian Townships.	Au	Timiskaming metasediments (conglomerate, arkose, and greywacke) disconformably overlie Keewatin mafic to felsic metavolcanics. Quartz veins and stringers cut a sheared carbonatized zone along the meta-volcanic-metasediment contact. Assays ranged from trace to 0.16 oz. Au/ton. Circa 1945: Pitting and trenching by Sylvanite Gold Mines Ltd.

MONTROSE TOWNSHIP

(NTS 41P/14E, 41P/15W, 42A/2W, 42A/3E)

Ferguson Occurrence: Northeastern Montrose Tp. Lat. 48.00°, Long. 80.91°.	Resident Geologist's Files, OMNR, Kirkland Lake: Montrose Tp., Ames, E. ODM Map 41a, Bannockburn Gold Area (occurrence not shown on map).	Au	Grab samples from a silicified breccia zone assayed from 0.14 to 0.20 oz. Au/ton. Diamond-drill core samples of unspecified rock types assayed from trace to 0.03 oz. Au/ton. Pre-1945: Trenching by E. Ames. 1945: 5 diamond-drill holes (571 feet) by E. Ames.
Hutt Lake Occurrence: Northeastern end of Hutt Lake, in southwestern Montrose Tp. Lat. 47.94°, Long. 81.06°.	ODM 1932, Vol.41, pt.2, p.21 (Claims G.G. 5911-9). Resident Geologist's Files, OMNR, Kirkland Lake: Montrose Tp., Anonymous (1944). ODM Map 41a, Bannockburn Gold Area.	Au Cu	Property underlain by rhyolite, iron formation, and sheared arkose. A 30-foot wide band of rusty schist contains a series of disconnected quartz lenses which carry pyrite and some chalcOPYrite. Assays of samples from trenches ranged from trace to 0.09 oz. Au/ton.
Leliever Occurrence: East of Dara Lake, in northeastern Montrose Tp. Lat. 47.99°, Long. 80.94°.	ODM 1932, Vol.41, pt.2, p.21. ODM Map 41a, Bannockburn Gold Area.	Au	Low gold values reported from lenses of massive cherty quartz, up to 100 feet wide, occurring in rhyolite.
Montrose Syndicate Occurrence: 500 feet southeast of the 1½-mile post on the Hincks-Montrose township boundary, in northern Montrose Tp. Lat. 48.02°, Long. 80.95°.	ODM 1932, Vol.41, pt.2, p.20,21. ODM Map 41a, Bannockburn Gold Area.	Au	Channel samples taken across a 4-foot wide zone of ferruginous dolomite, cut by narrow quartz stringers and mineralized with pyrite, yielded low gold values.

MORRISSETTE TOWNSHIP

(NTS 32D/4W, 32D/5W, 42A/1E, 42A/8E)

Deloye Occurrence: ¼ mile east of the southern end of Nettie Lake, in west-central Morrisette Tp. Shaft in patented claim L6325. Lat. 48.21°, Long. 80.01°.	ODM 1970, GR84, p.19. ODM Map 2193, Bernhardt and Morrisette Townships.	Au Mo Cu	A 4-inch wide quartz vein is sub-parallel to a shear zone trending N77°W between conglomerate and quartz-feldspar porphyry. Mineralization consists of pyrite with some molybdenite and traces of chalcOPYrite. Samples from shaft assayed 0.08 oz. Au/ton. 1965: Prospect shaft dewatered by E.C. Deloye.
Gordon, W.A. Occurrence: ½ mile east of Goodfish Lake, in the southwest corner of Morrisette Tp. Lat.	ODM 1970, GR84, p.19. ODM Map 2193, Bernhardt and Morrisette Townships.	Au Mo Cu	A 30-foot wide shear zone occurs at a contact between andesite and a quartz-feldspar porphyry dike. Gold

Name and Location	References	Metals	Remarks
48.20°, Long. 80.01°.			is reportedly associated with molybdenite and a little chalcopyrite in silicified zones within this shear.
Ronal Occurrence: ¼ mile north of Victoria Lake, in southeastern Morrisette Tp. and southwestern Arnold Tp. Lat. 48.20°, Long. 79.89°.	ODM 1970, GR84, p.22. Resident Geologist's Files, OMNR, Kirkland Lake: Morrisette Tp., Garvie (1948), Kerr-Lawson (1947). ODM Map 2193, Bernhardt and Morrisette Townships.	Au	A shear zone, consisting of sericitized chloritized schist rich in carbonate, strikes northeast near a contact between basalt and andesite to the north and felsic fragmental rocks to the south. Quartz-feldspar porphyry dikes occur in and adjacent to the shear zone. The zone contains quartz-carbonate stringers and veins mineralized with pyrite, graphite and visible gold. Of 65 surface samples, 2 returned values of greater than 1.0 oz. Au/ton and only 9 had values above 0.09 oz. Au/ton. Pre-1945: Surface work and at least 2 diamond-drill holes. 1947-1948: Geological survey, trenching, and 8 diamond-drill holes (1,133 feet) by Ronal Red Lake Gold Mines Ltd.

