Dominion Gulf Company

Interpretation of Ground Magnetic Survey

Enid I

Enid and Fortune Townships Ontario.

G. F. West March 20, 1956.

Introduction

The Enid I claim group of the Dominion Gulf Co. consists of 38 claims located in the north east corner of Enid Township and the south east corner of Fortune Township Sudbury Mining Division, Ontario. These are numbered S-84123 to -57 and S-88517 to -19, inclusive.

A ground magnetometer survey of the group was carried out during the spring, summer and fall of 1955. The survey of Fortune Township was done during June by R. McDonald assisted by D. Peters, and that of the Enid Township claims by W. Gannon assisted by F. Faulkner during August and September. Further detail was added to the survey of the Enid Township claims by Gannon and Faulkner during October.

Basic coverage of the property was achieved by taking readings at 100 ft. intervals on north-south picket lines 400 ft. apart. Additional coverage over much of the property was achieved by adding intermediate picket lines. On the Fortune township claims, readings were taken at 50 ft. intervals everywhere, while on the Enid Township claims 50 ft. spacing was obtained only on the detail lines and on some of the anomalies. In a few places where exceptional intensities were encountered the interval was decreased to 25 ft. Readings were also taken on the east-west base line and tie lines. A total of 3586 stations were read over a total of 47.6 miles of line. Of this 17.7 miles were read at 50 ft. intervals and 29.9 at 100 ft.

The instrument used for the survey was a Schmidt type vertical magnetometer having a sensitivity of approximately 20 gammas per scale division. Calculations checking and plotting of the data were carried out in the field, and the maps were sent to the Company's Toronto office for further processing.

The survey grid was laid out by means of chained picket lines. The intersection of the Fortune-Enid township line and the Enid-Coté township line was taken as the origin of the survey, and the Enid Fortune township line as the base line. Tie lines 52+80S and 26+40N were chained from the township line. The whole grid is therefore accurately tied in.

Detail geological mapping at a scale of 1" = 200' was carried out by D. Sprague at the same time as the magnetometer survey. The results of this work are to be found in his report dated November 25, 1955. A brief history of early work done in the area is also included in this report.

Summary

Much of the geology of the group is known since extensive outcrop occurs. Numerous diabase dykes are indicated and these have been traced on the magnetic map. Three of the dykes are placed only tentatively due to insufficient magnetic data.

Zones A, B and C are undoubtably caused by the "2a gabbro" which contains considerable magnetite. The contact between the gabbro and volcanics is interpreted on this basis.

Anomaly D is thought to be caused by a separate "2a" gabbro mass though it could be a more magnetic band in the lavas cut off to the east by granite.

Zone E occurs over a massive fine grained basic rock which contains clumps of pure hornblende produced by the metamorphism. Magnetite is very likely present in these pods. Much more detailed magnetics would be required to prove what the distribution of the magnetite might be however. The numerous local highs occuring over the greenstone belt are included in zone E since their origin is doubtless similar.

In several cases the field produced by a diabase dyke was found to be interupted by one or more strong negatives and/or positives. This is thought to be due to post diabase shearing which has fractured the dyke. The direction or continuity of these shears cannot be interpreted due to the lack of detail over many of the dykes.

Recommendations

An EM survey should be carried out along the gabbro greenstone contact. Two hundred foot lines should be run since any mineralization will probably be very short and blobby. Conductors will likely be fairly weak because of this.

The volcanics are not thought to be a favourable host rock for deposits of the Kam Kotia type since they apparently come from even deeper than those in Robb I, and metamorphism is of a correspondingly higher grade. No work is recommended over them.

Any conductors found over zone B may possibly be tested by trenching rather than drilling since the overburden seems shallow, at least in some places. Testing with an auger would be desirable before much digging was done.

In summary, the claim group is thought to be a fair prospect only. However, work will be going on in the vicinity, so further exploration should be done especially if the Cotè I drilling is favourable.

Interpretation

The known geology can be summarized as follows:- A belt of volcanic rocks, possibly a syncline, strikes through the Enid I and Cotè II claims. In the south-east part of Enid I a large area mapped as gabbro occurs. This rock is found both north and south of the volcanics in Cotè II. Several small masses of granite intrude these rocks on both groups, and the gabbro, especially, is cut by numerous aplite dykes. A large area of granite occurs immediately south of the Enid I claims. Granite is also known to occur to the north.

The volcanics include a variety of different types including pillow lavas, andesite porphyry, gneiss and schist. All are considerably metamorphosed but appear to be derived from fairly basic Keewatin lavas. The gabbro appears to be of two kinds, known as 2a and 2b. The 2a gabbro is a medium coarse grained fresh appearing rock made up of pyroxene pseudomorphed by actinolite or chlorite, and plagioclase altered to epidote, scapolite and chlorite. Considerable magnetite occurs in this rock, some of it formed from the breakdown of the pyroxene and actinolite. The 2b gabbro seems to be more strongly altered, fresh albite and actinolite having crystalized in a mozaic of epidote scapolite and chlorite. This rock could be derived from the same rock as the 2a gabbro or from a more feldspathic type. No magnetite is present and it is thought that the metamorphism may have resulted in loss of the iron. The origin of the gabbro is uncertain but it seems most likely to be a wide gabbroic sill related to the Robb township gabbro.

The contact between the gabbro to the south and volcanics to the north is well exposed south of Guppie Lake. The volcanics are folded and drag folds indicate a plunge of 75° E and a north side west movement. The main mass of 2a gabbro appears to be in the vicinity of this fold, although some is found in exposures further south.

The whole area has been subjected to considerable stress resulting in E-W shearing and schistosity sometimes varying to NW-SE.

A large number of Matachewan diabase dykes cut across the property striking generally a little west of north. These vary from as little as 10 ft. to over 100 ft. in width.

The most prominent features of the magnetics are the anomalies over the diabase dykes. Since the readings were taken on N-S lines the dykes could not be interpreted by magnetics alone. However, most of them could be traced with the aid of the geological mapping. The interpretation shows 16 dykes which are thought to be accurately located, and three which are placed tentatively. No other large dykes are thou ht to exist though some small ones (say less than 20 ft. wide) may be present.

Exclusive of the dyke anomalies the anomalous areas have been divided into 5 zones marked A, B, C, D and E. Zones A, B and D have sufficient detail over them that the field as contoured may approximate the truth. Zones C and E and the few other scattered anomalies are contoured on so few readings that little weight should be given to their shapes or trends.

Both A and B zones are complex and only roughly contoured. Zone A is made up of two linear anomalies and some scattered highs. The southern anomaly seems to follow the edge of the gabbro as mapped, and if the northern anomaly is assumed to be in a similar geological position Sprague's fold can be nicely extended.

Zone B appears very similar to zone A and seems to outline a fold even better than A does. A corollary of this interpretation of the A and B zone magnetics is that magnetite is most strongly developed in tight folds in the gabbro. The reason for this is not clear but the following hypothesis seems possible.

The belt mapped as gabbro is assumed to be originally a gabbroic sill intruded into the volcanics. This gabbro is not related to the granites which are assumed to be later. The intrusion of the granite caused movement throughout the belt especially along the gabbro greenstone contact causing considerable fracturing and shearing in the folds if not producing the folds themselves. The granite intruded mainly south and beneath the Enid I rocks and altered the augite-actinolite-chlorite-magnetite of the gabbro back to fresh actinolite and the epidote-scapolite-chlorite to albite with iron being driven off. Some of this iron has remained in pods of actinolite, rich in magnetite and pyrite, throughout the gabbro (e. g. Zone C). Most of it probably went up and is now lost, and some of it went into the shearing in the limbs of the folds along the contact. Here the same magnetite-rich amphibolite was formed in and around the sheares, and likely, also, the sulphides found in these zones. Alteration of the gabbro in the folds must have been inhibited either by the higher pressures there, or by the presence of additional iron; leaving the fresh 2a gabbro now found there.

Zone E is taken as including the whole area of scattered high magnetics in the volcanics near the south boundary. Pods of hornblende developed in the metamorphism have been found scattered throughout this area. The processes resulting in their formation are undoubtably similar to those causing the alteration of the gabbro. The magnetics are attributed to magnetite in these pods. Detail work might show up trends indicating some structural control but there is no evidence of this at present.

No certain interpretation can be made for zone C. Analysis of a profile over it shows the body to have a somewhat irregular magnetite content, though it is probably a more even distribution than in any of the other zones. The depth of burial is about 150 ft. and the susceptibility about 7000 x 10^{-6} cgs. units. This indicates very roughly about 2% magnetite. The anomaly could be caused by an outlier of the gabbro which has not been altered and contains its original magnetite. Another possibility is that it is one of the more magnetic lava bands cut off on the east by the granite. This latter interpretation involves the granite stock being considerably larger than expected. The former interpretation is favored. The granites themselves do not show up on the magnetics as either highs or lows.

No definite faulting can be interpreted from the magnetics since they do not indicate original formations. A major N.N.W. fault has been postulated from the geology and there is certainly nothing to contradict this supposition. More detail around some of the high magnetics might show up local shear zones. However, shearing in the area is known to have little continuity so this possibility is not particularly good. Some post diabase movement is interpreted from the disruption of three of the normal dyke anomalies by strong positives and negatives. The dykes are thought to be fractured at these locations. There is no evidence to show the direction of the faulting.

