

ALL OUT ON THEORUNUD GROUP

BADEN TOWNSHIP

Access:

A gravel road to Indian Reserve 72 leaves Highway #66 approximately one quarter of a mile east of the junction of Highways #65 and #66 in Cairo Township. This road continues northward through the Reserve and may be followed, with difficulty, to the claims group and on to the northern end of Lake Matachewan.

Topography:

Relief within the group is very variable, the maximum being one hundred to one hundred and fifty feet between a sand ridge and Lake Matachewan around its northern edge. Away from the lake, relief between sand plains and sand ridges averages sixty feet. Outcrop is fairly sparse, except in the vicinity of the shaft. Elsewhere, some plains and ridges obscure much of the bedrock. Vegetation is fairly open, especially in "park like" areas (short grass with widely spaced spruce).

Previous Work:

A considerable amount of previous work has been carried out upon this property. The following is a brief summary of various reports; -

- 1) Ontario Dept. of Mines, Vol. XXIX, 1920, Pt 3 entitled "Matachewan Gold Area" by A. G. Burrows.

 Nelson claims A shaft was sunk twelve feet on the No. 1 vein (consisting of branching quartz veins interbanded with granite and some greenish alteration of country rock adjacent to the vein) and both veins No. 1 and No. 2 (to the north of No. 1) had been traced by surface trenching. Some visible gold was found whilst sinking the shaft.
- 2) Carl Peter's & Co., Toronto early 1920's a Report on file at the Ontario Dept. of Mines Resident Geologist's Office at Kirkland Lake.

 This report is mainly a summary of the work done whilst sinking the shaft; hence it must have been written between 1920 and 1924. Besides the two veins already mentioned (Nos. 1 and 2) two others are described in the vicinity of the shaft No. 3, paralleling and to the east of No. 2 and exposed for one hundred and twenty-five feet, and No. 4, to the southeast of the shaft where it intersects No. 3 and exposed for one hundred feet. On a hill overlooking Lake Matachewan, vein No. 5 was found (also called the Original or Discovery vein); this was traced for one hundred and fourty feet by surface trenching, with an average width of three feet. It was also exposed in an adit driven in from a point about fifteen feet above the level of Lake Natachewan. Two sets of assays of samples from the No. 5 vein are listed in the report, one set from samples taken on the day of discovery

hesaurus Group - Page 2.

and ranging from \$2.60 to \$87.00, and a second set taken somewhat later ranging from \$1.40 to \$10.50. Though it is not stated, it is presumed that these figures are based upon a gold value of \$20.00 per ounce.

The description of the shaft sinking process lists at what depth good grade ore (no figures) were obtained besides a description of the geology and amount of drifting and cross cutting. All distances in feet. Grade of ore at that particular depth.

Depth	Grade of ore in a	shaft <u>Drifting</u>	Cross cutting
14 66 85	Good Good		in hanging wall 22' to the SE; inter-
100	8	SW - 140'; high grade at between 90' & 140' NE - drifted up to dyke contact (approx 35')	secting No. 4 vein 22'
107-118 132 142 220 245	Good to High gr Good "		
275 300	No. 1 vein left the Shaft encountered another vein		North 100' to inter- sect No. 3 vein South to intersect No. 1 - no distance given.

- Planned to: 1) continue cross cut south to No. 1 vein at 300' level, and them drift west.
 - 2) continue cross cut north to intersect No. 3 and other veins.
- 3) Ontario Dept. of Mines, Vol 44, 1935, Pt 2 and entitled "Matachewan-Kenogami Area" by W. S. Dyer.

 Thesaurus Gold Mines Limited Though idle from 1924 1934,
 the shaft (three compartment) had been sunk to three hundred and
 eight feet, with one hundred feet of drifting and crosscutting
 on the 100' level and two hundred and thirty feet on the 300'
 level. At the time of Dyer's visit (1934) the mine plant was in
 good order; shortly after the underground workings were pumped
 out, resampled and further drifting carried out (and upon which
 no report is available). Ore with a considerable amount of native
 gold and reportedly found in the mine, was shown to Dyer.
- 4) Ontario Dept. of Mines, Geological Report 51, 1967 entitled "Geology of the Matachewan Area" by H. L. Lovell.

