63.2701

A: Introduction

1. General

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1.1 This report describes results interpretation of an airborne geophysical survey flown over Dorothy Prospect located in the Dixie Lake Area, District of Kenora (Patricia Portion), Red Lake Mining Division, Province of Ontario.

1.2 The Prospect consists of a block of 402 claims situated between Pakwash Lake in the east and Dixie Lake in the west.

Highway #105, connecting Vermillion Bay and Red Lake, skirts the north-eastern corner of the property, and the distance from the centre of block of claims to the nearest point on Highway #105 is about 2 miles. The point where Chukuni River joins Pakwash Lake is also about 2 miles east of the eastern boundary of the property.

The relevant topographical map is Sheet 52K, Lac Seul, National Topographic Series 1" = 4 miles, and the claim map is M3112, Dixie Lake Area.

1.3 The property belongs to Caravelle Mines Limited on whose behalf, so far, all work in the area, including staking, has been carried out.

2. Airborne Survey

2.1 Airborne geophysical survey was flown over the property by Questor Surveys Limited of Bevanto between 31st March and 2nd April, 1969, totalling 562 line miles.

The spacing was 1/8 mile and the flight line direction north-south, but, in the western part of the property, north-west to south-east lines were flown in addition to the north-south grid. This was done in order to intersect conveniently the geological strike which swings south-west in that part. Nominal flying altitude was 400 feet.

2.2 The aircraft, a Super-Canso CF-JMS was equipped with Mark V Input electromagnetic system and AM-101 Proton Precession magnetometer (Barringer Research Ltd.). APN-1 radio-altimeter and 35 mm. continuous strip camera were on board.

2.3 The results of the airborne survey are presented as follows:

(i) position of the electromagnetic anomalies are plotted on 1" = ¼ mile photomosaic and symbols are used to discriminate between anomalies appearing on one, two, etc., channels; also, the degree of correlation with magnetic effects is indicated.

(ii) magnetic results are presented in the form of total magnetic field contours on a scale of 1" = ¼ mile.

3. Materials Available for Interpretation

3.1 Aeromagnetic maps:

(i) 1" = 1 mile Aeromagnetic series, Geological Survey of Canada Map 850G (Gullrock Lake Sheet 52K/13), and adjoining relevant sheets: 852G, 851G, 862G, 861G and 860G

(ii) 1" = 4 miles Aeromagnetic Compilation Sheet No. 5 prepared in 1961 for the company by Spartan Air Services Limited

(iii) present survey magnetic contour map 1" = ¼ mile.

3.2 Electromagnetic map: photomosaic with positions and identifications of E/M anomalies 1" = ¼ mile.

3.3 Preliminary Geological Maps, Ontario Department of Mines:

(i) P.355, Red Lake Sheet, scale 1" = 2 miles

(ii) P.366, Lower English River Sheet, scale 1" = 2 miles

(iii) P.379, Bruce Lake Area, scale 1" = ¼ mile.

3.4 Assessment File and other reports, Resident Geologist Office, Red Lake, Ontario, and Mineral Resources Circular No. 12, Pages 169 (Gordon Lake Mine), 171 (Werner Lake Nickel Prospect), and 174 (Snakeweed Lake Prospect).

B: Geological Background

1. Regional Appraisal

1.1 Survey area is situated at the south-west extension of the metasediments and metavolcanics belt which extends south-westerly from Birch Lake area (883G) to Skinner, Goodall, Honeywell Townships (873G), then turns south into Confederation Lake and Uchi Lake area (872G), and eventually trends in an arcuate sweep through Snakeweed Lake, Trout Lake River (Joy Prospect property), and Pakwash Lake (861G). This belt is richly mineralized in sections. The newest economic mineralization found is the Selco Exploration Ltd. ore body at South Bay on Confederation Lake, generally referred to as the Uchi Lake discovery.

1.2 From the regional point of view, a part of the greenstone belt described above forms a large "fold" around a large area of igneous rock. This fold is well noticeable on Aeromagnetic compilation map No. 5 (1" = 4 miles). It begins in the north-west corner of map 872G where it trends south-east, sweeps through the eastern part of this map and turns south-west through maps 871G, 861G and 851G, where it turns north into the Red Lake area.

1.3 The longer axis of this elliptical structure strikes east-west. At the western end of the "ellipse", there is the mining camp of Red Lake and, at the eastern, the numerous mineralization showings, past producers (Uchi Lake - Hasaga Gold Mines) and Selco base metals ore body.

1.4 Subsidiary structures appear mainly in two sectors of this elliptical fold. One is across the boundary of maps 861G and 871G, where the presence of a local fold is accentuated through magnetic expression of iron formation. This area is mineralized between Fredart Lake and Snakeweed Lake (Preliminary Map P.406: Trout Lake-Birch Lake sheet, 1" = 2 miles) in the east, and south of Trout Lake River - Woman River confluence, where Caravelle Mines Limited holds a property known as the Joy Prospect.

Another subsidiary structure is covered by the large block of claims also belonging to Caravelle Mines Limited, over which the presently discussed survey has been carried out. This area is mainly drift covered, but known mineralization occurs there too. However, considering the indications of the aeromagnetic compilation map 1" = 4 miles, it is feasible to postulate a synclinal fold pitching south-west with an axis striking 65° - 70°. Such fold can be delineated using iron formations' magnetics as marker horizon. Dorothy Prospect would be situated on the northern flank of this fold.

1.5 The two relevant geological maps P.355 and P.366 are of general reconnaissance character. In the survey area and its immediate vicinity, there is a lack of geological data, as the ground is either "unmapped" or drift covered.

However, there is some information based on topographical linears, photogeology and few occurrences of mineralization. Thus, in the vicinity to the south-west, the "linears" strike along directions confined in a sector 50° - 80°. This is also the "preferred" direction of topographical trends and, as will be seen later, geophysical trends in the survey area.

It is interesting to note that courses of the streams system in the western part of the property are subparallel along direction 55°, and that sulphide occurrences south-east of Long-legged Lake (P.366) lie in direct extension of those trends to the south-west.

1.6 The known economic orebodies nearest to Dorothy Prospect are in Red Lake area (15 miles to the north-west). The Uchi Lake deposit is 50 miles to the north-east, and the Gordon Lake mineral occurrence is about 50 miles to the south-west.

Both Uchi Lake and Gordon Lake mineralisations consist of base metals.

From what little can be surmised about the geology of the Dorothy Prospect, it seems that the mineralization in the Gordon Lake Mine occurs in a not unlikely geological setting.

This is a nickel-copper mine (1.2% Ni and 0.7% Cu), and mineralization is associated with a major (east-west) fault zone. Peridotite lenses occur within the fault zone, and the fault zone itself occurs along contact of metasediments (paragneisses) to the north and granite to the south. Pyrrhotite, pentlandite, pyrite and chalcopyrite occur in and within peridotite bodies in disseminated form and in more massive stringers and lenses.

In Dorothy Prospect, it seems that such sheared or faulted contacts exist between rock types comparable to those near Gordon Lake. Some ultra-basic rocks also probably exist.

2. Previous Prospecting

2.1 The following discussion is based on the searches of Assessment Work and other files in the Office of the Resident Geologist in Red Lake. This opportunity is taken to thankfully acknowledge the helpful and friendly cooperation accorded to the writer by the Resident Geologist, Mr. R.A. Riley, and his Assistant, Mr. A.P. Pryslak.

2.2 It seems that the previous prospecting within the present block of claims was confined mainly to two periods, and exclusively for gold during the first period. The earliest record of activity dates back to 1941. At that time a small block of claims was staked by Jack Mitchell and associates, resident of McKenzie Island, and in 1945 it was optioned to Belgold Mines. This block was centred on the apex of the curve formed by Caribou Creek flowing out of Dixie Lake.

The results of the prospecting work carried out by the prospectors and Belgold Mines are shown on a map, scale 12" = 1 mile (Belgold Property, Caribou Creek Area, December 1945). Thework consisted mainly of surface prospecting and trenching, without any geophysics, and only very little shallow drilling.

A geological appraisal of these exploration efforts is given by Mr. R. Thomson, the then Resident Geologist in Kenora in his report "Note on Property of Belgold Mines and Vicinity", 27.9.1947.

The relevant geological information from these sources is incorporated in the present Composite Interpretation Map (Fig. 6).

2.3 The main conclusions emerging from the examination of work during that period are:

(i) rocks underlying the property include:
- altered basic and acid (rhyolite) volcanics
- metasediments, schists, granulites
- granitic rocks, dioritic rock, quartz porphyry dykes

(ii) four zones, A, B, C and D, were prospected in greater detail including trenching, and (Fig. 6) encountered mineralization included:

gold: - A (in iron formation; also one hole reported ¼ oz./ton over 1½ feet at 81 feet)
- D (in quartz vein 0.19 oz./ton)

chalcopyrite: - A (quote: "in general, less than 1% associated with iron formation)
- B (associated with pyrrhotite, pyrite in iron formation with basic metavolcanics adjoining)
- D (with pyrrhotite and pyrite in shears and fractures in basic metavolcanics)

pyrrhotite and pyrite: occur in all four zones in shears, fractures and as lenses in metavolcanics, metasediments and iron formation.

2.4 Subsequently, additional work has been done over the same parcel of ground by Currie, Mahoney, Mcdougall, who drilled some eight diamond boreholes of depths varying 50 to 150 feet. The formations encountered (according to logging by the Partners) were: andesite (mainly), metasediments, diorite, basic metavolcanics. Mineralization found included pyrrhotite, pyrite and chalcopyrite. The tenor is unknown.

2.5 During the second period of prospecting, four small groups of claims were staked by INCO further to the south-west of the block of claims just described. There is no information available and no assessment work filed on work done by INCO, but some drilling has been done, because a drilling site was identified near the north-east shore of Oko Lake (south-east of Dixie Lake).

2.6 The outline of the boundaries of all known previous groups of claims has been reconstituted to the best ability and is shown on E/M Photomosaic Map (Fig. 5) and Interpretation Map (Fig. 6).

C: Electromagnetic Survey

1. Nature of Measurements

1.1 All E/M systems respond to a variety of conductors, and Input is not an exception. However, systems vary somewhat as regards the ability to discriminate between "poor" and "good" conductors.

In the Input system, the transient pulse of current in the transmitting loop stretched over the aircraft's fuselage and wings gives rise to a primary electromagnetic field which induces currents in the ground or bedrock conductors. The induced secondary electromagnetic field is picked up by a receiving coil towed in a bird behind the aircraft.

Due to the fact that, at the time of recording of the secondary field, the primary field is off, the quality of meaningful signal is enhanced.

The recording of the signal is not continuous, but occurs at discreet intervals of 250, 475, 650, 1050, 1450 and 1850 microseconds after the termination of the inducing transient pulse. At each of these moments, the instantaneous amplitude of the decaying signal is recording and displayed on six traces of a record. Thus, each trace corresponds to a given instant. Consequently, it is possible to plot the amplitude of E/M signal (in arbitrary units) against the time and obtain the shape of the decay curve.

1.2 The most probable causes of the E/M anomalies are:

(i) conductive near surface material (overburden, etc.)

(ii) graphite and carbonaceous rocks

(iii) electrolytic type conductors in shear and fault zones

(iv) altered ultrabasic rocks: serpentines, peridotites

(v) sulphides: pyrite, pyrrhotite and chalcopyrite.

It can be seen that sulphides, of which chalcopyrite is but one, are one of several groups of materials which may cause E/M anomalies. Thus, it is necessary to introduce some system of discrimination in order to select and grade the importance of various E/M responses.

2. Appraisal of E/M Anomalies

2.1 The following criteria were used in the appraisal of E/M anomalies recorded over Dorothy Prospect:

(i) shape of the decay curve

(ii) magnetic correlation

(iii) trends and patterns formed by the anomalies

(iv) relationship of E/M anomalies (or groups of anomalies) to magnetic features on the magnetic contour map

(v) relationship of E/M anomalies to structural features inferred from regional geology and from interpretation of aeromagnetics.

