

HEAD OFF



42A03NE0096 63A.350 BARTLETT

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**PAYMASTER CONSOLIDATED**  
(NO PERSONAL LIABILITY)

SOUTH PORCUPINE, ONTARIO

ADDRESS ALL CORRESPONDENCE TO COMPANY, NOT TO INDIVIDUALS  
February 26, 1958

Mr C. E. Cook,  
President and Managing Director,  
Paymaster Consolidated Mines, Limited

Dear Sir:-

Following please find report on the Paymaster property in Bartlett township comprising 73 claims or 2900 acres. The claims are numbers 42908 to 42967 inclusive, 43269 to 43274 inclusive, 43318 to 43321 inclusive, 43323, 43332, and 43333.

The property is accessible by Wick's lumber road past the Ankerite mine. Scott Lake on the property is 32 miles from Paymaster. A pass is required to go past the gate at mileage 20. The road is in poor condition and not recommended for cars. There is a cabin at Scott Lake owned by Charles Peterson. The aircraft taking personel to the Fatima landed at this lake. The road from Scott Lake to Fatima three miles is narrow and hilly. The highland timber has been mostly out with only a scattering pine tree as well as a few birch. Along the east side of the property there is some small spruce in the swamps. The undergrowth on the high land makes travelling difficult except along lines.

General Geology Summary

A copy of the Zenmac map on a scale of 1 inch equals 300 feet was obtained from the office of the resident geologist in Timmins and used as a base map. As shown on the map outcrops are quite scarce. Some of the outcrops were checked but it was not until the diamond drill core was available that a clearer picture was evident. Two main conclusions are: First, That the iron formation has been so completely absorbed by the intrusives that that there is very little prospect of getting iron ore on these claims. Two magnetic anomalies were drilled and the percentage of magnetite was very low. The outcrop west of D.H. No. 3 is probably just a capping. There are at least four different intrusives, gabbro, diorite, dark feldspar porphyry with 1/8" phenocrysts, and the acid intrusive with its various phases. It is rather surprising that there is so little mineralization associated with these intrusives.

Second, As all three diamond drill holes cut fine grained acid intrusive in the bottom of the holes it is probable that the granite at Scott Lake continues to the north joining the stock in the northeastern part of the township. Also the fine grained phases that resemble rhyolite are part of the main acid intrusive.

Legend

Algoman: Pink Granite and Syenite, and Quartz Porphyry,  
Dark Feldspar Porphyry  
Syenite-Diorite, Some Dykes with high Epidote content.  
Syenite-Diorite Lamprophyre  
Diorite  
Gabbro.

**Keewatin:** Agglomerate,  
Iron Formation,  
Chlorite

Keewatin: Agglomerate,

The agglomerate is intimately associated with the iron formation. The agglomerate light colored fragments lie in a darker matrix. The fragments may be boulders up to a foot in diameter. In the central part of the property the agglomerate outcrops are confined to the flanks of the iron formation with the outcrops very small. The diamond drilling cut only a limited amount of agglomerate. There was very little banding except associated with the iron formation. In D.H. No. 3 much of the agglomerate was highly altered by epidote. In some cases it was difficult to tell the agglomerate from the diorite-syenite intrusive.

Iron Formation,

With the strength of the magnetic anomalies it was expected that there would be a body of iron formation predominantly magnetite. In the two anomalies drilled there were a few ten foot sections that would contain 10% magnetite. There was narrow banding with magnetite but no massive iron ore. In D.H. No. 1 from 155 to 169.5' the iron formation is 60% siliceous. This siliceous type or later stringers may be seen on the Zenmac claim 39311 where it contains a little chalcopyrite. Also in D.H. No. 1 there is 4" of sphalerite at 157'. This hole contained enough pyrite and pyrrotite to confirm a conductor as indicated in the airborne electromagnetic survey.

Chlorite,

On line 800 N. 2400E. there is an outcrop of chlorite adjacent to the iron formation. Very little chlorite alteration was seen in the core.

Algoman: Gabbro

This is the most crystalline rock seen on the property with crystals 1/8" in diameter. There is no known peridotite on the property. As the rock is so fresh it is classed with the Algoman rather than the Haileyburian. Wide sections of gabbro were out in the diamond drilling. The outcrop of gabbro in the southeast part of the property indicate that this intrusive is quite extensive.