 Though mostly concerned with geological information, a few grab samples were obtained.
 - 1) Grey granite, with 8% pyrite Au Trace; Ag Trace 2) Vein quarts Au - Trace; Ag - Trace

3) Grey granite -several samples Au - 0.14 --

Thesaurus Group

5) Present evidence of previous work;

1) Though in poor condition (collapsed or falling over) the following mine plant is present in the shaft areas; Headframe on a three compartment shaft. Hoistroom - with steam hoist, compressor, plugger, boiler and three steam pumps. Machine shop; water tower; blacksmith/smelting shop; two

other buildings.

2) Numerous trenches and pits. The shaft is presumed to be located on No. 1 vein (now obscured by waste rock from underground). No, 2 is presumed to be that exposed in two trenches on line 4W, 5+00N. Vein No. 3 and 4 were not located. Vein No. 5 is situated on line 16W, 9+00S.

General Geology:

The predominant lithology in the area is a grey to white, fine to medium grained granite. This has been intruded by two and possibly three other rock types. Two gabbro diabase dykes are present, trending approximately north-south. To the north of the base line, and between the two dykes, a dyke of quartz porphyry was found, trending northeast. At the south end of lines 4W and 8W, a rock provisionally called a vent breccia occurs. Though it contains granite fragments, its exact relationship to the granite is not known, but is presumed to be intrusive.

In the reports of previous work upon this property several features are worth noting. Burrows described the appearance of the ore vein as a series of branching veins, this vein (the No. 1) being cut off by a diabase dyke to the east. Dyer compares the veins of the Thesaurus Group to those of Baden Gold Mines (to the southwest of Thesaurus on the opposite shore of Lake Matachewan) both in appearance and in strike continuity, though the veins do cut different rocks of the two properties (granite vs. tuff). Dyer also describes a quartz or rhyolite porphyry found on the 300' level "a body sixty feet wide, of peculiar, fresh looking, yellowish green rock with prominent quartz eyes it is seen to consist of fresh phenocrysts of quartz and phenocrysts of orthoclase and plagioclase altering to sericite in a very fine groundmass of feldspar, quartz, sericite and pyrite and is probably intrusive into the granite. No rock like it occurs anywhere else in the area". He finally states that all veins on the property belong to one system of fracturing, with a northeasterly strike.

Lovell attempts to draw a parallel between the greenish altered granite of Burrows description and Dyer's yellowish-green rock; he then suggests that this yellowish-green rock might have been used as an ore guide.

Detailed Geology: Lithologies

a) Granite: Predominantly greyish-white, sometimes pink, it is variable from fine to coarse grained. The mafic content (either

Thesaurus Group - Page 4.

biotite, hornblende or both) is variable from five to fourty percent. Though not strictly quartz eyes, the quartz component quite often occurs as clear glassy, rounded anhedral grains.

- b) Quartz porphyry: Only one outcrop of this occurs in the area, on line 4W, at approximately 8+00N. It has a grey to greyish-yellow, glassy, non siliceous groundmass with abundant clear glassy rounded quartz eyes scattered through it. A mineral lineation/foliation is very easily visible on weathered surfaces, but not on fresh surfaces; this continues, with some deflection, across the contact into the adjacent granite.
- c) Feldspar porphyry: This occurs in a few scattered occurrences, in particular associated with a breccia at the south end of line 8W. It has a grey, siliceous to non siliceous, glassy (fine grained) groundmass with euhedral to subhedral feldspar phenocrysts up to half an inch long. The latter occur either scattered throughout the groundmass, or clustered in patches. In a few instances, it contains rounded xenoliths of granite.
- d) Vent breccia: The grey-green, glassy, non siliceous groundmass is very similar to that of the feldspar porphyry. Set in this groundmass/matrix are numerous rounded to angular elongate granite fragments, varying in size from half to four inches long. The packing of the fragments is very close.
- e) Gabbro/diabase: Two dykes are present, both trending approximately north-south. The eastern dyke has a fine grained, chilled margin, coarsening towards the centre, but maintaining an overall melanocratic appearance with 60% mafics. In several places large, rounded, greenish-white(sericitised) feldspar phenocrysts are present.
- f) Pleistocene: Sand ridges and plains constitute the predominant geomorphological features. A fairly well developed crag-and-tail is present on line 8W, to the south of the base line. The outcrop marked as vent breccia forms the stoss side, with a lee slope of sand and boulders. Its orientation appears to indicate ice movement from the northwest (N30°W, parallel to the picket lines).

