41P14SW0055 63.930 KEMP

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HEAD OI

PAYMASTER CONSOLID/

(NO PERSONAL LIABILITY)

SOUTH PORCUPINE, ONTARIO

ADDRESS ALL CORRESPONDENCE TO COMPANY, NOT TO INDIVIDUALS

December 31, 1957

Mr C. [illegible],
President and Managing Director,
Paymaster Consolidated Mines, Limited.

Dear Sir:-

Following please find report on Paymaster's property in Burrows and Lorne townships. The property comprises 53 claims Nos. 25230-25247 inc. 25404 to 25412 inclusive, 25417 to 25439 inclusive, and 25517 to 25519 inc.

The claims begin at the south end of the common boundary and extend north along the township boundary for one and three quarters miles. The property extends east to the west shore of Lorne Lake and the narrows. The property includes Little Lorne Lake and most of the irregular lake lying west of Little Lorne. The property extends almost a mile north of Little Lorne Lake with the northeast corner about the centre of the west shore of Little Lorne Lake just south of "crooked bay". The property continues one and a half miles west from this point.

Accessibility:

Little Lorne Lake is suitable for the landing of aircraft of moderate size. This is six miles west of Upper Grassy Lake at the end of the Grassy River Road ten miles north of the Elk Lake-Westree road at mileage 52 west of Elk Lake.

In May 1957 a road was bulldozed to the property around the north end of Lorne Lake from the north end of the Grassy River road at Lorne creek a distance of 12 miles. The Dept. of Lands and Forests have built a camp of six buildings on Upper Lorne Lake for reforestation and have improved the road. After the fall rains parts of the road were practically impassable. It is expected that the road will be improved and extended during the coming year.

Lorne creek is passable by canoe at high water but very crooked.

Topography:

The whole area was burned in 1943 and again in 1953. There are a few green trees along the lake shores and there are two areas of green swamp of a few acres each. The property is mostly rolling "sand plain" with a few of the hills almost a hundred feet above the lake level. The hills generally strike east-west. The soil is a sandy loam rather than sand. There are a few burned swampy areas but no muskeg.

The outcrops are chiefly on the lakeshore, on the north edge of ridges, and in some general outcrop areas.

Summary of Work:

The property was staked in January 1957. At that time I took some dip needle readings confirming the position of the aeromagnetic anomaly. In March 1957 a magnetometer survey was done on the whole property spacing the lines 1000 feet apart. Detail work was done on the anomaly areas

spacing the lines 300 feet apart. The magnetic anomalies were checked with the electromagnetometer. A conductor was traced for 2000 feet along Little [illegible] Lake. Two diamond drill holes were drilled from location 4000 [illegible] southeast and 920' southwest on the south shore of the lake and one hole was drilled from location 2700' [illegible] and 225' N.[illegible] on the north shore of Little [illegible] Lake. These holes cut into chlorite schist at the location of the conductor. The schist in [illegible] No. 3 contained [illegible] of chalcopyrite but the assays were only .02 and .03% copper.

During [illegible] 1957 geological mapping was done covering the outcrops in the central part of the property [illegible] time was available. Detail work was done on the [illegible] of Little [illegible] Lake showing a variety of [illegible].

Geology

The rocks on the property are all early pre-Cambrian but the Cobalt [illegible] far west in the center of [illegible] township.

Legend

Diabase	[illegible] type up to 100 feet wide.
Acid intrusive	[illegible]
[illegible]	[illegible] in [illegible] No. [illegible] from [illegible]' to 650'
[illegible] porphyry	[illegible] porphyry of diorite composition.
Younger diorite	[illegible] in D.H. No. 3 from 42' to 94'.
Diorite-gabbro	[illegible] of [illegible], much altered, chicken track rock.
Gabbro	[illegible] of [illegible] and [illegible].
[illegible]	Highly altered to [illegible] chlorite
[illegible]	[illegible] altered olivine with fine magnetite.
Intermediate [illegible]	[illegible].
Agglomerate	Fragments 3" to 4" in diameter, probably dacite breccia.
[illegible] lava	Very fine acid lava with spherulites up to 4" in dia.