Diorite,

There are a number of diorite dykes that were out in the diamond drilling. Just off the southeast corner of the property on a Zenmac claim line there is an outcrop of diorite with feathery green amphibole.

Feldspar Porphyry,

Dykes of feldspar porphyry with 1/8" to 1/4" crystals in a dark matrix were out in diamond drilling. This is a very distinct type of rock.

There is a variation of this type that has a high epidote content. This may be slightly more basic. The epidote may even be an original mineral in the dykes.

Some of the dykes seem to be intermediate between syenite and diorite.

There was at least one dyke of lamprophyre.

Granite-Syenite-Quartz Porphyry,

The diamond drilling indicated that the typical Algomian intrusive is gradational from a fine grained felsite or porphyry resembling rhyolite or chert to a crystalline granite or syenite. On the Paymaster Bartlett property the coarser phases of the intrusive are pink in color. The intrusive extends the whole north south length of the property along the west side of the iron formation. The aeromagnetic map G.S.C. 291G suggests that the iron formation is offset by the granite and continues on the west side of the granite north of the Paymaster property.

The outcrop on lines 800 and 1200 south at 1400 east that were marked diorite on the Zenmac map were checked and found to be granite. This simplifies the structure. Also the outcrop northwest of Scott Lake marked quartz diorite resembles rhyolite or porphyry. This is included in the Algomian acid intrusive. In the areas not checked, the map is a copy of the Zenmac map even though I suspect that some of it is incorrect.

Mineralization:

Much of the pyrite-pyrrhotite cut in the diamond drilling was tested with dimethylglyoxime for nickel with negative results. D.H. No. 1 especially and also No. 3 cut sections of core running 10% pyrite and pyrrhotite associated with the iron formation. Also on claim 39311 held by Zenmac the iron formation in places contains 10 to 15% sulphides. Also associated with quartz is some chalcopyrite on this claim. There were a few spots of sphalerite in the core. There was enough magnetite and sulphide in the iron formation to react strongly on the mineral locator.

The airborne electromagnetic survey gave a few possible anomalies on the property. Two of these were diamond drilled cutting pyrite and pyrrhotite in one location and no mineralization at all in the second. There are a number of possible anomalies around Scott Lake and the chain of lakes to the north. These may be associated with lake bog deposits. There is one anomaly 10 west of Boomerang Lake especially that should be investigated. With at least four intrusives gabbro, diorite, feldspar porphyry, and granite-syenite and some of these quite large it is surprising that the mineralization is so limited.

Signed,

*C. S. Longley.*

C. S. Longley,  
Engineer-Geologist.



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# **aerophysics** of *Canada Limited*

## AIRBORNE ELECTROMAGNETIC SURVEY

OF THE

BIGFOUR CREEK, MUSKASENDA LAKE AND MARNE LAKE AREAS

DISTRICTS OF TIRIMINS AND SUDBURY, ONTARIO

FOR

PAYMASTER CONSOLIDATED MINES, LIMITED

### INTRODUCTION

At the request of Mr. C.S. Longley of Paymaster Consolidated Mines, Limited, an airborne electromagnetic survey was carried out over three areas in the Tirimins area of Ontario. A group of 100 claims in Kelvin Township, Sudbury District, was flown on north-south flight lines at an average spacing of one-eighth mile and the results shown on the plan, Bigfour Creek area. Groups of 14 claims in McArthur Township, 92 in Bartlett, 15 in Geikie and 69 in English were flown on north-south flight lines at an average spacing of one-eighth mile. The survey of these groups also included 240 line miles on unstaked ground between the two groups involved. The results are shown on the plan, Muskasenda Lake area. A group of 53 claims in Burrows and Kemp Townships was surveyed on east-west flight lines at one-eighth mile spacing. The results are shown on the plan, Marne Lake area. All three plans are on a scale of 1 inch equals 1320 feet, approximately. Anomaly designation is explained in the legends to these plans. A total of 376.4 line miles was flown.

