Eby Township Larder Lake Minin Geological R

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1. location, access, topography

The claim group is located in Lots 7,8,9,10 and 11, Concession 5, Eby Twp.

The property is accessible from a tote road that follows the fifth concession line westerly from the Eby Township road. It is also accessible from the south shore of Kenogami Lake, a distance of one quarter to one half mile.

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Much of the surface of the claim group is flat and swampy. There are a number of low gravel ridges extending southerly from the north boundary. Elevation of the outcrop areas does not exceed 100 feet above the swampy ground.

2. Owners, claim numbers, survey data

The claims are owned by, and the work was performed for, the Dominion Gulf Company, 203 Bay Street, Toronto.

There are thirteen claims in the group numbered L-57598 to L-57610 inclusive.

The survey was made by C. G. MacIntosh, Kirkland Lake, Ontario, assisted by D. Sprague, Larder Lake, Ontario and R. S. Savage, Swastika, Ontario. The work was performed between May 1/th. and June 7th., 1952.

Observations are related to picket lines cut in a north direction at 400 foot intervals and marked by pickets at 100 foot intervals. The picket lines are tied to concession and lot lines.

3. Table of Formations

Matachewan

Diabase Dikes

Algoman

Basic Syenite

Timiskaming

Greywacke, argillite

Conglomerate

Tuff (trachitic agglomerate)

Keewatin

Gabbro - (sills?)

Andesite - pillow lava

4. Description of rock types

<u>Diabase</u>: Matachewan diabase dikes intersect the older formation in a north to north easterly direction. They are fine to medium grained and massive.

Basic Syenite: A few small exposures of basic syenite were observed. It is medium grained, massive and reddish green in colour. It is composed of reddish feldspar (60%), pale green ferromagnesian (augite?) (45%) and biotite (5%). It occurs in narrow dikes or lenticular bodies striking northeasterly.

<u>Greywacke. Conglomerate:</u> Timiskaming conglomerate and medium to fine grained greywacke were found in diamond drill core at the site of a drill hole on claim L-57603. The conglomerate contains pebbles of many varieties, including jasper

Gree cke. Conglomerate cont'd.

up to about 3 inches in diameter. The greywacke is greenish grey and contains grains of jasper and quartz in the medium grained horizons. Grain gradation indicates that the top of the beds face south (toward the collar of the hole).

Tuff: Exposures of trachyte agglomerate or tuff occur on claim L-57601. It consists of angular to rounded reddish fragments in a reddish green matrix. Light coloured feldspar crystals or fragments are prominent. Trachyte fragments are usually less than 1 inch in diameter.

Andesite. gabbro: The Keewatin formations consist of fine grained, medium green pillow lavas. The lavas are interbanded with coarser grained, medium to dark green formations which may in some instances be a coarse grained phase of a flow but contact relationships on some exposures indicate that they are intrusive.

Pillow structures indicate that the flows strike northwesterly and that the tops of the flows face toward the southwest.

The coarser grained formations contain thin stringers of magnetite and hematite. The dip of the flows, though not definitely established, appears to be steep toward the southwest.

5. Structure

The rock exposures are in general massive but there is evidence of faulting or weak shearing on claims L-57599 and 57610. The apparent offset of a diabase dike on claim L-57610 indicates a probable fault striking in a northerly direction.

6. Mineralization, Alteration

The rock formation on claims I-57599 and I-57610 have been carbonatized in the vicinity of weak shears or faults. Occasional narrow quartz stringers are sparsely mineralized with pyrite.

7. Summary of Work:

Work during the present year includes: line cutting; a ground magnetometer survey and a geological survey. The collars of six diamond drill holes, drilled by former owners of the claims, were located. Drill core was available from only one of the holes.

C. G. MacIntosh

/do June 21, 1952 Dominion Guli Assessment

Ground Magnetons



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Eby Township

Eby Township

Larder Lake Mining Division

Province of Ontario

INTRODUCTION

Thirteen claims, in lots 7 to 11 inclusive concession 5, Eby Township, Province of Ontario, were staked by the Dominion Gulf Company in July 1951. Rock outcrops are numerous in the southeastern section of the claim group, but very rare in the north and west. Previous holders of the claims have drilled several holes on the property, mainly in the outcrop area in the southeastern section, although one long hole was drilled near the western boundary of the claims. Interest in the area is related to the location of the larder lake "Break" as interpreted by Jas. E. Thomson, a Provincial geologist.

A ground magnetometer survey was proposed, its purpose being to delineate the geological structure in the area, with particular emphasis being placed on the location of the Larder Lake "Break" and any subsidiary faults in the claim group. Since by far the greater part of the claims is covered by overburden, it would be extremely difficult to reconstruct a structure map of the area from geology alone. The presence of individual rock types, having varying amounts of magnetite associated with them, suggested that a ground magnetometer survey might provide some of the information required.

An Askania Schmidt-type magnetic balance having a sensitivity of about 25 gammas per scale division, was used in the survey. Basic coverage consisted of readings taken on picket lines 400 feet apart, using a station interval of 100 feet. Where magnetic gradients were particularly steep, intermediate stations were added. In all, a total of 729 stations were observed on 13.15 miles of picket line.

The magnetic data were observed and reduced by a Dominion Gulf Company magnetometer crew, and then transmitted to the Toronto office of the Dominion Gulf Company for further processing and interpretation. The basic data, together with isomagnetic contours and interpretation are presented on a map at a scale of 1 inch equals 400 feet, accompanying this report.

INTERPRETATION

Geological mapping has indicated the presence of six distinct rock types in the area. Only four of these rock types can be differentiated by the magnetic data; Keewatin andesite, Timiskaming sediments (conglomerate and greywacke), Timiskaming tuffs, and diabase. The Algoman syenite occurs in narrow dykes, and is not reflected in the magnetic data. An additional complication is the high degree of alteration present.

The eastern and southern portions of the claim group are characterised by highly complex magnetics. Contouring the magnetic data in this sone is very difficult since many sharp local anomalies tend to obscure the geological trend directions. Any number of contour patterns may be developed, since the data obtained from the survey was insufficient to develop a unique system of contours.

No matter what contour pattern is developed, however, a sharp discontinuity exists trending northeasterly through the lava series. Southeast of the discontinuity many sharp local anomalies predominate, the overall effect being to lift the general magnetic level some 300 gammas above that to the northwest. Thus it would appear that southeast of the discontinuity much secondary magnetite has been formed while to the northwest little secondary magnetite has been added.

A similar discontinuity exists between the lavas and the sediments, although here the magnetic level drops only about 100 gammas from the lavas to the sediments. The tuff horizon in the northwestern corner is indicated by magnetic values at about the same level as the lavas. When the tuffs are altered however, substantially higher magnetic levels are encountered.

A diabase dyke is represented by a continuous magnetic anomaly in the lava horizon, striking northeasterly. This dyke could not be interpreted if it were not for the information obtained from the Ontario Department of Mines Kenogami Lake Area map sheet, which indicates a diabase dyke on strike with this magnetic indication.

Several faults have been indicated as cutting the claim group. In general, these faults are merely relocations of faults interpreted by provincial geologists. Three main directions of faulting are shown, northeast, northwest and north. The northeasterly trending fault is of considerable importance. It is believed to represent the Larder Lake break in this area. The fault itself is represented by a discontinuity between the magnetic levels northwest and southeast of the break. Immediately west of claim L-57608, the major break appears to be offest about 800 feet to the south by a minor north-south break.

