



32D12SW0114 63.44 HARKER

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PLAN NO. 1.	Iso-Dynamic Contours of Vertical Intensities.
PLAN NO. 2.	Probable Geological Boundaries Inferred from Magnetic Survey.

April 23rd., 1946.

A. R. Graham, Esq.,
24 King St., West,
Toronto, Ontario.

dear Sir:- REPORT ON GEO-MAGNETIC SURVEY ON PROPERTY
KNOWN AS GRAHAM-BELLINGHAM GROUP - HARKER
TOWNSHIP, PROVINCE OF ONTARIO.

The work described herein, was conducted in March of the current year after completion of the adjoining property of Dale Gold Mines Limited to the west of your group.

SUMMARY

The Graham-Bellingham group comprises a total of 16 claims in the Township of Harker, District of Cochrane, Province of Ontario.

Geo-magnetic investigations have successfully located the position of the main "break" presumed to be the extension of the so-called Beatty and Munroe "breaks" which appears to follow the contact between rocks of low magnetic susceptibility to the north and those which exhibit much greater intensities on the south. With the scarcity of outcrops on which to outline definite rock types, it is believed that the northern group is made up mainly of sediments into which one gabbro intrusive was located. The southern complex is generally basic volcanics with some intercalated sedimentary strata and probably intrusive gabbros. Into

this zone it is believed that small granite or associated acid type intrusives, related to the Dale granite mass occur, and there is an indication that a much larger mass may occur on the property of St. Anthony Mines Limited to the south of your group. Evidence on the Dale group of granite, or its satellitic associates cutting the "break", show that the granite is post-break in age and therefore the areas along this contact zone assume a greater degree of importance than if the opposite had occurred.

A program of diamond drilling has been proposed but this should be accompanied by reinterpretations as drilling proceeds, which may result in the elimination of some drill-holes which are now tentatively suggested and the re-location of these in more advantageously located areas, based on additional geological information.

PROPERTY

Your group comprises a total of 16 mining claims situated in the Township of Harker, in the Province of Ontario. The claims lie approximately 37 miles east of Matheson on the Temiskaming and Northern Ontario Railway and may be reached by a rough truck road from Matheson to the camps on the property of Consolidated Mining & Smelting Company Limited. From this point it is necessary to walk the remaining 5 - 6 miles into the property.

The claims are bounded on the west, south and east by properties of Dale Gold Mines Limited, St. Anthony Mines Limited, and Hoyle Gold Mines Limited., and comprise a total of some 640 acres. This area is held under the 16 mining claims as shown below:

L-43455-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70.

The property is largely drift covered with relatively few rock exposures, the northern area being for the most part overlain by sand and boulders with an extensive amount of spruce muskeg to the south.

GEOLOGY

The claims are underlain by Pre-Cambrian formations and earlier reconnaissance geological surveys in this area and to the west, had located the positions of two major fault zones. The northern zone was located in the Townships of Beatty and Munroe, thence traced and projected through Michaud and into Garrison Township. This zone tentatively known as the "Munroe Break" is presumed from limited geological evidence to intersect the "Porcupine Break" in Garrison Township. The "Porcupine Break" having been presumed to extend through Beatty, Hislop, Guibord and Michaud Townships, and to have intersected the "Munroe Break" in Garrison, was then assumed to extend eastward through Harker and Holloway Townships.

Earlier magnetic surveys conducted on the Hoyle and Teddy Bear properties in Harker Township, indicated a strong anomalous condition somewhat to the north of the projected position of this "break" and it is believed that this magnetic variation marked the true position of the fault zone.

Work done on the property of Dale Gold Mines Limited, revealed the presence of this zone approximately one mile farther north than the position shown on regional geological plans which are available to the

writer and this information automatically places the position of your group directly across the "break". The terms applied to these "breaks" should be used with reservation until such time as definite continuity has been established to justify the assumption based thereon.

The geology of Garrison and Harker Townships is largely obscure and limited outcrops have resulted in the classification, by some geologists, of certain sedimentary and volcanic horizons by different names, which may be actually related to the same groups. The purpose of the geophysical survey was primarily to locate the exact position of the "break", and at the same time locate and delineate any other structural information which could be derived. The reader is reminded however, that all interpretations are somewhat generalized and that actual rock names cannot always be applied in the absence of outcrops to guide the interpretation, thus while granite intrusives may be inferred, the actual conditions encountered may be produced by any of the more acid intrusive type rocks, unless exposures are definitely located within the borders of the zone outlined.