2.2 The preliminary examination of E/M anomalies was carried out as follows:

(i) examination of original E/M record as regards the shape of anomaly on each channel and qualitative appraisal of relative amplitudes on each channel. On this basis, some obviously "geological", "overburden" and "surface" anomalies were discounted

(ii) the remaining anomalies were measured off the record in arbitrary units, and these amplitudes were plotted against times at which decay curve was sampled (para. 1.[illegible] of this section)

(iii) criterium as regards the quality of the decay curve was established on the basis of:

a. decay curve obtained over Uchi Lake economic orebody (Red Lake area) Fig. 7

b. decay curve over Ruttan Lake economic orebody (Manitoba) Fig. 7

c. relative comparison of all curves plotted from anomalies over Dorothy Prospect; statistical examination of the curves defines a more common type and some unusual types, either classed as "poorer" (rapid initial decay) or "better" (slower initial decay)

(iv) this purely "geophysical" classification is shown on the E/M Interpretation Photomosaic Map (Fig. 5). There, anoamlies are graded as: a, b, c, d (see Fig. 5 legend for appropriate marking)

(v) higher grade anomalies were gathered into groups, which it is suggested should be investigated. At this stage, the correlation with magnetic anomalies was also considered.

3. Discussion of E/M Results

3.1 All groups of E/M anomalies form a south-west to north-east striking trend. In the south-west this trend bifurcates at Oko Lake, the northern arm of the fork striking west, and the southern striking south-west.

In the north, the trend swings over to the east and south-east.

In fact, the belt of E/M anomalies is sub-parallel to the major structural trends in the survey area, as delineated from regional and magnetic survey considerations. Also, the topographical trends, as stressed by the main drainage directions, conform to this pattern (Caribou Creek and the stream south of Caribou Creek).

The main sets of directions in the area are:

(i) a. stream flowing out of Oko Lake: 55° (in the west)
b. Caribou Creek: 45° (disregarding a slight "bulge" and taking a line through shore of eastern part of Dixie Lake) - (in the west)
c. section of stream south-east of Group H of E/M anomalies: 40°
d. anomaly groups D, E, F, H, K: 40° (G is "off" line)

This set is contained between 40° and 55°:

(ii) a. groups A and G: east-west
b. groups B and C: East-west
c. top section of Caribou Creek: east-west
d. sections of stream through the centre of the area: east-west
e. sections of stream in the southern part of the area: east-west

(iii) a. groups L and M: 295°
b. groups M and O: 295°
c. Caribou Creek: 295° (eastern part)

All those directions are conformable to directions exhibited by magnetic trends and discussed later.

The described shape of the belt of E/M anomaly groups can be conceived as conformable to the flank of a fold postulated in para. 1.4 of Section B.

D: Aeromagnetic Survey

1. Approach to Interpretation

1.1 The magnetic picture emerging from the examination of the aeromagnetic map is not considered in terms of individual magnetic anomalies, which are not particularly significant in themselves.

The magnetic pattern is considered as a whole, and interpretation is carried out in terms of lithology and structure.

1.2 Lithology of various sections of the area is inferred from the "magnetic signature" of different rock types. Deductions are based on comparison of the magnetic field over known geology in the general area, using published Aeromagnetic Maps (1" = 1 mile, Geological Survey Series) and available geological maps. The boundaries and possible faulting are postulated on the basis of magnetic gradients, discontinuity of magnetic trends and displacement of axes of magnetic features. The consideration of topographic features helps in such analysis.

2. Discussion of Results

2.1 In the western part of the area, the magnetic trends strike between 45° (strong magnetic anomaly attributed to iron formation) to 68° (band of metavolcanics and metasediments with some iron formation underlining the longer trend which is probably due to a contact). These are the trends which were observed previously in the discussion of regional geology and E/M results.

In the east, the most noticeable magnetic feature strikes 330° and forms approximately a right angle with previously described trends in the eastern part of the area. A magnetic feature south of Dixie Lake is a composite of the above two directions (45° and 330°). Most other magnetic features are subparallel to those directions.

Different trends occur very rarely, and the two noticeable are north-south, which occurs east of Dixie Lake, and 300° in the north-eastern corner of the area across the lake.

These trends are related to contacts and to axial directions of folding.

2.2 The two most intense magnetic anomalies are in the south-west (1000 gammas above the background) and in the south-east (6000 gammas above the background). This latter anomaly points to a very high susceptibility.

If average width of the formation is assumed to be 2000 feet and the depth of the order to 500 feet below flight level, then the susceptibility could be about 12,500 x 10^{-6} cgs and theoretical magnetite by volume about 4%. On the other hand, if the width is taken as 1000 feet and the depth again as 500, then susceptibility works out as 25,000 x 10^{-6} cgs and corresponding contents of magnetite by volume 5%. This calculation is not very reliable as shown by a similar calculation overthe known Griffith Mine deposit on the east shore of Bruce Lake. There, the anomaly is 12,000 and the calculated magnetite contents 15% (considering indicated surface width of about 1000 feet). In actual fact, the mineable section is 25%-35% magnetite by volume. Thus, one would have to assume perhaps that richer sections of the anoamly (which is not in the block of claims owned by Caravelle Mines Limited) in the south-east of the survey area may be of the order of 10% magnetite by volume.

2.3 Another magnetic feature which deserves a mention here is the almost circular, but somewhat east-west elongated group of anomalies in the northern part of the area. This may be attributed to a local fold in iron formation (metasediments and metavolcanics), but could also be interpreted as an ultrabasic intrusion.

E: Interpretation Map

1. General Discussion

1.1 The Interpretation Map presents combined results of analysis based on regional geological and aeromagnetic and electromagnetic surveys study.

Localities where actual rock types were recognized, either as a result of trenching or drilling, are shown and are mainly confined to the northern part of the area where the original prospectors and Belgold Mines carried out prospecting.

1.2 Other boundaries are inferred from the interpretation. In the south, a well-pronounced boundary exists, south of which granitic rocks are postulated. This boundary swings sharply to the south-east in the eastern part of the area. This is accentuated by a well-marked bend in the iron formation, postulated on the basis of a higher amplitude, elongated magnetic feature.

The main part of the area is underlain by metasediments and metavolcanics with some igneous rocks consisting of diorites, possibly granite and quartz porphyry. Considerable sections are schistose in nature.

This area is, in fact, an extension to the west of the metasedimentary and metavolcanic belt shown on the adjoining Preliminary Geological Map P.379 (Bruce Lake Area 1" = ½ mile).

1.3 Structurally, a number of faults are inferred from the interpretation. Their strike direction is consistent and is contained mainly in the following sectors:

(i) between 340° and 360°

(ii) 0° to 30°

(iii) 40° to 60°

(iv) east-west

Thus it would seem that the faulting is either at a wide angle to the postulated axes of folding and, thus, cross-faulting, or along fold axes, or longitudinal faulting. The east-west faults are infrequent, but the north-south faults (mainly in the east and the west) are of considerable strike extent.

2. Selected Ground Targets

2.1 Group A contains anomalies of first and second grade, which align themselves along an east-west strike. This Group is within a larger swarm of anomalies forming the northern arm of a bifurcated trend discussed previously. The eastern part of this swarm is localized on the eastern part of a magnetic feature, reflecting a folded iron formation. However, the western part of the "swarm" is to the north of the iron formation, and the western part of the iron formation belt has no associated anomalies. Group A is close to a postulated lithological contact and across an interpreted fault. It is due most probably to sulphides in a contact, or possible sheared contact zone. Four aligned anomalies in that group, without direct magnetic correlation, could be due to a graphitic zone.

2.2 Groups B, C, D, E and F are most probably associated with iron formation. Groups B and D are directly within iron formation, while others seem to be in the contact zone. These groups can be explained with some degree of certainty as due to sulphides. Iron formation by itself would not give rise to such strong E/M response. This is amply confirmed by the fact that the strongest anomaly in the area situated in the south-east, and one which obviously contains greater percentage of magnetite, has no E/M anomalies associated with it.

It is also known that pyrrhotite and pyrite occur in considerable quantities in the survey area.

Group E is probably across a fault or fracture. All Groups contain anomalies of first and second grade, but are within an almost continuous zone of E/M anomalies extending north-east of Oko Lake and along the southern arm of bifurcation.

Group G is also within the "swarm", but not relatable directly to the iron formation. In fact, it is well off the possible contact zone and is probably associated with a shear zone. Thus, some of the other anomalies in that vicinity are likely to be of electrolytic nature.

Group H is along a contact zone towards the north-eastern extremity of the belt of anomalies. This again could be a shear zone, but graphitic cause is not likely because of direct local magnetic correlation.

2.3 Group I is well away from the magnetically disturbed zone, although three anomalies within it have direct correlation with small magnetic anomalies. It is an interesting Group, occurring probably in metasediments or metavolcanics.

Group J is on contact of what could be an extension of an ultrabasic intrusion, expressed by the oval magnetic feature to the east.

2.4 Groups K, M and possibly O are associated with a definite magnetic feature. K and M are on the contact of this possibly ultrabasic body with metasediments and metavolcanics (acid?) around it.

Group K preserves the curved shape of the magnetic feature, has anomalies with direct magnetic correlation, and is probably due to pyrrhotite. Implied association with ultrabasic rocks makes this Group interesting, as regards possible nickel mineralization.

Groups M and O are relatively isolated. Group O is bordering on postulated faults, and, in fact, there is a line of poorer anomalies extending along one of the postulated faults (north-south).

2.5 Group L is along the Caribou Creek: an probable intersection of two fractures. That, trending 25°, is implied by magnetic contours configuration; another by Caribou Creek course sub-parallel to a set of structural trends. Its anomalies have direct magnetic correlation, and sulphides are the probable cause.

2.6 Group N consists of a single relatively isolated anomaly, close to Caribou Creek and without direct magnetic correlation. It is probably within metavolcanics. The cause could be a body of non-magnetic sulphides.

Group P consists of two anomalies, again relatively isolated, but with direct magnetic correlation. Thus, sulphides probably contain pyrrhotite as well. Both these Groups are off magnetic features.

2.7 The remaining Group Q consists of a single anomaly, although it has a possible extension to the north. This Group is completely isolated and, consequently, somewhat intriguing. Although it exhibits some direct magnetic correlation, it is in fact off magnetic features and is not likely to be a electrolytic or graphitic conductor.

F: Conclusions and Recommendations

1. Conclusions

1.1 A large number of airborne electromagnetic anomalies have been recorded within the survey area. They were analyzed in connection with the results of the aeromagnetic survey and the ensuing structural and litholigical implications. This analysis led to the selection, from among the recorded anomalies, of groups which are suggested as targets for the ground follow-up work.

1.2 It seems that most of the E/M anomaly Groups are due to some form of sulphides mineralization, while electrolytic and graphitic conductors are less likely in most cases.

This, naturally, does not imply economic mineralisation, although, without ground survey and eventual drilling, the possibility of economic mineralization cannot be excluded.

1.3 Seventeen Groups of E/M anomalies are aggregated into the following priority classes:

- Priority No. One: I, K, L, M, P, Q
- Priority No. Two: A, G, H, J, N, O
- Priority No. Three: B, C, D, E, F

1.4 It will be noted that Groups A, B, C, D, E, F, H and J fall into areas which were previously staked by Inco. Whether work has been done within each staked area and, if so, what type of work, is not known.

Group K falls into the area which was once prospected by the original stakers and then by Belgold Mines. However, on Belgold's prospecting map the location of Group K is marked "no outcrop", and, thus, this conductor was not known to the then prospectors. In any case, at that time the exploratory interest was favoured in gold mineralization of the then staked area, as exemplified by a casual statement in R. Thompson's report: "chalcopyrite - in general less than 1%", Page 5.

The remaining Groups, as far as can be surmized, are in non-prospected areas.

Thus, all Groups of anomalies with top priority (No. One) are outside known prospected areas.

2. Recommendations

2.1 The seventeen zones discussed in this Report should be checked on the ground and, in particular, the Groups classified as Priority No. One.

2.2 The property is of considerable size, and line cutting requires careful planning in order to reduce it to a minimum

without, however, impairing the effectiveness of ground investigations.

The following is suggested:

(i) Baseline #1 along strike of Groups B, C, D, E and F; approximate length 2½ miles; picket lines cut to cover Groups of anomalies only.

Access to Baseline from Oko Lake.