The northwesterly fault is indicated by an interruption of northeasterly trending magnetic "events", one of which represents a diabase dyke. These interruptions are so sharply defined that it is believed that they must be cut off by faulting. In claim L-57606, west of a north-south fault, the north-westerly trending fault is represented by a sharp magnetic anomaly cutting across the sedimentary horizon. The offset indicated along the north-south fault is west side south 600 feet.

The more easterly of the north-south breaks is a continuation of a break indicated on the Kenogami Lake Area geological map. Evidence for this break is not particularly strong from this survey, although it does appear to offset a diabase dyke along the north boundary of the claim group. The movement indicated here would be west side north 200 feet, or about the same as indicated by the government geological map. No magnetic evidence exists that this fault offsets the larder lake break by a similar amount, however.

The second north-south break is located along the western edge of claims L-57604, L-57605 and L-57608. The movement along this fault has been described previously in referring to the Larder Lake break and the northwesterly break, as being west side south some 600 to 800 feet. North of the claim group this fault appears to be aligned with a topographic valley indicated on the Kenogami Lake area geological map.

Two other breaks have been interpreted by government geologists in the north eastern portion of the claim group. No evidence of either of these breaks can be

seen from the magnetic data, however. This does not suggest that the breaks do not exist, but rather that the magnetic data is insufficient in this highly complex zone to indicate the faults as such.

The ground magnetometer survey has been quite successful in delineating several faults and contacts between rocks of varying magnetite content. It is believed that this area is somewhat analogous to the Kirkland lake camp, and that further work, probably diamond drilling is definitely warranted.

J. H. Ratcliffe P. Eng.

/dc

APPENDIX "A"

Areas of particular interest, which have been indicated by this survey are mainly confined to the western group of claims. It is believed that a diamond drilling program should be undertaken to examine several of the areas listed below. These areas of interest, not necessarily in order of importance are:

- (a) The sharp local magnetic anomaly on the contact between the sediments and lavas 100 feet south of the Base Line on Line 52W.
- (b) The northwesterly trending anomaly attributed to a fault in claim L-57606.
- (c) The horse shoe shaped anomaly in the sediments in the northeast corner of claim L-57602.
- (d) The anomalous magnetic highs south of the sediment-lava contact in claim L-57602.
- (e) Anywhere along the postulated Larder Lake break, in order to prove or disprove its location from this survey.

It is also suggested that a re-examination of the outcrop in the southeast quarter of lot 10, concession VI, Eby Township, shown as Timiskaming conglomerate on the Kenogami Lake Area geological map, be made. It is believed that this outcrop will probably fall into the same category as those outcrops in the northwest quarter of lot 10, concession V, recently remapped as tuffs, or agglomerates.

J. H. Ratoliffe

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DOMINION GULF COMPANY

INTERPRETATION OF DETAIL GROUND MAGNETOMETER SURVEY

EBY TOWNSHIP CLAIMS GROUP I

PROVINCE OF ONTARIO

C. W. Faessler, March 13, 1953.

Dominion Gulf Company Interpretation of Detail Ground Magnetometer Survey Eby Township Claim Group I Province of Ontario.

INTRODUCTION:

A total of fourteen claims were staked in Eby Township, Province of Ontario thirteen in June, 1951, and the northwestern most claim in June, 1952. The interest in the vicinity was mainly due to its possible location on the extension of the Larder Lake Break. The geological information at that time indicated Keewatin lavas, intermediate to basic in composition, striking northwesterly, with the tops facing southwest; Timiskaming sediments, striking north 60° east; and diabase. An unconformity was therefore indicated between the Timiskaming sediments and the Keewatin lavas. Two fault directions had been established, the major one striking north 60° east and the other being northerly. It was also known that the Larder Lake Break generally follows the contact between the Timiskaming sediments and Keewatin volcanics in the Kirkland Lake camp.

A geological survey of these claims on 400' picket lines by the Dominion Gulf Company geologists, indicated that the five eastern claims were underlain by Keewatin volcanics in varying stages of alterations, and some diabase. In the western group of claims, two outcrop areas were found, one of Keewatin volcanics in claim L-57608, and one described as Timiskaming tuffs and carbonatized tuffs in the northwest half of claim L-57601. This outcrop area, on the Ontario Department of Mines Map 1946-1 (Keonogami Lake Area), is shown as Timiskaming conglomerate, a diamond drill hole dipping 45° to the N45°W is reported to have cut Timiskaming greywack and conglomerate, with a few dikes of diabase and basic syenite.

Lack of resolution of the airborne magnetics merely succeeded in blending the effects of the two main rock types, lavas and sediments.

Askania Schmidt-type magnetic balances having a sensitivity of about 24 gammas per scale divisions, were used in the survey. As a ground magnetometer survey had already been made on 400' picket lines, readings were taken on 200' picket lines over all of the claim group, and on 100' picket lines on the eastern five-eights of the group. The readings were spaced 100' apart over low magnetic gradients, the spacing being decreased to 50' and '5' where needed. The base stations of the original survey were used all over so as to tie in both surveys. The 400' picket lines were not resurveyed but were incorporated into the final map. In all, a total of 2400 stations were observed on 36.7 miles of picket line.

The magnetic data were observed and reduced by Dominion Gulf Company magnetometer crews, and then transmitted to the Toronto office of the Dominion Gulf Company for further processing and interpretation. The basic data, together with isomagnetic contours and interpretation, are presented on a map at a scale of 1 inch equals 100 feet, accompanying this report.

SUMMARY:

It is known that the geological sequence, from the southeast to the north-west is Keewatin lavas, unconformity, Timiskaming conglomerates and greywackes, Timiskaming tuffs. Due to alteration in the form of carbonatization, the Timiskaming-Keewatin unconformity is not defined accurately by the magnetic data. A zone of

carbonated rocks or "dolomite", striking NE-SW in the Keewatin lavas, is interpreted in the eastern block of claims. Its extension in the western block is not magnetically defined. It is suggested that the extensive carbonatization ends near the fault strikingslightly east of southeast which displaces a band of altered tuffs horizontally by 100' in a right-handed movement.

Two dike-like features, striking NW-SE, with one curving sharply to the NE, are suggested as being of syenitic material.

INTERPRETATION:

The correlation between magnetics and the different types of rock is well established due to the presence of outcrops of almost all types of rocks on the claim group.

Over outcrop, the Keewatin lavas appear as fairly high (3,000 gammas average, as high as 14,876 gammas), discontinuous and irregular anomalies, to feature-less magnetically, The Timiskaming sediments all appear featureless except for the zone of altered tuffs in the northwest corner of the claim group which is indicated by two parallel superimposed anomalies. The known diabase is found to be non-magnetic. Further more, zones of carbonated rock, sometimes called "dolomite", are found half a mile east of the claims; these zones are expected to be magnetically featureless. From this correlation it is apparent that the interpretation will have to be made mainly on magnetic trends.

The five eastern claims are known to be underlain by Keewatin lavas. Claims L-57599, L57609 and L-57610, have a variety of trends with a slight preponderance of the NW-SE direction. The northwestern half of claim L-57598, shows a definite trend N-S ending quite abruptly against a low and flat zone which extends south into claim L-57600. Although the northern limit of this zone is fairly sharp, the southern one is very indistinct in claim L-57600. The zone is interpreted as a main carbonatized zone, striking NE-SW, the southern limit being based on a very slight magnetic lineament, and the carbonatization extending southeast in claim L-57600 with a gradational contact with the lavas to the east. Diabase is known to exist in these claims but it does not appear magnetically.