Altered Rocks:

- g) Xenoliths in granite: On line 4W, 1+50N, two yellowish-green, sericitic xenoliths were found in the granite. Both are fine grained and contain scattered quartz eyes. Both the xenoliths and the granite contain a northeasterly trending foliation.
- h) Yellowish-green rock on mine waste dump: This has a glassy, pale yellowish-green, non siliceous matrix with fairly abundant, rounded quartz eyes up to one quarter of an inch in diameter. It also contains a few scattered pyrite patches. This rock is presumed to be the yellowish-green altered rock of Dyer (see General Geology).

Thesaurus Group - Page 5.

i) Altered wallrock by quartz vein No. 2: A soft, sericitic, yellowish-green rock with a variable content of cubic brassy pyrite. It does not contain any quartz eyes. A sericitic alteration (to a lesser extent) of wallrock granite at vein No. 5 is also evident. This type of alteration appears to be very limited in extent, and directly associated with the quartz veins. It is concluded that this altered granite is the same as Burrows' green altered granite.

Structural Geology:

Though two foliations are present, nowhere were they seen together. One trends approximately east-west - S₄, and the other northeast-southwest - S₂. It is presumed from studies elsewhere in the region that the latter is the younger of the two. Neither foliation is well developed due to the nature of the lithologies. Both were found best developed in the area of the shaft. Here, there is a very striking parallelism between veins and S₂; the quartz porphyry dyke also parallels the S₂ direction, but is older, as it contains the S₂ foliation. It is concluded that the system of quartz veins (Nos. 1 and 2) in the shaft area and elsewhere (No. 5) were formed during the deformation period creating the S₂ foliation; this is a similar conclusion to that which Dyer (1935) put forward.

A zone of shearing is present along the western edge of the eastern diabase dyke and is probably the youngest structural feature present.

Economic Geology:

Previous work upon the property was concerned with exploration for gold. One piece was found in a glassy, bluish-grey, faintly banded piece of quartz in an ore pile beside the shaft. In the same pile, a piece of white quartz, also faintly banded, contains large patches of chalcopyrite. Apart from this, pyrite is fairly common, but is more abundant in altered sericite/chlorite wallrock. Banding (alternating white and greyish quartz bands) in quartz is very well developed in several pieces; its original orientation is not know but presumed to be parallel to that of the strike of the vein. Other pieces exhibit a series of anastomosing quartz veins in altered chloritic wallrock.

Apart from mineralisation found in quartz from the ore pile, pyrite appears to be ubiquitous to all lithologies. It is especially well developed in the altered rock adjacent to quartz veins (up to ten percent) usually as brassy cubes. Elsewhere, it occurs as small disseminated specks in the granite (zero to three percent), and gabbro diabase (less than one percent). The other lithologies contain little to no pyrite. Magnetite is present in very minor amounts in the granite.