The mineralization so far located on the property is of pyrite-pyrrhotite and chalcopyrite associated with the magnetite and actinolite rich parts of the gabbro. It seems likely that it has the same genesis as the magnetite, indicating that there was no great abundance of sulphur when it was formed. Large deposits of sulphides are not to be expected therefore. The base metal content may vary, so mineralization similar to that already found could be interesting. This might occur anywhere along the contact zone, especially in the folds.

References

(1) D. G. C. Report - Detail Geology of Enid I, Base Map 42A/12S, Enid and Fortune Twp. Ontario. D. Sprague, November 25, 1955.

(2) D. G. C. Report - Laboratory Report, Enid I, A. K. Temple, Nov. 9, 1955.

Attachments

(1) D. G. C. Map - Ground Magnetometer Survey (Interpretation) Enid I, Base Map 42A/12S Ontario. 1" = 200'. March 27, 1956.

D O M I N I O N G U L F C O M P A N Y

DETAIL GEOLOGY OF ENID I

BASE MAP 42A/12S

ENID & FORTUNE TOWNSHIPS ONTARIO

D. Sprague November 25, 1955

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INTRODUCTION

The Enid I claim group is located in the northeast corner of Enid Township and the southeast corner of Fortune Township, Sudbury Mining Division, Ontario. There are 38 claims in the group, being Claims S-84123 to -57 and S-88517 to -19, inclusive.

The main base camp is located at Fortune Lake, about 1 mile north of the claim group. A temporary camp was located on the northeast shore of Sweet Lake, Enid Township. Fortune Lake is accessible by plane and also by trail from Kamiskotia Lake.

Earliest work in the area was done by E. W. Todd[1] in 1923. In 1930, A. R. Graham did a geological survey of the Groundhog-Kamiskotia area, taking in the Townships of Enid and Fortune. This survey was of the reconnaissance type; consequently, many outcrop areas were missed and rock types generalized.

Two copper-nickel showings in Enid Township, belonging to George Sweet, were optioned by Hollinger in 1930. Hollinger then drilled four shallow holes under the two showings, one under the north showing (Claims S-88517-18), and three under the south showing (Claim S-88519). This drilling indicated the downward extension of the sulphide zones to eighty feet. In 1952, Hollinger again optioned the two showings, then held by A. Lepic and E. Gagnon of Timmins, Ontario. During the summer of 1952, geological and ground magnetometer surveys were conducted in the vicinity of the two showings. Limited trenching was done on magnetometer highs which could possibly have been caused by massive lenses of pyrrhotite. Knox held the claims until the spring of 1955.

(1) O.D.M. Vol. XL, Part III, pp. 26, 1931, by A. R. Graham.

Dominion Gulf Company, in the spring of 1955, staked the group, including the copper-nickel showings. The purpose of the present investigation is to evaluate the claims, and to obtain geological and geophysical data which may prove useful in selecting areas for a more concentrated effort to locate economical ore bodies of this type. Accordingly, a detailed geological survey was conducted; the mapping being done on the scale 1 inch equals 200 feet. Lines were cut at 400-foot intervals and detail lines cut where needed. A ground magnetometer survey was completed, including detail work.

The geology was done by D. Sprague, assisted by J. Britton. A. K. Temple spent 10 days in the area with the writer. The ground magnetometer survey was done by R. McDonald and D. Peters (Fortune Township), and by W. J. Gannon, assisted by F. Faulkner (Enid Township). Two line cutters and a cook were also at the camp. The work was carried out during the spring, summer and fall of 1955.

SUMMARY

The main geological features of the Enid I claim group are a band of highly metamorphosed basic Keewatin volcanics which have been intruded by later gabbro, granite and derivatives and diabase. From an economical standpoint, the gabbro is the most interesting rock type in the area. This gabbro mass extends as far west as Line 64, and continues eastward to our east boundary. The southern half of this area has abundant gabbro outcrop areas, whereas the northern half is covered by overburden.

Sulphides are found in this gabbro, especially in the more basic and fresh appearing variety. The sulphide minerals are pyrite (minor), pyrrhotite and chalcopyrite. Magnetite is commonly associated

with the sulphides. They occur as lenses, and are also disseminated in the gabbro.

Regional stresses in the area have caused a consistent east-west trend in the greenstone complex, and locally in the gabbro. Consequently, most of the faulting and shearing is in an east-west direction. There exists the possibility that an east-west trending synclinal axis lies between the claim group and Fortune Lake.

CONCLUSIONS

Two small copper-nickel occurrences in the gabbro prompted a detailed geological survey, which disclosed that:

(1) The two showings mentioned are minor and do not warrant further work.

(2) The gabbro, type 2a, is the most favourable host rock for this particular type of sulphide mineralization in this area.

(3) The mineralization is related to shear zones and aplite intrusions in the gabbro, and is most likely to be found in the vicinity of the contact between the gabbro and the greenstone.

(4) The greenstone belt in this particular area is a poor host for nickel-copper sulphides.

(5) There is a possibility that an economical deposit exists in the area.

(6) The most favourable region to prospect is along the contact between the gabbro and the greenstone, and extensions thereof, and especially in the vicinity of apparent folding along this contact.

(7) An E.M. survey of some fifteen claims is warranted.

RECOMMENDATIONS

Although the two occurrences of sulphides in the claim group can by no means be considered as economical deposits, they indicate that sulphides can and do occur in the immediate area. It would, therefore, be in order to do more work in the vicinity of the contact between the gabbro and the greenstone. As this contact is largely covered with overburden, prospecting is limited to geophysical means. Therefore, an electromagnetic survey of a detailed nature is recommended on the following claims: S-86517, -18, -19 and S-84140, -41, -42, -32, -33, -34, -35, -36, -25, -26, -27 and -29, with particular attention being drawn to east-west or west-northwest trending magnetic anomalies.

To the south of the above mentioned claims, there is considerable outcrop with no indication of being of value, and these claims can therefore safely be dropped. All claims west of Line 64W can also be dropped, as they lie on the greenstone belt, and have considerable outcrop on them that has already been well prospected.

TOPOGRAPHY

The immediate area is drained by numerous small creeks, which join the three lakes, and by Enid Creek at the east end of the property.

Relief, except for the southwest portion of the group, is low, seldom exceeding 40 feet. Much of the area is covered by swamp, or low, level sandplain. Spruce, tamarac, cedar and alder are found in the swamps, while birch, jackpine, poplar and spruce are found in the dryer areas. Much of the southeast quarter is covered by slash and dead balsam, making travelling difficult.

Outcrop areas are numerous in the south half and northwest quarter. There is no outcrop in the Fortune Township claims. Very

little of the outcrop is exposed, thus necessitating a rather intensive stripping program. The only prominent lineament in the area is a north-northwest trending depression that includes Sweet Lake. Its cause was not determined.

There is considerable overburden in the swamps and sandplain areas. Test pits eleven feet in depth were sunk by Hollinger without hitting bedrock. Outcrop areas are moss covered.

GENERAL GEOLOGY

The claim group is situated on a band of Keewatin volcanic rocks, now largely metamorphosed to schists and gneisses, and amphibolites. This band is steeply dipping and strikes a little north of east. Gabbro, granite and diabase intrude this belt.

The gabbro on the claim group is part of a batholith of gabbro found in Whitesides, Massey and Cote Townships, as well as Enid Township. It appears as if these exposures of gabbro may be joined at depth and that the gabbro presently seen is merely "windows" in the older greenstone. Gabbro is also found much further west in Montcalm Township.

Granite is found to the north, south, east and west of the area mapped. Diabase dikes are frequently found in outcrop areas.

Detailed Geology

The following formations were mapped on the Enid group. All are PreCambrian in age:

Greenstone complex

Andesite dikes

Gabbro

Gabbro altered and more feldspathic

Granite

Aplites

Diabase.

Description of Formations

Greenstone Complex (Keewatin volcanics)

Keewatin type rocks outcrop on the west end of the property and north of the two showings. This band continues through our Cote II group.

This formation was originally a series of rather basic volcanic rocks, with possibly some intrusives which have been regionally metamorphosed and now consist mainly of fine grained schists, gneisses, amphibolites and porphyries. Five main types have been mapped:

(i) Pillow lava

(ii) Andesite Porphyry

(iii) Gneiss

(iv) Schist

(v) Undifferentiated altered Keewatin type rocks.

Pillow Lava

Only one outcrop of pillow lava was found on the property, this being on Line 96/00W at 39/00S. It is a fine grained, dark green massive rock (Spec. 388). The pillows strike about W15N and seem to face north. The only other pillow lava seen in the area by the writer was about ½ mile east of Fortune Lake Camp on the trail to Cote II. Here the pillows were somewhat squeezed and elongated. Tops were difficult to determine, but they seemed to face south.

Andesite Porphyry

Several outcrops of massive appearing andesite porphyry were located in the west portion of the claim group. It is a massive appearing rock with a fine grained groundmass composed largely of small laths of amphibole, and phenocrysts of plagioclase euhedral to anhedral in outline, and in the order of 1/8" x 1/8". These phenocrysts make up to

40% of the rock. Often these phenocrysts are broken and have been affected by shearing, metamorphism, etc., until they finally disappear. When this rock type becomes sheared and metamorphosed, it is difficult to distinguish it from the gneisses further to the west. Indeed, it appears as if these gneisses could have been formed from this basic porphyry (see Spec. 211-DS-385, -242 and -296).