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## 2. GENERAL GEOLOGY

The regional geology is shown on Ontario Department of Mines' Map No. 1931a, Porcupine--Shiningtree area. The geology of the three areas is described briefly in Ontario Department of Mines Volume XXXV, Part VI, in the articles "Grassy River Area", "Notes on the Southern Part of the Grassy River Area" and "McArthur, Douglas, Bartlett and Geikie Townships". The geological succession is early Precambrian in age and consists of generally altered volcanic flows of breccia, with minor sediments. Iron formation occurs and serves as a good magnetic structural marker for both ground and airborne magnetic surveys. These formations are intruded by Haileyburian basic to ultrabasic sills and by Algoman granite and porphyry. Diabase dykes of both Matachewan and Keweenawan age occur. Cobalt conglomerate may cover the older formations over part of the area surveyed. Current prospecting in the area is mainly directed toward the location of copper-nickel mineralization, which is generally associated with the ultrabasic sills.

Aeromagnetic coverage is available on Geological Survey of Canada Geophysics Papers 285, 286 and 291. These are particularly useful for showing the structure of the ultrabasic sills and iron formation.

## 3. RESULTS

The results of the survey are shown on the accompanying maps. Zones A, B and C, have been labelled on these to designate zones of particular interest. In addition, anomalies will be specified by the anomaly designation with the flight line number in brackets following immediately.

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## (1) BIGFOUR CREEK AREA (KELVIN TOWNSHIP)

### ZONE A

This anomaly follows 5A(19) - 11A(20) - 4B(21). Its indicated strike is NNE and it occurs in an area underlain by altered Keewatin basalt striking about north-south. There is no corresponding magnetic anomaly. It is given first priority for ground electromagnetic investigation.

## (2) MUSKASENDA LAKE AREA (McARTHUR, BARTLETT, GEIKIE, ENGLISH TOWNSHIPS)

Geological and aeromagnetic data in this area indicate that Keewatin lavas are intruded by Haileyburian peridotite, marked by a broad magnetic anomaly running northwest from McArthur Lake to the south end of Papakomeka Lake. This changes to a NNE-SSW trend across Bartlett, Geikie and English Townships. To the west of this, a narrower anomaly marks iron formation (e.g., vicinity of Boomeran and Scott Lakes).

### Zone B

3A(64) - 3A(65). This appears to be due to a relatively localized conductor between lines 64 and 65, likely closer to 65, and correlates with a 300 gamma closure to the northeast of the main aeromagnetic anomaly in this area. This could be due to the conductive effects of iron formation, but the fact that it is so localized leads to the recommendation that it be investigated by ground electromagnetic work.

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## Zone C

1C(78) - 1B(79) - 1D1C (80). This portion of the zone is weak but relatively localized and may correspond with iron formation known to the author in this area.

1C1C1C(82) - 1C2B(83). This portion of Zone C is located near a structural bend in the ultrabasic shown by the aeromagnetics. It is possible that this response is due to a slight increase in conductivity accompanying serpentinization of the ultrabasic, since known mineralization in this vicinity is too disseminated to make a good conductor.

Several minor conductors occur, including the following:

A 1B anomaly near Boomerang Lake correlates with iron formation shown by the aeromagnetics and geology, as do anomalies 1B(69) - 1D(69).

At Muskrat Lake, a group of 1B, 1C and 1D anomalies, and at Scott Lake a group of 1D anomalies appear weak and coincident with the lakes, but may be of interest. Along the Bartlett-English boundary, a group of 1D anomalies coincides with an extensive swamp area.

### 3. MADRE LAKE AREA (BURROWS, KEMP TOWNSHIPS)

Anomalies 1D(37) - 1D(38) - 1D(39) and 1C(25) - 1D(26) are possibly lake effects but may merit ground follow up.

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## 4. RECOMMENDATIONS

Zones A and B are recommended for detailed ground investigation, using the electromagnetic method. The minor conductors mentioned should take second priority after these, but may be of interest. Zone C may indicate effects associated with mineralization, but it is doubtful if it is caused by the mineralization itself.

*D.W. Snellie*

*for*

D.W. Snellie  
Geophysicist

APPROVED:

*W.H. McPherson*  
\_\_\_\_\_  
(W.H. McPherson)

AEROPHYSICS OF CANADA LIMITED

December 1957





PAYMASTER CONSOLIDATED MINES; LIMITED.

Bartlett Township. Diamond Drill Hole No. 1.