A biogeochemical survey carried out by Canadian Johns-Manville Co. Limited did not outline any outstanding anomalies of copper,

Thesaurus Group - Page 6.

lead, zinc or molybdenum. The rather broad anomalies obtained appear to have a vague northeasterly trend, and are probably related to the northeasterly trending fracture system. However, Lovell obtained gold values in grey granite ranging from a trace to 0.14 ozs/ton. Though it is not stated in his description, it appears that Lovell's grey granite is the unaltered country rock. In this case, the assays obtained possibly indicate an overall low grade gold mineralisation in the granite, apart from that associated with the quartz veins. His suggestion that the yellowish-green altered rock be used as an ore guide appears to be based upon mistaken correlations, as two such altered rocks appear to be present. From the mapping and descriptions in previous reports, it is concluded that the quartz porphyry found on surface and the quartz porphyry found underground (Dyer's report), are the same unit. Burrows' green altered granite appears to be limited to the vicinity of the quartz veins (and a product of their emplacement), and in that it is associated with quartz veins might be used as a guide. However, the quartz porphyry (by Dyer's description) does not appear to be in any way useful as an ore guide.

Conclusions:

Two possibilities exist for there being an economic deposit within this group. The first is that a large low grade gold deposit is associated with granite, and the second that some form of mineralisation is associated with the vent breccia. Rock samples have been collected for assay and will test both possibilities.

Submitted by: John Henry Morris

September 74. 1972.

REPORT ON GEOLOGICAL AND ELECTROMAGNETIC SURVEYS ON PART OF THE THESAURUS GROUP OF CLAIMS OF CANADIAN JOHNS-MANVILLE CO. LIMITED LOGATED IN

LARDER LAKI



Introduction:

020

The following reports describe the geological and electromagnetic surveys carried out on part of the Thessurus Group of claims under the Ministry of Natural Resources Financial Assistance Agreement - Contract CG-28, dated April 249, 1972.

This property comprises eight claims which were staked early in 1972 and recorded on January 19th. Posts were pretagged and claims numbered 316590 to 316597 inclusive.

Currently assessment work is being filed on the three claims numbered 316590 -92 -93 which have been transferred to Canadian Johns-Manville Co. Limited. Technical reports, maps and cost data, as required under Contract CG-28, for the entire block, will be forwarded to the Ministry of Natural Resources later this month.

Note that at the time of staking, a reconnaissance type biogeochemical survey was completed on the Thesaurus Group. The weak anomalies outlined by this work lead directly to the programs described in this report.

Geological mapping was conducted on the claims by J. H. Morris while electromagnetic surveying was carried out by P. Brown. Both men are geologists with this Company. Overall supervision and interpretation of the surveys were the responsibility of the writer, Regional Geologist with Canadian Johns-Manville Co. Limited of Matheson, Ontario.

• For Access, Topography, Previous Work, General Geology and Detailed Geology see Report by J. H. Morris.

Line Cutting and Chaining:

A base line, striking 860°W, was started from the southwest corner of a small lake on the property and cut and chained for a length of 1,700 feet. Right-angled offset lines were located every 400 feet along this base line and were cut to the northwest and southwest to cover the main outcrop areas. Pickets were established at 100 foot intervals along these offset lines by chainage. A Brunton compass affixed on a tripod was used to turn off the base and picket lines. Totals of 2.1 miles of picket and 0.3 miles of base lines were cut and chained during this initial program. Note that 0.5 of the total of 2.4 miles were outside the boundaries of the three claims discussed in this report.

J. H. Morris, geologist, assisted R. Haley, senior fieldman, with starting of the base line and turning off the picket lines.

J. Goodger, geologist, assisted with the final part of the line cutting and the chaining of the offset lines.

Additional picket and base lines - totalling 1.8 miles were cut and chained to cover the electromagnetic conducting zones.
however, only 0.8 miles of this total are located on claims 316592
and 316593. Line cutting and chaining were carried out by M. Bruce,
L. Bruce and H. Brown on November 84 and 94. The ends of all
lines were tied into the existing grid by chainage to allow an accurate plot.

Geological Mapping:

This program was conducted by J. H. Morris, a geologist hired for the 1972 field season. Mapping was carried out intermittently during the period July 19th to August 30th as shown in the "Detailed Assessment Report". Morris is currently attending the Graduate

School, Earth Sciences Department at Waterloo University.

Picket lines (1.7 miles) and pace and compass traverses (0.5 miles) were used to tie in bedrock exposures and topographic features. Aerial photographs, enlarged to a scale of one inch equals 400 feet, were used extensively during the course of the survey.