(ii) Separate; limited grid for Group A with access from Dixie Lake (short Baseline #2 and picket lines).

(iii) Baseline #3 along strike of Groups I, J, K and L; approximate length 2½ miles; picket lines cut to cover Groups of anomalies only.

Access to this Baseline from Dixie Lake (1½ miles) or from Caribou Creek (½ mile).

(iv) Access to Group H from Baseline #3.

(v) Baseline #4 along strike of Groups L, M, N and O; approximate length 1¾ miles; picket lines cut to cover Groups of anomalies only.

(vi) Access to Group Q from Baseline #4.

(vii) Access to Group P from the Lake.

2.3 Ground geophysical reconnaissance to consist of magnetometer and dip angle E/M (Sharp transceiver, for example). The delineation of E/M anomaly on the ground is quite adequate with this type of equipment. On the other hand, the operation is quick (without connecting cables) and results free from errors due to topography, if vertical transmitting and horizontal receiving coils configuration is adopted. Broadside operation along 400 feet spaced traverses is recommended.

If additional information is required in some cases, an horizontal loop system can be used on a limited number of traverses to measure in-phase and out-of-phase components.

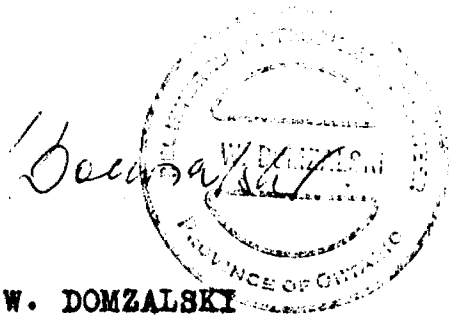
The use of I.P. is not foreseen at present. All targets are E/M conductors.

2.4 Photogeological study should take place concurrently with line cutting and should be followed by ground geological checks over possible outcrop areas. In addition, anomaly geological reconnaissance at prospector level is recommended, as some outcrops can be found which were not apparent from the examination of photographs.

2.5 After the location of E/M conductors on the ground, some probing of overburden is advisable in case the bedrock is shallow, as trenching can give some useful information.

2.6 When photogeological study is completed and ground geophysical work fairly well advanced, some test drilling would be advisable, so that geophysical results can be correlated with drilling results, and subsequent drill holes located in the light of that correlation.

2.7 Subsequently, a full drilling programme should be undertaken.



DR. W. DOMZALSKI

APPENDIX 3

LIST OF CLAIMS

KRL 64408	KRL 64418	KRL 68371	KRL 68376
64409	64419	68372	68377
64415	64420	68373	68378
64416	68369	68374	68379
64417	68370	68375	68380
KRL 68381	KRL 68386	KRL 68391	KRL 68396
68382	68387	68392	68397
68383	68388	68393	68398
68384	68389	68394	68399
68385	68390	68395	68400
KRL 68401	KRL 68406	KRL 68411	KRL 68275
68402	68407	68412	68276
68403	68408	68413	68277
68404	68409	68273	68278
68405	68410	68274	68279
KRL 68280	KRL 68285	KRL 68290	KRL 68295
68281	68286	68291	68296
68282	68287	68292	68297
68283	68288	68293	68298
68284	68289	68294	68299
KRL 68300	KRL 68305	KRL 68310	KRL 72328
68301	68306	68311	72329
68302	68307	68312	72330
68303	68308	68313	72331
68304	68309	72327	72332
KRL 72333	KRL 72338	KRL 72343	KRL 72348
72334	72339	72344	72349
72335	72340	72345	72350
72336	72341	72346	72351
72337	72342	72347	72352
KRL 72353	KRL 72358	KRL 72363	KRL 73093
72354	72359	72364	73094
72355	72360	72365	73095
72356	72361	72366	73096
72357	72362	73092	73097
KRL 73098	KRL 73103	KRL 73108	KRL 73113
73099	73104	73109	73114
73100	73105	73110	73115
73101	73106	73111	73116
73102	73107	73112	73117
KRL 73118	KRL 73123	KRL 73128	KRL 72368
73119	73124	73129	72369
73120	73125	73130	72370
73121	73126	73131	72371
73122	73127	72367	72372
KRL 72373	KRL 72378	KRL 72383	KRL 72388
72374	72379	72384	72389
72375	72380	72385	72390
72376	72381	72386	72391
72377	72382	72387	72392

APPENDIX 3

LIST OF CLAIMS

KRL 72393	KRL 72398	KRL 72403	KRL 72408
72394	72399	72404	72409
72395	72400	72405	72410
72396	72401	72406	72411
72397	72402	72407	72412
KRL 72413	KRL 72418	KRL 72423	KRL 72428
72414	72419	72424	72429
72415	72420	72425	72430
72416	72421	72426	72431
72417	72422	72427	72432
KRL 72433	KRL 72438	KRL 72443	KRL 72448
72434	72439	72444	72449
72435	72440	72445	72450
72436	72441	72446	72451
72437	72442	72447	72452
KRL 72453	KRL 71915	KRL 71923	KRL 72585
72454	71919	71925	72586
72455	71920	72582	72587
72456	71921	72583	72588
71914	71922	72584	72589
KRL 72590	KRL 72595	KRL 72600	KRL 72605
72591	72596	72601	72606
72592	72597	72602	72919
72593	72598	72603	72920
72594	72599	72604	72921
KRL 72922	KRL 72927	KRL 72932	KRL 72937
72923	72928	72933	72938
72924	72929	72934	72939
72925	72930	72935	72940
72926	72931	72936	72941
KRL 72942	KRL 72947	KRL 72952	72957
72943	72948	72953	72958
72944	72949	72954	73392
72945	72950	72955	73393
72946	72951	72956	73540
KRL 73541	KRL 73546	KRL 73387	KRL 73289
73542	73547	73388	73290
73543	73384	73389	73291
73544	73385	73390	73292
73545	73386	73391	73293
KRL 73294			
73295			
73296			
73297			
73298			

APPENDIX 2

GENERAL RELEVANT INFORMATION

1. Intervals at which the decay pulse is sampled:

   MARK V Input (six channels): 250, 475, 650, 1050, 1450 and 1850 microseconds

   MARK II Input (four channels): 450, 850, 1250 and 1650 microseconds

2. Uchi Lake discovery anomaly is the same units as those used for the description of anomalies in this report:

   8.1 : 3.6 : 2.4 : 1.2

3. Radio Altimeter: 1" = 200 feet, decreasing upwards.
   Centre trace on record is 400 feet.

4. Magnetometer: Coarse scale - 1" = 5000 gammas
   Fine scale - 1" = 100 gammas
   Positive anomaly upwards.

APPENDIX 3

LIST OF CLAIMS

KRL 64408	KRL 64418	KRL 68371	KRL 68376
64409	64419	68372	68377
64415	64420	68373	68378
64416	68369	68374	68379
64417	68370	68375	68380
KRL 68381	KRL 68386	KRL 68391	KRL 68396
68382	68387	68392	68397
68383	68388	68393	68398
68384	68389	68394	68399
68385	68390	68395	68400
KRL 68401	KRL 68406	KRL 68411	KRL 68275
68402	68407	68412	68276
68403	68408	68413	68277
68404	68409	68273	68278
68405	68410	68274	68279
KRL 68280	KRL 68285	KRL 68290	KRL 68295
68281	68286	68291	68296
68282	68287	68292	68297
68283	68288	68293	68298
68284	68289	68294	68299
KRL 68300	KRL 68305	KRL 68310	KRL 72328
68301	68306	68311	72329
68302	68307	68312	72330
68303	68308	68313	72331
68304	68309	72327	72332
KRL 72333	KRL 72338	KRL 72343	KRL 72348
72334	72339	72344	72349
72335	72340	72345	72350
72336	72341	72346	72351
72337	72342	72347	72352
KRL 72353	KRL 72358	KRL 72363	KRL 73093
72354	72359	72364	73094
72355	72360	72365	73095
72356	72361	72366	73096
72357	72362	73092	73097
KRL 73098	KRL 73103	KRL 73108	KRL 73113
73099	73104	73109	73114
73100	73105	73110	73115
73101	73106	73111	73116
73102	73107	73112	73117
KRL 73118	KRL 73123	KRL 73128	KRL 72368
73119	73124	73129	72369
73120	73125	73130	72370
73121	73126	73131	72371
73122	73127	72367	72372
KRL 72373	KRL 72378	KRL 72383	KRL 72388
72374	72379	72384	72389
72375	72380	72385	72390
72376	72381	72386	72391
72377	72382	72387	72392

APPENDIX 3

LIST OF CLAIMS

KRL 72393	KRL 72398	KRL 72403	KRL 72408
72394	72399	72404	72409
72395	72400	72405	72410
72396	72401	72406	72411
72397	72402	72407	72412
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72414	72419	72424	72429
72415	72420	72425	72430
72416	72421	72426	72431
72417	72422	72427	72432
KRL 72433	KRL 72438	KRL 72443	KRL 72448
72434	72439	72444	72449
72435	72440	72445	72450
72436	72441	72446	72451
72437	72442	72447	72452
KRL 72453	KRL 71915	KRL 71923	KRL 72585
72454	71919	71925	72586
72455	71920	72582	72587
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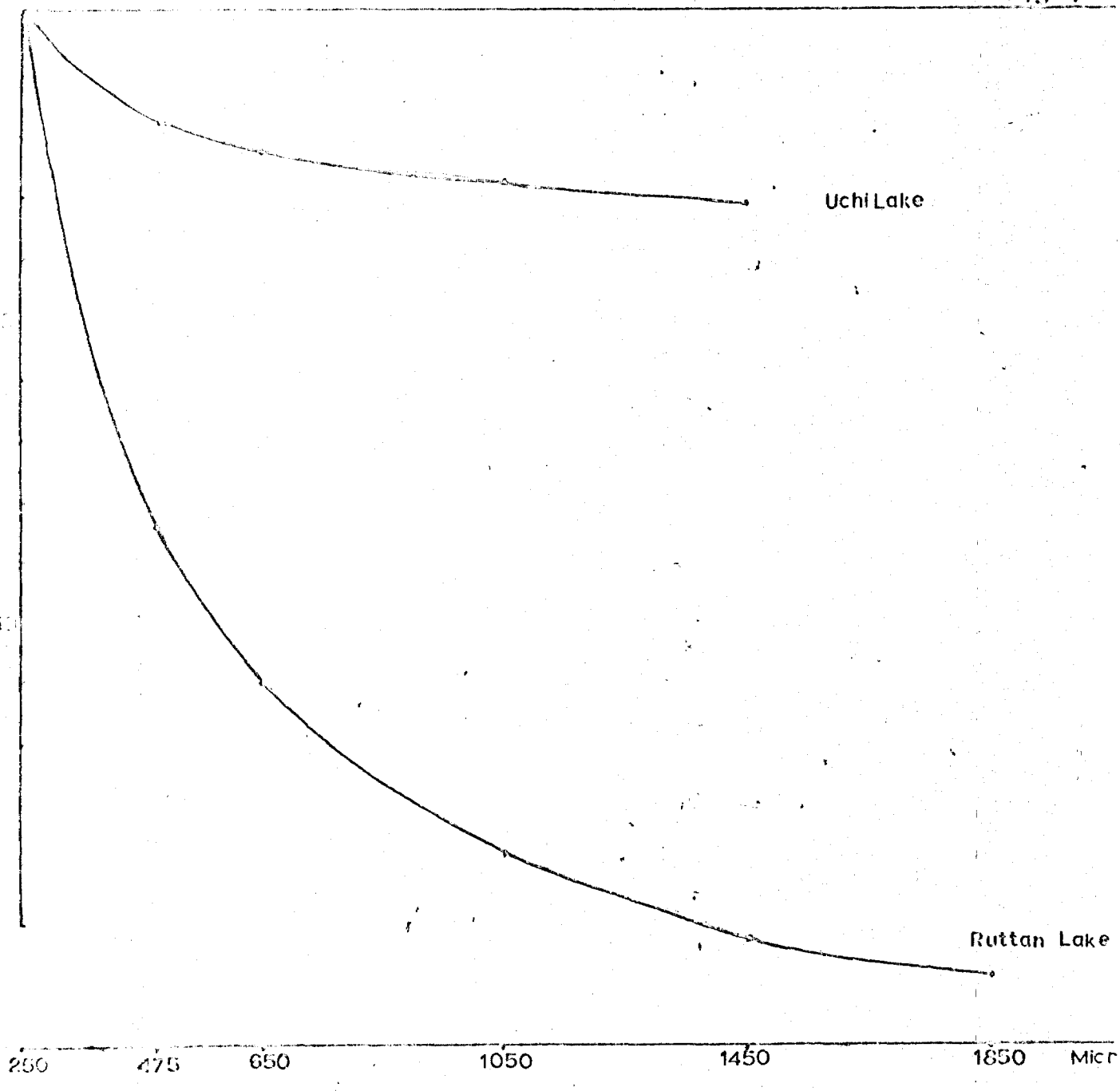
71914	71922	72584	72589
KRL 72590	KRL 72595	KRL 72600	KRL 72605
72591	72596	72601	72606
72592	72597	72602	72919
72593	72598	72603	72920
72594	72599	72604	72921
KRL 72922	KRL 72927	KRL 72932	KRL 72937
72923	72928	72933	72938
72924	72929	72934	72939
72925	72930	72935	72940
72926	72931	72936	72941
KRL 72942	KRL 72947	KRL 72952	72957
72943	72948	72953	72958
72944	72949	72954	73392
72945	72950	72955	73393
72946	72951	72956	73540
KRL 73541	KRL 73546	KRL 73387	~~KRL 73289~~
73542	73547	73388	~~73290~~
73543	73384	73389	~~73291~~
73544	73385	73390	~~73292~~
73545	73386	73391	~~73293~~
~~KRL 73294~~			
~~73295~~			
~~73296~~			
~~73297~~			
~~73298~~			