GEO-MAGNETIC SURVEY

The results of the survey are shown on Plan Nos. 1 and 2 entitled "Iso-Dynamic Contours of Vertical Intensities" and "Probable Geological Boundaries Inferred from Magnetic Survey", respectively.

Plan No. 1 depicts the contours of the magnetic intensities derived from the magnetic observations, while Plan No. 2, shows the most probably structural interpretations derived from Plan No. 1. The

boundaries of the geological formations as shown, are mostly approximations, and the formations themselves may vary considerably.

The most outstanding difference in magnetic susceptibilities occurs along an east-west line midway through the center of your property and it is believed that this marks the position of the main fault zone or "break" which has been mentioned under the preceding heading. To the north, the intensities reach a value of less than-1000 gamma and except for the strongly magnetic intrusive, probably gabbro, on claims L.43461 and 62, this area is largely uniform and consistently low, magnetically. It is therefore believed to represent a sedimentary horizon and has so been designated on Plan No. 2, although acid volcanics could give a similar response.

South of the "break", conditions appear more complex, and while sediments, gabbro and volcanics are known to occur, with the sedimentary members within a few hundred feet south of the "break" the existence of this latter formation, cannot be reconciled with the magnitude of the intensities obtained over and around these limited outcrops.

No attempt has been made to differentiate this southern area and it is believed that the probably explanation lies in an intercalated sequence of sedimentary horizons in the volcanics, perhaps related to an overlap between the cessation of volcanism and the onset of sedimentation. It is along this zone that the major movement has occurred, whatever the past geologic history of the area may be.

The occurrence of some gabbro outcrops in the southern area, and

the extreme magnitude of the intensities, suggest that the volcanics while predominantly of basic types, may have been intruded to a great extent by gabbro, more particularly in those areas marked by the 5000 gamma contours. The presence of sedimentary outcrops within these zones, could perhaps, be explained as remnants within the gabbro mass.

With further reference to Plan No. 1, it will be seen that on approaching your south boundary, the magnetic gradient quickly decreases, and while an insufficient area was covered to be certain, it is possible that a granite boss occurs on the St. Anthony ground, immediately south of your group.

Five areas of magnetic irregularities are indicated which may be granite or associated acid plugs intruded into the southern complex. Of these four, those intersected by proposed drill holes (Plan No. 2) "C", "D", "G" and "I", seem probable, while that intersected by "Q", is very doubtful but has been shown as such because this area should be tested.

There are some indications of what may be drag-folding on a minor scale along the "break", but similar results could also occur from variations in rock susceptibilities along this zone.

Without neglecting the uncertainty of many factors, largely attributable to the lack of outcrops, your ground is structurally interesting and will certainly warrant considerable work. If the presence of granite on the adjacent St. Anthony ground can be established, and it would appear reasonably certain, then the possibilities in the

southern area would be considerably enhanced, since work on the Dale property has established the age of the "break" as pre-granite. Consequently, any unusual variations in the continuity of the "break" may be potential ore-bearing structures. Similar possibilities could be anticipated for any subsidiary structures associated with this zone.

RECOMMENDATIONS

A total of nine drill-holes are recommended to intersect what appear to be the most favourable zones. Of these, six are associated with intersections of the "break" and other irregularities which are related thereto as described briefly below.

Hole "A" is to intersect the "break" in an area where drag-golding may have occurred.

Hole "B" is spotted for similar but less pronounced reasons than "A" and it is pointed out that similar contour effects could be obtained from a more magnetic rock tongue, perhaps of gabbro.

Holes "C" and "D" are to intersect what may be small granite intrusives or associated acid rock types of similar magnetic susceptibility.

Hole "E" should intersect the "break" and may pass into basic volcanics or gabbro on the south.

Hole "F" This hole has a fairly good chance of intersecting a small granite plug and the contour shapes in this area (Plan No. 1), are typical of a condition where an acid rock type occurs within more basic flows. The shape suggests a small intrusive.