Gneiss

The main minerals are hornblende and plagioclase, giving the gneiss the composition of an amphibolite. Locally, there may be quartz, carbonates, minor magnetite and brown mica present. Outcrops of this gneiss are usually very well lineated, especially when seen in vertical section, although individual specimens may appear massive. Good banding is rare, as the mafics tend to separate out only in short lenticular layers. Banding, when it does appear, is short and discontinuous, although there is the occasional regular band of pure amphibole (Spec. 211-DS-32).

The rock grades from extremely fine grained to medium grained, gneissic to slightly lineated locally with "porphyroblasts" or sheared phenocrysts of feldspar. The colour varies from a streaky dark grey to a mottled brown colour. The hornblende tends to crystallize as distinct elongated crystals which are oriented in the plane of gneissocity.

In one instance (L-96/00N, 14/00S, 1/00E), a light coloured band of gneiss about 30 inches wide was noted which was an original acidic dike cutting the host rock. This dike parallels the gneissocity and was itself altered to a gneiss (Spec. 211-DS-295). The contact is well defined, although gradational (i.e., secondary hornblende crossing the contact gives it this appearance). Biotite is a common constituent of these gneissic former acid intrusives.

There is a complete gradation between this rock type and the andesite porphyry indicating that much of this rock may have formerly been a porphyry (see Spec. 211-DS-312, -296(a), -381 and -385).

These gneisses have an average strike of W10N and dip 80° to the south.

Schists

Where shearing has occurred in the greenstone, the resultant rock is a fine grained, strongly lineated, soft chloritic schist. Shear zones are common in the older Keewatin lavas; consequently, schist zones are numerous. Quartz, carbonates and minor pyrite are invariably associated with these zones. Although on the Enid I property these zones tended to be only one to twenty feet wide, in Cote II much of the greenstone mapped is a good chlorite, sericite, carbonate schist. The quartz occurring in these schists is often in the form of small lenticular bodies, which have been intensely granulated. The general strike of the schists is the same as for the gneisses.

Some of these schisted zones can be followed for hundreds of feet.

Undifferentiated Rocks

Keewatin rock types failing to fall into the above classes were mapped as an undifferentiated type. They include a peculiar type of greenstone which was found adjacent to the gabbro mass. This rock was locally highly sheared and lineated and sometimes exhibited a banded structure. Drag folds and highly contorted bands indicate extreme deformation. The lineation tends to be concordant with the outline of the gabbro mass, with some exceptions. The main features of this rock type are the gabbroic-like bands and lenses which parallel the lineation

and banding. These gabbroic-like bands may represent injected dikes of gabbro or they might possibly be portions of recrystallized lava. The composition of this rock type is similar to the composition of the gabbro. Magnetite and quartz are the main accessory minerals.

On Claims S-8455, -56 and -57, a massive to lineated fine grained rock was found. In places, it was quite basic and several occurrences of pure hornblende were noted. Lineations, where present, were in a general east-west direction.

Andesite Dikes

Several narrow dikes, three to eight feet in width were noted cutting the greenstones immediately west of Sweet Lake. These have been tentatively called andesite dikes. They are fine grained, very basic, being composed almost entirely of ferromagnesians (see Spec. 211-DS-246), black to dark green on both the weathered and fresh surfaces. These dikes have a characteristic east-west trend, thus paralleling the trend of the greenstone belt. Their occurrence is restricted to the greenstones.

Gabbro

Two main types of gabbro were noted in the field.

Type 2(a)

A medium to very coarse grained variety, fresh appearing, usually massive, although it may be slightly lineated near shear zones and locally magnetite rich. The texture is gabbroic. The feldspars tend to weather down, leaving prominent crystals of dull green pyroxene. These feldspar crystals tend to exhibit euhedralism, whereas the pyroxenes are mostly anhedral. On the fresh surface, the feldspars are a very light cream tinted green in colour. The pyroxene is a very dark

green. It is now almost entirely altered to chlorite and actinolite. Chlorite and needles of actinolite can easily be seen in the hand specimen.

The percentage of feldspar varies considerably from about 20% to 50% (see Spec. 211-DS-352 and 211-DS-345). Magnetite is a common accessory mineral. Quartz, pyrrhotite, chalcopyrite and minor pyrite may be present. A variety of quartz which is an intense blue is peculiar to this type of rock (Spec. 211-DS-346).

This type of gabbro is generally confined to the peripheral zone of the intrusive, which is in contact with the older greenstones. Isolated outcrops of this type are found to the south in some of the larger outcrop areas. This gabbro was also found near the east boundary, i.e., L-8W, 8/00S, 1/00E, and it presumably continues west to the two showings. This rock type was also found on our Cote II group.

Both the sulphide occurrences were found in this rock, implying that it is a more favourable host to sulphide deposition than its more altered counterpart.

This gabbro has a tendency to grade into a pyroxenite. The pyroxenite is now entirely converted to an amphibolite, as the pyroxenes have been pseudomorphed by actinolite. Sulphide occurrences in the area were restricted to this basic phase of the gabbro.

The contact between the gabbro and the greenstone is distinct and can easily be recognized in the field. It is best seen along tie line 23/00S. The gabbro is so coarse grained that chilling is not apparent. Along tie line 23/00S, gabbro portion of the contact zone tends to be lineated and slightly sheared.

examples of this are seen on Line 44/00W, 40/00S, 1/00E, and on Line 36W, 35/00S, 1/50E.

Quartz veins and aplite dikes are especially abundant throughout this rock type. In many cases, it was difficult to decide whether to call a particular outcrop gabbro or aplite. On one occasion, the gabbro was seen to form breccia fragments in a groundmass of aplite material.

Banding was noted in several instances. The ferromagnesians and feldspathics separated into distinct layers about four to six inches wide. The strike and dip of these layers varied considerably.

This rock type was found over much of the southeast quarter of the group.

The highly altered condition of this rock type is due to the effects of the intense acidic intrusions in the area. This type was seen to grade gradationally into the 2(a) type of gabbro.

Granite (3a)

Only three small outcrops of granite were found on the actual claim block. However, immediately north of the claim group is an excellent exposure of granite. This rock is medium grained, red to pale pink in colour, with the major minerals being quartz, feldspar and biotite. Considerable pyrite is associated with this granite, especially adjacent to and in narrow quartz veins.

Acidic and Basic Aplites, Quartz Porphyry, Feldspar Porphyry, Quartz Feldspar, Biotite Porphyry, Quartz Veins, Fine Grained Acidic and Basic Dikes

These dike rocks are especially common in the altered gabbro, less common in the normal gabbro, and rare in the older greenstones. For the most part, they are acidic, very fine grained, aphanitic, and

Type 2(b)

This rock had the original gabbroic texture of 2(a), but alteration has largely destroyed this texture. There are less ferromagnesian minerals in this rock type, aggregating less than 50% of the total mineral assemblage. Magnetite is rare, while quartz is common. Much of this quartz is replacement quartz being introduced with the aplite dikes. A thin section study indicated the following mineral assemblage:

Albite	25%
Actinolite	25%
Epidote	30%
Scapolite	10%
Quartz	5%.

It is characteristically much lighter on the weathered surface than type 2(a), being white to pale green in colour. Usually, the former outlines of the ferromagnesian mineral can be seen, though it is now largely consisting of a pale green mixture of epidote, chlorite and actinolite. There is a definite tendency for the altered ferromagnesians to form gradually into clots in a groundmass of felspar, quartz and alteration products. A pitted weathered surface (Spec. 211-DS-164, -164), caused by the weathering out of carbonates, is commonly seen in the field.

These carbonates may have been formed through the liberation of calcium by alteration and the introduction of CO_2 with the aplite intrusions.

Peculiar to this rock type are numerous discontinuous bands of massive amphibolite, locally rich in magnetite and pyrite. Good

occurred in dikes a few feet in width. Locally, larger outcrops of this fine grained rock were noted, for example, in the northeast corner of Enid Township. These rock types weather white to light pink. There is a high percentage of quartz in these dikes, ranging from about 25% to 60%.

In the field, these dike rocks were so numerous that no attempt was made to follow individual dikes. They were followed as far as 400 feet, however. At times, larger masses of this dike material were found.

Quartz veins are common in the gabbro mass. Where they intrude the 2(a) type gabbro, there often surrounds the quartz a halo of pure chlorite. Quartz veins and lenses, when occurring in shear zones, or in acid dikes in the gabbro, are usually accompanied by pyrite. Quartz veins up to 14 inches in width were noted. Although less abundant, there were many quartz veins in the greenstone and in the granite. Quartz veins were present in the shear zones at both of the showings.

It has been postulated that these dike rocks are related to the granitic intrusives surrounding the area mapped; however, it is quite possible that some of these more basic varieties may be related to the gabbro. Field evidence which supports this is the fact that these more basic type of dikes are found only in the gabbro mass. In the lab., A. K. Temple has indicated that one specimen (SW-5) of a more basic dike has a replacement type texture rather than a straight igneous texture,which implies complications in its origin.

These dike rocks are found to be closely associated with both occurrences of sulphide mineralization.

Diabase

The youngest formations mapped are the Matachewan quartz diabase dikes. Eleven of these dikes were found across the two-mile claim group.

The diabase is fresh, unaltered and has a characteristic ophitic texture. Excellent chilled contacts were observed. The dikes were a rusty brown colour on the weathered surface. Individual dikes usually varied from 60 to 100 feet in width, although some very narrow ones, 10 feet or less, were noted. There was a tendency for the dikes to appear in swarms, rather than at regular intervals. Occasionally, a single dike would branch out to form two narrower dikes. On Claim S-88518, a later diabase dike about three inches wide was found to intrude a large diabase dike about 20 feet wide.