OTTO TOWNSHIP

(NTS 42A/1E)

Chavigny Occurrence: ¾ mile east of the southern end of Otto Lake, in NW¼, S¼, lot 6, con. VI, Otto Tp. Lat. 48.09°, Long. 80.08°.	ODMNA 1972, GR99, p.26. Resident Geologist's Files, OMNR, Kirkland Lake. ODMNA Map 2239, Eby-Otto Area.	Au	Diamond-drill core samples from rusty Keewatin mafic metavolcanics (mainly basalt and andesite) assayed 0.04 oz. Au/ton. Sludge samples assayed 0.02 oz. Au/ton. 1948-1949: 5 diamond-drill holes (5,800 feet) by Chavigny Gold Mines Ltd.
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PACAUD TOWNSHIP

(NTS 31M/13W, 32D/4W, 41P/16E, 42A/1E)

Boston-McCrea Occurrence: N½, lot 2, con. VI, Pacaud Tp. Lat. 48.01°, Long. 79.93°.	ODM 1957, Vol.66, pt.5, p.47. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au Cu	Keewatin mafic metavolcanics, striking northwest and dipping northeast, are intruded by a compound hornblende-serpentine sill and by a few dikes and small masses of syenite porphyry. In northeast corner of property, visible gold observed along hanging wall of a north-trending quartz vein which averages 1 foot in width. In south-central part of property, a wide schist zone carries quartz stringers, pyrite, chalcopyrite, and some gold values. Circa 1916: Several shafts by Boston-McCrea Gold Mines Limited.
Hamelin Occurrence: N½, lot 11, con. I, Pacaud Tp. Lat. 47.94°, Long. 79.99°.	ODM 1957, Vol.66, pt.5, p.41,42 (Sheromac Mining Corporation Limited). ODM Map 1957-4, Boston Township and part of Pacaud Township (Sheromac Mining Corporation Ltd.).	Au	Thinly bedded altered Keewatin tuffs and tuffaceous sediments are intruded by sill-like masses of altered diorite and by dikes and small bodies of quartz-feldspar porphyry and syenite porphyry. Grab samples from quartz veins

Name and Location	References	Metals	Remarks
			in the metavolcanics assayed from trace to 6.80 oz. Au/ton (personal communication, 1974). 1974: Pitting, trenching, and diamond-drilling (amount unknown) by H. Hamelin.
O'Donald Occurrence: N½, N½, lot 4, con. VI, Pacaud Tp. and southwest of O'Donald Lake, in southern Boston Tp. Lat. 48.01°, Long. 79.94°.	Resident Geologist's Files, OMNR, Kirkland Lake: Pacaud Tp., Jordan (1938), Smith (1925). ODM Map 1957-4, Boston Township and part of Pacaud Township.	Au	Keewatin andesitic pillow lavas are cut by 5- to 7-foot wide shear zones containing quartz veins (possibly an extension of the Barry-Hollinger No.7 Vein). Diamond-drill core assayed 2.65 oz. Au/ton over 5 feet and 1.4 oz. Au/ton over 2.5 feet. Circa 1925: Prospect shaft and one diamond-drill hole (600 feet) by J.C. O'Donald. 1938: Trenching.

POWELL TOWNSHIP

(NTS 41P/15, 42A/2)

Childs Red Lake Occurrence: ¼ mile west of northern end of Log Lake (claim MR11904) and 1 3/5 miles northwest of Log Lake (claim MR12343), in northern Powell Township. Lat. 47.93°, Long. 80.71°.	ODM 1967, GR51, p.45 (Noranda Explorations Company Limited). Resident Geologist's Files, OMNR, Kirkland Lake: Powell Township, Moody (1947). ODM Map 2110, Powell and Cairo Townships (Noranda Explorations Co. Ltd.).	Au Cu	In claim MR11904, pink syenite intrusive into Timiskaming metasediments is cut by quartz-stringers, some of which contain chalcopyrite, tourmaline and traces of gold. In claim MR12343, a 30-foot wide shear zone cuts metavolcanics along a contact with a diabase dike. A sample of quartz-carbonate mineralized with pyrite assayed 0.01 oz. Au/ton. 1947: 4 diamond-drill holes (897 feet) by Childs Red Lake Gold Mines Ltd. 1959: 4 diamond-drill holes (220 feet) by Hayes. 1966: 1 diamond-drill hole (326 feet) by Cominco Ltd.
Crang Occurrence: Between Hawley and Little Hawley Lakes, in eastern Powell Tp. Claims MR5704, MR5722-MR5725, and MR6538-MR6540. Lat. 47.97°, Long. 80.67°.	Resident Geologist's Files, OMNR, Kirkland Lake: Powell Tp., Blackwell (1949). ODM Map 2110, Powell and Cairo Townships (Matachewan Consolidated Mines Ltd.).	Au	Keewatin mafic metavolcanics and Timiskaming metasediments are intruded by a small ultramafic body, stocks and dikes of syenite, and north-trending diabase dikes. Assays of diamond-drill core samples ranged from trace to 0.02 oz. Au/ton. 1906: Prospected for silver. Circa 1948: Geological and dip needle surveys. 1949: 4 diamond-drill holes (1,141 feet) by J.G. and J.K. Crang. 1970: Electromagnetic survey by Matachewan Consolidated Mines Ltd.
Fort Matachewan Occurrence: ¼ mile west of the narrows separating Matachewan and Lower Matachewan Lakes, in eastern Powell Tp. and western Cairo Tp. Lat. 47.99°, Long. 80.66°.	Resident Geologist's Files, OMNR, Kirkland Lake: Powell Tp., Fort Matachewan Gold Mining Syndicate. ODM Map 2110, Powell and Cairo Townships (occurrence not shown on map).	Au	Keewatin metavolcanics are cut by stocks and dikes of syenite. Grab samples from pits assayed from trace to 0.03 oz. Au/ton.