The results of the mapping program are described in the attached "Geological Report" dated September 70, 1972. A Plan, on a scale of one inch equals 100 feet with Legend Sheet, accompany this report.

Electromagnetic Survey:

Electromagnetic surveying was carried out on the Thesaurus claims during the period August 22nd to 24%, inclusive, 1972 by P. Brown, geologist, assisted by D. Haley. Readings were recorded using a McPhar dual frequency vertical loop reconnaissance electromagnetic unit applying the in-line method. During the course of this initial survey 1.3 miles of picket lines were traversed and 71 readings recorded on claims 316592 and 316593.

Distance between transmitter and receiver was maintained at 200 feet during the course of the survey. Walki-talki units were used for communicating field data. Stations were spaced at 100 foot intervals.

The results of the R. E. M. in-line survey are shown on the accompanying "Electromagnetic Profile Plan" on a scale of one inch equals 100 feet. Profiles have been plotted on a scale of one inch equals 20°. Conducting zones have been marked on the plan with purple dashes.

Eleven weak to extremely weak conductors have been delineated

on the claims by the R. E. M. in-line survey. Dip angles of the extremely weak zones range from +1° (northeast side of line) -2° (southwest side) to $+3^{\circ}$, -2° . Weak conductors, marked with a purple W on the plan, occur on line 4+00W at 1+50 feet south of the base line $(+3^{\circ}, -5^{\circ})$, at 7+50 feet north of the base line $(+1^{\circ}, -6^{\circ})$ and on line 16+00W at 7+50 feet south of the base line $(+2^{\circ}, -4^{\circ})$.

Detailed electromagnetic surveying was carried out over the weak conductors on the Thesaurus claims by P. Brown assisted by J. Goodger on November 9th, 1972. The same McPhar Vertical loop unit as used in the initial program was used for the detailed survey.

In-line surveying was conducted over old and new picket lines to check the three weak conducting zones. Stations were spaced at 25 foot intervals along the offset lines with the transmitting and receiving units being maintained at 200 feet apart.

A total of 0.9 miles of line were traversed and 197 readings recorded during the course of this work.

Results of the survey are shown on the accompanying Electro-Magnetic Profile Plan on a scale of one inch equals 400 feet.

Profiles plotted on a scale of one inch equals 20° have been superimposed on the plan showing geology, topography and reconnaissance in-line E. M. profiles. The weak conducting zones have been marked on this plan in orange dashes.

Weak conductors to both the north and south of the base line on picket line 4+00W and to the south on 16+00W indicated by the initial survey were also delineated by the detailed in-line work. However, dip angles were extremely low being in the order of +2, -2, +3, -1, +1, -2, and +1, -3.

Conclusions:

No conducting zones of any significance have been delineated on the Thesaurus Group of claims by the McPhar vertical loop electromagnetic surveys.

Recommendations:

Hold claims in shaft area until the gold situation becomes clarified.

Submitted: January 85, 1973 by: F. J. Evelegh

- Havilegh

Regional Geologist.

DETAILED ASSESSMENT REPORT THESAURUS GROUP OF CLAIMS, BADEN TOWNSHIP LARDER LAKE MINING DIVISION.

Line Cutting and Chaining:

This program was carried out by Company personnel from Matheson, Ontario in three stages as shown below:

Employee	Dates Worked 1972	Total 8-Hour Man-Days
J. H. Morris R. Haley J. Goodger M. Bruce L. Bruce H. Brown	July 18 July 17-22 incl; Aug 1-4 incl Aug 1 - 4 incl July 18, Nov 8 & 9 Nov 8 & 9 Nov 8 & 9	104522
6	Totals	<u>22</u>

Geological Survey:

Geological mapping was conducted by J. H. Morris, geologist with this Company for the 1972 field season and based at Matheson. Details are as follows:

J. H.	н.	Morris	July 19-22 inol; Aug 2, 3, Aug 22, 23, 24 field work				4	
						10 x 7		70
			Aug	26,	30	office work	· .	
					·	2 x 7		14
				Tot	al		jā.	84