These diabase dikes have a tendency to swerve when they hit fault or shear zones, and thus are a good indication of such structures.

Structure

Faulting

The entire area has been subjected to intense faulting. Although many of the faults consistently strike in an E-W direction, deviations are by no means uncommon. For example, both the mineral occurrences are related to NW trending shears.

These fault zones are characterized by soft chloritic schist zones with lenses of granulated quartz. Sulphides may or may not be present in these zones. Fault gouge and slickensides were noted. Drag folds in these fault zones indicate a north side west movement.

Strong, steeply dipping shear zones are found both in the gabbro and in the greenstone, although they were more prevalent in the greenstone areas.

There appears to be a relatively strong fault zone along the 23/00 tie line, as indicated by intense shearing in the greenstones. There is also the possibility that some of this deformation may be due to the intruding gabbro mass.

The ages of faulting are obscured, but it appears as if the faulting associated with the mineralization is the younger. The granite to the north is very massive with few intrusions indicating little faulting in this area after the Algoman intrusives.

Folding

In the vicinity of the north showing, there is a large S-shaped fold in the volcanic rocks. Drag folds indicate that this structure is steeply dipping, plunging about 75^{0} to the east. Distinct drag folds were found in three separate places along this large fold. Other drag folds noted on the property were plunging vertical, and indicated a north side west movement.

Pillow lavas on the claim group, and about a mile north of the group, indicate a synclinal axis passing between Sweet Lake and Fortune Lake. To correlate with the fold at the showing, however, this syncline would have to be assymmetrical and slightly overturned. This syncline is highly speculative, however, as the pillow determinations were not good.

The great abundance of aplite dikes in the gabbro, contrasted with the few in the greenstone, indicates that the gabbro mass was the more competent rock type of the two, therefore shattering and allowing space for the intrusive dikes, whereas the incompetent greenstone tended to fold rather than shatter.

Lineations & Minor Structures

Lineations, generally in an east-west direction, were prevalent in the greenstone and also occurred in the gabbro and aplite dikes to some extent.

Contortions were seen in the greenstone, especially near the 23/00S tie line. Occasionally, oriented fragments of acidic material were noted in the greenstone.

Structures which could be flow lines were noted in the andesite porphyry, i.e., Line 76/00W, 15/50S, 1/50W. They were striking a little north of west and dipping steeply to the south.

Locally, the gabbro was lineated, especially adjacent to shear zones. Banding occurred in several instances in the 2(b) type gabbro.

Metamorphism

All the rocks mapped, except the diabase, granite and some of the aplite dikes, have undergone the effects of regional metamorphism.

The Keewatin volcanics have been sheared, faulted and recrystallized to a series of schists, gneisses and amphibolites. Only remnants of the original rock remain.

The gabbro intrusive has been similarly affected, but with less shearing and faulting. Much of the gabbro has been metamorphosed to an albite-actinolite-epidote-scapolite bearing rock with some free quartz; and thus belongs to the albite-epidote-amphibolite facies of metamorphism, caused by moderate changes in temperature and pressure. This metamorphism is probably caused by the acidic intrusives in the area, coupled with regionally developed stresses.

Some of the dike rocks have metamorphic texture, and it is quite probable that these are related to the gabbro, thus being affected by the same degree of metamorphism that has affected the gabbro.

The gabbro in contact with the greenstone does not appear to have suffered the same degree of metamorphism as the gabbro further south, as some of the original pyroxene and plagioclase remain. A. K. Temple has indicated that much of the pyroxene has been pseudomorphed by actinolite, and the feldspars altered to epidote, scapolite and chlorite. The more highly altered gabbro to the south has been locally silicified and carbonated. Where intensely sheared, the gabbro may resemble the greenstones in the area. This is especially true near the north showing.

Economic Geology & Mineralization

Two occurrences of Ni-Cu sulphides occur on the Enid I claim group. The most northerly occurrence is located on the common boundary between claims S-88517 and S-88518, about 500 feet south of Guppie Lake. The second occurrence is in the east central portion of Claim S-88519.

The ore minerals are pyrrhotite and chalcopyrite, with associated magnetite and very minor pyrite. The pyrrhotite aggregates approximately 90% of the total sulphide mineralization, the remaining being chalcopyrite and minor pyrite. These sulphides occur both as massive sulphides in lenses and as disseminated sulphides in the pyroxenite. The sulphides in both cases are found in the pyroxenite rich phase of the gabbro and both replace the amphibolitized pyroxene pseudomorphs, and occupy the interstices between the pyroxene pseudomorphs. The pyrite is closely associated with shear zones and other planes of

weakness in the gabbro. The gabbro surrounding these two showings is the medium to very coarse grained variety (2a), consisting essentially of pyroxene and plagioclase with some accessory magnetite.

On claims S-88517 and -18 (refer to detail map), the sulphides occur south of and in a strong northwest trending pyritiferous shear zone in the gabbro. Two minor shear zones in the sulphides parallel this major shear. Forty feet north of the pit, this shear zone is represented by a highly contorted rock which grades into a coarse grained magnetite rich gabbro. A narrow fine grained greenish coloured aplite dike intrudes the sulphide zone and strikes parallel to the shear zone. Immediately east lies a 20-foot diabase dike which swings abruptly west 100 feet north of the showing when it hits a strong E-W trending shear zone in the greenstone complex.

On Claim S-88519, sulphides occur in the magnetite rich pyroxenite phase of the gabbro, which is locally sheared and highly altered. Two aplite dikes intrude near the sulphide occurrence. Thin section study showed one of these dikes to be a normal feldspar porphyry and the other to be a microgranodiorite with a metamorphic texture. This latter dike is probably related to the gabbro mass. To the east is an 80-foot diabase dike.

The results of this investigation disclosed the following facts in respect to the sulphide mineralization:

(a) The sulphides are found in the pyroxene rich phase of gabbro, or coarse grained gabbro type 2(a).

(b) Sulphides are incidental to concentrations of magnetite; i.e., there may be magnetite rich gabbro with no sulphides.

(c) Sulphide deposition is related to aplite dikes and northwest trending shear zones.

(d) The sulphides occur as either small lenses or pods, or may be of the disseminated type.

(e) The sulphides replace the amphibolitized pyroxene and also occupy the interstices between the pseudomorphed pyroxene grains, thus possibly replacing original plagioclase, if it was present.

Gold values were reported to have been obtained in a narrow 12-inch pyritized quartz vein located a few hundred feet north of our Fortune Township group. The area has been intensely prospected for gold.

ASSAYS

Hollinger reports the following assays in conjunction with their work on the two Cu-Ni showings:

Hole No.	Footage	% Ni	% Cu	$ Au
1	101-103	Tr	Tr	Tr
2	45-47	0.15	0.25	Tr
3	49-52	0.09	0.20	Tr

The Government reported the following assay obtained from the original Sweet Claims: Grab - 0.47.

A sample of massive pyrrhotite with very little chalcopyrite was assayed by Swastika Laboratories with the following result:

#3151	Grab	0.24	0.09	Nil

The nickel values are seen to be too low to be of economic interest, especially with such a small deposit. Higher copper values could have been obtained (i.e., see Spec. 211-SW-19), but this would give spurious results.

GEOPHYSICS

A ground magnetometer survey was conducted over the Enid I group on lines 400 feet apart. Detail work was carried out on 200-foot lines, or closer when necessary. About 12½ miles of detail work was done. Readings were taken at 100-foot stations, with fill-ins being taken when warranted.

Magnetic anomalies were caused by the following rock types:

1. Diabase
2. Gabbro
3. Mineralized gabbro
4. Keewatin greenstone.

Numerous diabase dikes caused north-northwest trending anomalies. These anomalies may prove useful in interpreting fault zones.

Magnetic rich phases of the gabbro locally gave anomalous effects. The concentrations of magnetite causing these anomalies varied from almost nil to as much as 50%. The magnetite occurs in distinct isolated grains rather than in veins or pods, thus lacking any structural control. Therefore, these magnetite rich areas were not continuous nor could they be outlined with the magnetometer without a great deal of detail work, which is not warranted. Pyroxenite bands in the 2(b) type of gabbro gave anomalous effects.

Nickeliferous sulphides in the gabbro also gave anomalous conditions. Magnetite is always closely associated with these sulphides; however, there may be concentrations of magnetite which are void of sulphides. Favourable areas for sulphide deposition are in areas adjacent to and in shear zones, with magnetic highs. East-west or west-northwest trending anomalies may possibly be caused in part by sulphides, and

should be outlined with care. The 2(a) type of gabbro gave higher magnetic values than did the 2(b) type.

Magnetic highs were encountered in the greenstone areas. These were caused by two types of rock:

(i) very basic amphibolites with appreciable magnetite, and

(ii) iron formation.

No significant sulphide zones were noted in this rock type, therefore it does not appear likely that any anomalies in this rock type could be caused by nickeliferous sulphides. No detail magnetic work is required in this rock type, in this area, in the future.

D. Sprague

DS:bh
Duplicate - Mr. Wyckoff

ATTACHMENTS

1. DGC Detailed Geology - Enid I - Base Map 42A/12S - Porcupine-Kirkland Area, Ontario - D. Sprague - September 1955.
2. DGC Detailed Geology of Copper-Nickel Showing on Claims S-88517, -18 - Enid Township, Ontario - Base Map 42A/12S - D. Sprague - September 1955.
3. DGC Detailed Geology of Copper-Nickel Showing on Claim S-88519 - Enid Township, Ontario - Base Map 42A/12S - D. Sprague - August 1955.