Name and Location	References	Metals	Remarks
Nautilus Occurrence: ½ mile south of Powell Creek, in north-western Powell Tp. Lat. 48.00°, Long. 80.78°.	Resident Geologist's Files, OMNR, Kirkland Lake: Powell Tp., McCannell (1972). ODM Map 2110, Powell and Cairo Townships.	Au	Keewatin metavolcanics are intruded by a granitic stock and north-trending diabase dikes, and cut by carbonatized shear zones. Visible gold noted in the shear zones, but assays of grab samples yielded low gold values. Circa 1930: Trenching. 1972: Magnetic and electromagnetic surveys and 4 diamond-drill holes (1,057 feet) by Nautilus Explorations Ltd.
North Powell Occurrence: ¾ mile north-northeast of Log Lake, in northeastern Powell Tp. Lat. 48.00°, Long. 80.69°.	ODM 1967, GR51, p.45 (S. Welsh). ODM Map 2110, Powell and Cairo Townships (Welsh, S.).	Au Cu Mo	Syenite is cut by quartz veins containing pyrite, chalcopyrite, and minor molybdenite. One quartz lens, 500 feet long and up to 40 feet wide, intrudes metavolcanics close to a contact with metasediments. Surface samples reportedly yielded low gold values, but diamond-drilling failed to locate the lens beneath the surface.
Plaunt-Cummings Occurrence: ¾ mile south-southeast of Ryan Lake, in southeast-central Powell Tp. Claims MR6169, MR6170 and MR6553. Lat. 47.95°, Long. 80.69°.	Resident Geologist's Files, OMNR, Kirkland Lake: Powell Tp., Anonymous (1936). ODM Map 2110, Powell and Cairo Townships.	Au Cu	Timiskaming arkose and Algoman syenite porphyry are cut by quartz veins which are mineralized with pyrite, and minor pyrrhotite and chalcopyrite. Samples of vein material assayed from 0.13 to 0.26 oz. Au/ton; samples of arkose averaged 0.02 oz. Au/ton. 1936: Geological and magnetic surveys by Geophysics Exploration Ltd.
Stancop Occurrence: 1¼ miles west of the northern end of Otisse Lake, in southeast-central Powell Tp. Claim MR5409. Lat. 47.96°, Long. 80.70°.	ODM 1967, GR51, p.46,47. ODM 1969, MRC12, p.368, 369. Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 2110, Powell and Cairo Townships.	Au Ag Cu	In the southeast corner of the claim, a highly silicified zone in Timiskaming arkose is cut by quartz stringers containing chalcopyrite. Selected grab sample assayed 0.52 oz. Au/ton and 1.08 oz. Ag/ton. In the northwest corner of the claim, syenite porphyry contains a zone of quartz veins measuring 50 feet by 40 feet and mineralized with chalcopyrite and pyrite. Grab sample assayed 0.04 oz. Au/ton and 0.48 oz. Ag/ton. From the former showing, a bulk sample of 2000 tons yielded 18,958 pounds of Cu, 174 ounces of Ag and 13 ounces of Au. 1955-1957: Stripping, pitting, and 20 diamond-drill holes by Ethel Copper Mines Ltd. 1964: 2000-ton bulk sample taken by Stancop Mines Ltd. 1973: Trenching, percussion drilling, and bulk sampling by Majestic Pipeline Construction Co. Ltd.

Name and Location	References	Metals	Remarks
ROBILLARD TOWNSHIP (NTS 41P/16E)			
Long Lake Occurrence: South of Robillard Lake, in NE¼ and SW¼, S½, lot 7, con. II, S½, N½, lot 7, con. II, SW¼, S½, lot 8, con. III, N½, lot 8, con. III and E½, S½, lot 9, con. III, Robillard Tp. Shaft in NW¼, N½, lot 7, con. II. Lat. 47.78°, Long. 80.09°.	ODM 1941, Vol.50, pt.4, p.36. Au Resident Geologist's Files, OMNR, Kirkland Lake: Robillard Tp., Longmore (1910), Wray (1935). ODM Map 50j, Bryce-Robillard Area (Hobo property (Long Lake Gold Mg. Syn.)).		Property underlain by platy hornblende schist intruded by granitic rocks and hybrid diorite. Work done on narrow quartz veins (maximum width of 2 feet) with pyrite mineralization in the 'greenstone' wallrocks. Samples of unspecified rock types assayed from trace to 3.6 oz. Au/ton. Circa 1910: Test pitting, 5 prospect shafts, and 45 feet of tunnelling by Kushang Syndicate and Long Lake Gold Mining Co. Ltd.
MacDonald Occurrence: NW¼, N½, lot 10, con. II, Robillard Tp. Lat. 47.78°, Long. 80.02°.	ODM 1941, Vol.50, pt.4, p.37,38. Resident Geologist's Files, OMNR, Kirkland Lake: Robillard Tp., Anonymous (1936). ODM Map 50j, Bryce-Robillard Area.	Au	Granodiorite contains an altered tongue or roof pendant of hornblende schist. These rocks are cut by a northeast-trending shear zone which has been traced for 500 feet. The zone contains a vein structure which consists of narrow veins, irregular stringers, patches, and blebs of quartz and contains pyrite and chalcopyrite. Best assay from surface samples was 0.88 oz. Au/ton over 4.9 feet. Two zones on surface, 19 and 18.5 feet long, averaged 0.13 oz. Au/ton over widths of 2.6 and 1.7 feet respectively. The best assay from diamond-drill core was 0.24 oz. Au/ton over 4.9 feet. Circa 1936: Trenching and 8 diamond-drill holes (956 feet) by Sylvanite Gold Mines Ltd.
Mearow, J. T. Occurrence: NW¼, S½, lot 9 and S½, lot 10, con. I, Robillard Tp. Lat. 47.77°, Long. 80.12°.	ODM 1941, Vol.50, pt.4, p.38. Au ODM Map 50j, Bryce-Robillard Area.		Sheared Keewatin pillow lava and Algoman granodiorite are cut by lenticular shear zones up to 100 feet in length and 10 feet in width. Mineralization consists of disseminated pyrite in quartz veins, carbonatized 'greenstone', pegmatite, and aplite. Some gold values obtained from trenches.
SHILLINGTON TOWNSHIP (NTS 41P/15E)			
Chicago Gowganda Occurrence: Central Shillington Tp. Claim MR3794. Approximately Lat. 47.76°, Long. 80.60°.	OBM 1912, Vol.21, pt.1, p.149. Resident Geologist's Files, OMNR, Kirkland Lake: Shillington Tp., Chisholm (1939). ODM Map 2205, Timmins-Kirkland Lake (occurrence not shown on map).	Au	A stockwork of quartz veins occurs in syenite porphyry. An assay value was obtained on the 171-foot level. Circa 1911: Shaft to 275 feet and at least 204 feet of lateral development on levels at 75 and 171 feet by Chicago-Gowganda Mines Co. Ltd.
Lavigne Occurrence: Central Shillington Tp. Lat. 47.75°, Long. 80.61°.	Resident Geologist's Files, OMNR, Kirkland Lake: Shillington Tp., Chisholm	Au	Syenite porphyry and Cobalt Group sedimentary rocks are overlain by Nipissing Diabase. Samples assayed