Hole "G" is located to test a minor low in a zone of magnetic "highs". The probability of granite here is very doubtful and similar contours

could result from a subsurface topographical depression.

Holes "H" and "I" might be arranged as a joint cross-section with Dale Gold Mines Limited. The probability of a small acid intrusive occurring here, is not unlikely and its presence south of the "break" may be of interest.

In addition to the above, the area along the southern boundary may warrant some investigation, if further evidence of the presence of granite on the St. Anthony group to the south can be obtained.

GEO-MAGNETIC SURVEY DATA

The survey was conducted with a Wolfson vertical variometer set with a sensitivity of 31 gamma per scale division and completely compensated for temperature. Maximum closure errors did not exceed 17 gamma for any one mile circuit, thus insuring an accuracy of plus or minus 10 gamma per field observation.

Lines and geological information were prepared and supplied by Mr. A. R. Graham, thus the total number of man-days required for this phase of the operation is not available to the writer, however, the time required to complete the survey is shown below:

Transportation	6 man-days
Survey	12 " "
Drafting and office work	14 " "
Supervision	<u>10 " "</u>
TOTAL	- 42 " "

The total number of magnetic observations taken may be shown as follows:

Field Stations	562
Control stations	25
Check stations	<u>9</u>
TOTAL	- <u>596.</u>

The position of the main base control station is located on the Teddy Bear Road at the northern end of line 5+00 and consists of three wooden pegs driven into the ground for support of the tripod. This station was accurately tied into the Dale control station which in turn was tied into the value of 2410 gamma obtained by Mining Corporation of Canada Limited, at the eastern end of their south base line on the Garrison east group. This position conforms with the 0+00 on the Dale base line.

Yours very truly,

GEO-TECHNICAL DEVELOPMENT COMPANY LIMITED

"J. T. Randell"

J.T.RANDELL - President.

Geo-physical Summary

F. J. Llo
 JUL 26 1946
Ref. 63-44

BELLINGHAM - GRAHAM GROUP

REPORT OF WORK RECORDED WITH MINING RECORDER, LARDER LAKE MINING DIVISION, DISTRICT OF COCHRANE, PROVINCE OF ONTARIO.

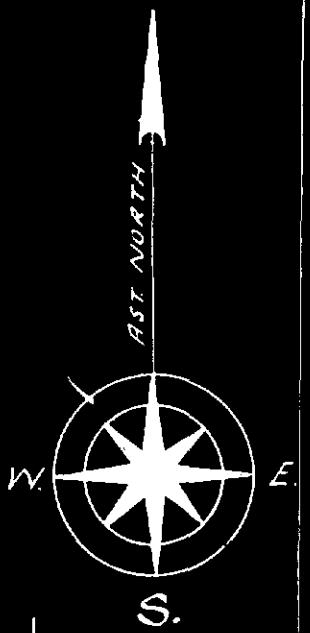
Claim No.	Date - Number of days		Formerly Recorded in 1945.	TOTAL RECORDINGS.
			Date - Number of days	
L.43455	March, 1946	25		25
L.43456	" "	25		25
L.43457	" "	42	40	82
L.43458	" "	25		25
L.43459	" "	25		25
L.43460	" "	25		25
L.43461	" "	25		25
L.43462	" "	25		25
L.43463	" "	25		25
L.43464	" "	25	30	55
L.43465	" "	25		25
L.43466	" "	25		25
L.43467	" "	25		25
L.43468	" "	25		25
L.43469	" "	25		25
L.43470	" "	25	30	55
			TOTAL DAYS RECORDED - - - -	517

In Rep of work recorded with K.L.M.R. for Geoph. Surv.