Keewatin Volcanics

[illegible] of Little [illegible] Lake there is a very good exposed section across the volcanics. In the south there is spherulitic rhyolite or acid lava. This rock is [illegible] spherulitic with spherulites four inches in diameter with traces of pillow structure. The contact with the overlying agglomerate is covered.

[illegible] northeast [illegible] on either side of the diabase there is an horizon of agglomerate or dacite breccia as described by [illegible] in [illegible] Report Ont. Dept. of Mines, Vol. 62 part 6, on [illegible] township. [illegible] were seen here in the "dacite breccia" but from observations north of [illegible] Creek in [illegible] and [illegible] townships the agglomerate is of volcanic origin or closely associated with lava. This is a lighter coloured agglomerate with the fragments lighter than the matrix.

Northwest of the agglomerate there is intermediate or basic lava with tops northwest. This type of intermediate pillow lava is found in scattered outcrops as far north as the north edge of the property. This pillowed andesite has little flow structure with pillows up to 4' long. On claim 25252 and 25257 the lava has been intruded by diorite. The boundaries between the lava and diorite are very irregular and in places the rock has been changed to diorite while retaining the lava structure.

Basic Intrusive

The intermediate and basic intrusives occur under Little Marko Lake and extend to the north and northwest. They have been differentiated from diorite to dunite before serpentinization. The dunite has two phases black and green outcropping on claims 25227 and 25240. The black dunite is probably finer grained occurring near the contact with the diorite-gabbro. The green dunite is crystalline with grains of olivine 1/16" in diameter with fine magnetite between the grains.

The diorite-gabbro is a rather variable rock. The [illegible] outcrops on claim 25240 associated with the dunite are coarse grained and may be gabbro. Farther from the dunite near post 1 of claim 25227 where the [illegible] is [illegible] the rock is a [illegible] diorite. On the east shore of Little [illegible] Lake there is a cliff of diorite-gabbro with one [illegible] outcrop of gabbro. The diorite-gabbro cut in the diamond drilling was similar to the cliff except that the core showed more alteration. Some of the core in the bottom of the holes was so altered and dark that it was classed as peridotite altered to chlorite, talc, and serpentine.

Younger Gabbro-Diorite

In D.H. No. 3 a fresh diorite was cut from 48' to 94 feet. This is considered younger than the diorite-peridotite-dunite as it was unsheared and very slightly altered. Some of the [illegible] west of Little Marko Lake are probably of this younger age. There is a gabbro intrusive in the centre of [illegible] township that is also considered to be younger.

Biotite [illegible]

[illegible] with coarse biotite were found around the property on surface and [illegible] cut in the diamond drill core. The biotite flakes were in [illegible] 1" in diameter. No relationships were observed except that the [illegible] out [illegible] west of Little Marko Lake and in the northern part of the property. The [illegible] are about a diorite composition.

Syenite

[illegible] a light red-ish syenite. This type of rock was cut in D.H. No. 2 from 450' to 640 feet. The core showed small [illegible] cavities and an accessory black shiny mineral.

Acid Dykes

The [illegible] west of Little Marko Lake are so numerous and varied that it is difficult to separate or classify them. The lighter acid type [illegible] and are of syenite and quartz porphyry composition. They are quite [illegible].

Chicken Tracks Rock or Criss-Cross Structure.

The chicken tracks rock has now become a distinct type of alteration. It is most commonly found near the contact of a basic intrusive or peridotite. On claim 25238 [illegible] township there is an outcrop twenty-five feet long showing very distinct chicken tracks structure on the whole outcrop. Here the structure is very coarse with sheaves four inches long. I have also called this coarser type of alteration "criss-cross" structure.

In the core from D.H. Nos. 1 and 2 the chicken tracks structure was found in the grey and green carbonate and also in the outcrop near

the collars of the holes on the south side of Little Lorne Lake. The diorite in both holes showed the chicken track structure.

In Kelvin township the chicken track structure was seen in the carbonate in the drill core. An unusual occurrence was seen on the west shore of a small lake where the fragments in the agglomerate or conglomerate showed this structure. These occurrences in Kelvin township are distinct in that there is no known basic intrusive nearby.