Name and Location	References	Metals	Remarks
	(1939), Thompson (1953). ODM Map 2205, Timmins-Kirkland Lake (occurrence not shown on map).		up to 0.07 oz. Au/ton. In 1953, the occurrence reportedly showed good grade cobalt and yielded gold values of up to 1.71 oz./ton.
SKEAD TOWNSHIP (NTS 31M/13E)			
Crawford-Skead Occurrence: ¾ mile west-northwest of Mageau Lake, in NE¼, N½, lot 9 and NW¼, N½, lot 10, con. V, Skead Tp. Patented claims L5960 and L5961. Lat. 48.00°, Long. 79.66°.	ODM 1921, Vol.30, pt.6, p.24. ODM Map 30d, Boston-Skead Gold Area.	Au Mo	A contact between red porphyry and lamprophyre is occupied by a 2-foot wide silicified zone containing pyrite and some molybdenite. Sample assayed 0.02 oz. Au/ton. 1921: 22-foot prospect shaft.
Fidelity Occurrence: 3/5 mile north-east of the northern end of St. Anthony Lake, in S½, lots 5 and 6, con. V, Skead Tp. Lat. 47.99°, Long. 79.70°.	ODM 1921, Vol.30, pt.6, p.23. ODM 1949, Vol.58, pt.6, p.38,39. ODM 1949-3, Township of Skead (shaft shown in S½, lot 5, con. V).	Au Cu	Keewatin metavolcanics and bodies of quartz and diorite porphyry are intruded by serpentized peridotite and syenite. A band of black chert is cut by quartz stringers mineralized with pyrite, chalcopyrite, and visible gold. Several bands of iron formation are cut by quartz veinlets mineralized with pyrite and yielding low gold values. 1920: Pitting, trenching, and 28-foot prospect shaft by Fidelity. 1969-1971: Trenching by A. and W. Jack.
Flanagan Occurrence: ½ mile east of St. Anthony Lake, in N½, S½, lot 7, con. III, Skead Tp. Lat. 47.96°, Long. 79.69°.	ODM 1921, Vol.30, pt.6, p.22,23. ODM Map 30d, Boston-Skead Gold Area.	Au Cu Pb	Quartz diorite porphyry is cut by an east-trending quartz vein which has a maximum width of 4 feet. It contains pyrite, chalcopyrite, and minor galena and a telluride. Picked sample assayed 0.15 oz. Au/ton. Circa 1920: Pitting and trenching by P. Flanagan.
Martin Occurrence: ½ mile west of Grace Lake, in NE¼, S½, lot 9, con. VI, Skead Tp. Lat. 47.98°, Long. 79.66°.	ODM 1921, Vol.30, pt.6, p.24. ODM Map 30d, Boston-Skead Gold Area.	Au Pb	Keewatin pillow lava is intruded by a cylindrical body of porphyry which contains a network of quartz veinlets and lenses. Mineralization consists of pyrite and some galena and visible gold. Chip sample taken across 20 feet assayed 0.02 oz. Au/ton. Shaft and open cuts of unknown age.
Ritchie Occurrence: ½ mile east of the southern end of Grace Lake, in W½, S½, lot 12, con. VI, Skead Tp. Lat. 48.00°, Long. 79.63°.	Resident Geologist's Files, OMNR, Kirkland Lake: Skead Tp., Doherty (1936). ODM Map 1949-3, Township of Skead (occurrence not shown on map).	Au	Keewatin metavolcanics are cut by quartz porphyry dikes and by a quartz vein which is 400 feet long and 4 feet wide. Assays of 0.02 oz. Au/ton were reported.
Sampson Occurrence: Immediately west of the southern part of Grace Lake, in N½, S½, lot 10, con. VI, Skead Tp. Patented claims L4363 and L4364. Lat. 48.00°, Long. 79.66°.	ODM 1921, Vol.30, pt.6, p.26. ODM Map 30d, Boston-Skead Gold Area.	Au Mo	A stockwork of porphyry and quartz, up to 100 feet in width, consists of quartz veins which vary up to 3 feet in width and are mineralized with pyrite, molybdenite, telluride, and gold. Grab sample assayed 0.70 oz. Au/ton. Trenching and test-pitting at unknown date.