Fig 7



Decay Curves: Input E/M

Uchi Lake and Ruttan Lake Orebodies

CARAVELLE MINES LIMITED

Per C. J. Nadey

Caribou Creek

52K13SE0057 63.2701 DIXIE LAKE

As this property has not been thoroughly explored since it was staked in the Fall of 1941, it is recommended that

1) In Zone "A", Trenches Nos. 1 and 2 be drilled and blasted to a further depth of at least 3'.
On Claim No. 18871, in the high ground about 150 yards along the strike from Trench No. 1, a trench should be dug in an effort to locate a continuation of Zone "A."

2) In Zone "B", Trench No. 1 should be continued in both directions, and the acidic rocks drilled and blasted.

3) In Zone "C", Trench No. 3 should be drilled and blasted, especially where quartz occurs. No. 4 Trench should be extended in both directions, drilled and blasted; No. 5 Trench extended, especially towards the S.W., drilled and blasted; and the ridge at No. 7 Trench thoroughly explored by trenching and drilling.

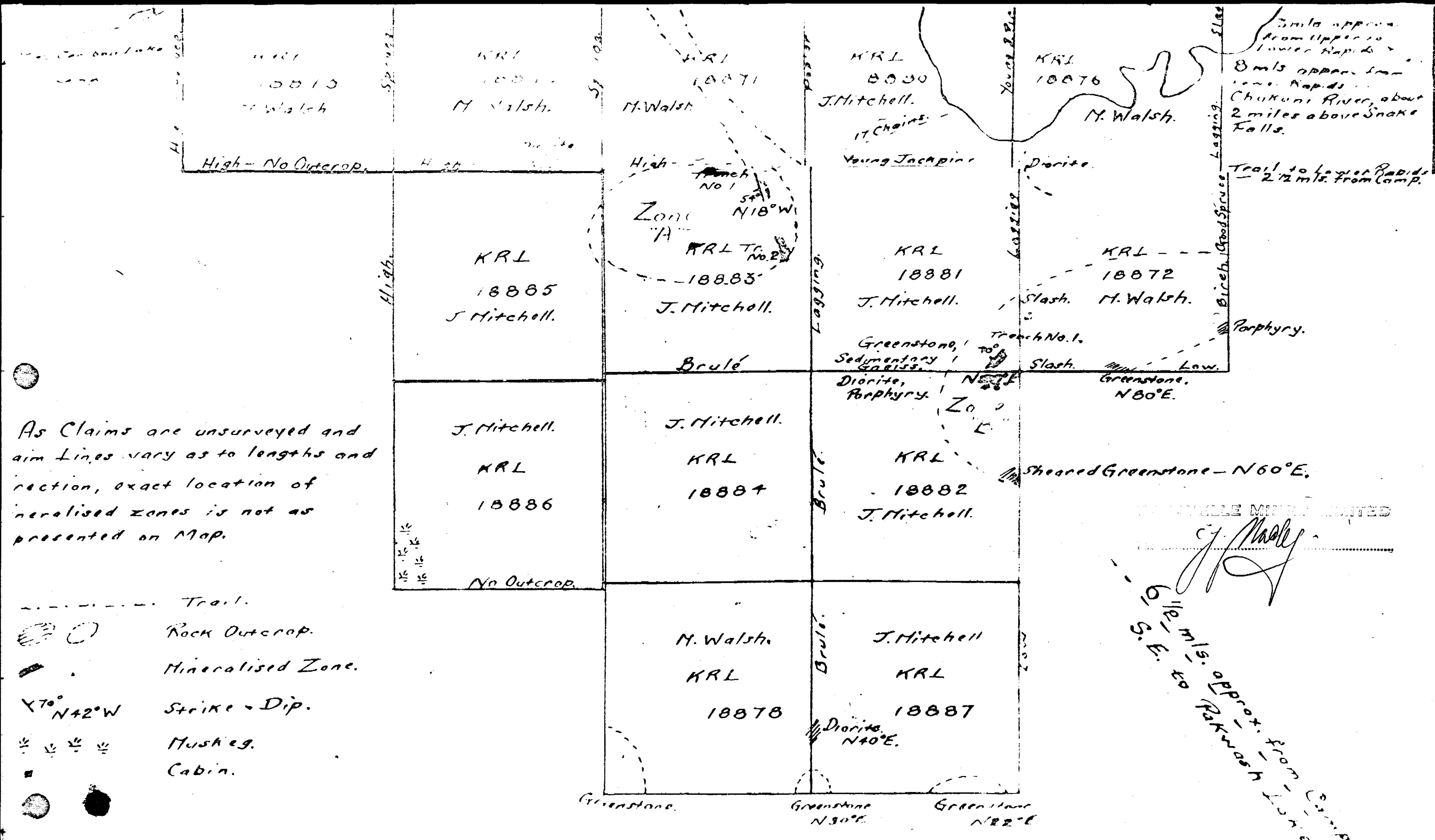
4. The ridge at Post No. 4, KRL 18888, should be cross-trenched and explored.

For Diamond-Drilling, the nearest point at which water may be had from Caribou Creek to Zone "A" is approximately 17 Chains.

Trench No. 7, Zone "C", lies approximately 15 Chains from the Creek.

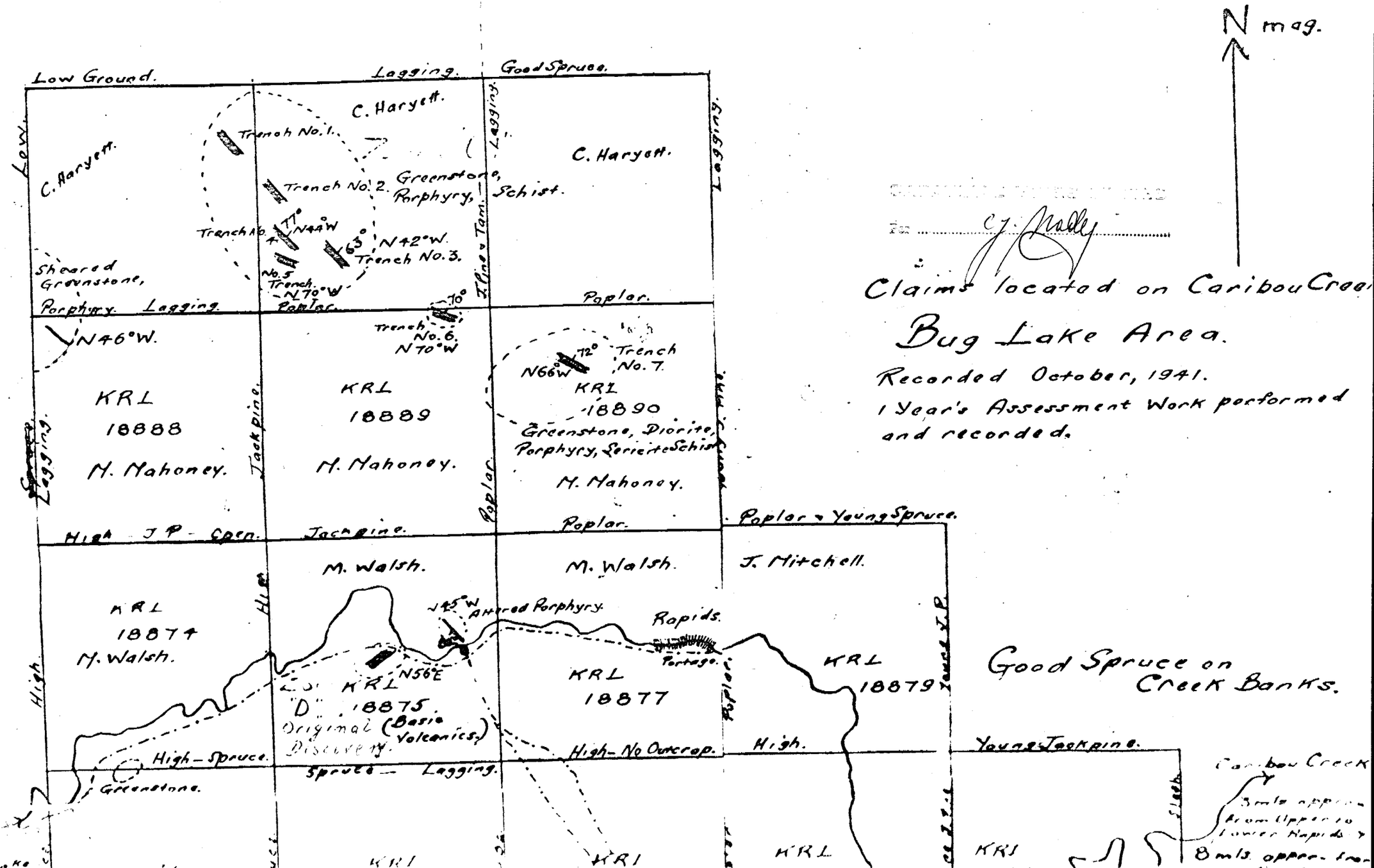
M. Walsh. Island. Ont.
McKenzie Island
March 2/1942.

[illegible stamp]
J. Nalley



KRL
18873
M. Walsh
M. Walsh.
KRL
18871
M. Walsh
KRL
8890
J. Mitchell.
17 Chains
Young Jackpine
KRL
18876
M. Walsh.
8 mls approx. from Lower Rapids Chukuni River, about 2 miles above Snake Falls.
Trail to Lower Rapids 2½ mls. from Camp.
High - No Outcrop.
High
Zone "A"
Trench No 1
N18°W
KRL Tr. No. 2
KRL
18885
J. Mitchell.
KRL
18883
J. Mitchell.
KRL
18881
J. Mitchell.
Lagging
Logging
Diorite.
KRL
18872
M. Walsh.
Slash.
Birch, Good Spruce
Porphyry.
Greenstone, Sedimentary Gneiss.
Trench No. 1.
70°
Slash.
Low.
Greenstone, N80°E.
Brulé
Diorite, Porphyry.
Zone "B"
J. Mitchell.
KRL
18886
J. Mitchell.
KRL
18884
Brulé
KRL
18882
J. Mitchell.
Sheared Greenstone - N60°E.
No Outcrop.
As Claims are unsurveyed and aim Lines vary as to lengths and direction, exact location of mineralised zones is not as presented on Map.
M. Walsh.
KRL
18878
J. Mitchell
KRL
18887
Diorite. N40°E.
Greenstone.
Greenstone N30°E.
Greenstone N22°E
Trail.
Rock Outcrop.
Mineralised Zone.
70° N42°W
Strike + Dip.
Muskeg.
Cabin.
6½ mls. approx. from Camp S.E. to Pakwash Lake

3 mls. approx. from Camp
Transmission Line, at Pole # 274.