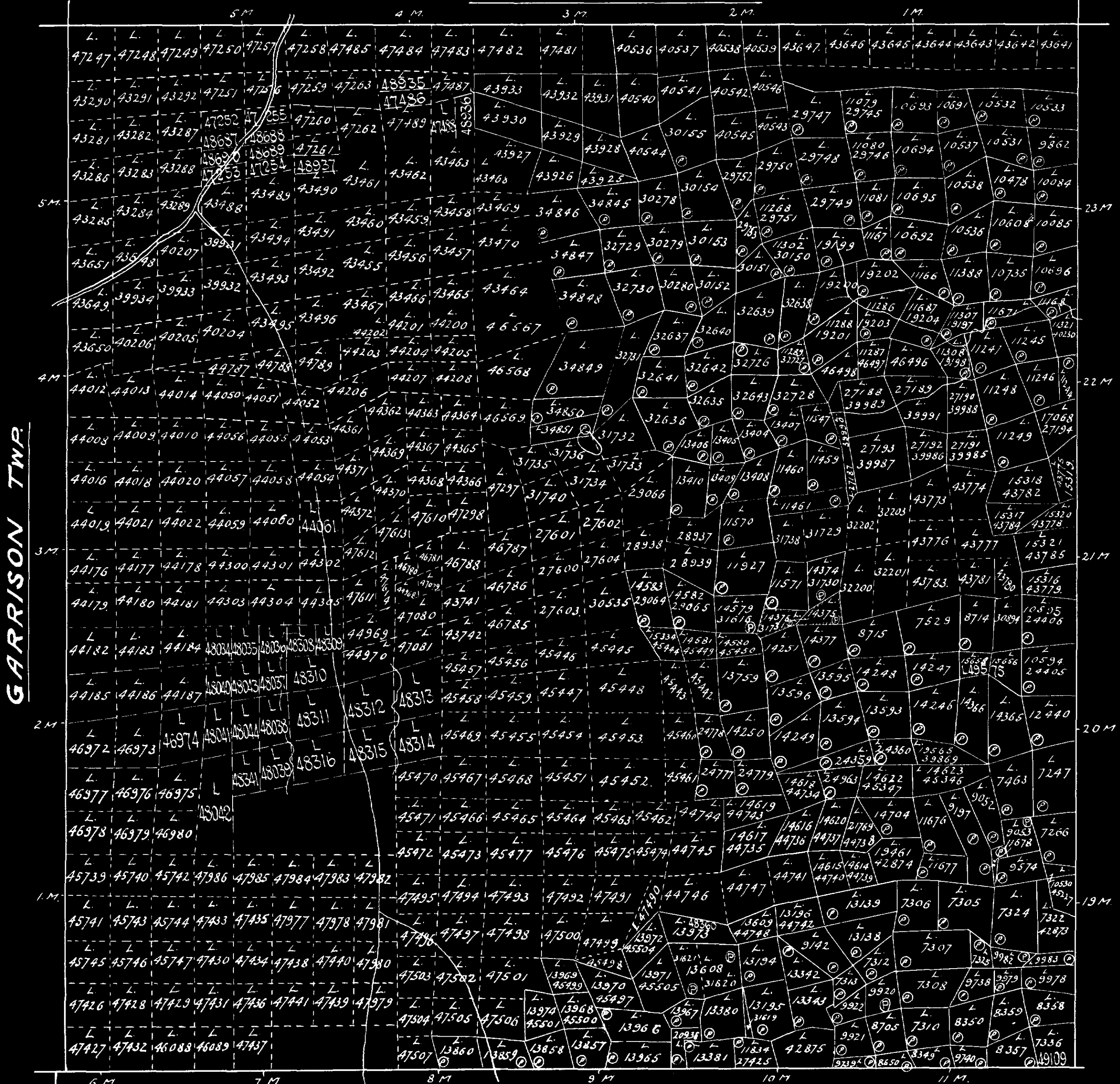
PLAN OF HARKER TWP

LARDER LAKE MINING DIVISION.
DISTRICT OF COCHRANE

Scale, 40 chains to an inch.