Name and Location	References	Metals	Remarks
Webster Occurrence: 1½ miles west of Mageau Lake, in lots 7 and 8, con. V, Skead Tp. Lat. 47.99°, Long. 79.68°.	ODM 1921, Vol.30, pt.6, p.23. ODM 1949, Vol.58, pt.6, p.37 (Tye-East Exploration, Limited). Resident Geologist's Files, OMNR, Kirkland Lake: Skead Tp., Jeffrey and MacDonald (1926). ODM Map 30d, Boston-Skead Gold Area.	Au	Keewatin mafic to felsic metavolcanics, striking N70°W, are intruded by serpentized peridotite and by a small plug of syenite. Quartz veins contain tellurides and native gold. 5 tons of ore shipped for test milling averaged 0.50 oz. Au/ton.
TECK TOWNSHIP (NTS 42A/1E)			
Calcora Occurrence: East shore of Armer Lake, in northwestern Teck Tp. Patented claims L40013 and L40014. Lat. 48.17°, Long. 80.14°.	Resident Geologist's Files, OMNR, Kirkland Lake: Teck Tp., Calcora Mining and Development Syndicate. ODM Map 1945-1, Township of Teck.	Au	Grab samples of vein material from a pit in Keewatin mafic metavolcanics assayed from 0.01 to 2.02 oz. Au/ton. 1953: 2 diamond-drill holes (218 feet) by Calcora Mining and Development Syndicate.
Fidelity Occurrence: ½ mile northwest of Gami Lake, in the northeast corner of Teck Tp. Patented claims L2845 and L6047 and claims L2844 and L5289. Lat. 48.18°, Long. 80.03°.	ODM 1920, Vol.29, pt.4, p.46. ODM Map 1945-1, Township of Teck.	Au Mo	Keewatin basalt and diabase are intruded by quartz-feldspar porphyry. The basalt is cut by a zone of vein quartz and silicified rock which trends northwest, strikes 45°NE and varies in width from 1.7 feet at surface to 7 feet at a depth of 140 feet. Mineralization consists of pyrite, some molybdenite, and occasional visible gold. Encouraging results reported from underground samples. 1918-1919: Inclined shaft to 140 feet by Fidelity Mining and Development Co. 1920: Shaft deepened to 300 feet and 747 feet of lateral development on levels at 140 and 300 feet by Fidelity Mining and Development Co.
Huclif Porcupine Occurrence: Part of the Kirkland Lake slimes basin, in east-central Teck Tp. Lat. 48.16°, Long. 80.05°.	Assessment Files Research Office, OGS, Toronto: Teck Tp., Technical Survey File 62.3282. Northern Miner, August 30, 1973, p.8. Resident Geologist's Files, OMNR, Kirkland Lake: Teck Tp., Huclif Porcupine Mines. ODM Map 1945-1, Township of Teck.	Au	Tailings from the Lake Shore mill, estimated to contain 4.4 million tons averaging 0.043 oz. Au/ton, were acquired by Huclif Porcupine Mines Ltd. in 1973.
Lois Lake Occurrence: West and northwest of Lois Lake, in western Teck Tp. Main showings in patented claims L12981 and L25994. Shaft in claim L25994. Lat. 48.15°, Long. 80.13°.	Resident Geologist's Files, OMNR, Kirkland Lake: Teck Tp., Lois Lake Gold Mines Ltd. ODM Map 1945-1, Township of Teck.	Au	Keewatin metavolcanics are intruded by large bodies of diorite and gabbro, and by smaller bodies and dikes of syenite and syenite porphyry. Channel samples taken across narrow quartz stringers in brecciated and sheared zones yielded values of up to 0.13 oz. Au/ton over 4.3 feet. Diamond-drill core samples assayed up to 0.03 oz. Au/ton.

Name and Location	References	Metals	Remarks
			Circa 1934: Trenching and 2 shafts (35 and 40 feet) by Lois Lake Gold Mines Limited. 1962: 1 diamond-drill hole (568 feet) by Tresdor Larder Mines Ltd. 1963: 4 diamond-drill holes (1,240 feet) by Mareast Explorations Ltd.
Mayer Occurrence: East of Amikougami Creek, in northern Teck Tp. Lat. 48.19°, Long. 80.10°.	Resident Geologist's Files, OMNR, Kirkland Lake: Teck Tp., Mayer Mining Co. Ltd. ODM Map 1945-1, Township of Teck (occurrence not shown on map).	Au Cu	Keewatin metavolcanics are intruded by a large body of diorite and gabbro. At an intersection between 2 sets of mineralized shears in volcanic breccia, samples of chalcopyrite mineralization assayed 0.21 and 0.25 oz. Au/ton. 1959-1960: Geological survey, surface work, and sampling by Mayer Mining Co. Ltd.
Murphy Occurrence: ¼ mile southwest of Elsie Lake, in southwestern Teck Tp. Patented claims L6842 and L6863. Lat. 48.12°, Long. 80.13°.	ODM 1948, Vol.57, pt.5, p.51. ODM 1964, MRC3, p.57. ODM Map 1945-1, Township of Teck.	Au	Timiskaming metasediments are intruded by basic syenite, syenite porphyry, lamprophyre and diabase, and are cut by the westward extension of the Kirkland Lake Fault. Diamond-drilling revealed that rocks adjacent to the fault are carbonatized, silicified, and cut by quartz and calcite stringers. There is little mineralization and sampling revealed only traces of gold. Pre-1930: Surface work. 1937: 12 diamond-drill holes (4,559 feet) by M.J. O'Brien Ltd.
Sahtram (Trout Creek) Occurrence: 1 mile southeast of Elsie Lake, in southern Teck Tp. Shaft in patented claim T16477. Lat. 48.14°, Long. 80.11°.	ODM 1948, Vol.57, pt.5, p.52. ODM 1945-1, Township of Teck.	Au	Keewatin metavolcanics and Timiskaming metasediments are intruded by augite porphyry and syenite porphyry. Two fault zones trend east-northeast across the property and are offset by the north-trending Amikougami Creek Fault. Shaft sunk on the southern fault zone and 1 ton of ore yielded approximately 77 ounces of gold. 1928: Gold discovered in claim T16477. 1930-1931: Shaft to 80 feet with 200 feet of lateral development on the 76-foot level. 1 ton of ore shipped by Trout Creek Gold Mining Co. Ltd. 1945-1946: 16 surface diamond-drill holes and some underground diamond-drilling by Toburn Gold Mines Ltd.
Solomino Occurrence: ¾ mile southeast of Lois Lake, in west-central Teck Tp. Claim L3156 (L15609 on ODM Map 1945-1). Lat. 48.14°, Long. 80.11°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1945-1, Township of Teck.	Au	Keewatin metavolcanics are intruded by diorite and syenite porphyry. From the 650-foot diamond-drill hole put down, a 1-foot section of rusty carbonate material mineralized with pyrite assayed 0.01 oz. Au/ton. 1963: 1 diamond-drill hole (650 feet) by Solomino Gold Mines Ltd.