The carbonated zone cannot be traced definitely into the western block of claims. On strike with it are known recrystallized lavas in claim L-57608. show up magnetically as high parallel anomalies with a definite NW-SE trend. These anomalies stop at the northwest corner of claim L-57608, at a sharp straight contact which strikes ENE and which becomes very indistinct before reaching the eastern boundary of the western claim block. To the north of this contact, in claims L-57601 and L-57604 to L-57607 incl., the magnetics are quite featureless, but in the vicinity of the NE corner of claim L-57607, slight indications of NE-SW trends are found, which persist until the anomaly over the altered tuffs is reached. On the accompanying map, a contact is shown where the NE-SW trend becomes apparent in claim L-57607, and is swung north to reach the northeast corner of claim L-57604 on the basis of the dike-like feature discussed later. This contact would separate the Timiskaming conglomerates and greywackes from the Keewatin lavas, or from carbonated rocks. The location of the contact as shown is based only on slight indications of the NE-SW trend and could just as well be located to the northwest in which case it could join up with the contact shown on the southwest side of the fault, or even possibly to the southeast, although in this case it would be hard to explain the sudden thickening of the conglomerates and greywackes. The contact

between the tuffs and the greywackes is located south of, or is indicated by, the southern limit of the altered tuffs.

A fault is suggested by the apparent displacement of the altered tuffs and is shown on the map as striking east of southeast. Its southern location is mainly based on a magnetic lineament and a small carbonate zone, in the recrystallized lavas of claim L-57608. The apparent horizontal movement is right-handed of about 100 feet, possibly as much as 500°, as indicated by the altered tuffs. It is suggested that the fault corresponds more or less with the westernmost limit of the area of extensive and intensive carbonatization to explain the apparent greater displacement of the magnetically similar contacts shown in claim L-57608 and L-57602; in other words, the Timiskaming-Keewatin unconformity, separating the greywackes and conglomerates from the recrystallized lavas on the southwest side of the interpreted fault, would separate conglomerates and greywackes from carbonated rocks on the northeast side of the interpreted fault.

The apparent displacement of the altered tuffs could also be explained by a small fold which would be reflected by a similar fold of the Timiskaming-Keewatin unconformity if this contact were located about three hundred feet to the northwest of where it is shown in claim L-57607.

Two magnetic features remain to be described. They are long and narrow anomalies. One extends, from the nonthwest corner of claim L-57606, southeast halfway into claim L-57605, weaving slightly. The other one is located in claim L-57604, and is in the form of an X, striking NW-SE and N-S, the north branch curving to the NE near the northeast corner of this claim, and the southeast branch lining up with a similar anomaly in the southwest corner of claim L-57600. Three possible interpretation are presented here;

l) Faults or shear zones with magnetic alterations. This seems improbable, as the one fault interpreted with this trend does not show any such alteration. Further more, there is no evidence of movement or displacement in either case. Also, in the eastern block of claims, where some shear zones have been mapped, their main trend is E-W, and none produce a magnetic picture similar to the one being interpreted.

2) Diabase dikes. The magnetic picture is such as would be expected from diabase dikes. However, diabase outcrops were mapped on the eastern claims, and appear to be non-magnetic. Further more, in the whole of the Kenogami Lake Area (Map 1946-1) and the Township of Teck (Map 1945-1), of the great number of diabase dikes mapped, none trend in this direction.

3) Dikes similar to those mapped on the line between lots 6 and 7 in concession VI, Eby Township, as Algoman "Syenite, syenite porphyry, quartz-feldspar porphyry, alaskite". No objections are known, but also there is no evidence that such rocks would be magnetic.

If the interpretation of dikes, whether syenite or diabase, is accepted, then the sharp curve to the NE of the eastern dike can be interpreted as an indication of the location of the Timiskaming-Keewatin unconformity. This would seem to correspond to the uncertain contact that was interpreted on the basis of the NE-SW trends. It would also correspond to the extrapolation from the geology to the north and east as shown on the Kenogami Lake sheet (Map 1946-1)

Attach: Map of Detail Ground Magnetometer Survey, Eby Township Claims, Group I Scale 1" = 100' February 9, 1953 C. W. Faessler

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PETROLOGICAL STUDIES

EBY TOWNSHIP CLAIMS GROUP I

PROVINCE OF ONTARIO

R. W. Johns

July 16, 1952

INTRODUCTION

A petrographic examination has been made of the thin-sections from the Kenogami Lake area including our Eby township claims.

About half of the samples collected were sent for thin-section. 44 were chosen as the most representative. The whole suite was not sectioned because of the time element required.

No information has been derived from the thin sections which will alter the field classification of the rocks nor change the mapping on the Kenogami Lake sheet nor the mapping by Gordon MacIntosh as he described it to me in the field. Therefore there is no need for long petrographic descriptions of all the samples. Only those features which serve to show the degree of alteration in the rocks will be listed.

GEOLOGY

A band of Temiskaming sediments continues westward from the Kirkland Lake area but with diminished width. It consists of a conglomerate overlain by a peculiar rock called, locally, trachytic agglomerate. These formations are not tightly folded. The folded syncline of sediments is unconformable with underlying Keewatin laws which are mapped by geologists of the Untario Department of Mines as striking nearly at right angles to the sedimentary band (Kenogami Lake Area, Map 1946-1, Ontario Department of Mines, by Wm. Gerrie and J. E. Thomson).

A prominent band of faulting believed to be the westward continuation of the "Larder Lake Break" occurs principally in the lavas just south of the infolded sedimentary band. Some indication that the fault may be branching is shown by quite heavey shearing at the contacts, within the sedimentary band, and at the sedimentary-lava contact. The heaviest shearing, however, appears to be in the lavas a short distance south of the sediments.

All of the sheared rocks have been intensively altered. Locally the alteration has been especially intense and the rock has taken on a massive reddish appearance and is called syenite.

FINDINGS FROM THIN SECTIONS

As previously mentioned, no evidence was found, from the thin sections, to justify changing the names or extent or any of the principal rock types - lava, conglomerate, agglomerate and granite. Small irregular bodies mapped as lamprophyre and syenite however showed good evidence of being highly altered lavas in the case of the lamprophyre, and highly altered sediments in the case of the "syenite" from the drill hole section.

No carbonate nor "dolomite" rocks were included in the thin sections as it was quite obvious from visual examination that these rocks were altered beyond much chance of recognizing the original composition. Thus it was rather surprising to fine 40 to 50% of some of the slides to be carbonate. A much greater extent to the carbonated zone is indicated than could be distinguished visually.

The location of carbonate samples is as follows:

| Sample No. | Location and Field Description | Estimated % Carbonate |
|------------|----------------------------------------------------------------------------------------------------------------------|--------------------------|
| R1002 | 200' North of 15+00 W on N. Base line | 10% |
| R1006 | West side of low outcrop in swamp 500' North of 15+00W. Carbonate stringers. Heavy carbonate at North end of outcrop | 20% |
| R1 011 | 17+40 S on line 28+00 W massive baselt | 5% |
| F1013 | 1+50' South of South end of 24+00 line. Large outcrop. Andesite | 30 % |
| R1020 | Trachytic agglomerate 100+00 W on concession line | 20% |
| R1022 | 300! North of drill hole West end of property | 15% |
| R1032 | Outcrop of dacite (MacIntosh) just north of 3rd concession | 5 % |
| R1070 | Lava from South shore of Kenogami Lake at base of point | 5 % |
| R1072 | Trachytic agglomerate | 20% |
| R1074 | Trachytic agglomerate | 15% |
| R1075 | Conglomerate, sheared, at contact with trachytic agglomerate | 50 % |
| R1076 | Conglomerate | 40% |
| R-1080 | Conglomerate | 20% |

| Sample No. | | timated % erbonate |
|----------------------------|------------------------------------------------------------------------|-----------------------|
| R1084 | Lamprophyre 15+30S 26+30W | 5 % |
| R1085 | Lava, fine-grained 23+00S (1) on 20+00Line | 20% |
| R1086 | Coarse dioritic material from same outcrop as R1085 | - |
| R1045A | Altered conglomerate from drill hole | 30% |
| R1046B | Highly altered conglomerate 4* from R1046A near "contact" with syenite | 40% |
| R1046C | "Syenite" - 4" from R1046B | 60% |
| In action for thin section | ddition the following were carbonate rocks and wer | e not sent |
| R1005 | North side of outcrop near R1004 and R1006 | |
| | | |

