



42E12NW8185 2.10231 MCCOMBER

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REPORT ON  
THE MAPPING PROGRAM  
NORBEN - TENACITY OPTION  
BEARDMORE AREA PROPERTIES  
FOR  
ATEBA MINES INC.

BY

Terry Matheson, B.Sc.H.

A.C.A. Howe International Ltd.

*Insert of his file*

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JUL 23 1987  
MINING LANDS SECTION

May 28, 1987  
Report 533

Toronto, Ontario



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CERTIFICATE: Terry R. Matheson, B.Sc.H.

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## SUMMARY

Norben Gold Resources Inc. presently holds, by option agreement, 111 claims centered in an area 14 km east-northeast of Beardmore, Ontario (Location Map 1). Nine of these claims in the northwestern extremity of the group were recently the subject of a geological mapping survey (see Location Map 2).

Two basic rock types were observed with a tentative stratigraphic boundary between them, trending 70°-75°.

A well-foliated metamorphosed greywacke underlies eighty percent of the mapped area in the north. Over the greywacke, bedrock exposure is less than 1% covered by a glacial-fluvial till (Carter, M.W. et al, 1985). As well, swampy ground covers 25-30% of the map area. In the southwestern section of the mapped area, a sequence of massive, variolitic and pillowed flows is observed. These outcrop along ridges trending at 70°-80°, and yield 5-10% bedrock exposure.

The axial planar cleavage attitudes within both the sediments and the mafic volcanics, were consistent with the regional strike within the Beardmore-Geraldton metasedimentary-metavolcanic belt. They are steeply dipping to the south and striking between 70°-80°.

Some quartz veining and dilatent quartz infilling along the wacke-volcanic contact and within the pillowed volcanics in the extreme south-east of the map area were also observed. These veins, particularly one located on the contact may be the subject of further investigation during the upcoming summer field season.