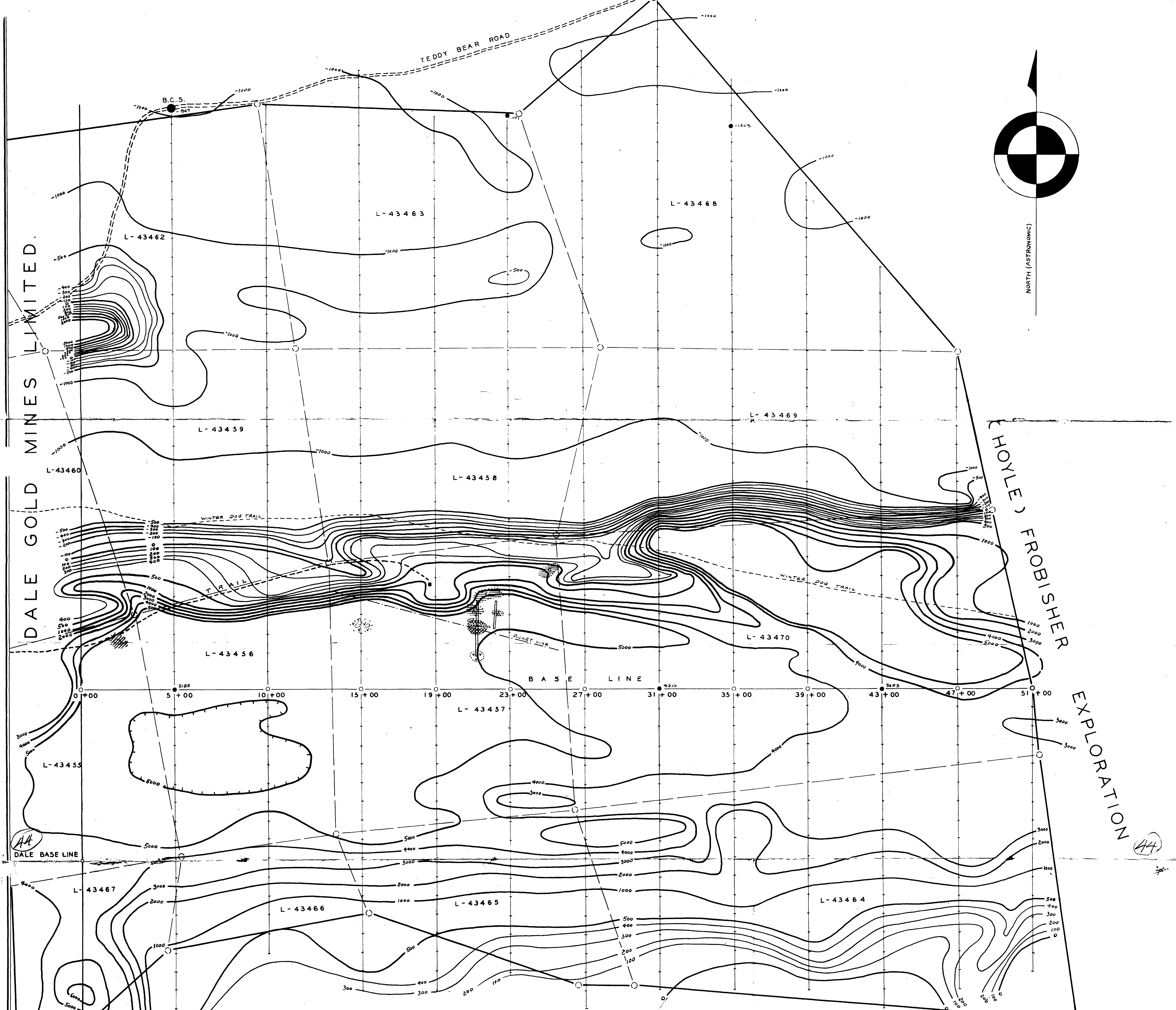
LAMPLUGH TWR



ELLIOTT TWR

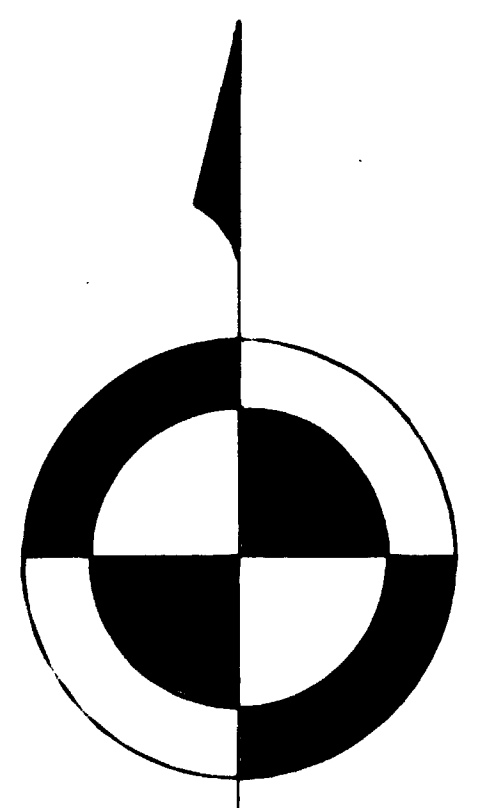


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DALE GOLD MINES LIMITED.