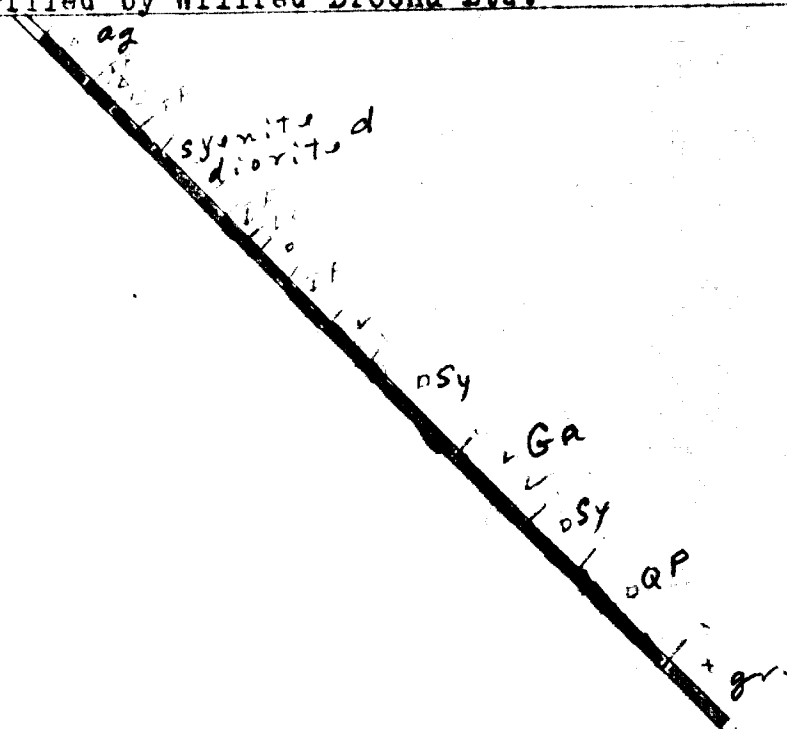
January 27, 1958

Claim 43269, 3600 East, 2935 North, Direction: N. 49° W. Dip: -45°

Drilled by Wilfred Brochu Ltd.

49°  
S. E.

49°  
N. W.



PAWLESTER CONSOLIDATED MINES, LIMITED

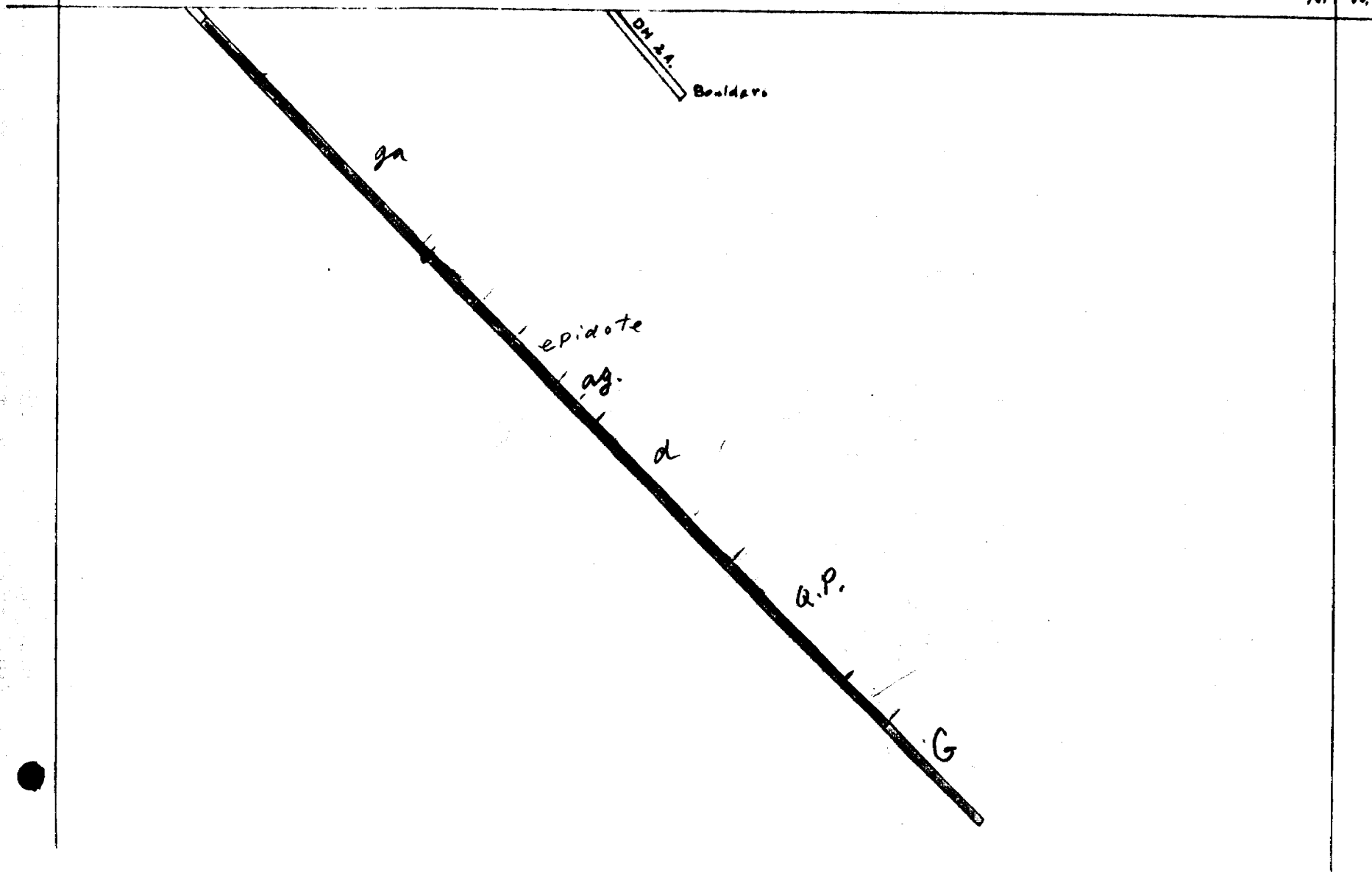
Bartlett Township, Diamond Drill Hole No. 2