R1015 24+70S 20+00W

R1021 East side of trachytic agglomerate outcrops on concession line NW part of property near R1020

The trachytic agglomerate is a peculiar rock consisting of quarts and feldspar fragments in a hematite-stained matrix. The fragments are not rounded or fractured and appear more like phenocrysts than fragments. There is extensive carbonate which occasionally penetrates a feldspar fragment but is largely confined to the matrix. There does not appear to be any trachytic texture which would account for the name given to this formation in the Kirkland Lake camp.

Samples R1020, R1072 and R1074 are all from the so-called trachytic agglomerage band and all contain about the same amount (15-20%) of carbonate. This might suggest that 15 to 20% is a primary percentage of carbonate in this sediment.

The very high (20-40%) amount of carbonate in the rather fresh looking conglomerate sediments is unexpected, R1076-R1080. Most of this carbonate is introduced and extends the heavily carbonated zone into the sediments to the north. This makes it more surprising that R1083 between these heavily carbonated conglomerates and the heavy carbonate zone in the lavas to the south, is not carbonated. R1083 does contain a mineral which may be epidote and may also be Aegirine, the soda pyroxene. Some of the

other non-carbonated samples from the area also show this mineral. The significance of this mineral will have to await more positive identification by x-ray. If it is Aegirine, a considerable area of soda metasomatism is indicated which is unique in our present experience in being more extensive that the carbonate zone.

Gordon MacIntosh was puzzled, in mapping, by the frequent changes from fine to coarse grained material in the lavas. The problem was whether the different grain sizes were indicative of different flows. Two samples R1085 and R1086 were taken a few feet apart. There was no visible contact between them only a gradational change. The principal difference appears to be that R1085 has 20% carbonate. The matrix is very fine grained but appears to contain similar minerals to R1086 which is probably a lava but is completely recrystallized to a mixture of chlorite, amphibole and the epidote-like minerals, mentioned above. If this is Aegirine it seems probable that the coarse phase of the flows corresponds to recrystallization due to soda metasomatism and the fine-grained indicates carbonate metasomatism. Neither of the samples could be considered as indicative of the original rock. The fact that pillow structure has been noted in both coarse and fine-grained phases indicates that these rocks were originally lavas.

Previous operators on the ground had drilled a long drill hole (1200') in the sediments near the west end of our property. The core was stacked at the drill-site and some interesting samples were taken. Three samples were taken 4" apart across the apparent contact between conglomerate and a reddish featureless body which MacIntosh said appeared similar to many of the syenite bodies at Kirkland Lake.

The conglomerate 4" from the contact contained about 30% carbonate but the quartz and feldspar fragments are not affected. There is some development of Kaolin-like shreds in the matrix.

At the contact the Kaolin can be seen to spread through the whole rock, the carbonate content increases and the quartz and feldspar fragments are etched.

Finally 8" away from the obvious conglomerate the rock is higly altered with about equal parts of Kaolin-like material and carbonate with scattered patches of quartz (chalcedonic) indicating the location of the fragments in the original conglomerate. Rather than syenite this is a replacement by potash-carbonate solutions. Pyrite has replaced the magnetite in the conglomerate.

A similar origin was suggested for the syenites in the Kirkland Lake camp (Research Report, March 7th, 1952). There they are intimately associated with ore. None were noted in the surface exposures of sediments north of the property and only a few narrow sections occurred in the drill core. There may be a distinct lack on the property, of this type or replacement so intimately associated with ore in Kirkland Lake. So much of the property is covered that considerable bodies of replacement syenite could be present.

The heavy alteration in the lavas appears to more closely resemble the carbonatization in the lavas of the Larder Lake area than the alteration in the sediments of the Kirkland Lake area.

A sample was taken from an unidentified fine-grained section of the diamond drill hole. This rock consists of 60% albite, 15% chlorite, and 25% quartz. All the minerals appear to be recrystallized and no textural evidence remains. The albite may be secondary. If it were an intrusive or replacement body the name albitite would be used. Under the circumstances it can only be called a quartz-albite rock.

MAGNETIC INTERPRETATION

None of the slides show a conspicuous amount of magnetite. There is more magnetite in the coarse lava specimens. Hematite and sulphides are quite widespread and show no particular preference for the carbonated rocks. There does not appear to be any reason for much magnetic relief in the area. In the sediments there is more leucoxene, pseudomorph after magnetite, than there is magnetite in the lavas. Thus originally the sediments were probably the most magnetic.

CONCLUSION

The "syenite" alteration typical of Kirkland Lake is present on the property in small amounts.

The carbonate alteration typical of the Larder Lake area is present extensively in the lavas.

The property is within the metasomatic area which however, does not extend as far as the granite to the south. The property is thus near the south west margin of the metasomatic area.

Strong structural control would be necessary to produce ore.

R. W. Johns

RECISTERED

Mr. H. C. Rickaby, Daputy Minister of Mines, Ontario Department of Mines, Parliament Buildings, Toronto 1, Ontario.

Dear Mr. Rickaby:

Enclosed with this letter I am forwarding to you a report in duplicate covering geological and geophysical work performed on 13 claims numbered L-57598 to L-57610 inclusive located in Eby Township.

On July 9, 1952 the first year's assessment work was submitted on these claims. It consisted of a ground magnetic map with report written by Mr. J. H. Ratcliffe and a geological report and map prepared by Mr. C. G. MacIntosh. Assessment work credit was confirmed in the following amounts as a result of these surveys:

| Claim Number | Claim Number Geophysical Geological | | Total |
|----------------|-------------------------------------|-----|----------------------------|
| L-57598 | 3 6 | 20 | 56 |
| 99 | 3 6 | 20 | 56 56 56 56 56 |
| 600 | 36 | 20 | 56 |
| 01 | 36 | 20 | 56 |
| 02 | 3 6 | 20 | 56 |
| 03 | 37 | 20 | 57 |
| 04 | 37 | 20 | 57 |
| 05 | 3 7 | 20 | 57 |
| 06 | 37 | 20 | 57 |
| 07 | 37 | 20 | 57 |
| 08 | 37 | 20 | 57 |
| 09 | 37 | 19 | 56 |
| 10 | _37 | 19 | 57 56 <u>56</u> |
| Total Man-days | <u>476</u> | 258 | 734 |

Page
Mr. H. C. Rickaby
Ontario Department of Mines
Parliament Buildings
Toronto 1, Ontario

The ground magnetometer survey had been performed on lines cut at 400° intervals. In the fall of 1952 we decided that coverage on lines at 200° intervals was desireable and the additional linecutting was started in November. The field work was completed in January, 1953 and the interpretation was carried out in February and March. We are submitting the new report and maps prepared by Mr. C. M. Faessler, a member of our geophysical staff, for additional assessment work credit:

Mr. R. W. Johns, a member of our geological staff, spent 30 days during June and July, 1952 on a petrological examination of rock samples collected in the vicinity of our claims. Twenty-two samples were selected for study of which 12 were taken from within our claim boundaries. Mr. Johns' report on this study is being submitted now for additional geological assessment work credit. We are asking that 15 days' work be considered as the share applicable to our 13 claims.