In [illegible] township the chicken track structure is common in each of the serpentine mountain peridotite mass. The structure is so widespread that there is no doubt of it occurring in the peridotite. The chicken track rock was seen in much of the drill core as well as on surface in [illegible] township.

Structure

The outcrops are so scattered that very little detail structure shows. There is a change in dip indicating an anticline near the south end of the narrows on Lorne Lake. The lava strikes northeast. The pillows in the lava east of Little Lorne Lake face northwest indicating that the axis of the anticline crosses the southeast end of this lake. The lava series is truncated to the east or covered by the Cobalt sediments. The younger sediments outcrop at the northeast end of Lorne Lake and extend southeast across [illegible] township.

The basic intrusive follows Little Lorne Lake and extends to the north and northwest. North of the lake the wider diorite zone north of the [illegible] indicates the top to the north or a north dipping intrusive. There are not enough outcrops nearby to tell if the attitude of the lava has been disturbed by the basic intrusive.

The small dykes east of Little Lorne Lake have various strikes. The majority of the dykes strike northeast but others strike north-south and [illegible]. The lava contact strikes N.E..

The sheared quartz diabase follows the south side of Little Lorne Lake. West of the lake its abrupt ending indicates faulting. Further to the west near the next lake there are green spots in the diabase two inches in diameter.

Grey and green (fuchsite) carbonate outcrop on the south shore of Little Lorne Lake. One surface sample assayed .08 oz in gold and one drill core sample assayed .11 oz but there seemed to be no concentration of values. The carbonate seemed to strike to the west but there are no other carbonate outcrops to project its extension. There is carbonate [illegible] to the south but this outcrop area has not been mapped.

Summary

The [illegible] property shows a wide variety of intrusive rocks. There are low gold values associated with the carbonate. Chalcopyrite was seen in the dykes and also in the peridotite in D.H. No. 3. It would be interesting to look over and map the remainder of the property but the economic mineral prospects are unfavorable. We are awaiting the report of the aeroelectromagnetic survey by Spartan Air Services Limited.

Signed,

C. S. Longley, Engineer-Geologist

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SHARPE GEOPHYSICAL SURVEYS LIMITED
SUITE 901 - 330 BAY STREET
TORONTO 1, ONTARIO

FIELD OFFICE:
BATHURST, N.B.

TELEPHONE:
EMPIRE 6-3261

REPORT ON A MAGNETOMETER SURVEY AND AN ELECTROMAGNETIC CHECK SURVEY ON THE PROPERTY OF PAYMASTER CONSOLIDATED MINES LIMITED, [illegible] AND [illegible] TOWNSHIPS, ONTARIO.

by:

SHARPE GEOPHYSICAL SURVEYS LIMITED

INTRODUCTION.

The following report is based on the results of a magnetometer survey and an electromagnetic check survey, carried out by Sharpe Geophysical Surveys Limited, on the property of Paymaster Consolidated Mines Limited, in [illegible] and [illegible] townships, Ontario. Field work was carried out between February 27, 1957 and March [illegible], 1957.

The base line runs in a [illegible] direction, oriented N40°W on this property and the lines were cut at right angles to the base line, oriented N50°E. For reconnaissance magnetometer survey lines were cut at 1000-foot apart and for detailed magnetic work, more lines were cut at 200-foot and 400-foot intervals in between the 1000-foot lines. Measurements were taken at 100-foot station intervals along these lines.

The field procedure adopted in the magnetometer survey is to measure the variation in vertical component of magnetic intensity. The magnetic deposits such as magnetite, pyrrhotite, are strongly magnetic and will show a higher variation in vertical magnetic intensity than the surrounding rocks. Basic rocks, in view of this higher percentage magnetite content, also show greater variation in magnetic intensity than the acidic and sedimentary rocks which

generally carry very little of magnetite. At each station the magnetometer was levelled and the needle was oriented in the magnetic meridian direction and the scale reading was noted. Later on, from the knowledge of scale constant of the instrument, the scale readings were converted in the intensity units of "gammas" and plotted. Appropriate corrections were applied to these readings for diurnal variation of magnetic field.