HOYLE, FROBISHER EXPLORATION



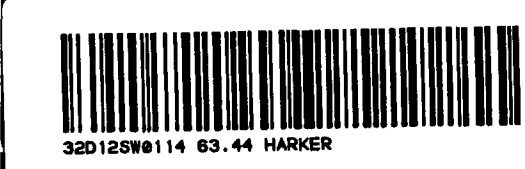
NORTH (ASTRONOMIC)

AA

AA

DALE BASE LINE

63-44



210

SCALE: 1 IN. = 200 FT.	BELLINGHAM - GRAHAM GROUP MARCH 1946. ISO-DYNAMIC CONTOURS OF VERTICAL INTENSITIES HARKER TOWNSHIP DISTRICT OF COCHRANE ONTARIO	PLAN NO. 1.
DRAWN BY: A.G.S. J.C. Randall	GEOLOGICAL SURVEY BY: GEO-TECHNICAL DEVELOPMENT COMPANY LTD.	

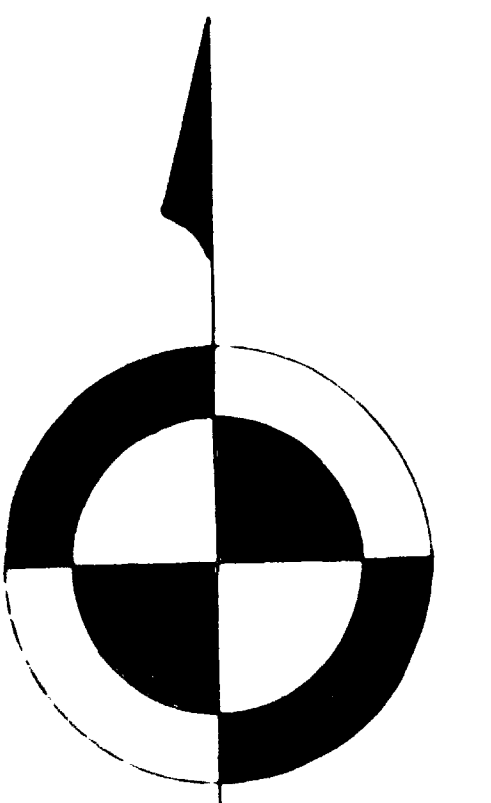
LEGEND

- LINES SURVEYED, MAGNETIC INTENSITIES OBSERVED
- BASE CONTROL STATION
- CONTROL STATION
- MAGNETIC CONTOUR
- LOW AREA ENCLOSED BY "HIGH"
- TRENCH
- OUTCROP
- PICKET LINE
- CLAIM BOUNDARY
- ROAD
- TRAIL
- POINT