REFERENCES

1. Assessment Report - Lepic-Gagnon Ni-Cu Claims - Enid Township, Ont.
2. Ont. Dept. of Mines, Vol. XL, Part 3, 1931 - Groundhog Kamiskotia Area - by A. R. Graham.
3. DGC Petrographic Examination of Seven Samples from Enid I - by A. K. Temple - November 9, 1955.

D1068

DOMINION GULF COMPANY
Rock Specimen Record Sheet

Property or Twp. Enid I Base Map No. 42A/12S Prov. Ontario
To accompany ~~report~~, geology report ~~or~~ map, ~~entitled~~, ENTITLED
Detail Geology of Enid I
By D. Sprague Dated Nov. 25/55.
(stroke out reports not applicable; state reasons for any lab. work at bottom of sheet)

Received in Central File by ..... Date ..... Stored At .....
Lab. Reports by (1) ..... Dated .....
(2) ..... Dated .....

C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
	211-DS		Lava	
13550	1	62/30W	23/50S	(lineated) abundant quartz
551	2	61/80W	24/00S	Lava (lineated) gabbroic band
552	3	61/30W	23/95S	Lava (lineated) sheared, some minor carbonates
553	4	60/95W	23/80S	Lava (lineated) medium grained, sericitic, gabbroic
554	6(a)	59/90W	23/00S	Lava - medium grained, gabbroic band
555	8	57/35W	23/00S	Lava? gabbroic type band in lava
556	10	55/10W	23/10S	Gabbro 2a medium grained (excellent sample)
557	15	61/10W	25/30S	Lava (lineated), banded
558	21	59/40W	30/30S	Gabbro 2b medium grained, feldspathic
559	25	64/50W	28/30S	Gabbro 2b medium grained
560	27	64/50W	28/50S	Gabbro 2b in contact with coarser gabbro
561	31	60/00W	34/40S	Gabbro 2b highly altered
562	33	60/70W	39/20S	Med. grained amphibolitized pyroxenite / sulphides
563	38	56/30W	25/50S	Gabbro 2b highly altered
564	38	56/30W	25/40S	Gabbro 2a gneissic
565	40	56/40W	26/40S	Basic aplite
566	44	56/20W	27/10S	Gabbro 2b highly carbonated and altered
567	50	56/00W	28/70S	Basic aplite, gneissic med. grained, altered.
568	52	57/10W	30/20S	Gabbro 2b medium grained

D106B

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C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
	211-DS			
13569	-61	58/00W 32/40S	Sheared gabbro - sericite rich.	
570	63	57/20W 34/00S	Basic aplite? altered.	
571	64	59/00W 34/30S	Gabbro (2b) coarse grained, good spec.	
572	76	59/50W 41/30S	Gabbro (2b), near diabase dike, pink feldspars	
573	77	58/30W 43/00S	Granite, medium grained.	
574	88	53/40W 29/30S	Basic type aplite.	
575	93	TL 28/00S 49/00W	-	Found in gabbro, possibly sheared gabbro
576	109	L-48W, 30/00S 0/55W	Gabbro (2b) medium grained	
577	115	L-52W, 30/00S 2/25W	Aplite dike (basic type, good spec.)	
578	117	L-52W, 30/60S 0/85W	Gabbro (2b)	
579	138	L-44W, 34/00S 1/10W	Quartz porphyry dike	
580	147	L-44W, 40/60S 0/50E	Gabbro (2b) feldspathic	
581	149	L-44W, 43/00S 0/60W	Quartz feldspar porphyry dike	
582	163	L-36W, 39/40S 0/30E	Gabbro (2b)	
583	164	L-40W, 40/60S 2/00E	Gabbro (2b) highly altered, carbonated	
584	165	1/50E, 35/00S L-36W	Sulphides in amphibolitized pyroxenite band	
585	168	L-36W, 37/40S 1/90E	Basic dike (qtz. rich)	
586	183	L-20W, 38/90S 0/15W	Basic aplite (qtz. diorite)	
587	184	L-20W, 38/00S 0/80W	Gabbro (2b) slightly lineated	
588	190	L-12W, 41/00S 0/80W	Lava? inclusion in the gabbro	

D106B

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(2) ....Dated ....

C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
13589	211-DS -191	L-16W, 40/70S 2/20E	Gabbro (2b)	(already @ Toronto)
590	210	L-0/00, 20/80S 0/20E	Gabbro (2b)	(near diabase)
591	211	L-0/00, 30/15S 0/15E	Aplite	(crushed and lineated)
592	212	L-36W 2/20W, 44/00S	Gabbro (2b)	medium grained (in Toronto)
593	220	L-4/00W, 1/25S 0/15E	Fine grained aplite	(good specimen)
594	220(b)	L-4/00W, 1/85S	Sheared (3b)	(aplite)
595	222	L-0/00, 2/50S 1/40W	Diabase	(porphyritic edge)
596	223	L-0/00, 3/00 1/70W	?	Fragmental appearance.
597	226	L-0/00, 5/90S 0/90W	Aplite	(gneissic)
598	228	L-12W, 8/70S 0/40E	Gabbro 2(a)	(good example of)
599	229	L-12W, 8/50S 1/10E	Gabbro (2a)	(in Toronto)
600	230	L-0/00, 3/35S 0/35W	Aplite	(gneissic)
601	231	L-16/00W, 8/35S 0/25E	Gabbro 2(a),	adjacent to magnetite rich gabbro
602	237	L-80W, 13/20S 1/20E	Andesite	porphyry
603	242	L-76W, 21/20S 1/20W	Andesite	porphyry
604	244	L-80W, 35/30S 0/85E	Lava	
605	245	L-80W, 35/20S 2/00E	Aplite?	fine grained, grey with qtz. eyes
606	246	L-76W, 34/60S 1/20E	Lava -	lineated hbld. grains, some quartz
607	248	L-76W, 19/70S 1/50E	Andesite	dike rock
608	254	L-76W, 35/80S 1/20E	Recrystallized	andesite (note hbld. needles)

D106B

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Lab. Reports by (1) Dated
(2) Dated

C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
13609	221-DS 256	L-76W, 36/00S 3/50E	Andesite porphyry (finer grained)	
610	257	L-76W, 37/50S 3/15E	Andesite dike rock	
611	258	L-76W, 37/00S 1/70E	Aplite (3b) gneissic	
612	259	L-72W, 37/80S 0/15E	Lava (actinolite needles)	
613	262	L-76W, 47/40S 1/20E	Lava fine grained, recrystallized	
614	264	L-72W, 48/70S 0/75W	Andesite porphyry (lineated)	
615	269	L-72/00W @ TL 52/00S	Lava (recrystallized to an amphibolite)	
616	271	L-68/00W, 50/10S 0/10E	Lava? (recrystallized or fine grained gabbro)	
617	273	L-80W, 47/80S 1/80E	Lava (banded material)	
618	278	L-84W, 11/50S 0/70E	Gneiss (long needles of hbld.)	
619	279	L-84W, 13/30S 2/20E	Gneiss (more massive appearing)	
620	280	L-84W, 13/00S 0/60E	Gneiss (hbld. fld.) 2 spec.	
621	281	L-84W, 22/70S 2/40E	Gneiss (hbld., fld.) 2 spec.	
622	290	L-84W, 12/50S 1/50W	Gneiss (lenticular) from acidic rock type	
623	291	L-84W, 12/70S 0/50W	Amphibolite (massive fine grained)	
624	295	L-96W, 13/80S 1/00E	Gneiss (old acidic dike in greenstone)	
625	(a)296	L-96W, 14/70S 0/75E	Gneiss	
626	(b)296	"	Andesite porphyry, grades to gneiss as spec.(a).	
627	298	L-96W, 8/80S 2/30W	Gneiss (almost pure amphibole)	
628	303	L-100W, 15/70S 0/10E	Gneiss	

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(2) .....Dated .....

C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
18629	211-DS 306	L-100W, 17/70S 0/30E	Gneiss	
630	308	L-105/60W, 22/70S 0/15E	Gneiss (hbld. feldspar)	
631	312	L-105/60W, 19/60S, 0/20E	Gneiss showing band of amphibole (excellent spec.)	
632	319	L-100W, 22/00S	Gneiss (hbld. feld.)	
633	322	L-104W, 28/30S 1/50E	Feldspar porphyry (altered)	
634	331	L-88W, 35/80S	Andesite porphry	
635	345	L-60W, 9/80N 0/25E	Lava? or altered gabbro	
636	346	L-60W, 14 80S 2/00E	Gabbro 2(a) with blue quartz (2 spec.)	
637	352	TL 23S @ 55/70W	Gabbro 2(a) medium grained	
638	344	L-64W, 12/50S 0/60E	Aplite? (altered, basic)	
639	351	TL-23S @ 54/20W	Lava (mineralized and sheared)	
640	353	L-92W, 33/00S 1/00E	Diabase medium grained	
641	381	L-92W, 32/70S 0/80E	Sheared andesite porphyry	
642	384	L-92W, 32/00S 1/10W	Gneiss (hbld. feldspar)	
643	385	L-96W, 32/00S 2/25E	Andesite porphyry (2 excellent specimens)	
644	388	L-96W, 39/25S	Pillow lava (massive fine grained)	
645	395	L-60W, 26/00S	Gabbro (2a) excellent typical weathered surface	
646	415	L-105/60W 47/60S	Amphibolite (massive fine grained) some sulphides	
647	460	L-44W, 40/30S 1/50E	Gabbro 2(b) altered and mineralized	
648	481	L-44W, 40/30S 1/50E	Gabbro 2(a)	

D106B SPECIMENS TAKEN AT THE SHOWINGS IN ENID I.