LOCATION AND ACCESSIBILITY

The property consists of a group of 50 claims and is situated in Burrows and Loop Townships, nearly 20 miles northeast of Cobalt. In winter, when the lakes are frozen, the property is accessible by aeroplane, and in summer, by canoe.

The following are the claims belonging to this property:

Claim Nos:	29230 to 29247	Inclusive	- 18 Claims
	29264 to 29272	"	- 9 "
	29297 to 29314	"	- 18 "
	29355 to 29359	"	- 5 "
		Total	- 50 Claims

GENERAL GEOLOGY

The general geology of the area has been reported by Gledhill, and the results of the geological mapping can be seen on Map No: 550, entitled, "Burwash River Area, District of Sudbury, Ontario", Department of Mines, Province of Ontario. According to Gledhill, most of the area is covered with the acidic type of rocks which are mostly basic. Apart from the basic rocks, trachytes and rhyolite flows and tuffs also cover the area. Some of the intrusive contacts are found in the area which consist of diabase and carbonate rocks.

The strikes and dips of the rocks vary much in this area, though in the present survey the strike of the formation was taken northwest-southeast

which was considered to be most favourable for the survey. There are many hills and outcrops surrounding the lake.

The accompanying plan maps, on a scale of one inch equals 400 feet, show the magnetic and electromagnetic check results and the contours based thereon.

Plate I shows the results of the magnetic survey carried out over this property. The magnetic base value may be taken as about 2000 gammas. The results have indicated the presence of a long, and some discontinuous zones of high magnetic intensity, striking approximately parallel to the base line, and these mostly lie on the northern part of the base line. The magnetic anomaly observed in these discontinued zones usually varies from 1500 gammas to 1800 gammas, although at places, anomalies of more than 4000 gammas to 5000 gammas have been observed. Various magnetic zones are named alphabetically. It was thought that this magnetic anomaly of more than 4000 to 5000 gammas, as is shown in zones 'A', 'B' and 'C', might be due to rock magnetite content in the rocks, or due to very massive sulphides. The magnetic anomaly of about 1500 gammas or so, in zones 'E', 'F' and 'H', was also considered due to some weak sulphides or small magnetite content in the rocks. It is rather difficult to say whether the observed discontinued anomalous zones are being caused by sulphide mineralization or by magnetite, at the contact zones or in the volcanics themselves. Accordingly, electromagnetic check survey was carried out over the anomalous zones to assure whether they are due to zone from contact or due to some good conductor.

Plate II shows the plan map of the electromagnetic check survey. No electromagnetic crossovers were observed on zones 'A', 'B' and 'C', from which it is concluded that the magnetic highs are mostly due to magnetite

content.

Electromagnetic coupling has revealed some conductors which are named in numbered order and are shown on the plan map. The important ones are discussed below.

Conductor #1

This conductor is nearly 2000 feet in length, extending from L-2W to L-4W or probably up to L-5S, and lies southeast of the base line. The conductor, which seems to follow the southeast boundary of the Little Horne lake, shows moderate to strong intensity. The conductor is not related with the magnetic anomaly except on L-4S, where the anomaly of 1500 to 1600 gammas is observed. From the intensity of the conductor it seems to be of economic interest. Though the reason for the conductor is unknown, it is speculated that some contact zone might be running underneath the lake which may be associated with the conductor.

Conductor #2

This conductor is situated on L-2W at nearly 1400 ft. of the base line. The conductor seems to be of moderate intensity showing a crossover of 13. It is also related with a magnetic high with an anomaly of 1500 gammas. This conductor lies only on one line and does not show on continuity on either side. The conductor might be due to some sulphides which are not considered of economic importance.

Conductors #3 and #4

Conductor #3 lies on L-10S nearly 600 feet northeast of the base line, and conductor #4 on L-9S at about 800 feet northeast of the base line. Conductor #3 seems to be very shallow and wide with a moderate intensity of 8, and conductor #4 shows a very weak intensity of 3. Both the conductors are related with the magnetic highs of nearly 1500 to 1600 gammas.

from the intensity of the conductors, they do not seem to be of economic importance.