Electromagnetic Survey:

Electromagnetic surveying was carried out by P. Brown, geologist with Canadian Johns-Manville Co. Limited assisted by J. Goodger and D. Haley. All personnel are from Matheson. A McPhar R. E. M. vertical loop unit was used for this work. Details re man-days worked are as follows:

	Brown Haley	Aug	22, 23, 24, Nov 9 22, 23, 24	4 x 7 3 x 7	28 21
J.	Goodger		Nov 9	1 x 7	Ž
	DeMarchi - Evelegh		5 - draughting 22 - typing, maps	1 x 7 1 x 7	7
	J. Evelegh		13, Report, maps	1 x 7	7

Total

Detailed Assessment Report - Page 2.

The line cutting and chaining was carried out to give control in outcrop areas for the geological survey and covers claims 316593 and parts of claims 316590 and 316592. Time spent on this grid to the west of claim 316593 has not been included in the Assessment Report.

Line cutting and chaining are equivalent to 7.3 man-days on each of claims 316590 -92, -93.

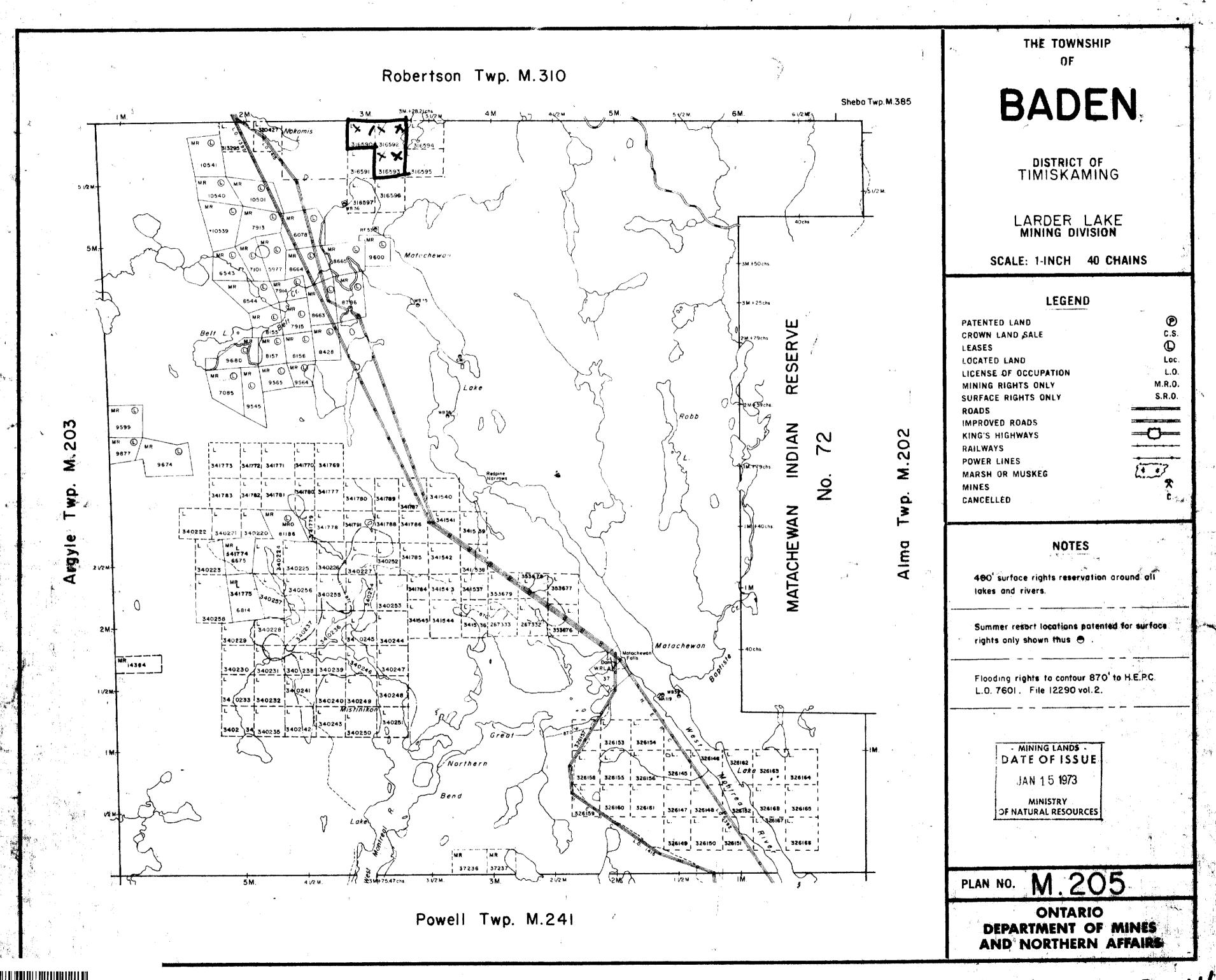
Geological surveying is equivalent to 28 man-days on each of claims 316590 -92, -93.