DOMINION GULF COMPANY

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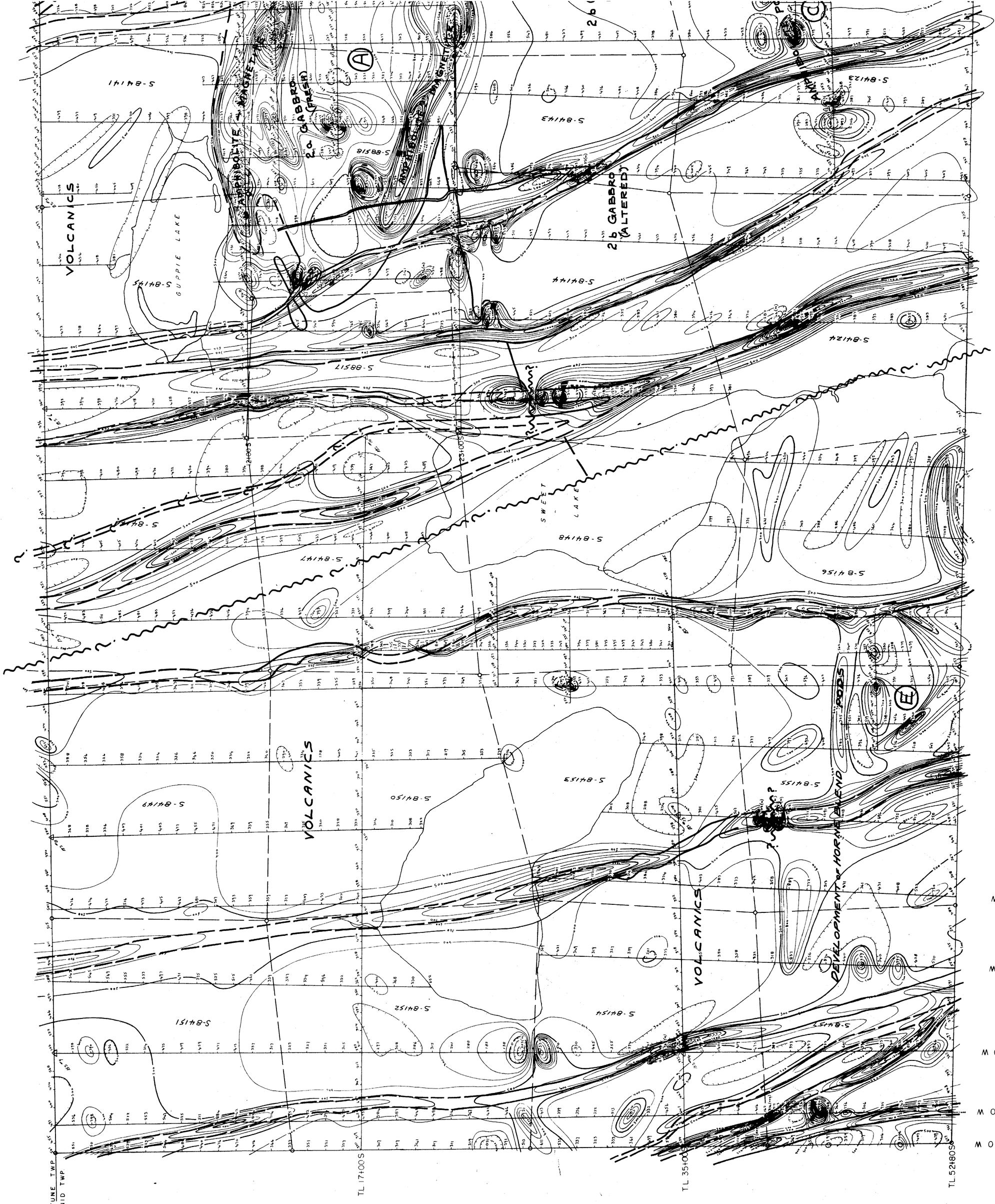
C.F. No.	Field No.	Location	Field Name	Misc. Notes, Assay No., Results, Purpose, c/s, etc.
13649	SW-1	See detail map	Acidic aplite (feldspar porphyry) in Toronto	
650	2	"	Gabbro 2(a)	
651	3	"	Mineralized amphibolitized pyroxenite (in Toronto)	
652	4	"	Gabbro at contact with diabase	
653	5	"	Basic aplite (microgranediorite) (inToronto)	
654	6	"	Dark green f.g. dike rock	
655	7	"	Mineralized amphibolitized pyroxenite (in Toronto)	
656	8	"	Mineralized amphibolitized pyroxenite	
657	9	In pit	Massive pyrrhotite in amphibolite	
658	211 SW -10	See detail map	Gabbro 2(a)	
659	11	"	Gabbro sheared	
660	12	"	Amphibolitized pyroxenite	
661	13	"	Aplite (basic)	
662	14	"	Magnetite rich amphibolitized pyroxenite	
663	15	"	Sulphides in amphibolitized pyroxenite	
664	16	"	Massive magnetite	
665	17	"	Magnetite rich gabbro near shear	
666	18	"	Magnetite rich gabbro near shear	
667	19	In pit	Massive pyrrhotite, chalcopyrite in pyroxenite	


VOLCANICS
AMPHIBOLITE ± MAGNETITE
2a GABBRO (FRESH)
AMPHIBOLITE ± MAGNETITE
2b GABBRO (ALTERED)
GUPPIE LAKE
SWEET LAKE
VOLCANICS
VOLCANICS
DEVELOPMENT OF HOEMAN BLEND
PODS
FORTUNE TWP
ENID TWP
TL 17+00S
TL 35+00S
TL 52+80S
L 44+00W
L 48+00W
L 52+00W
L 56+00W
L 60+00W
L 64+00W
L 68+00W
L 72+00W
L 76+00W
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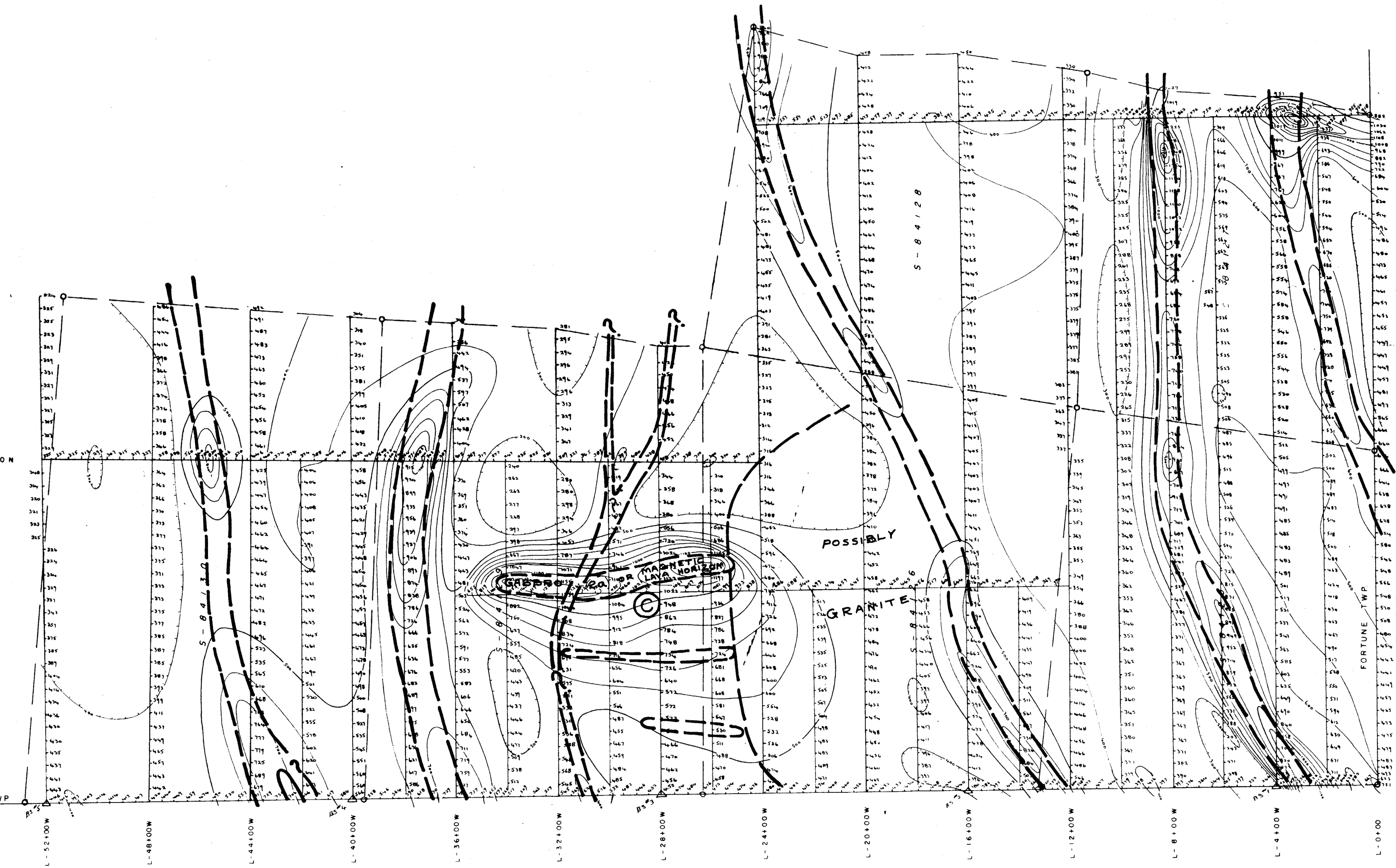
L 92+00W
L 96+00W
L 100+00 W
L 104+00 W
L 105+60 W



LEGEND

CONTACTS

KNOWN FROM GEOLOGY

INTERPRETED FROM GEOLOGY & GEOPHYSICS

POSSIBLE —?—?—?—?