Claims located on Caribou Creek

Bug Lake Area.

Recorded October, 1941.

1 Year's Assessment Work performed and recorded.

Good Spruce on Creek Banks.

CARAVELLE MINES LIMITED

Per .....

Note on Property of Belgold Mines and Vicinity

(Six Miles south of Byshe Twp.)

Red Lake Mining Division

by

Robert Thomson
Resident Geologist
Kenora, Ont.

Sept. 27, 1947.

INTRODUCTION

The purpose of this note is to put on record information on an area in the vicinity of Caribou Creek, which flows easterly from Dixie Lake some eight miles into Chukuni River, entering it about one mile north of Pakwash Lake. This vicinity is some six miles south of Byshe Twp. (see drawing RL 38) the north part of which lies in the Red Lake greenstone belt. The group on which work was done by Belgold Mines consists of 21 claims, KRL No's 18870 to 18890.

Access is most easily obtained by air from Red Lake to Dixie Lake and from there by canoe down Caribou Creek some 2½ miles to the cabin on the south side of the creek in claim K 18875. Caribou Creek is some 25 feet wide and, although progress may be impeded by a few log jams and boulders, is easily travellable except in very low water. A trail goes along the south side of the Creek. The group of claims may also be reached by canoe up Caribou Creek from Chukuni River; a mile portage easterly from the cabin is made necessary by rapids and low water in the creek. At the time of the writers visit the creek near Chukuni River was filled with logs and not usable. A poor trail leads northerly from the cabin some 2½ miles to the Power Transmission Line to Red Lake.

At the time of the writer's visit the cabin on the south side of the creek and on claim KRL 18875 was in poor repair.

On the west side of the blunt peninsula that makes the narrows in Dixie Lake is a set of camps used in lumbering operations. A trail along the south side of Dixie Lake is used in trapping and lumbering.

The writer spent parts of August 16 to 18, 1946 in company with Mr. W. J. Skeanes in a visit to the property and is grateful to him and to Mr. Jack Mitchell of McKenzie Island for information.

HISTORY

The first discovery of gold on the group is reported to have been made by Messrs. Hariot and Nels Andeson some 5 or more years ago while running a trapping line in the vicinity. The discovery (now part of D zone) was on the south bank of Caribou Creek and in claim KRL 18875 . Hariot told Jack Mitchell (residing at McKenzie Island) of this and he had the group staked. Mitchell had surface prospecting done by Hariot and the Walsh brothers, one of whom is reported to have drawn the original plan from which the map entitled "Bell-Gold Property, December 1945" and now on file at the Resident Geologists office, Kenora, was made. A little X-ray diamond drilling was done.

In early 1944 Mitchell tried to option the group to several mining companies but they apparently regarded his terms as too onerous. Later he had some 8 X-ray drill put down on the A zone and a little surface prospecting done by W. J. Skeanes. The results of this work were not up to expectations. During this year a considerable number of claims were staked adjoining the original group by other interests. In 1945 Belgold Mines became interested in the property and diamond drilling under the direction of G.R. McLaren was carried out on the A zone by Westspeer Prospecting Syndicate. This drilling encountered great difficulty due to unavailability of drillers and mechanical breakage; nothing of importance was found. In 1946 at the time of the writer's visit no work was being done on the property.

PHYSICAL CONDITIONS

The vicinity of Caribou Creek is an area of low relief and heavy overburden. From Dixie Lake to the east boundary of the claims, heavy clay overburden with a few outcrops and rock hills occurs; from here easterly to Chukuni River low ground with heavy overburden and no outcrops is reported. The overburden is a serious disadvantage to surface prospecting.

The direction of glaciation at the mouth of Caribou Creek on Dixie Lake is south 31 to 35 degrees west (corrected compass reading) , on KRL 18875 about 60 feet westerly of the cabin a direction south 24 degrees west (corrected compass reading) was obtained.

GENERAL GEOLOGY

This vicinity has not been covered by any systematic geolgoic mapping. It is left blank on the Kenora sheet, Map 266 A, Geolgoical Survey of Canada. The most important large scale geologic feature is the occurrence of a belt of greenstones and associated sediments extending from Stone Lake easterly to Chukuni River (and probably quite a distance beyond). Bruce E.L. Bruce, "Geology of the Upper Part of the English River Valley" Ont. Dept. Mines, Volume 33, part 41 1924 (map 33 f) shows greenstone exposed over a width of some two miles at the north end of Pakwash Lake and at Chukuni River. The Caribou Creek band of greenstone appears to be completely separated from the Red Lake greenstones by granites. On drawing RL -38 the writer has attempted to set down his meagre information as to the extent and boundaries of the Caribou Creek belt; most of the information was given to the writer by Mr. Skeanes. The task of outlining this belt would be difficult due to lack of rock exposures. In the vicinity of the claims it appears to be at least three miles wide.

Rocks seen by the writer in the area include:

1 granitic rocks, quartz porphyry dikes

2 highly metamorphosed schists and granulites near the granite contacts

3 diorite intrusives, dark dikes

4 altered lavas, iron formation sediments rhyolite (possibly felsitic intrusives)

Quartz porphyry dikes occur commonly on the group of claims.

Coarse dark amphibole rich rock seen by the writer on the west side of the A zone claim 18883, on the south side of D zone, claim 18875, is probably diorite but may be a coarse phase of lava. A dark dike, up to six feet wide, intersects the iron formation at the most important trench of the A zone.

Lavas of intermediate composition appeared to be the most commonly occurring rock on the claims. Banded siliceous iron formation occurs at the A zone, claim K - 18883 (up to 10 feet wide, with northerly strike) and at the B zone, in the trench some 250 feet northwest of Post 2, claim 18881 (at least 25 feet wide, with northeasterly strike).

Altered greywacke-like sediments were seen at the C zone, at the trench in the northeast corner of claim 18889, and in trenches near the west line of claim 19874. They are bedded, contain mica and, in a few places, garnets; in several places they had weathered rusty, probably due to pyrite and pyrrhotite contained in them. Near the northwest corner of claim 18888 a small outcrop of sediments with fine grained [illegible] texture and containing magnetite bands was seen.

Fine grained, white or light gray, felsitic rock outcropping near the northwest corner of claim 18888 and also north of Caribou Creek at the cabin on claim 18875 may be rhyolite or an intrusive. It has commonly a satiny lustre; in places no quartz phenocrysts were made out.

The most important structural direction in the area appears to be a little south of east.

ECONOMIC GEOLOGY

Gold is the only mineral known to occur in economically interesting amount. Four zones of economic interest are shown on map, entitled "Bell-Gold Property, December 1946" supplied to the writer and now on file at Resident Geologists' office, Kenora. The positions of these are shown roughly on drawing RL 38. The A zone is regarded as the most attractive showing. The zones are described below:

Zone A

A sketch of this zone is shown on drawing RL 38; it is situated on the northern part of claim 18883 and is reached by a trail running southerly from the cabin. The showing is on the top and north side of a hill some 30 feet high, to the north of which is heavy clay overburden, exploration under which is not feasible by trenching. The most important part of the showing is a pit some 12 feet by 8 feet and 6 feet deep on the northward facing slope of the hill. Another trench lies some 80 feet south of the pit. The showing was explored by 8 X-ray diamond drill holes, drilled by Albert Boyle in 1944 and later 4 holes drilled in 1945 for Belgold. No logs of the drilling were available and apparently no plan made. The position of some of the holes is shown on drawing K 99.

A band of contorted iron formation, up to 10 feet wide, is exposed in the pit and the trench to the south, enclosed in lava. The iron formation is in part siliceous in part slaty. Possibly no great continuity to this band is to be expected; at the north end of the pit the width had decreased to 3 feet. The strike of the iron formation is roughly north 10 degrees west (magnetic disturbance occurs in the vicinity) and the dip appears to be nearly vertical. A dark dike up to 6 feet wide cuts through the iron formation, and diorite-like rock is exposed on the west side of the showing.

Gold had been found in silicified parts of the iron formation ; the writer was not able to make out any clear cut structure with which it was connected.

Some silicified parts of the iron formation did not yield gold returns on assay, although indistinguishable from those parts that did. Metallic minerals occurring in the pit are as follows:

Pyrite - in irregular areas and disseminations
Pyrrhotite -
Chalcopyrite- in general less than 1%
Arsenopyrite - not seen by writer but reported to occur.
Sphalerite - not seen in pit but in small amount in X-ray drill core drilled below pit.
Gold - no visible gold is reported, the presence of gold being shown by assay. A panning of rust from the pit bottom gave one coarse grain of gold.

The positions of samples taken by the writer from the showing are indicated on drawing RL 38 and described below:

RL 46 ½ inch quartz vein, containing minor pyrite also irregularly shaped areas of quartz to a few inches, cutting across iron formation; 0.01oz. gold per ton.

RL 47 iron formation very minor pyrite; trace of gold.

RL 48 quartz stringers in iron formation; trace of gold.

RL 49 siliceous, pyrite in irregular areas and disseminations say 7%, pyrrhotite less than 1%, chalcopyrite less than 1%; nil gold.

RL 50 (about one foot west of RL 49 and somewhat 0.33 oz. gold per ton.

The operators who made the trench, placed considerable importance on a flat lying open space, (in part filled in with mud) at the bottom of the pit, which in their opinion had cut off the gold deposition. The writer noticed the feature but doubted that it had much effect on the distribution of gold. It seemed significant to the writer tha the greater part of the iron formation exposed did not carry gold in significant amount. The diamond drilling was done to test the iron formation. The sampling that was done shortly after the drilling apparently gave negligible assay returns but J. Mitchell, who was of the opinion that insufficient samples had been taken from the four holes drilled by Belgold Mines, reported to the writer(in a telegram September 14, 1946) that he had taken an 18 inch sample from No. 3 hole at 81 feet and that it assayed $ 123.90 in gold; the writer can neither confirm or deny this.

Zone B A few trenches, with a little blasting, have been made in the southeast corner of claim 18881; the place is reached by a branch trail southerly from the trail running easterly from the cabin. Iron formation with contorted bedding and in general northeasterly strike has a width of at least 25 ft. It is in places black and chloritic, in other places quartzitic with sugary texture. Pyrrhotite mineralization is in places up to 50%, pyrite is in considerable amount; chalcopyrite also occurs. A grab sample (RL 41) this mineralization gave an assay return of nil gold. A schisted light coloured porphyry dike contains pyrite in estimated amount of 3% by volume; mica flakes had been developed along the shear planes. Lava is the most commonly exposed rock in the vicinity.

Zone C The trenches included in this zone are spread over part of claims 18890, 18889 and 19874. The writer does not know if gold was found in the zone. On claim 18889 about 300 ft. west of No. 1 post a trnch some 50 ft. long with blasting along the north 20 ft. exposes bedded sediments (strike 97 degrees, dip 72 degrees north) containing pyrite mineralization. A grab sample RL 45 of selected materail over 3 feet of the blasted part of the trench and containing irregular veinlets and areas of pyrite (with some pyrrhotite) associated with monor quartz stringers, gave an assay return of nil gold. A quartz porphyry dike, 4 ft. wide, was seen in the trench.

A picket line had been run from the trench at about south 58 degrees east and at about 1100 ft. from the trench described above , a trench some 150 ft. long had been made. This long trench exposes hornblende schist, a quartz porphyry dike 15 ft. wide, and a dark sediment like rock; a few coarse quartz veinlets were seen. On the western part of claim 19874 several trenches exposing altered sediments, in part rusty, were noted . The writer did not examine these carefully but noted that some sampling had been done along them.