A breakdown of the man-days required for the work described above with their assessment credit values is shown in the following schedule:

| | Actual <u>Man-devs</u> | Assess- ment Factor | Assessment Credit In Man-days |
|-----------------------------------------------------------|---------------------------|---------------------------|-------------------------------------|
| Ground Magnetometer Survey | | | |
| Linecutting (E. Kittilson, Chief) | 186 | 4 | 744 |
| Instrument Operators and Assistants (E. G. Millar, Chief) | 142 | ٨, | 568 |
| Drafting (C. W. Faessler, Supervisor) | 23 | 4 | 92 |
| Report (C. W. Faessler, Geophysicist) | _2 | 4 | 8 |
| Subtotal | 353 | | 1.412 |
| Geology (Petrological Work) | | | |
| Petrological Studies (R. W. Johns, Geologist) | 13 | 4 | 52 |
| Report (R. W. Johns, Geologist) | _2 | 4 | 8 |
| Subtotal | _15 | | 60 |
| Total | <u>368</u> | | 1,472 |

Page 3 Mr. H. C. Rickaby Ontario Department of Mines Parliament Buildings Toronto 1. Ontario

We should like to use the above work credit to complete the 40 days' maximum allowance per claim for geological and geophysical work. Therefore, we request that assessment credit be granted as follows on the basis of this new work now being reported:

| Claim Number | <u>Geonhysical</u> | Geological | Total |
|--------------|--------------------|------------|------------|
| L-57508 | 20 | 4 | 24 |
| 99 | 20 | 4 | 24 |
| 600 | 20 | 4 | 24 |
| 01 | 20 | 4 | 24, |
| 02 | 20 | 4 | 24 |
| 03 | 20 | 3 | 23 |
| όν, | 20 | 3 | 2 3 |
| 05 | 20 | 3 | 2 3 |
| 06 | 20 | 3 · | 2 3 |
| 07 | 20 | 3 | 2 3 |
| 08 | 20 | 3 | 2 3 |
| 09 | 21 | 3 | 24 |
| 10 | 21 | _3 | 21 |
| Total | 262 | 44 | <u>306</u> |

You will note that a 14th claim, No. L-58757, appears on the ground magnetic map and that the report actually is written to cover 14 claims. This claim was staked and recorded after our original magnetic survey was completed and thus all data concerning it were obtained in the second survey. This claim was dropped on June 3, 1953, the first anniversary of the recording date.

I am enclosing a copy of our schedule A which accompanied each work report filed with the Mining Recorder. This schedule shows the complete listing of the men employed on the geophysical survey and the dates during which the work was performed.

Very truly yours, ORIGINAL SIGNED BY E. W. Westrick E. W. Westrick.

RSF/JV

Attachments follow in this orders

- 1. Schedule A
- 2. Ground magnetometer report written by C. W. Faessler
- 3. Contoured and interpreted map of ground magnetic data, scale 100' to the inch
- 4. Petrological report written by R. W. Johns