Name and Location	References	Metals	Remarks
Teckora Occurrence: East of Lois Lake, in west-central Teck Tp. Lat. 48.15°, Long. 80.10°.	Resident Geologist's Files, OMNR, Kirkland Lake. ODM Map 1945-1, Township of Teck.	Au	Keewatin metavolcanics are intruded by large bodies of diorite and gabbro. The best assay result from 1972 diamond-drilling was 0.01 oz. Au/ton across a 6-inch quartz vein. Date unknown: Trenching and diamond-drilling. 1972: 6 diamond-drill holes (2,445 feet) by Teckora Mines Ltd.

TERRY TOWNSHIP

(NTS 42A/1W, 42A/2E, 42A/7E, 42A/8W)

Biederman Occurrence: ¼ mile southeast of the southern end of Fallduck Lakes, near the 2-mile post on the Terry-Dunmore township boundary, in southern Terry Tp. Claims DG67 and L15740. Lat. 48.47°, Long. 80.45°.	ODM 1922, Vol.31, pt.7, p.21. ODM 1971, GR92, p.32. ODM Map 2214, Terry and Lee Townships.	Au Ag Cu Mo	Granite is cut by a 20-foot wide quartz vein which strikes N40°W and contains patches of pyrite, chalcopryite, molybdenite, and hematite mineralization. Assays of diamond-drill core samples ranged from 0.04 to 0.68 oz. Au/ton and from 2 to 3 oz. Ag/ton. 1908: Pitting by H. Biederman. 1914: 4 diamond-drill holes (455 feet) by H. Biederman.
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TUDHOPE TOWNSHIP

(NTS 41P/9E)

Cobalt-Frontenac Occurrence: N½, N½, lot 7, con. I, Tudhope Tp. Lat. 47.68°, Long. 80.22°.	ODM 1941, Vol.50, pt.4, p.28. Resident Geologist's Files, OMNR, Kirkland Lake: Tudhope Tp., McBean (1945). ODM Map 50j, Bryce-Robillard Area.	Au	Keewatin metavolcanics are intruded by Nipissing Diabase which is cut by a narrow shear zone containing lenses of rusty quartz. Mineralization consists of pyrite and chalcopryite. Assays ranged from 0.02 to 0.32 oz. Au/ton. 1912-1913: Shaft to possible depth of 250 feet by Cobalt Frontenac Gold Mining Co.
Tough-Oakes Occurrence: Lots 1 and 2, con. II and III, Tudhope Tp. Patented claim MR18571. Lat. 47.67°, Long. 80.16°.	Resident Geologist's Files, OMNR, Kirkland Lake: Tudhope Tp., Karp. ODM Map 50j, Bryce-Robillard Area (occurrence not shown on map).	Au Cu	Keewatin intermediate metavolcanics are cut by quartz-carbonate veins containing coarse disseminated pyrite and specks of chalcopryite. Grab sample from surface assayed 1.66 oz. Au/ton; samples from the shaft gave values of 0.46, 0.66 and 0.54 oz. Au/ton. Assays of channel samples ranged from trace to 0.58 oz. Au/ton. Circa 1928: Inclined shaft to unknown depth by George Tough and Harry Oakes. 1950: Trenching by Lake Shore Mines Ltd.

TYRRELL TOWNSHIP

(NTS 41P/10W, 41P/11E)