Zone D Four trenches have been made in claim 18875 on the south side of caribou creek about 700 ft. westerly of the cabin; X-ray diamond drill holes were put down under the trenches. The trenches cover a length of about 100 yards along a strike a few degrees north of east. At the time of the writers visit the trenches were not cleaned out and not easily examined. A few quartz veins and veinlets occur in shears and fractures in altered lavas. Apparently the veins are not very wide, as the widest piece of vein material seen was a loose piece of some 10 inches. The quartz veins contain pyrrhotit, pyrite, a very little chalcopyrite and some black tourmaline. The results of three grab samples taken by the writer are as follows:

RL 42, from easterly trench, loose blasted piece not in place, quartz with plentiful tourmaline, pyrrhotite say 5%, little chalcopyrite, assay return 0.19 oz. gold per ton

RL 43, from first trench west of above coarse quartz, contains pyrite stringers, assay return 0.01 oz.gold per ton.

RL 44, from most westerly trench, quartz with pyrrhotite, assay returns nil gold.

Along the possible easterly extension of this zone, on the north side of Caribou Creek, opposite the cabin, few trenches have be n made in felsitic rock (possibly rhyolite) and at least one X-ray diamond drill hole put down.

COMMENTS

Exploration in this vicinity to date has shown the presence of a belt of rocks favourable for gold deposition and has shown that gold occurs in it. The work done has not proved the presence of workable ore bodies. The lack of abundant rock exposure makes the area less attractive, particulary for the operator with limited capital, who might not care to undertake expensive cross-sectional diamond drilling.

Along the easterly extension of the belt a gold bearing quartz vein is reported to occur in the vininity of Snake Falls on the Chukuni River.

Robert Thomson

Robert Thomson
Resident Geologist.

Dorothy Prospect

CARAVELLE MINES LIMITED

Per .....

Currie, Mahoney, McDougall Claims (South of Gulbrouk Lake)

52K/NW; 52K/13

Red Lake Res. Geol. Office

2.10.1969

File consists of : 1. appended notes

2. 1" = ½ m. map showing claims positions.

Currie, Mahoney, Mcdougall Claims

(South of Gullrock Lake East of Dixie Lake)

Log of Diamond Drill Claim KRL 31289

Hole no. 1

0.0	- 3.0	casing
3.0	- 8.0	Andesite with fine quartz strings
8.0	- 10.5	Coarse grained andesite with carbonates and chalcopyrites
10.5	- 13.0	Andesite with Pyrite and find quartz strings
13.0	- 35'.0"	Fine grained Andesite
35.0	- 43'.0"	Coarse grained Andesite with fine quartz strings
43.0"	- 60.0"	Fine grained Andesite

Corelogged by James Currie & Mcdougall

Hole No. 2 Claim KRL 31289

angle 50° west 53 feet

0.0	-	3.0	casing
3.0	-	28.0	fine grained Andesite with some iron Pyrite and quartz
28.0	-	53.0	fine grained Andesite with a few quartz strings

Hole No. 3 Angle 45° east 50 feet

0.0	-	3.0	casing
3.0	-	6.0	fine grained Andesite
6.0	-	9.0	fine grained Andesite with pyrrhotite and pyrite
9.0	-	10.0	rusty quartz with fine mineralization
10.0	-	50.0	Andesite medium to fine grained a few quartz stringers

core logged by James Currie & Mcdougall

D. Drill Hole Claim KRL 31289

Hole No. 4 angle 45° east 98.0

0.0	-	37.0	casing
37.0	-	48.0	fine to coarse grained andesite with quartz stringers
48.0	-	73.0	fine grained andesite with 2" barren looking quartz
73.0	-	98.0	fine to coarse grained andesite very little mineralization

Hole No. 5

0.0	-	19.0	casing
19.0	-	44.0	fine grained andesite
44.0	-	60.0	coarse grained andesite with some quartz and pyrites
60.0	-	100.0	fine grained andesite with little or no mineral

Core logged by James Currie & McDougall

KRL 31289

Log Diamond Drill Hole No. 6

0.0	- 24.0	casing	
24.0	- 29.0	andesite, fine grained, slightly sheared	
29.0	- 37.8	diorite, medium fine grained, occasional glassy quartz stringers.	
37.8	- 49.0	andesite, massive fine grained, gradational to coarser grained.	
49.0	- 74.0	andesite, slightly sheared to sheared, some alteration to biotite, medium fine to coarse grained, almost dioritic.	
74.0	- 99.0	andesite, slightly sheared, occasional quartz and carbonate stringers, slight alteration, medium coarse grained.	
99.0	- 124.0	similar to preceeding.	
124.0	- 141.8	andesite, slightly sheared, occasional quartz carbonate stringers, medium fine grained.	
			Au
141.8	- 144.0	quartz stringers and inclusions wall rock. some pyrite, minor pyrrohotite.	T7460 .03
144.0	- 146.2	similar to preceeding, fair coarse pyrite.	T7461 .06
146.2	- 147.5	Slaty sediments, occasional quartz stringers, fair veryssine pyrrhotite minor pyrite.	T7462 .02
147.5	- 149.0	diorite, medium fine grained.	

End of hole 139.0

Core logged by R. McIntosh,
Madsen, Ontario

KRL 31289

Log Diamond Drill Hole Number 7.

0.0 - 35.0	casing.
35.0 - 60.0	diorite, some alteration to biotite, somewhat sheared, occasional carbonate stringers, medium fine to medium coarse grained, hole almost parallel schistosity.
69.0 - 85.0	diorite, gradational to talc chlorite schist, occasional glassy quartz stringers some carbonate, hole parallel schistosity.
85.0 - 110.0	talc chlorite schist, gradational to altered diorite to talc chlorite schist, some biotite in less altered diorite, occasional carbonate stringers, core angle from parallel to 15°.
110.0 - 135.0	talc chlorite schist, gradational to less altered diorite to unaltered diorite at 135.0. core angle parallel to 20°.

End of hole 135.0

Core logged by R. McIntosh,
Madsen, Ontario.

LOG DIAMOND DRILL HOLE NO. 7

STRIKE East 5° South

Dip - 50°

Footage	Remarks	Samples
0.0 - 5.0	casing	
5.0 - 29.0	diorite, medium fine grained, slightly sheared, occasional glassy quartz. stringers.	
29.0 - 30.0	lost core.	
30.0 - 55.0	diorite, medium fine to medium coarse grained, slightlyssheared, occasional glassy quartz stringers.	
55.0 - 80.0	similar to preceeding.	
80.0 - 105.0	similar to preceeding.	
105.0 - 110.0	similar to preceeding.	
130.0 - 146.9	diorite, medium fine grained, slightly sheared, occasional quartz carb. stringers.	
146.9 - 147.9	lamprophyre dike.	
147.9 - 154.4	diorite, slightly sheared, occasional glassy quartz stringers, 14' lamprophyre at 154.0	

End of Hole at 154.4

LOG DIAMOND DRILL HOLE NUMBER 8.

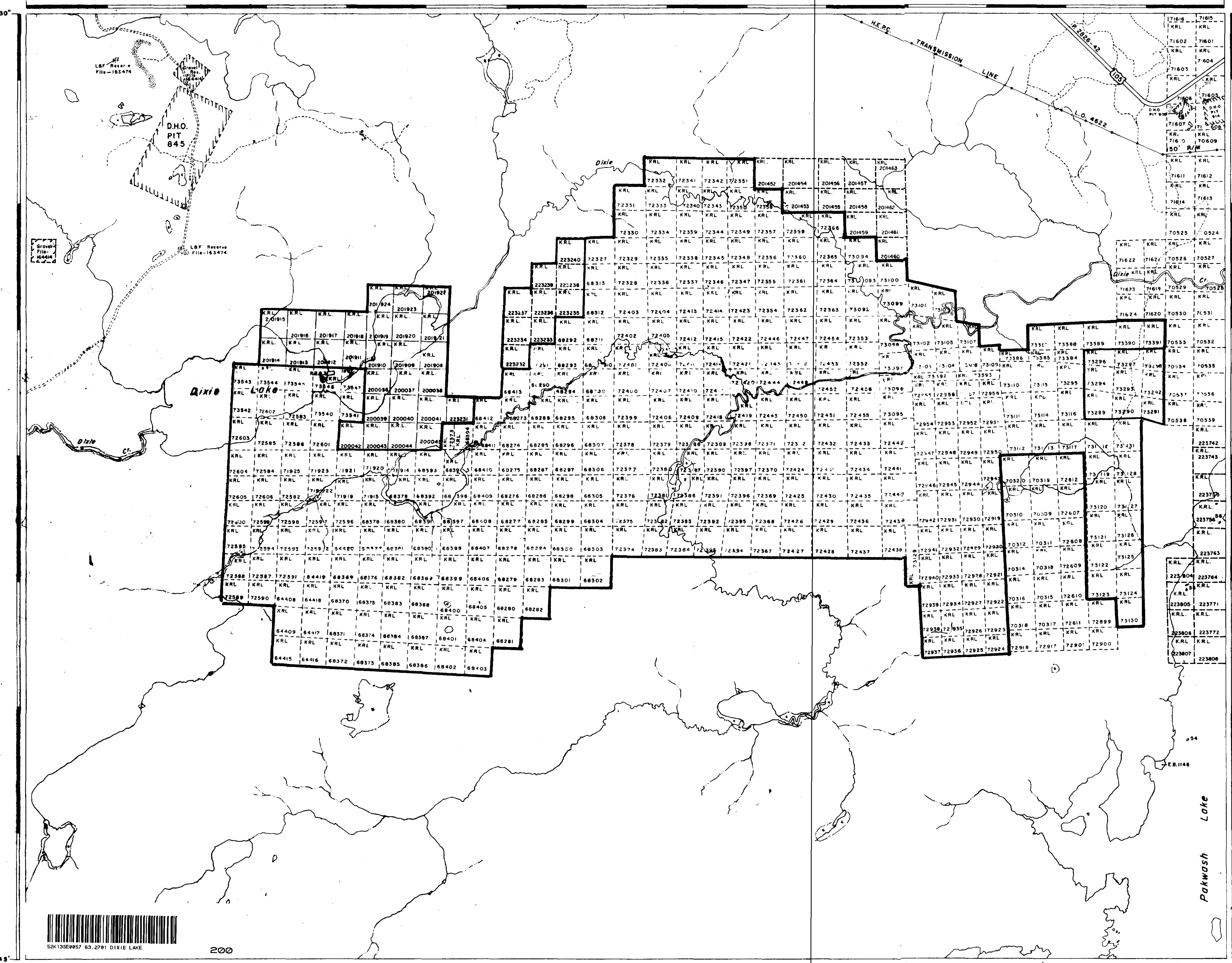
Strike East 10° South
Dip 45°

Footage	Remarks	Samples
0.0 - 18.7	diorite, medium fine grained, slightly sheared, finer grained possibly andesite at 0.0.	
18.7 - 20.0	~~fine grained, medium fine grained, slightly sheared~~ altered diorite, considerable albitisation, very slight pyrite and pyrrhotite	Au. 1 0.01 ozs.
20.5 - 22.0	diorite, medium fine grained, slightly sheared	
22.0 - 23.7	lamprophyre dike, somewhat sheared.	
23.7 - 24.7	diorite, 20% glassy white quartz, no mineralization	Au. 2 0.04 ozs.
24.7 - 41.7	diorite, medium fine grained, slightly sheared andesite 40.0 - 41.7	
41.7 - 43.9	lamprophyre dike, fine grained, some biotite.	
43.9 - 50.0	diorite, medium fine grained, slightly sheared.	
50.0 - 61.1	similar to preceedings, occasional carbonate stringers	
61.1 - 65.0	andesite, massive, fine grained.	
65.0 - 75.0	diorite, medium fine grained, contact not well defined, may be a coarser grained phase of andesite.	
75.0 - 76.7	andesite, slightly sheared, occasional quartz and quartz carbonate stringers slight pyrite and pyrrhotite	Au. 3 0.03 ozs.
76.7 - 79.6	coarse grained lamprophyre dike, somewhat sheared.	

LOG DIAMOND DRILL HOLE NUMBER 8 continued.