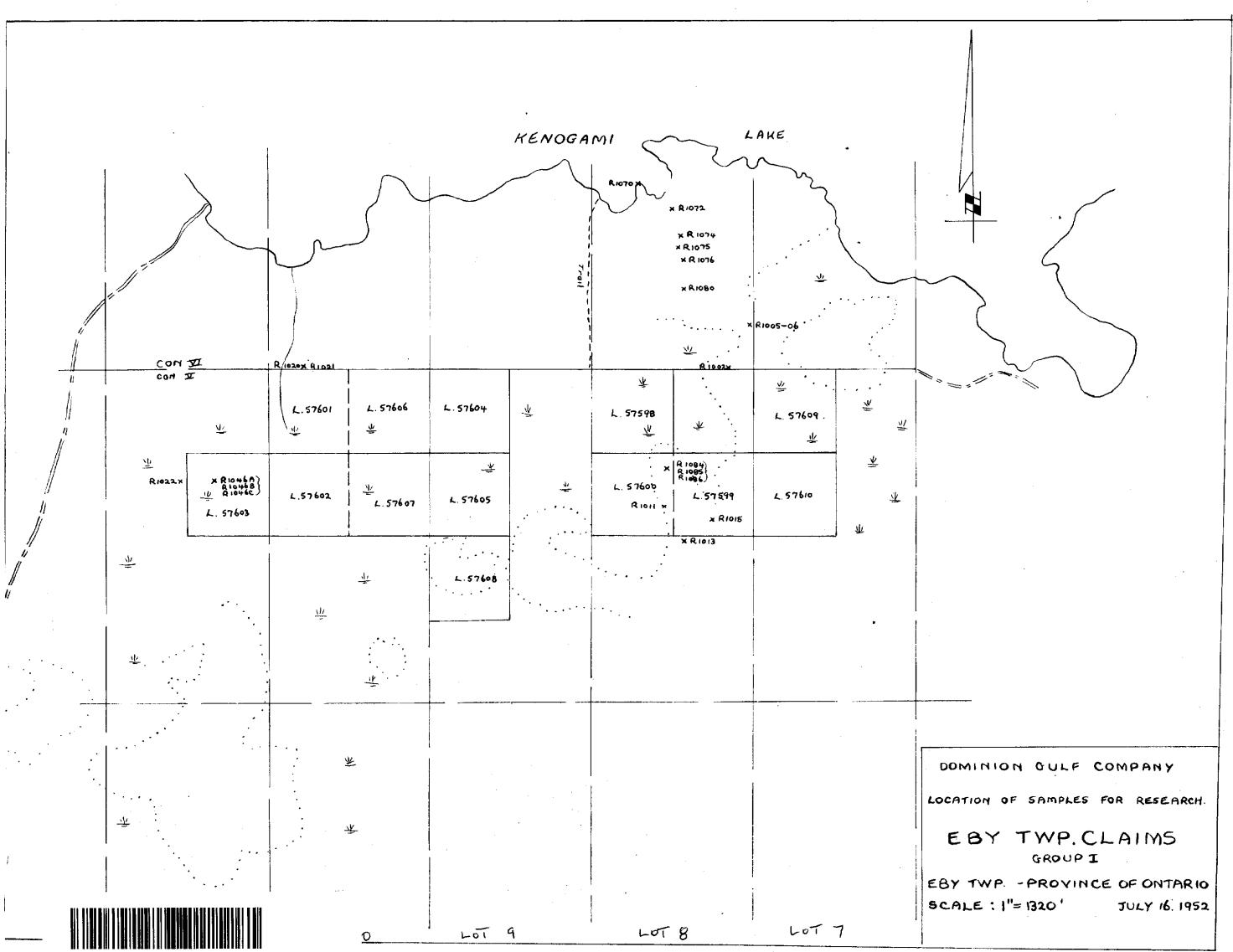
Schedule A

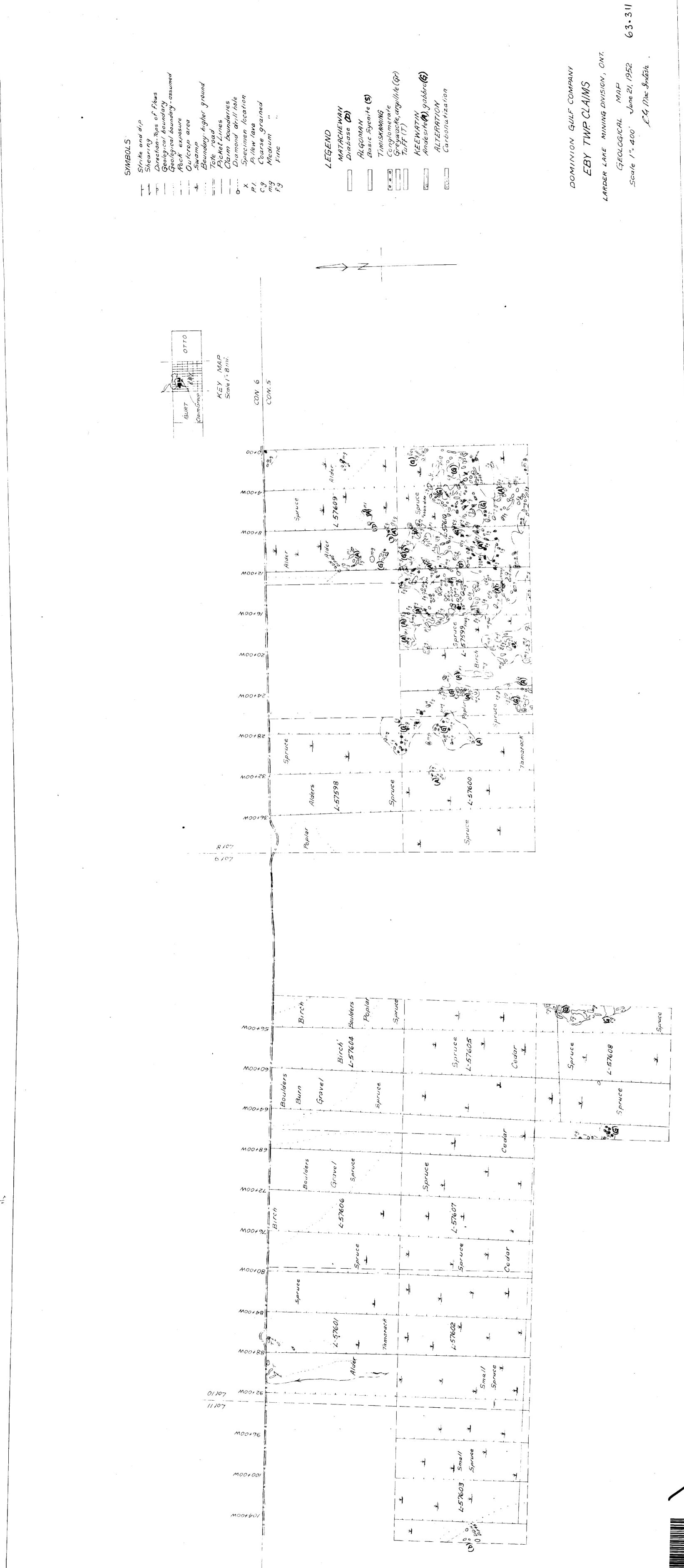
| | - | Dec. | Jana | 1953 Feb. | Mar. |
|---------------------------|---|-------------|------|--------------|------|
| Linecutting | | | | | |
| G. Breti | r | x | x | | |
| G. Froyrak | X | X | X | | |
| R. Hodgins | X | | | | |
| E. Kittilson | X | X | I | | |
| G. D. McNaughton | X | X | x | | |
| H. Nilson | X | X | | | |
| C. Smith | X | X | | | |
| Ground Magnetometer | | | | | |
| Field Work | | | 2. | | |
| J. H. Ratoliffe | x | | | | |
| C. W. Faessler | X | X | X | | |
| R. Hodgins | x | X | X | | |
| G. Breti | | X X X | | | |
| G. Mason | | I | X | | |
| E. G. Millar | | | X | | |
| D. Peters | | X | X | | |
| R. McDonald | | | X | | |
| W. Nicholls | | | X | | |
| Drafting | | | | | |
| C. W. Faessler | | | | X | X |
| H. Ricketts | | | | X | |
| U. Arbanas | | | | | X |
| J. Wilson | | | | | X |
| Interpretation and Report | | | | | |
| J. H. Ratcliffe | | | | X | |
| C. W. Faessler | | | | I | X |

The address for all the above personnel is

203 Bay Street,

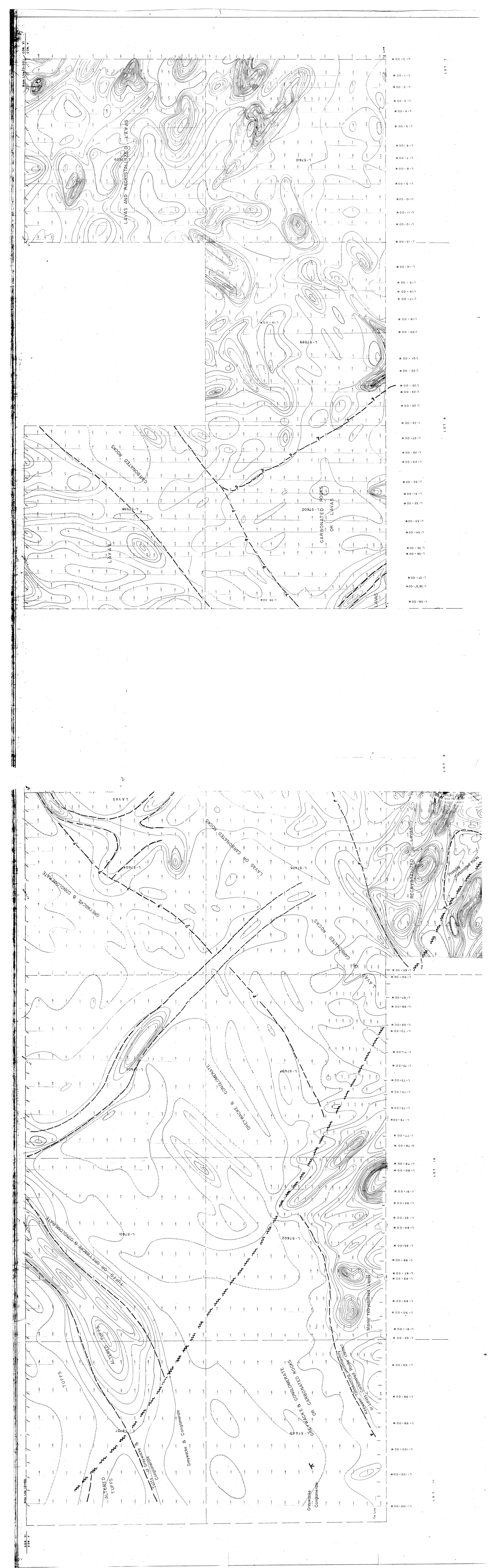
Toronto, Ontario.