Bay Roc Occurrence: ¾ mile southwest of Milly Lake, in northwestern Tyrrell Tp. Diamond-drilling in claims L367472 and	Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Bay Roc Mining Co. Ltd.	Au	Early Precambrian metavolcanics and metasediments are cut by sheared and carbonatized feldspar porphyry dikes. Assays of diamond-
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Name and Location	References	Metals	Remarks
L367477. Lat. 47.65°, Long. 81.04°.	ODM Map 2365, Macmurchy and Tyrrell Townships (occurrence not shown on map).		drill core samples ranged from trace to 0.04 oz. Au/ton. 1968-1970: Geophysical surveys and 3 diamond-drill holes by Timiskaming Nickel Ltd. 1973: Magnetic and electromagnetic surveys, and 3 diamond-drill holes (1,101 feet) by Bay Roc Mining Co. Ltd.
Burroughs Occurrence: Northwestern shore of Cripple Lake, in central Tyrrell Tp. Claims GG5936-GG5941 GG6633. Lat. 47.63°, Long. 81.01°.	ODM 1932, Vol.41, pt.2, p.55. Au ODM 1977, GR152, p.57, 58 (Witherspoon, J.A.). ODM Map 2365, Macmurchy and Tyrrell Townships (Witherspoon, J.A.).		Diorite is cut by a weak fracture zone striking N20°W and dipping 80°W. Individual fractures are narrow and are mineralized with quartz and pyrite. Surface sampling showed nothing of importance. Best assay from diamond-drilling was 0.69 oz. Au/ton over 2.5 feet. 1936: 4 diamond-drill holes (765 feet) by Mid-Tyrrell Matachewan Gold Ltd. 1949: 7 diamond-drill holes (1,387 feet) by Mid-Tyrrell Matachewan Gold Ltd.
Cryderman Occurrence: ¼ mile north of Indian Lake, in south-central Tyrrell Tp. Claim GG6044. Lat. 47.61°, Long. 80.99°.	ODM 1977, GR152, p.41. ODM Map 2365, Macmurchy and Tyrrell Townships.	Au	Gold reportedly panned from a small mineralized fracture in quartzite containing disseminated pyrite. 1931: Trenching.
Garvey Occurrence: East of Breeze Lake, in central Tyrrell Tp. Claims GG5498-GG5501, GG6038 and GG6039. Lat. 47.64°, Long. 80.99°.	ODM 1932, Vol.41, pt.2, p.54. ODM Map 2365, Macmurchy and Tyrrell Townships (occurrence not shown on map).	Au	A narrow quartz-carbonate stringer in sheared rhyolite yielded a value of 0.77 oz. Au/ton.
Johnston-Gardner Occurrence: 700 feet south of Pear Lake, in central Tyrrell Tp. Lat. 47.61°, Long. 80.98°.	ODM 1932, Vol.41, pt.2, p.55. Au ODM Map 2365, Macmurchy and Tyrrell Townships (occurrence not shown on map).		Good assay reported from a mineralized shear zone in rhyolite. 1931: Trenching.
LaFrance Occurrence: ¼ mile east of Indian Lake, in south-central Tyrrell Tp. Claims GG6181 and GG6346. Lat. 47.61°, Long. 80.99°.	ODM 1977, GR152, p.45, 46. Au Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Burke (1936), McBean (1945). ODM Map 2365, Macmurchy and Tyrrell Townships.		Property is underlain by intermediate to felsic metavolcanics. South showing is a quartz vein which strikes N30°W, dips 80°S, is 4 inches wide and has been exposed for 45 feet. Mineralization consists of pyrite, chalcopyrite, and free gold. Best assay was 0.09 oz. Au/ton over 12 feet. North showing is a quartz-carbonate vein which strikes N5°E, dips 78°E, is 6 inches wide, and has been exposed for 25 feet. Mineralization reportedly consists of minor pyrite and visible gold. Circa 1931: Pitting and trenching by Sorbel and LaFrance. 1958: 3 diamond-drill holes (101 feet). 1971: Trenching by H. Bruno.

Name and Location	References	Metals	Remarks
Matachewan Consolidated Occurrence: 1½ miles southeast of Indian Lake, in southern Tyrrell Tp. Claim MR13343. Lat. 47.60°, Long. 80.98°.	ODM 1977, GR152, p.46. Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., McBean (1945). ODM Map 2365, Macmurchy and Tyrrell Townships.	Au	A 30-foot wide zone of silicified altered felsic metavolcanics, striking N70°W and dipping vertically, contains a 5-foot wide quartz vein. Sampling reportedly yielded two 4-foot sections with values of 0.18 oz. Au/ton. 1945: Geological survey, pitting, and trenching by Matachewan Consolidated Mines Ltd. 1974: Geological survey by M. Juby.
McNeely Occurrence: ½ mile west of Hare Lake, in northwestern Tyrrell Tp. Lat. 47.64°, Long. 81.05°.	ODM 1932, Vol.41, pt.2, p.58. Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Harris (1946), McLaren (1936). ODM Map 2365, Macmurchy and Tyrrell Townships (occurrence not shown on map).	Au Cu	Felsic metavolcanics are cut by a large east-trending quartz vein which has been exposed for 200 feet. Sulphides not abundant in the vein, but the wallrock is altered and contains pyrite and chalcopyrite. Shear zone containing pyrite and graphite crosscuts the vein. Channel sample yielded 0.85 oz. Au/ton across 5.6 feet. A contact between Keewatin-type metavolcanics and iron formation and Timiskaming-type metavolcanics and metasediments is intruded by granodiorite and by porphyry dikes. Assays of grab samples ranged from 0.01 to 2.04 oz. Au/ton. 1931: Surface work and sampling by McNeely Matachewan Syndicate. 1970: Trenching by E. Rivers.
Melisek Occurrence: ½ mile east of Cripple Lake, in central Tyrrell Tp. Lat. 47.63°, Long. 80.99°.	ODM 1977, GR152, p.47, 48. Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., JAM (1942). ODM Map 2365, Macmurchy and Tyrrell Townships.	Au	Keewatin intermediate metavolcanics are intruded by porphyry dikes and both are cut by quartz stringers which strike N20°W, dip 70°W, and are 2 to 5 inches wide. Mineralization consists of pyrite and free gold. Best assay was 0.2 oz. Au/ton over 4.7 feet.
Pope Occurrence: In the vicinity of Cripple Lake, in central Tyrrell Tp. Lat. 47.63°, Long. 81.01°.	Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Mid-Tyrrell Matachewan Gold Ltd., Saville, S. ODM Map 2365, Macmurchy and Tyrrell Townships (occurrence not shown on map).	Au	Timiskaming-type metavolcanics and metasediments are intruded by gabbro. Visible gold reported and assays ranged from trace to 0.02 oz. Au/ton. 1934-1935: Trenching and 4 diamond-drill holes (footage unknown) by Mid-Tyrrell Matachewan Gold Ltd. 1949: 4 diamond-drill holes (2,063 feet). 1970-1973: Trenching by S. Saville.
Shahen Occurrence: 1000 feet (No.1 showing) and 2000 feet (No.2 showing) north, and 600 feet south (No.3 showing) of Breeze Lake, in north-central Tyrrell Tp. Claims GG5903 and GG5907. Lat. 47.64°, Long. 81.01°.	ODM 1932, Vol.41, pt.2, p.55. ODM 1977, GR152, p.46 (F.A. Lorenzo and A. Shahen). Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Harcourt (1936). ODM Map 2365, Macmurchy and Tyrrell Townships (Lorenzo, F.A. and Shahen, A.).	Au Cu	Intermediate and felsic metavolcanics are intruded by a small body of Nipissing-type diabase and by dikes of feldspar porphyry and Matachewan-type diabase. No.1 showing is a 2-inch wide quartz vein in a 2-foot wide shear zone which strikes N50°W and has been exposed for 100 feet. Mineralization consists of disseminated pyrite and free