TL-26+40N

METAMORPHISM

STRONGLY ALTERED

WEAKLY ALTERED

ROCK TYPES AS INDICATED EXCEPT MATACHEWAN DIABASE

FAULT

CONTOUR INTERVAL — 100 GAMMAS

DOMINION GULF COMPANY

GROUND MAGNETOMETER SURVEY

ENID I

(North Section)

FORTUNE TWP PROV. OF ONT.

Scale. 1 inch = 200 ft. Date: July 12, 1955

TO ACCOMPANY INTERPRETATION REPORT BY G. WEST DATED 20 MAR. 1956

LEGEND
4 diabase
3a granite
3b aplites; acidic & basic aplites, quartz porphyry, feldspar porphyry, quartz feldspar biotite porphyry, quartz veins, fine grained acidic & basic dikes.
2a gabbro; medium to very coarse grained, fresh appearing & relatively unaltered, grades locally into an amphibolitized pyroxenite, may locally be rich in magnetite, some quartz may be present, greater than 50% ferromagnesium minerals
2b gabbro, altered & more feldspathic usually less than 50% ferromagnesiums, locally silicified, carbonated, chloritized & sheared, intruded by many aplite dikes, ferromagnesium minerals tend to become obliterated
andesite dikes; fine grained, basic
1 greenstone complex; massive amphibolites to schists and gneisses, fine grained dark green to black, may be lineated; near gabbro may be intruded? by narrow gabbroic dikes
P.L. pillow lava
A.P. andesite porphyry
gn. gneiss
sch. schist
SYMBOLS
strike & dip of lineation
strike & dip of shearing, schistocity
fault, with indicated movement & dip
drag fold with indicated movement & plunge
gneissocity or schistose direction
outcrop boundary
exposed outcrop
formation boundary, known
formation boundary, assumed
cg mg fg coarse, medium & fine grained
topographic boundary
trail
claim line
claim posts
spruce, cedar, tamarac, alder swamp
open swamp, alder or grass
beaver dam
areas covered by 1 inch : 20 ft. geological maps
FORTUNE TWP
CÔTE TWP
ENID TWP
BASE LINE
TIE LINE
TIE LINE 17+00S
TIE LINE 35+00S
GUPPIE LAKE
SWEET LAKE
LAKE LOUISE
S-84125
S-84126
S-84127
S-84128
S-84129
S-84130
S-84131
S-84132
S-84133
S-84134
S-84135
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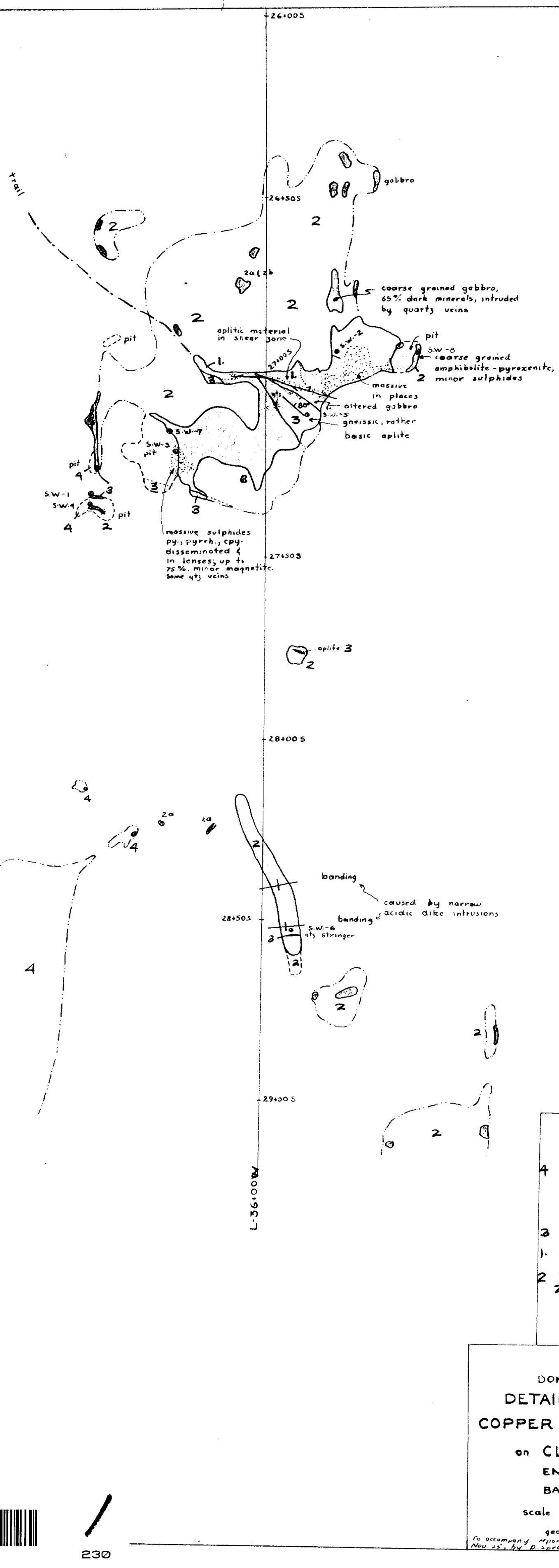
S-88519



LEGEND

4		diabase (Matachewan)
		mineralization, massive and disseminated sulphides; py, pyrr, cpy
3		aplites & qtz veins
1.		gabbro, highly altered
2	2a 2b	gabbro; grading from highly feldspathic to an amphibolite - pyroxenite; coarse grained; massive to slightly gneissic. Locally rich in magnetite

DOMINION GULF CO.

DETAILED GEOLOGY of COPPER - NICKEL SHOWING on CLAIM S-88519

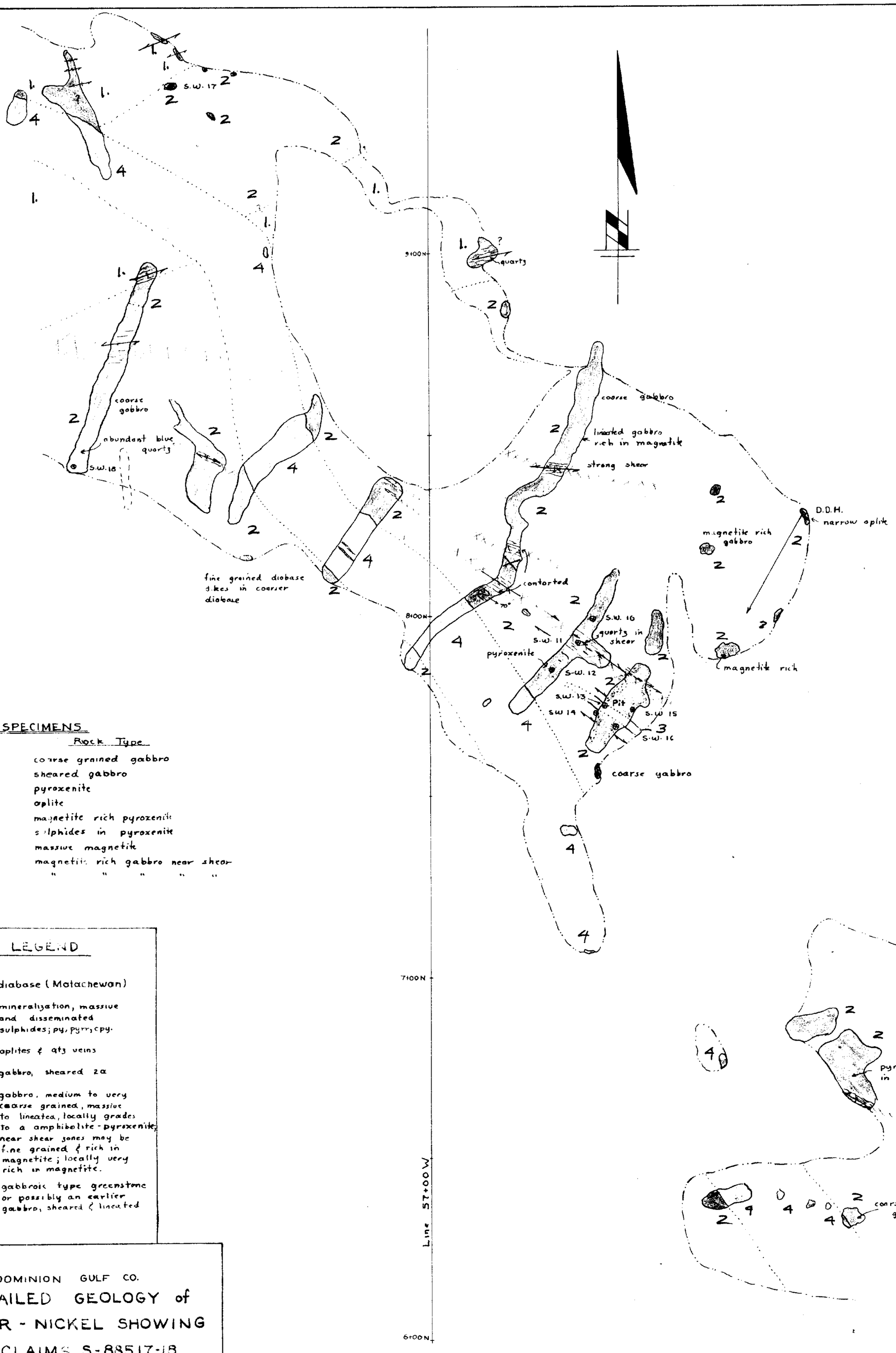
ENID TWP. ONT.