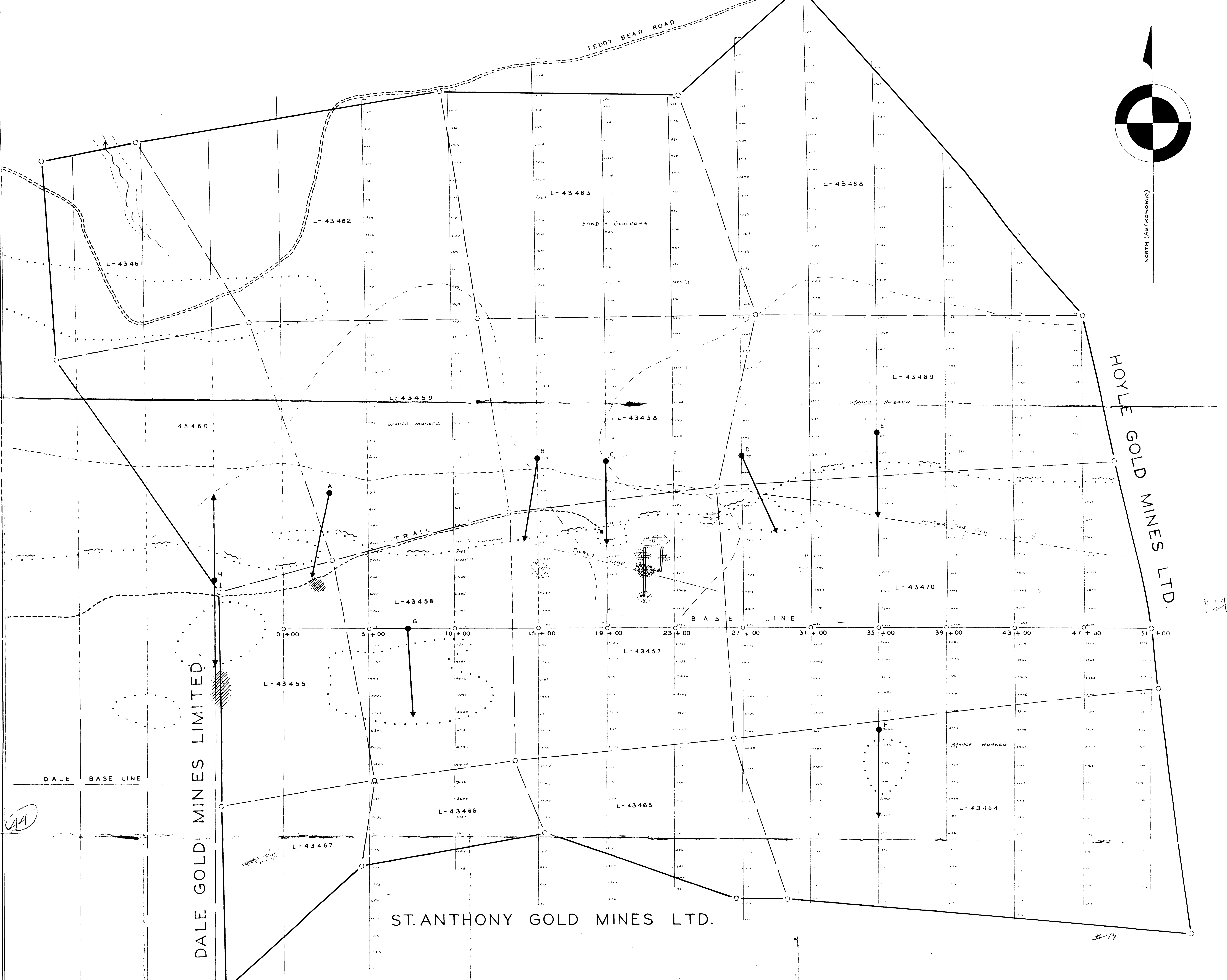
LEGEND

- 1000 - UP GAMMA
- 500 - -1000
- 0 - -500
- 0 - +500
- +500 - +1000
- +1000 - +2000
- +2000 - UP

44



NORTH (ASTRONOMIC)



241

22-14

LEGEND

- GEOLGICAL BOUNDARY OUTLINED BY MAGNETIC CONTOURS
- ~ FAULT OR SHEAR
- PROPOSED DIAMOND DRILL HOLES
- OUTCROPS
- AREA CONTAINING SCATTERED OUTCROPS
- TRENCH
- CLAIM BOUNDARY
- PICKET LINE
- HIGH GROUND OUTLINE
- TRAIL
- == ROAD
- CAMP

SCALE: 1 IN. = 200 FT.

BELLINGHAM - GRAHAM GROUP

MARCH 1946

PROBABLE GEOLOGICAL BOUNDARIES
INTERPRETED FROM MAGNETIC SURVEY
AND
TOPOGRAPHY

DRAWN BY: A.G.S.
J.T. Rendell

PLAN NO. II

HARKER TOWNSHIP
DISTRICT OF COCHRANE
ONTARIO

GEOLOGICAL SURVEY BY:
GEO-TECHNICAL DEVELOPMENT COMPANY LTD.

LEGEND

- GRANITE
- GABBRO
- CARBONATES
- SEDIMENTS
 - ARKOSE
 - GREYWACKE
- UNDIFFERENTIATED GABBRO AND GREENSTONE.
(LIGHT BLUE AREA CONTAINING SOME INTERCALATED SEDIMENTS)

GEOLOGY OF OUTCROPS BY: A.R. GRAHAM.

EX P
2/14/46

23.44