Claim 43273, 2260 North, 3350 East. Direction: N. 38° W. Dip: -45°

Also D.H. No. 2A, Claim 43273, 2450 N. 3150 E. Dir: West, Dip: -50°

38°  
S. E.

38°  
N. W.

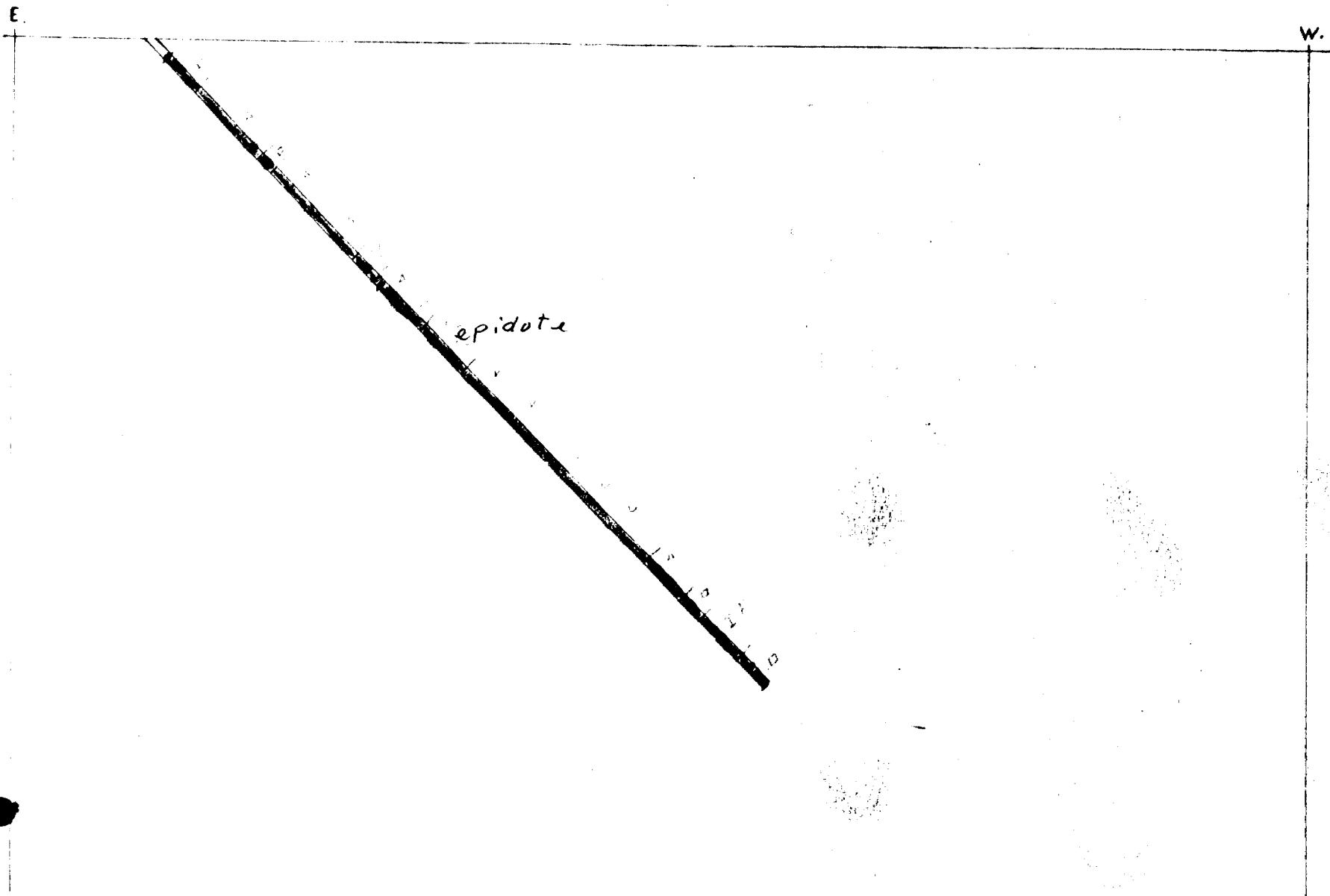


PAYMASTER CONSOLIDATED MINES, LIMITED

Bartlett Township, Diamond Drill Hole No. 3

January 27, 1958