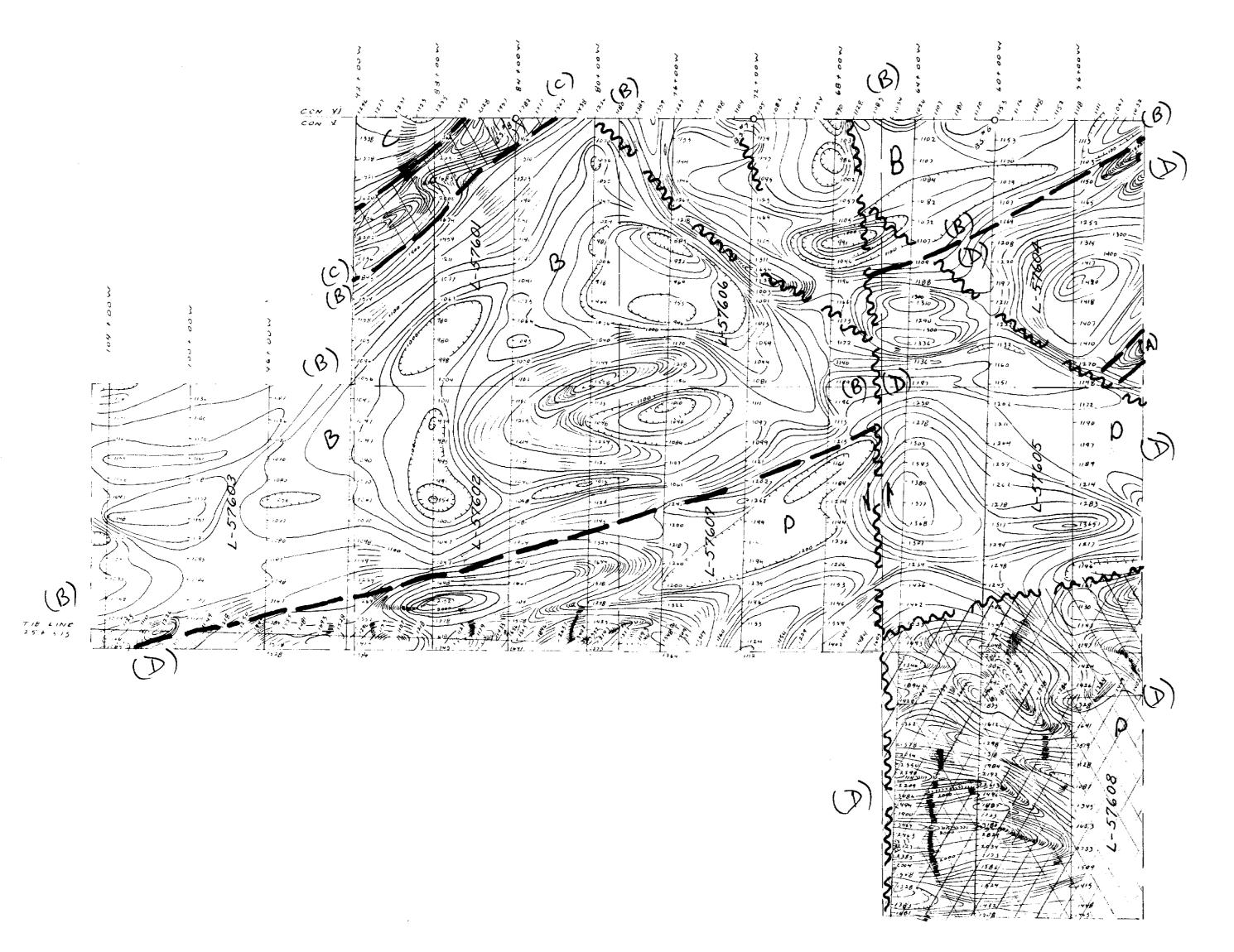


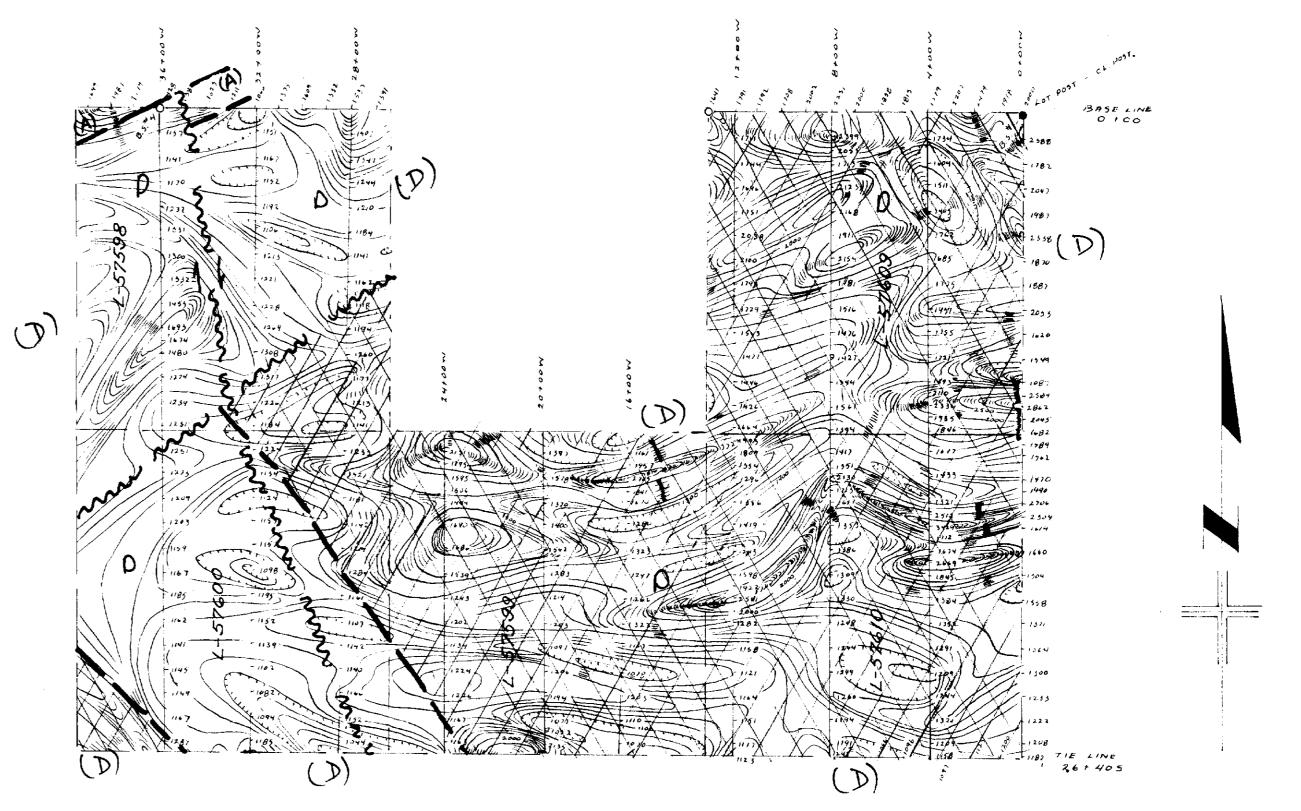


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15E8925 63.311 EBY







OTTO

KEY MAP Scale!" 8 mi.

Triniskaming Sediments (Conglomerate & Greywacke) Tuff

Alteration (Secondary Magnetite

Keewatin Andesite

(c) ____

(D)