[illegible]

From the foregoing discussion it is clear that the good magnetic anomalies are not associated with the basic metals or any other conductor which could be located by electromagnetic survey.

Electromagnetic survey has revealed only one good conductor of economic importance, though some other weak conductors are also revealed which are associated with magnetic highs but these do not seem to be of economic value.

Conductor #1 shows very strong intensity on 1-5W, 1-4OS, 1-7W and 1-4W, and in between it shows quite a moderate intensity. The nature of the conductor is not known but it does seem to be of economic interest and needs further subsurface investigation. If possible, the conductor may be tested with one drill hole on 1-3W, which shows very strong intensity, this will not only reveal the nature of the conductor but will also throw some light on the economic value of the conductor.

Respectfully submitted,

[illegible]

R. C. Agarwal, B.Sc. M.A.,
Geophysicist.

Toronto, April 25th, 1957.

1-21W

HEAD OF

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900

PAYMASTER CONSOLIDA

(NO PERSONAL LIABILITY)

SOUTH PORCUPINE, ONTARIO

ADDRESS ALL CORRESPONDENCE TO COMPANY, NOT TO INDIVIDUALS

Barlows' Kemp Twps
Dip Needle Readings

Assessment Work
Applied for Jan. 1958
C. S. Longley.

Cabot Twp

Kelvin Twp

Manns Lake

PAYMASTER CONSOLIDATED MINES LIMITED

BURROWS & KEMP TWPS. ONTARIO

MAGNETOMETER SURVEY

SHARPE GEOPHYSICAL SURVEYS LIMITED

TORONTO CANADA

Scale 1" = 400 ft

LEGEND

OVER 6000 | 5000 - 6000 | 4000 - 5000 | 3000-4000

READINGS IN GAMMAS

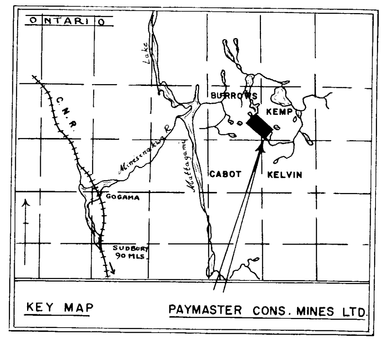
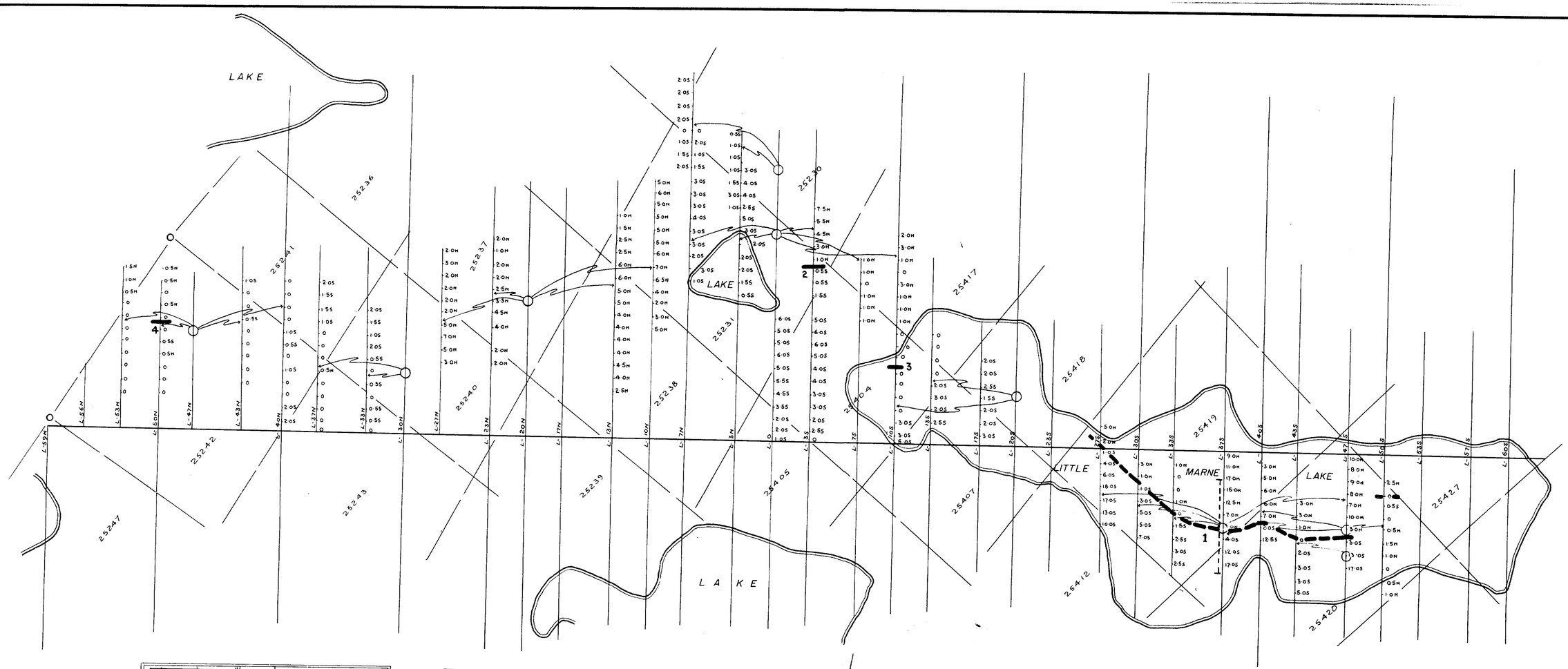