Claim 42923, 5000 North, 4600 East. Direction: West. Dip:  $-45^{\circ}$



PAYMASTER CONSOLIDATED MINES, LIMITED

Bartlett Township, Diamond Drill Hole No. 2

Claim 43273, 2260 North, 3350 East. Direction: N. 38° W. Dip: -45°

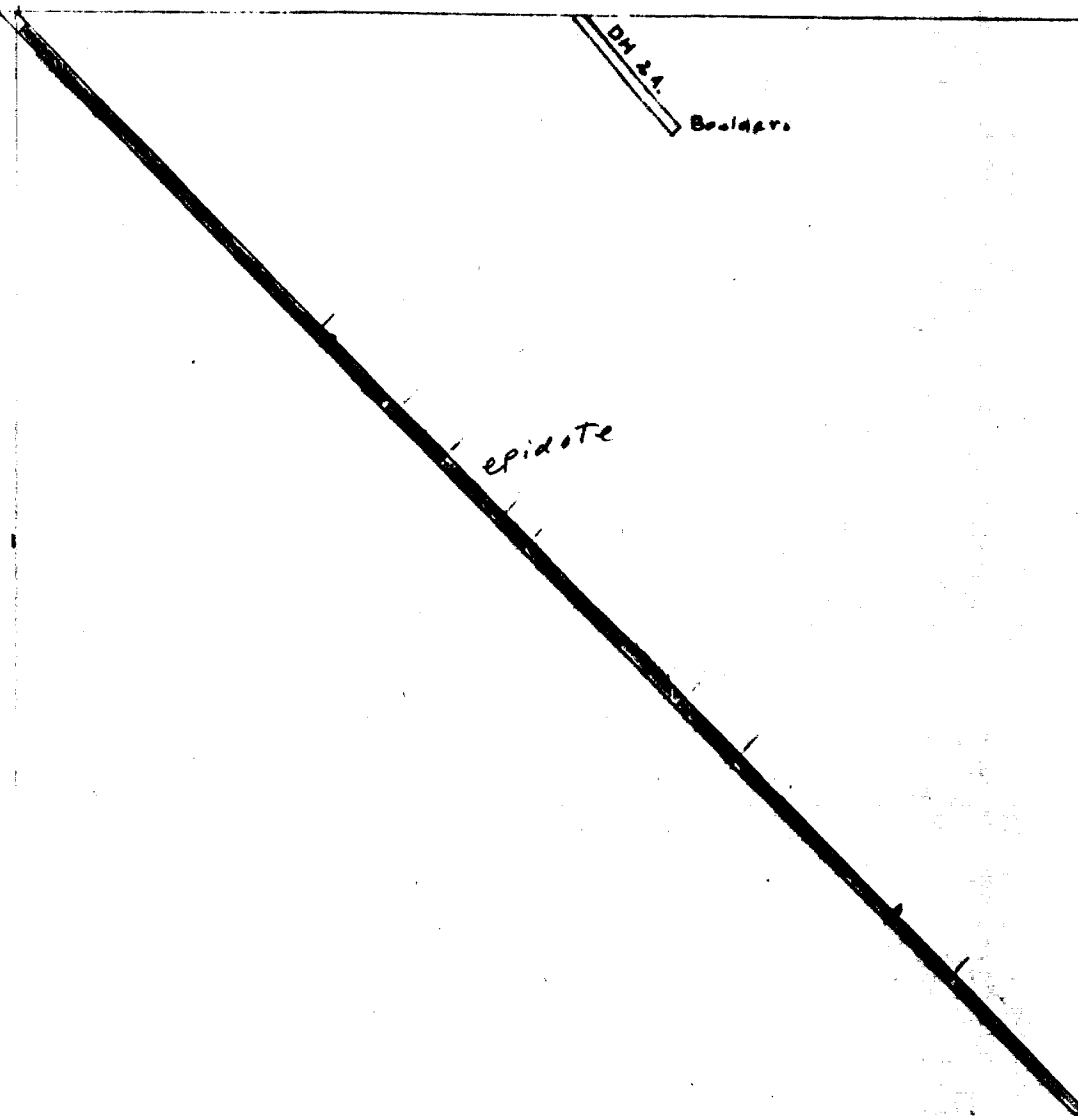
Also D.H. No. 2A, Claim 43273, 2450 N. 3150 E. Dir: West, Dip: -50°