Name and Location	References	Metals	Remarks
Sloane Occurrence: Between Porphyry Lake and the Knight-Tyrrell township boundary, in northern Tyrrell Tp. Lat. 47.58°, Long. 81.03°.	ODM 1932, Vol.41, pt.2, p.57 (McIntyre Porcupine Mines). Resident Geologist's Files, OMNR, Kirkland Lake: Tyrrell Tp., Campbell (1939), MacVeigh (1961), Savage (1948), Wiseman (1947). ODM Map 2365, Macmurchy and Tyrrell Townships (Timiskaming Nickel Ltd.).	Au	gold. Best assay was 0.06 oz. Au/ton from a chip sample taken across 2.5 feet. No.2 showing is a shear zone, 4 feet wide and exposed for 200 feet, which contains quartz lenses well-mineralized with pyrite and chalcopyrite. Best assay was 0.14 oz. Au/ton. No.3 showing is a quartz vein, 50 feet long and 8 inches wide, mineralized with pyrite and chalcopyrite. Sample assayed 0.08 oz. Au/ton. 1931: Stripping and trenching by A. Shahan. 1973: Geological and magnetic surveys by Foxdale Mines Ltd.
			Timiskaming-type metavolcanics (rhyolite and trachyte) and minor metasediments are intruded by granodiorite and cut by lamprophyre and feldspar porphyry dikes. Main trench reveals a brown carbonate zone, at least 35 feet wide, containing quartz stockworks. Channel samples yielded erratic gold values. Samples of a highly silicified quartz porphyry assayed from trace to 0.14 oz. Au/ton. Samples from other pits and trenches yielded values ranging from trace to 0.17 oz. Au/ton. Circa 1936: Pitting and trenching. 1961: Geological and magnetic surveys by Sunbeam Exploration Co. Ltd. 1973: Magnetic and electromagnetic surveys by Sloane Mining Co. Ltd.

YARROW TOWNSHIP

(NTS 41P/15E)

Vandeventer Occurrence: 1¼ miles south-southwest of southern end of Mudpack Lake, in central Yarrow Tp. Lat. 47.89°, Long. 80.71°.	Resident Geologist's Files, OMNR, Kirkland Lake: Yarrow Tp., Vandeventer. ODM Map 2205, Timmins-Kirkland Lake.	Au	A small east-northeast trending 'greenstone' belt is bounded on both sides by granite. The metavolcanics are cut by syenite porphyry and granite dikes, and all rock types are cut by diabase dikes. The "main vein", varying in width from 3 to 40 feet, occurs in a fault zone. Various veins were sampled and assays for gold reportedly all gave positive results.
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APPENDIX

MEASUREMENTS IN ONTARIO GEOLOGICAL SURVEY PUBLICATIONS

All the measurements in this report are given in the units used in the source materials or in the original measuring. If the reader wishes to convert Imperial Units to Metric or SI Units or SI Units to Imperial Units the following multipliers should be used:

<i>Unit</i>	<i>Multiplied by</i>	<i>Gives</i>	<i>Unit</i>	<i>Multiplied by</i>	<i>Gives</i>
LENGTH					
1 mm	0.039	inches	1 inch	25.4	mm
1 cm	0.394	inches	1 inch	2.54	cm
1 m	3.281	feet	1 foot	0.3048	m
1 km	0.621	miles (statute)	1 mile (statute)	1.609	km
AREA					
1 cm ²	0.155	square inches	1 square inch	6.452	cm ²
1 m ²	10.764	square feet	1 square foot	0.093	m ²
1 km ²	0.386	square miles	1 square mile	2.590	km ²
1 m ²	0.000247	acres	1 acre	4046.686	m ²
1 h	2.471	acres	1 acre	0.405	h
VOLUME					
1 cm ³	0.061	cubic inches	1 cubic inch	16.387	cm ³
1 m ³	35.315	cubic feet	1 cubic foot	0.028	m ³
CAPACITY					
1 l	1.760	pints	1 pint	0.568	l
1 l	0.880	quarts	1 quart	1.137	l
1 l	0.220	gallons	1 gallon	4.546	l
MASS					
1 g	0.035	ounces (avdp)	1 ounce (avdp)	28.350	g
1 g	0.032	ounces (troy)	1 ounce (troy)	31.103	g
1 kg	2.205	pounds (avdp)	1 pound (avdp)	0.454	kg
1 kg	0.0011	tons (short)	1 ton (short)	907.185	kg
1 t	1.102	tons (short)	1 ton (short)	0.907	t
1 kg	0.000984	tons (long)	1 ton (long)	1016.047	kg
1 t	0.984	tons (long)	1 ton (long)	1.016	t
CONCENTRATION					
1 gm/t	0.029	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.292	gm/t
1 gm/t	0.583	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.715	gm/t
1 ounce (troy)/ ton (short)	20.0	pennyweights/ ton (short)	1 pennyweight/ ton (short)	0.05	ounce (troy)/ ton (short)

Suggestion: Although the above conversion factors are given to several decimal places for your convenience, do not attempt to convert an approximate measurement to a precise measurement. For example, "about 1000 feet" should be converted to "about 300 m" rather than "304.8 m".

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