79.6 - 80.8	andesite, slightly sheared, occasional quartz stringers			
80.8 - 81.9	lamprophyre dike			
81.9 - 91.2	andesite, massive, fine grained, occasional quartz carbonate stringers.			
91.2 - 93.5	altered phase of preceeding, occasional garnets some massive pyrite, minor pyrrhotite	4	Au. 0.12 ozs $4.20	
93.5 - 95.0	black slaty sediments, occasional garnets light fine pyrrhotite, minor pyrite.	5	0.01 ozs.	
95.0 - 100.0	similar to preceeding, fair bleby pyrro. minor pyrite	6	0.01 ozs.	
100.0 - 105.0	black slaty sediments, occasional garnets and quz. stringers, light streaky pyrrhotite	7	0.01 ozs.	
105.0 - 110.0	similar to preceeding, considerable alteration 25% ztx. and qtz carb.	8	trace	
110.0 - 115.0	greyish finely bedded sediments, very slight mineralization, core angle 35°			
115.0 - 125.0	similar to preceeding, core angle 35° to flat.			
125.0 - 132.2	greyish fairly well bedded sediments, some quartzite, core angle flat to 35°			
132.2 - 133.4	diorite, medium fine grained, core angle 25°			

End of Hole 133'4"



DEEDE LAKE AREA M-1988

BRUCE LAKE AREA M-2191

CABIN BAY AREA M-3113

52K13SE0057 63.2701 DIXIE LAKE 200

AREA OF
LOCATION MAP

DIXIE LAKE

DISTRICT OF
KENORA
PATRICIA PORTION

RED LAKE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	Ⓟ
CROWN LAND SALE	C.S.
LEASES	Ⓛ
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

Water Power Lease Agreement No.43 H.E.P.C. Manitou Falls Development (File-61556) reserving flooding rights for H.E.P.C. to contour elevation 1140' on Pakwash Lake File-69307

DATE OF ISSUE
FEB 4 1970
ONTARIO DEPT. OF MINES

☐ - AIRBORNE SURVEY.

☐ - GEOPHYSICAL CERT.

PLAN NO. M-3112

DEPARTMENT OF MINES
— ONTARIO —

AREA OF CLAIM MAP

DIXIE LAKE

DISTRICT OF
KENORA
PATRICIA PORTION

RED LAKE
MINING DIVISION

SCALE: 1-INCH = 40 CHAINS

LEGEND

PATENTED LAND	(P)
CROWN LAND SALE	C.S.
LEASES	(L)
LOCATED LAND	Loc.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	C.

NOTES

400' Surface Rights Reservation along the shores of all lakes and rivers.

Water Power Lease Agreement No. 43 H.E.P.C. Manitou Falls Development (File-61556) reserving flooding rights for H.E.P.C. to contour elevation 1140' on Pakwash Lake File-69307

DATE OF ISSUE
FEB 20 1980
ONTARIO DEPT. OF MINES

X - certificate
X - Geophysical Survey

THIS LAKE AREA COMPLETELY COVERED BY AIRBORNE SURVEY ON THIS FILE.

PLAN NO. M-3112

DEPARTMENT OF MINES
— ONTARIO —

DEEDE LAKE AREA M-1988

BRUCE LAKE AREA M-2191

CABIN BAY AREA M-3113

93°45' 44' 43' 42' 41' 40' 39' 38' 37' 36' 35' 34' 33' 32' 31' 93°30'

50°52'30" 52' 51' 50' 49' 48' 47' 46' 50°45'

Dixie Lake

Dixie Ct.

Dixie

Pakwash Lake

D.H.O. PIT 845

L&F Reserve File-163474

Gravel Pit

H.E.P.C. TRANSMISSION LINE

R 2826-42

1051

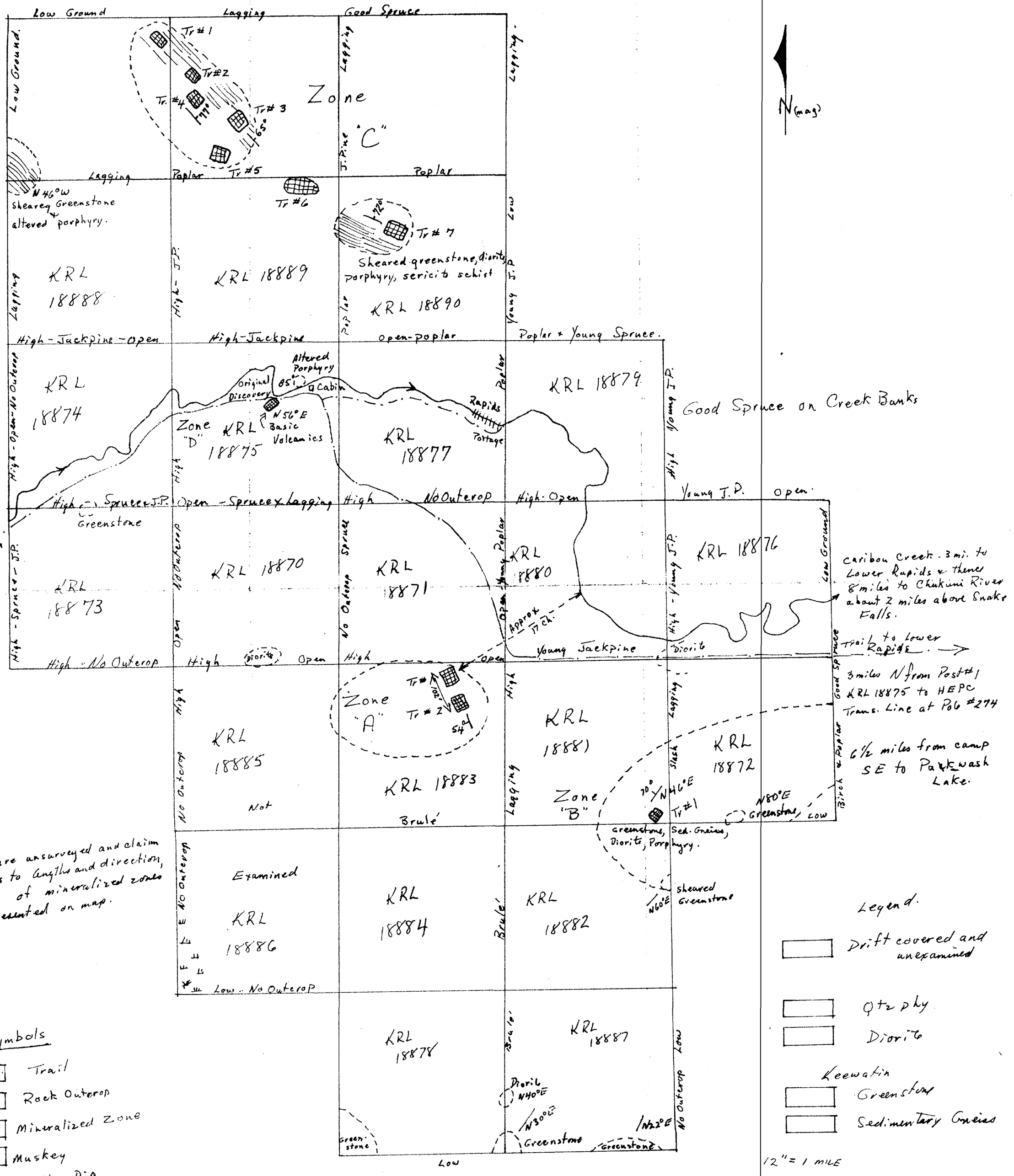
L.O. 4622

50' R/W

E.B. 1146

210

52K13SE0057 63.2701 DIXIE LAKE



As claims are unsurveyed and claim lines vary as to lengths and direction, exact location of mineralized zones is not represented on map.

Symbols

- Trail
- Rock Outcrop
- Mineralized Zone
- Muskey
- 70° strike & Dip
  N 42° W

Legend.

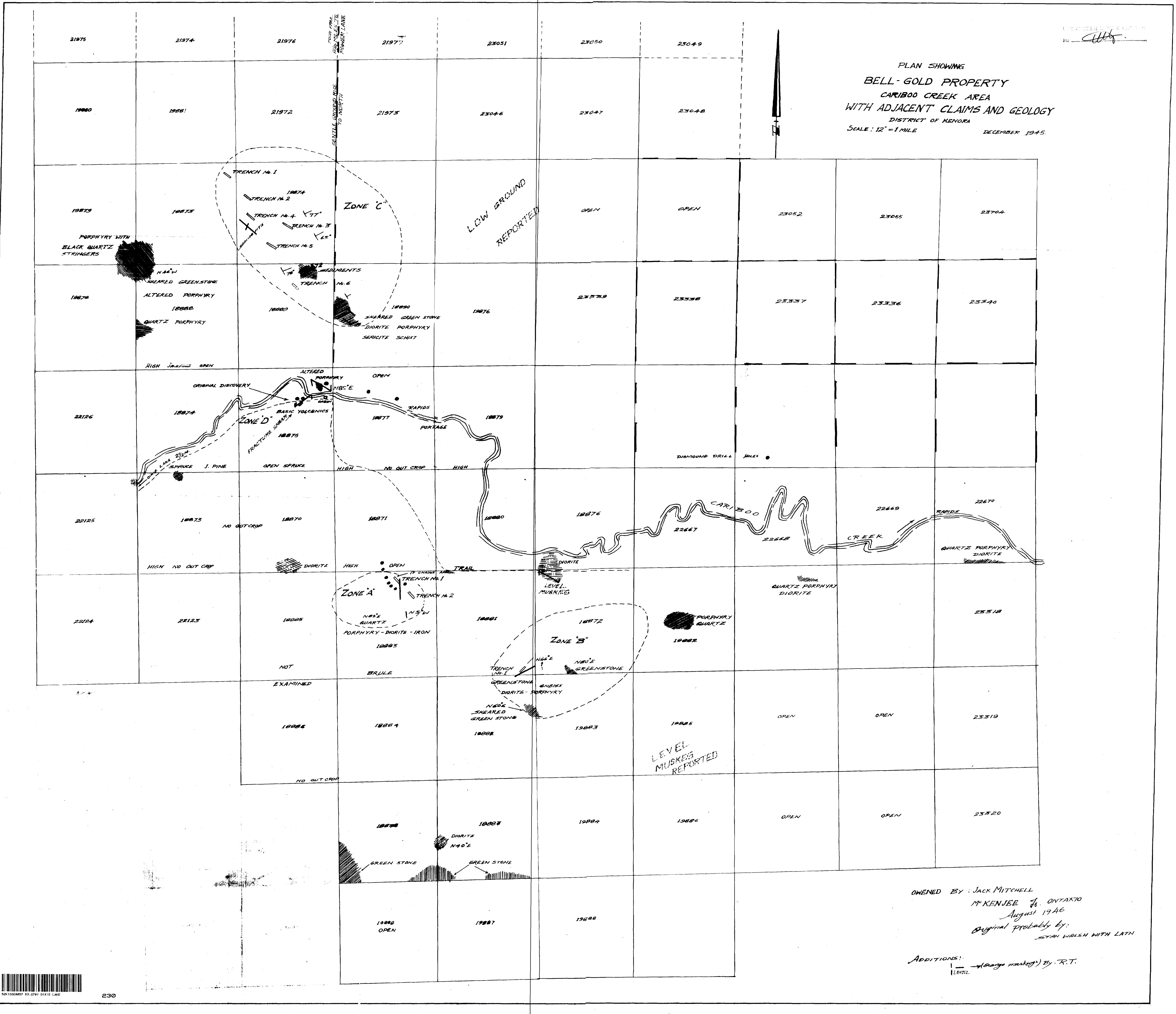
- Drift covered and unexamined
- Qtz phy
- Diorite