38°  
S. E.

50°  
V. W.

DH 2A  
Boulders

epidote



PAYMASTER CONSOLIDATED MINES, LIMITED,

Bartlett Township. Diamond Drill Hole No. 1.

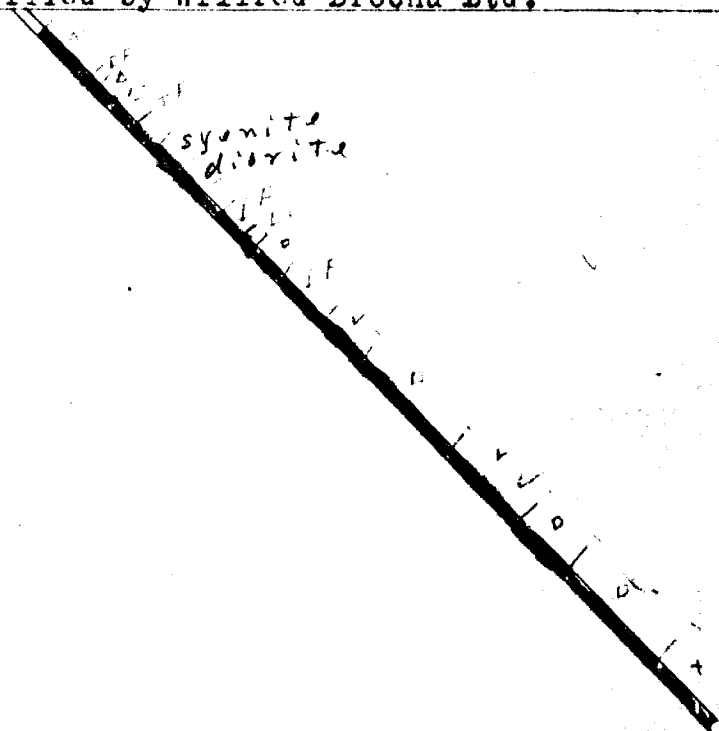
January 27, 1958

Claim 43269, 3600 East, 2935 North. Direction: N. 49° W. Dip: -45°

Drilled by Wilfred Brochu Ltd.

49°  
S. E.

45°  
N. W.