Electromagnetic surveying is equivalent to 38.5 man-days on each of claims 316592 -93.

Alteria (18.C)

Submitted: January 80, 1973 by: F. J. Evelegh

Regional Geologist.



42A02SE0135 2.1118 ALMA

2.1118

LEGEND FOR DETAILED GEOLOGICAL MAPPING

Geological Legend

Abbreviations

	Geological Legend		Anoreva	EM CTOUR	Ţ
6 6	Quartz diabase, diabase	Asbestos Brecoiated	Aab Brecid	Oxidized Pyrite	Ox'd Py
5 5c 5c	Granite 5a; Syenite 5b; Syenite porphyry 5-bl; Feldspar porphyry 5c; Quartz feldspar 5d; Felsite 5e; Lamprophyre 5f; Granodiorite, granitic gneiss 5g; Quartz diorite 5h.	Carbonated Chalcopyrite Disseminated Dark	Carbid Cpy Diss Dk	Pyrrhotite Peridotite Pyroxenite Quartz	Po Perid : Pyrox Qts
4	Diorite 4a; Gabbro diabase 4b.	Feldsp ar Foliated	Fp Fol'd	Serpentinite Sheared	Serp Sh [†] d
4c LC	Peridotite & Dunite (Serpentinized)	Grained - fine - medium	F gr'd M gr'd	Serpentinized Strongly	Serp'd Str
4D	Pyroxemite 3 Felsic volcanics (undifferentiated); 3a Rhyolite	- coarse Graphite	C gr!d Graph	Schistose Stringers	Schise Stra Sch
3	3b Dacite; 3c Fragmental lava; 3d Cherty tuff.	Gneiss Gneissic Hornblende	Gn Gn'o H'bl	Schist Sericitized Typical	Ser'd Typ
2 2	2 Basic volcanies (undifferentiated); 2a Basalt-andesite 2b Basalt-andesite- pillowed; 2c Diabase lava; 2d Diorite (flow); 2e Andesite (basalt) porphyry; 2f Spherulitic lav 2k Tale-chlorite schist; 2l amphibolite. 2g Fragmental lava; 2h Tuff and Chert; 2i Breccia; 2j Agglomerate Greywacke la; Arkose lb; Quartzite lc; Argillite or	normateriae a; Light Magnetite Moderately Medium	Lt Magn Mod Med	Thread vein Texture Trace Volcanics	T.V. Text Tr Volc
1.	shale ld; Conglomerate le; Iron formation lf; Chlorite schist lg.	Massive	Mass	Weakly	₩k
CB CB	Carbonate rock.				
	TOPOGRAPHIC	SYMBOLS			,
占	Direction in which lava flows face, indicated by shape of pillows	Bush road		Geological Contact	- assumed - definite
.007	Outcrop	High ground		Swamp border	
*	Swamp or muskeg	Cabin		Shear zone	31. · · ·
	,	3haft	~~~	Fault - assumed - definite	:
	Creek		-4	Attitudes - beddin - sheari	-
	Drill hole	NO TENTO	-0-	- jointi	_



21