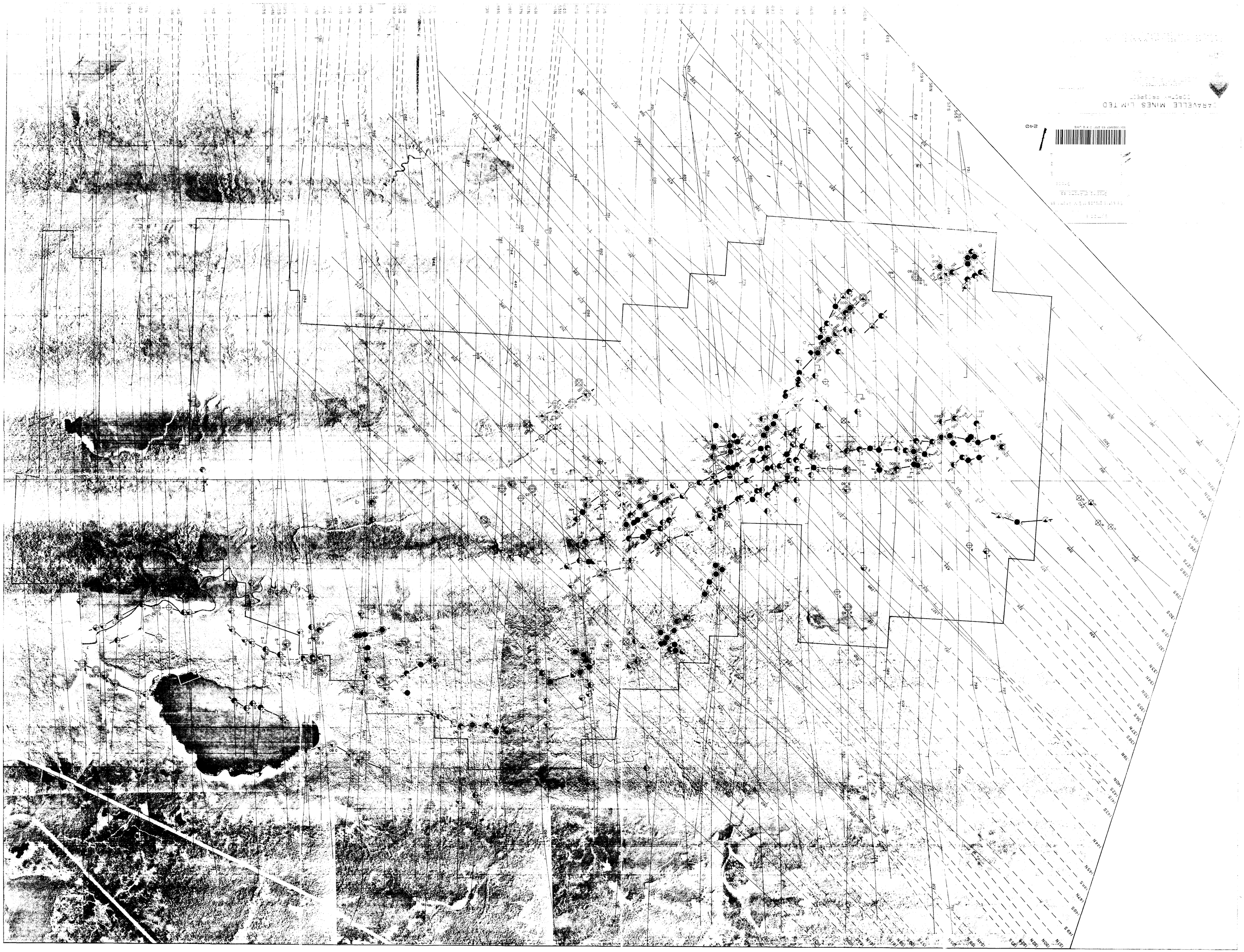
Keewatin

- Greenstone
- Sedimentary Gneiss

12" = 1 MILE

Drawn & Traced
June 24/42
D.A.K.


PLAN SHOWING
BELL-GOLD PROPERTY
CARIBOO CREEK AREA
WITH ADJACENT CLAIMS AND GEOLOGY
DISTRICT OF KENORA
SCALE: 12" = 1 MILE
DECEMBER 1945.
21975
21974
21976
21977
23051
23050
23049
21972
21973
23046
23047
23048
ZONE "C"
TRENCH No. 1
TRENCH No. 2
TRENCH No. 3
TRENCH No. 4
TRENCH No. 5
TRENCH No. 6
LOW GROUND REPORTED
OPEN
23052
23065
23704
PORPHYRY WITH BLACK QUARTZ STRINGERS
SHEARED GREENSTONE
ALTERED PORPHYRY
QUARTZ PORPHYRY
SEDIMENTS
SHEARED GREEN STONE
DIORITE PORPHYRY
SERICITE SCHIST
23337
23336
23340
ORIGINAL DISCOVERY
ALTERED PORPHYRY
ZONE "D"
BASIC VOLCANICS
FRACTURE SHEAR
RAPIDS
PORTAGE
22126
DIAMOND DRILL HOLES
SPRUCE
J. PINE
OPEN SPRUCE
HIGH
NO OUT CROP
CARIBOO
CREEK
22669
22670
22125
22667
22668
QUARTZ PORPHYRY
DIORITE
HIGH NO OUT CROP
TRAIL
LEVEL MUSKEG
TRENCH No. 1
TRENCH No. 2
ZONE "A"
QUARTZ
PORPHYRY - DIORITE - IRON
22124
22123
ZONE "B"
PORPHYRY QUARTZ
23318
GREENSTONE
GNEISS
DIORITE - PORPHYRY
SHEARED GREEN STONE
NOT EXAMINED
BRULE
23319
LEVEL MUSKEG REPORTED
NO OUT CROP
23320
DIORITE
GREEN STONE
OPEN
OWENED BY: JACK MITCHELL
MCKENJEE ONTARIO
August 1946
Original probably by:
STAN WALSH WITH LATN
ADDITIONS:
By R.T.
230



Contour Interval

Below 62,500 Gammas - 50 Gammas

62,500 Gammas to 65,000 Gammas - 500 Gammas

Above 65,000 Gammas - 2500 Gammas

250

CARAVELLE MINES LIMITED

DOROTHY PROSPECT

Work performed by

QUESTOR SURVEYS LIMITED

Airborne Magnetometer Survey

CARAVELLE MINES LIMITED

Per .....

DIXIE LAKE AREA RED LAKE MINING DIVISION

DISTRICT OF KENORA (PATRICIA PORTION)

Scale 1 inch = 1320 Feet

ODP2

Drawn By	C.C.
Flight Flown	March, April, 1969
Flight Path Recovery	J.D.
Data Reduction	C.C.
Completed	August 1, 1969
Checked	J.D.
File No.	1969 - 148

N

63.3001

CARAVELLE MINES LTD.
DOROTHY PROSPECT.
GEOLOGICAL COMPILATION MAP.
SCALE 1" = 1320'

LEGEND

- Granite, Granodiorite.
- Metadiorite.
- Metasediments: Metagreywacke, argillite and iron formation - IF
- Metavolcanics
- Rhyolitic and dacitic tuff with metasediments
- 2a Rhyolite
- Andesite - Basalt, tuff, and amphibolite with some metasediments.
- Outcrop boundary
- Strike and dip of foliation
- Interpreted fault. (Photogeological, geophysical)
- Lineament
- Diamond drill hole

Prepared by T Balakrishnan,
Nov '72

DIXIE LAKE
DIXIE CREEK
OKO LAKE
RICE LAKE
TORA LAKE
PAKWASH LAKE
N

7th Dec '72

260

FIG 6 Overlay to Mosaic 63.2701

CARAVELLE MINES LIMITED

CARAVELLE MINES LIMITED
DOROTHY PROSPECT
DIXIE LAKE AREA, RED LAKE MINIG DIVISION
KENORA DISTRICT PATRICIA PORTION
INTERPRETATION MAP
Scale 1" = 1320'.

LEGEND and SYMBOLS

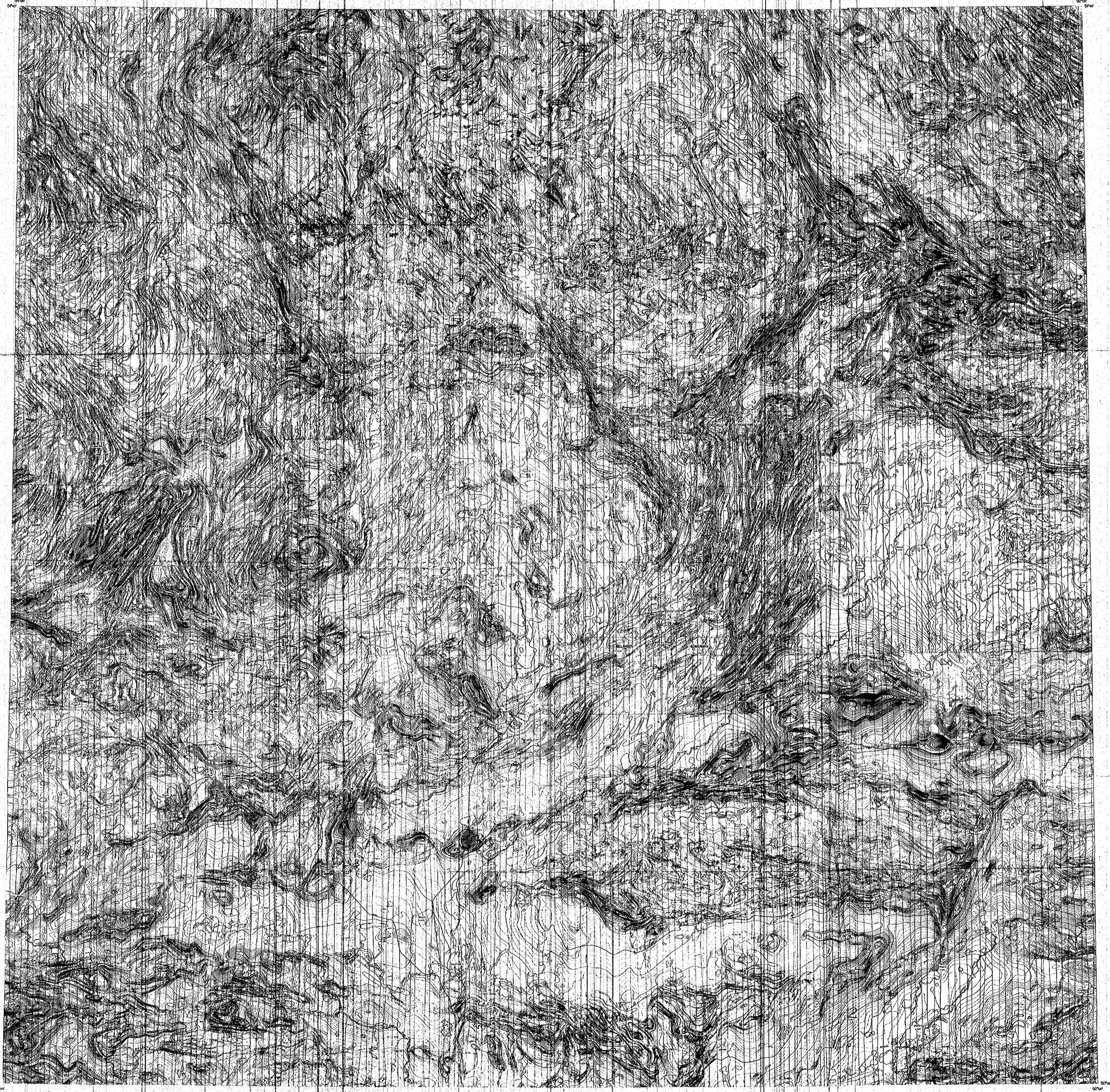
D	Diorite
Dp	Diorite porphry
G	Granitic Rocks
Gg	Granite gneiss
Ms	Meta sediments
If	Iron formation
Mv	Metavolcanics
Mva	Metavolcanics acidic
Mvb	Metavolcanics basic
x	Outcrop locations
X	Mineralised zones (sulfides)

Interpreted Geological boundary
Interpreted Fault
Selected groups of Anomalies
Outline of former holdings of 'INCO'
" " 'BELGOLD'

INTERPRETATION: DR. W. DOMZALSKI
Consulting Geophysicist
Exploration Consultant

270

94°00'
50°30'
92°00'
50°30'



50°30'
94°00'
50°30'
92°00'

SURVEYED AND COMPILED BY
SPARTAN AIR SERVICES LTD.

280

CARAVELLE MINES LIMITED

Per .....

AEROMAGNETIC SURVEY

NORTHERN ONTARIO

ROADS TO RESOURCES PROGRAM

SCALE: 1 INCH = 4 MILES

4 0 4 8 12
MILES MILES

94°00' 88°00'
53°00' 53°00'

1	2	3	4
5	6	7	8

60°30' 60°30'
94°00' 88°00'

INDEX