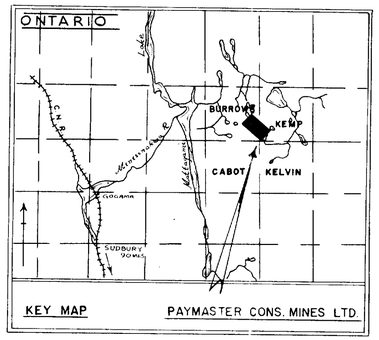
PLATE 1

APRIL 1957

T-219

200





PAYMASTER CONSOLIDATED MINES LIMITED

BURROWS & KEMP TWPS. ONTARIO

ELECTROMAGNETIC CHECK SURVEY

BY SHARPE GEOPHYSICAL SURVEYS LIMITED

TORONTO CANADA

Scale 1" = 400ft

LEGEND

ELECTROMAGNETIC CONDUCTOR

2.0S 3.0S 2.0S ELECTROMAGNETIC DIP - DEGREES.

TRANSMITTER SET-UP.

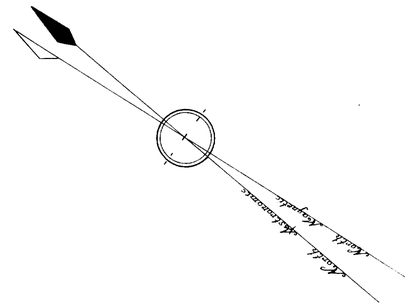
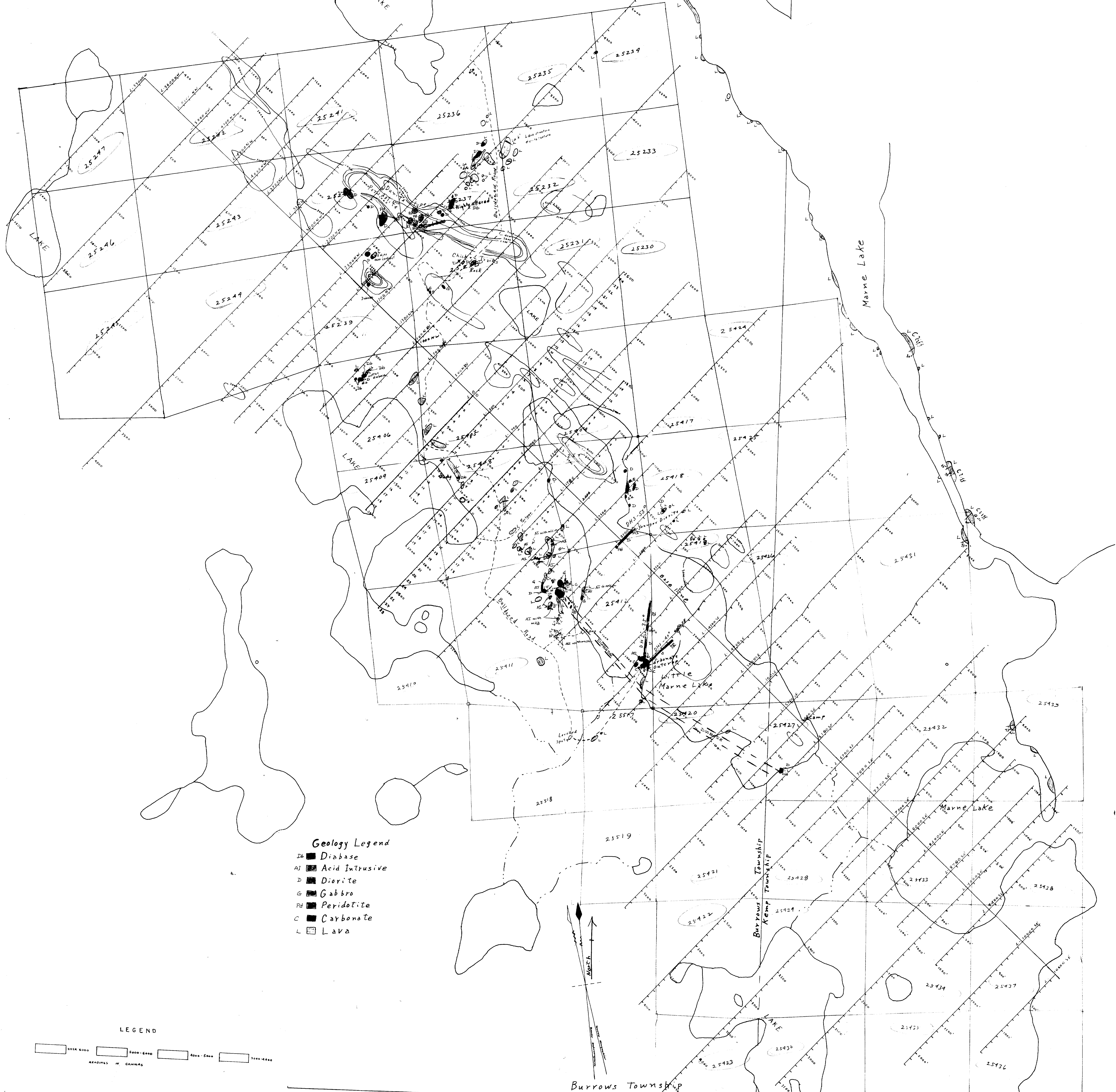