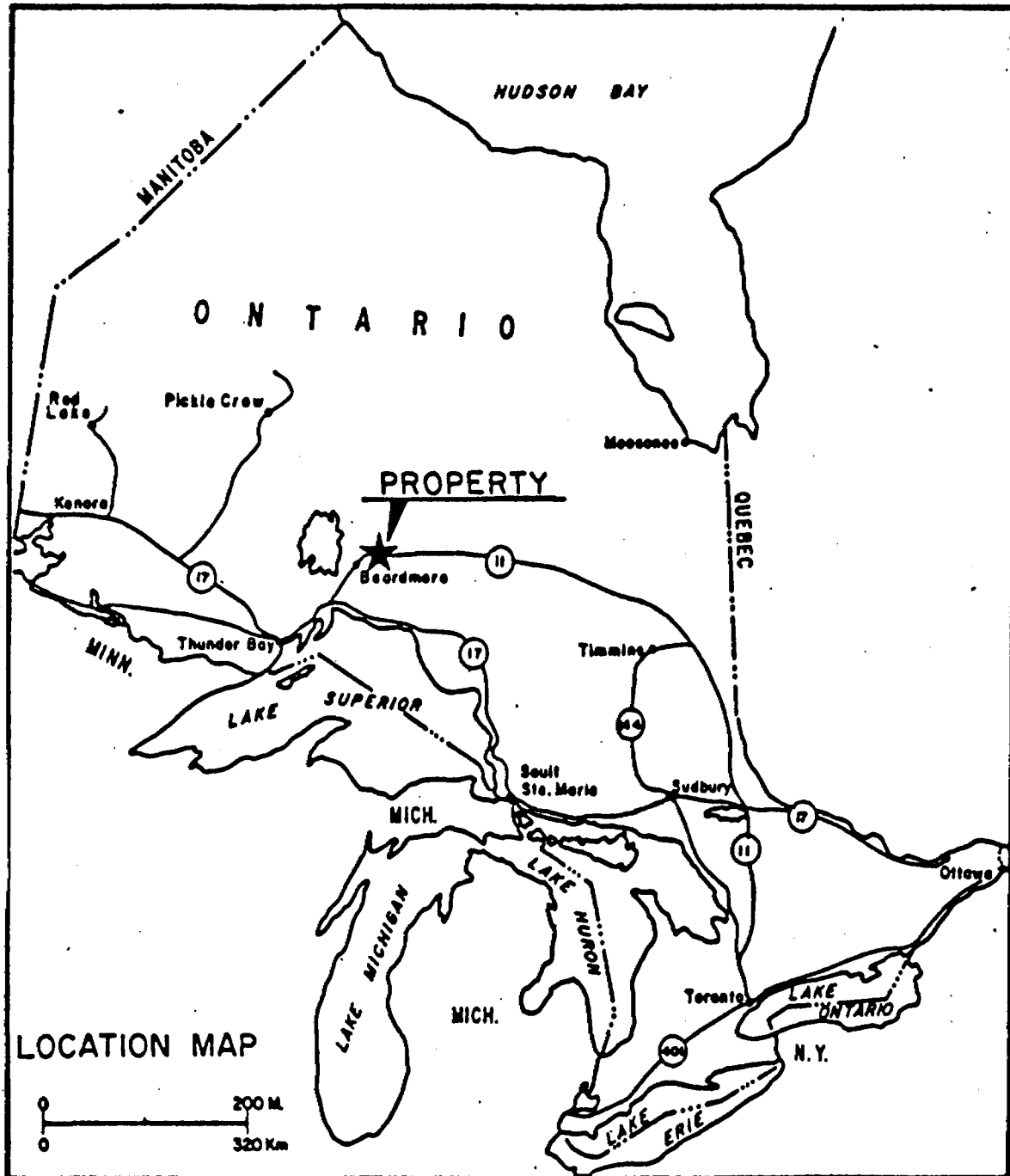


Figure 1

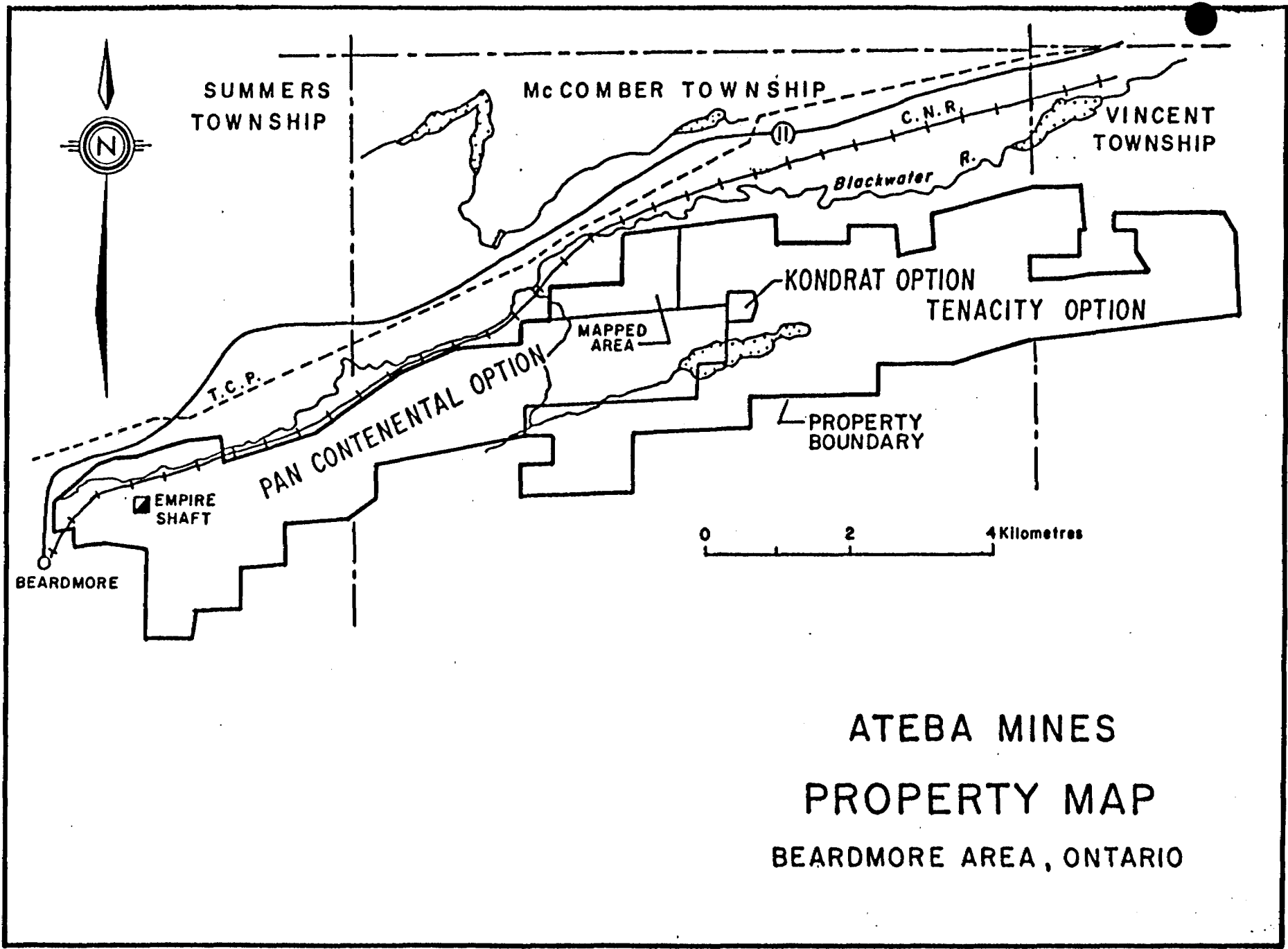


Figure 2

ATEBA MINES  
 PROPERTY MAP  
 BEARDMORE AREA, ONTARIO

1. INTRODUCTION

In 1986 Norben Gold Resources Inc., a wholly owned subsidiary of Ateba Mines Inc., entered into an option agreement with Tenacity Mining Corporation Limited and acquired the right to earn a 70% interest in 111 unpatented claims adjoining the Pancontinental and Kondrat options. These 111 unpatented claims are located in McComber and Vincent townships, of the Thunder Bay Mining Division, and are just east of the town of Beardmore, Ontario which lies east of Lake Nipigon (location maps 1 & 2).

This report will outline the pertinent details of a geological mapping survey, undertaken on the following mine claims optioned from Tenacity:

McComber Township: TB677415  
TB677416  
TB677418 - TB677421  
TB677425  
TB677427  
TB677474

(See Geological Map in map pocket at back.)

The field work was carried out by the author and one field assistant, Mark Oudejans, B.Sc., between May 6th and 20th of this year. The survey utilized the recently completed eastward extension of the Pan Empire grid, lines 63 E to 84 E inclusive (see map pocket at back). A total of approximately 15.5 line-kilometres have been cut over the 9 claims mapped, at a line spacing of 100 metres. The Pan Empire base line strikes 72°.

2. LOCATION, ACCESS AND TOPOGRAPHY

The map area is located in the north-western extremity of the Norben optioned Tenacity claim group. More specifically, it lies in the north central portion of McComber Township (Thunder Bay Mining Div.), centered 2 kilometres north-west of Ralph Lake.

Access to the map area can be gained by travelling 9.5 kilometres east from Beardmore along Highway 11, then turning south onto an access road leading to Trans Canada Gas pipeline "right of way". Once at the "right of way" turn eastward and proceed along it 0.5 kilometres. On foot, proceed south-southwest approximately 300 metres through the bush to the Canadian National Railway bridge over the Blackwater River. Cross the bridge to the south shore of the Blackwater. Proceeding 2 kilometres east-southeast, will place you in the central portion of the 9 claim map area (see Location Map 2).