Contact

M M Foult

63.311

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DOMINION GULF COMPANY

GROUND MAGNETOMETER SURVEY

CONTOUR INTERVAL - 20 GAMMAS

EBY TWP. CLAIMS

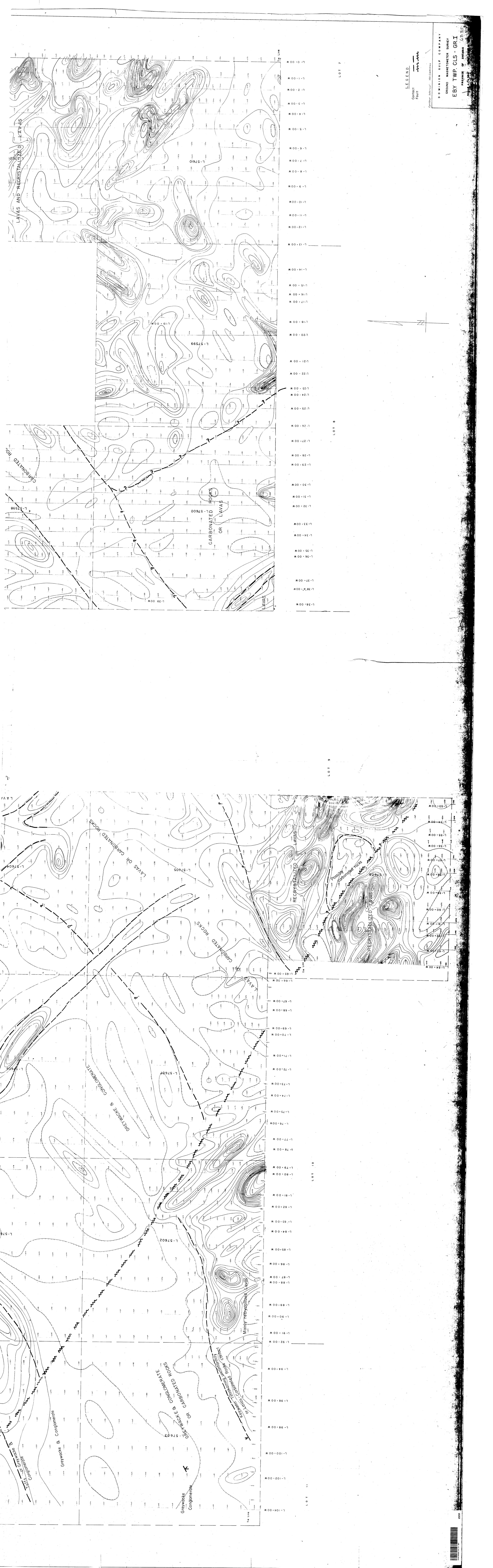
GROUP I

PROVINCE OF ONTARIO

Scale | "= 400"

Date June 26,1952





900



DOMINION GULF COMPANY

ASSESSMENT WORK REQUIREMENTS

REGISTERED

Mr. H. C. Rickaby, Deputy Minister of Mines, Ontario Department of Mines, Parliament Buildings, Toronto 1, Ontario.

Dear Mr. Rickaby:

Enclosed with this letter I am forwarding to you a report in duplicate covering geological and geophysical work performed on 13 claims numbered L-57598 to L-57610 inclusive located in Eby Township.

On July 9, 1952 the first year's assessment work was submitted on these claims. It consisted of a ground magnetic map with report written by Mr. J. H. Ratcliffe and a geological report and map prepared by Mr. C. G. MacIntosh. Assessment work credit was confirmed in the following amounts as a result of these surveys:

| Claim Number | Geophysical | <u>Geological</u> | Total |
|----------------|-------------|-------------------|----------------|
| L-57598 | 3 6 | 20 | 56 |
| 9 9 | 3 6 | 20 | 56 |
| 600 | <i>3</i> 6 | 20 | 56 |
| 01 | 3 6 | 20 | 56 56 56 |
| 02 | 3 6 | 20 | 56 |
| 03 | <i>3</i> 7 | 20 | 57 |
| 04 | <i>3</i> 7 | 20 | <i>5</i> 7 |
| 05 | 3 7 | 20 | 57 |
| 0 6 | <i>3</i> 7 | 20 | 57 |
| 07 | <i>3</i> 7 | 20 | 57 |
| 08 | <i>3</i> 7 | 20 | 57 |
| 09 | <i>3</i> 7 | 1 9 | 56 |
| 10 | _37 | _19 | <u>_56</u> |
| Total Man-days | <u>476</u> | 258 | 734 |

Page Mr. H. C. Rickaby Ontario Department of Mines Parliament Buildings Toronto 1, Ontario

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|--------------------------------------------------------------------|---------------------------|----------------------------------|--------------------------------------------|
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| Linecutting | | | |
| (E. Kittilson, Chief) | 186 | 4 | 744 |
| Instrument Operators and Assistants (E. G. Millar, Chief) Drafting | 142 | 4 | 568 |
| (C. W. Faessler, Supervisor) Report | 23 | 4 | 92 |
| (C. W. Faessler, Geophysicist) | _2 | 4 | 8 |
| Subtotal | <u>353</u> | | 1.412 |
| Geology (Petrological Work) | | | |
| Petrological Studies | | | |
| (R. W. Johns, Geologist) Report | 13 | 4 | 52 |
| (R. W. Johns, Geologist) | _2 | 4 | 8 |
| Subtotal | _15 | | 60 |
| Total | <u>368</u> | | 1,472 |

Page 3 Mr. H. C. Rickaby Ontario Department of Mines Parliament Buildings Toronto 1, Ontario

3

We should like to use the above work credit to complete the 40 days' maximum allowance per claim for geological and geophysical work. Therefore, we request that assessment credit be granted as follows on the basis of this new work now being reported:

| Claim Number | Geophysical | Geological | <u>Total</u> |
|------------------|-------------|------------|--------------|
| L-57 5 98 | 20 | 4 | 24 |
| 99 | 20 | À | 24 |
| 600 | 20 | Ĺ | 24 |
| 01 | 20 | 4 | 24 |
| 02 | 20 | 4 | 24 |
| 03 | 20 | ž | 23 |
| 04 | 20 | 3 | 23 |
| 05 | 20 | 3 | 23 |
| 06 | 20 | 3 · | 23 |
| 07 | 20 | 3 | 23 |
| 08 | 20 | 3 | 23 |
| 09 | 21 | 3 | 24 |
| 10 | 21 | قَـ | 21 |
| Total | <u> 262</u> | 44 | <u>306</u> |

You will note that a 14th claim, No. L-58757, appears on the ground magnetic map and that the report actually is written to cover 14 claims. This claim was staked and recorded after our original magnetic survey was completed and thus all data concerning it were obtained in the second survey. This claim was dropped on June 3, 1953, the first anniversary of the recording date.

I am enclosing a copy of our schedule A which accompanied each work report filed with the Mining Recorder. This schedule shows the complete listing of the men employed on the geophysical survey and the dates during which the work was performed.

Very truly yours, ORIGINAL SIGNED SY E. W. Westrick E. W. Vestrick.

RSF/JV

Attachments follow in this order:

- 1. Schedule A
- 2. Ground magnetometer report written by C. W. Faessler
- 3. Contoured and interpreted map of ground magnetic data, scale 100 to the inch
- 4. Petrological report written by R. W. Johns

Schedule A

| | | 52 | | 1953 | |
|---------------------------|------|------|-------------|------|------|
| | NOA. | Dec. | Jan. | Feb. | Mar. |
| Linecutting | | | | | |
| G. Breti | x | x | x | | |
| G. Froyrak | X | Ī | Ÿ | | |
| R. Hodgins | X | | | | |
| E. Kittilson | X | X | X | | |
| G. D. McNaughton | X | X | X | | |
| H. Nilson | X | X | | | |
| C. Smith | X | X | | | |
| Ground Magnetometer | | | | | |
| Field Work | | | | | |
| J. H. Ratcliffe | X | | | | |
| C. W. Faessler | x | X | x | | |
| R. Hodgins | x | x | Ï | | |
| G. Breti | _ | x | | | |
| G. Mason | | X | X | | |
| E. G. Millar | | X | X | | |
| D. Peters | | X | X | | |
| R. McDonald | | | X | | |
| W. Nicholls | | | X | | |
| Drafting | | | | | |
| C. W. Faessler | | | | X | X |
| H. Ricketts | | | | X | |
| U. Arbanas | | | | | X |
| J. Wilson | | | | | X |
| Interpretation and Report | | | | | |
| J. H. Ratcliffe | | | | x | |
| C. W. Faessler | | | | X | X |

The address for all the above personnel is

203 Bay Street,

Toronto, Ontario.