BASE MAP 42A/12S

scale 1 in = 20 ft August 1955

geology by D. Sprague

To accompany Report dated Nov 25, by D. Sprague



SPECIMENS

NO.	Rock Type
211-SW-10	coarse grained gabbro
211-SW-11	sheared gabbro
211-SW-12	pyroxenite
211-SW-13	aplite
211-SW-14	magnetite rich pyroxenite
211-SW-15	sulphides in pyroxenite
211-SW-16	massive magnetite
211-SW-17	magnetite rich gabbro near shear
211-SW-18	" " " " "

LEGEND

- 4 diabase (Matachewan)
- mineralization, massive and disseminated sulphides; py, pyrr, cpy.
- 3 aplites & qtz veins
- gabbro, sheared 2a
- 2a gabbro, medium to very coarse grained, massive to lineated, locally grades to a amphibolite - pyroxenite; near shear zones may be fine grained & rich in magnetite; locally very rich in magnetite.
- 1. gabbroic type greenstone or possibly an earlier gabbro, sheared & lineated

DOMINION GULF CO.

DETAILED GEOLOGY of COPPER - NICKEL SHOWING

on CLAIMS S-88517-18

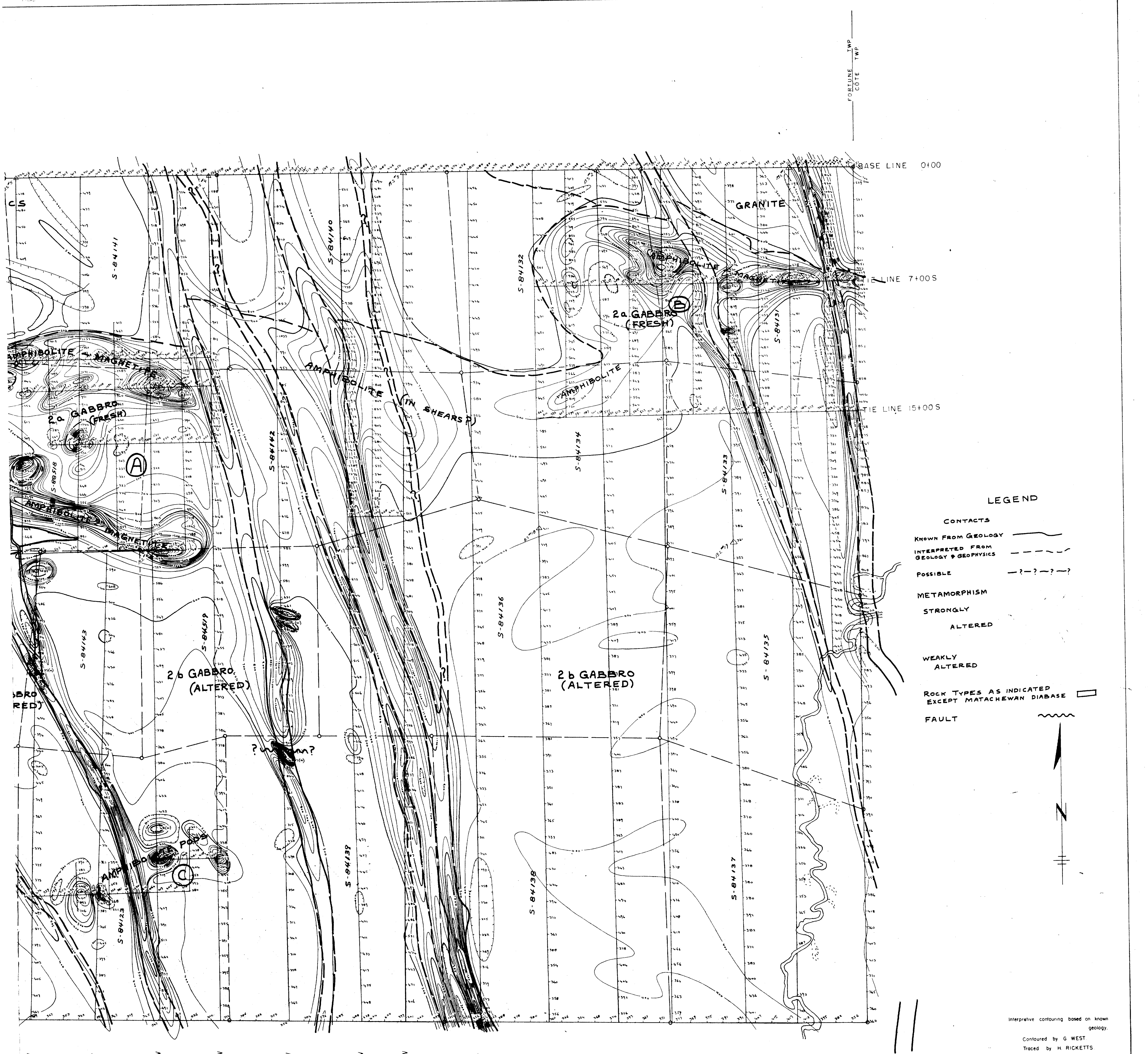
ENID TWP. ONT.

BASE MAP 42A/12S

scale 1 in. = 20 ft. Sept. 1955

To accompany report by D. Sprague dated Nov 25 1955

D. Sprague



Interpretive contouring based on known geology.

Contoured by G WEST

Traced by H. RICKETTS

Contour Interval 100 gammas

DOMINION GULF COMPANY

GROUND MAGNETOMETER SURVEY

ENID I

(South Section)

ENID TWP. PROV. OF ONTARIO

Scale: 1"=200' Date: Jan. 11, 1956.

TO ACCOMPANY INTERPRETATION REPORT BY G.WEST DATED 20 MAR 1956

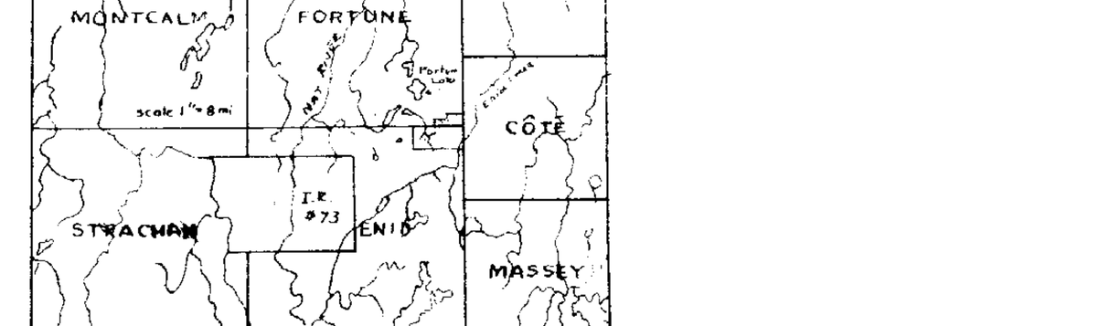
LEGEND

4	diabase
3a / 3b	3a granite 3b aplites; acidic & basic aplites, quartz porphyry, feldspar porphyry, quartz feldspar biotite porphyry, quartz veins, fine grained acidic & basic dikes.
2a / 2b	2a gabbro; medium to very coarse grained, fresh appearing & relatively unaltered, grades locally into an amphibolitized pyroxenite, may locally be rich in magnetite, some quartz may be present, greater than 50% ferromagnesium minerals 2b gabbro, altered & more feldspathic usually less than 50% ferromagnesiums, locally silicified, carbonated, chloritized & sheared, intruded by many aplite dikes, ferromagnesium minerals tend to become obliterated
	andesite dikes; fine grained, basic
1	greenstone complex; massive amphibolites to schists and gneisses, fine grained dark green to black, may be lineated; near gabbro may be intruded? by narrow gabbroic dikes P.L. pillow lava A.P. andesite porphyry gn. gneiss sch. schist

SYMBOLS

- 70° strike & dip of lineation
- 70° strike & dip of shearing, schistocity
- 70° fault, with indicated movement & dip
- 70° drag fold with indicated movement & plunge
- gneissocity or schistose direction
- outcrop boundary
- exposed outcrop
- formation boundary, known
- formation boundary, assumed
- c.g. m.g. f.g. coarse, medium & fine grained
- topographic boundary
- trail
- claim line
- claim posts
- spruce, cedar, tamarac, alder swamp
- open swamp, alder or grass
- beaver dam
- areas covered by 1 inch = 20 ft. geological maps

INDEX MAP



DOMINION GULF CO

DETAILED GEOLOGY ENID I

BASE MAP 42A/12S

PORCUPINE - KIRKLAND AREA

scale 1" = 200' date September 1955

geology by D. Sprague

To accompany report by D. Sprague date Nov. 25 1955

drawn Nov. by D. Sprague