Airborne Electromagnetometer Survey  
 BARTLETT TOWNSHIP  
 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)

**BARTLETT**  
 Horizontal Control Based on an Uncontrolled Mosaic

**SHAPE OF RECORDED RESPONSE**

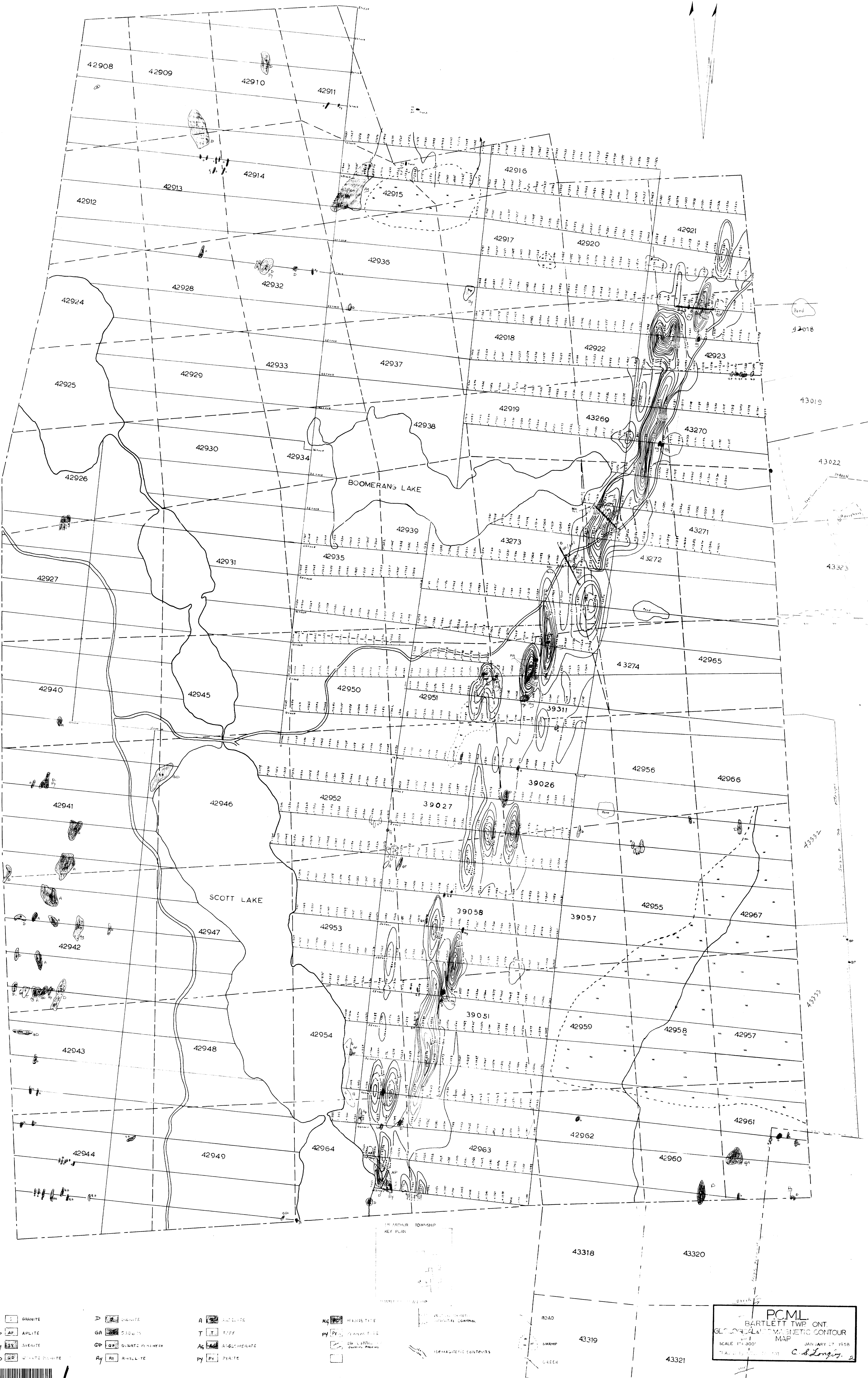
A - - - - -   
 B - - - - -   
 C - - - - -   
 D - - - - - 

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PCML  
 BARTLETT TWP. ONT.  
 GEOLOGICAL MAGNETIC CONTOUR  
 MAP  
 SCALE 1" = 300'  
 JANUARY 27, 1958  
 C. Longley