PLATE 2

210

CAH T-219

APRIL 1957



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Little Marna-Lake

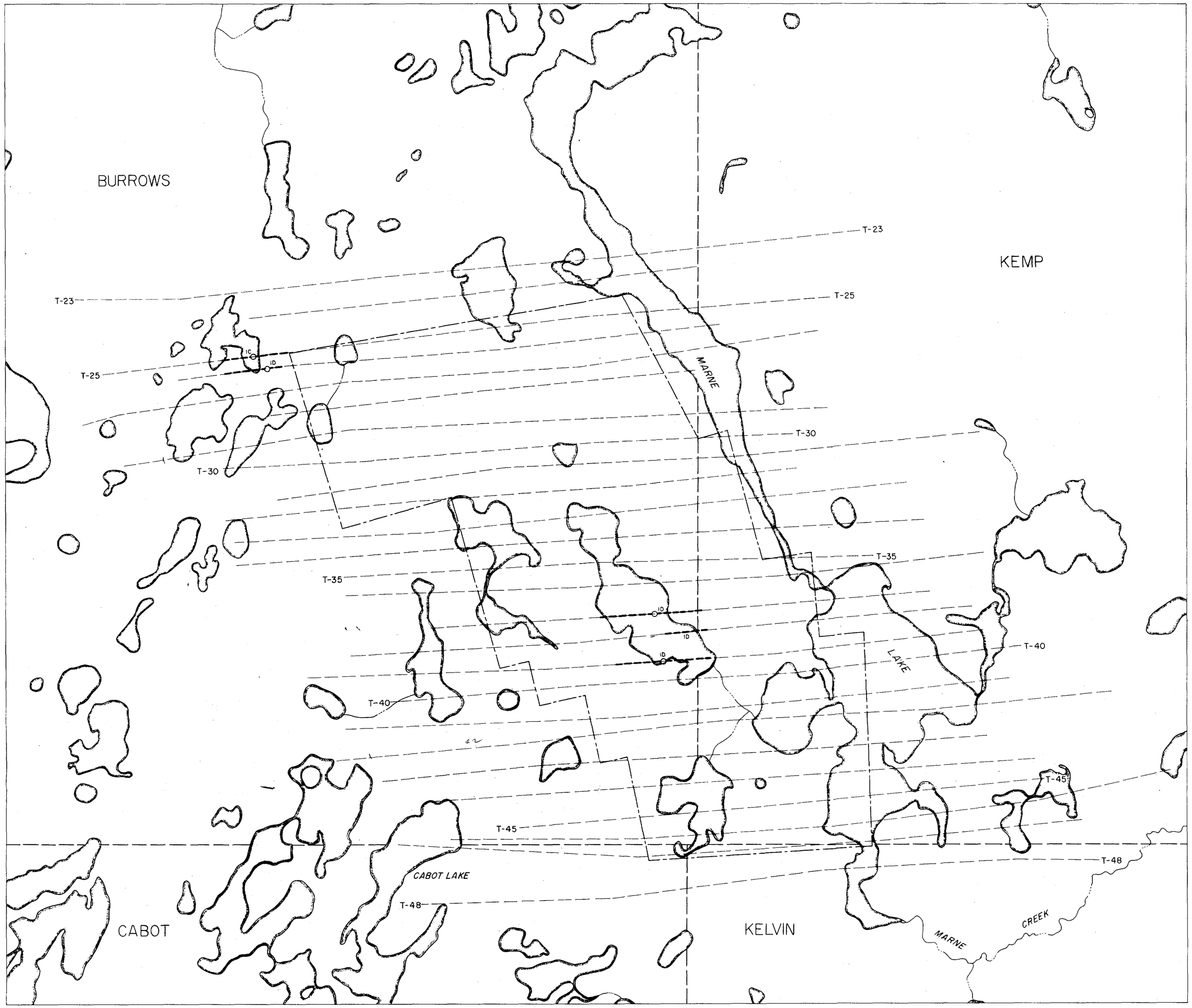
Burrows twp.

August 1957

Scale 1" = 100'

Legend

AI	Acid intrusive, usually with mica
Sy	Syenite
Sy-D	Syenite-Diorite
Lamp	Lamprophyre
D	Diorite, quartz diorite
G	Gabbro
	Diabas structura gabbro
Db	Diabas
LI	Pillow lava Intermediate
LA	Spherulitic lava Acid
Cong.	Conglomer type lava
Pd	Peridolite
	Grey carbonate
Carb	Green carbonate
Q.V.	Quartz Vein



AIRBORNE ELECTROMAGNETOMETER SURVEY

MARNE LAKE AREA

ONTARIO

PAYMASTER CONSOLIDATED MINES LIMITED

SCALE: 1 INCH TO 1320 FEET (APPROXIMATELY)

LEGEND

MEAN TERRAIN CLEARANCE	500 FEET
MEAN TRAVERSE INTERVAL	1/8 MILE
LENGTH AND PEAK OF ANOMALY	
LENGTH AND PEAK OF POSSIBLE ANOMALY	
FLAT RESPONSE	
RELATIVE AMPLITUDE OF RESPONSE (e.g.)	3
(10=1% OF PRIMARY FIELD)	

HORIZONTAL CONTROL BASED ON AN UNCONTROLLED MOSAIC

SHAPE OF RECORDED RESPONSE

A
B
C
D

N

AEROPHYSICS OF CANADA LIMITED

C3-930

5018-53