The northern portion of the map area is dominated, by a low till bank sloping down into several small swamps toward the east, up again, then down into a large cedar swamp. This cedar swamp extends across the claim group from east to west and surrounds a large pond in the eastern map area. The swamp is rimmed in the south-east by a 3-4 metre ridge of bedrock. This ridge marks the edge of a low plateau of volcanic ridges which prevail to the southern and eastern boundaries of the map area and beyond. Dominantly, these ridges trend east-west with the regional strike.

3. BRIEF HISTORY OF MAP AREA

The area, which includes the claims mapped in this study, was first "worked" in the mid-20's. The discovery over the years of numerous showings (The McWilliam, Kondrat, Delbridge, Dominion and Blacksmith to name a few) and several mines (the Northern Empire and Leitch mines to name two), has kept the area episodically active through all subsequent decades and to date.

In regards of mapping, the Ontario Department of Mines, Thunder Bay District has produced, various geological maps which include the area surveyed in this report. To the author's knowledge, the first of these surveys was "Geology of the Beardmore-Nezah Gold Area", by Langford, B.G., 1929. Most recently "Precambrian Geology of McComber Township", by Carter, M.W. et al, 1985, gives a complete re-mapped look at the area and includes the location of old showings, logging roads, diamond drill holes and other features found in the township. The field work for the later of the two maps was completed in 1983.

Numerous other geological maps have also been produced by private firms active in the area. These maps are discontinuous in their aerial coverage and are more concerned with specific economic features of the geology.



4. MAPPING METHODOLOGY

In order to gain the clearest possible picture of grid line deviation with distance from the baseline, myself and my assistant paced and compassed the claim boundaries of the study block. Line lengths at claim boundary and the distance between each line and claim post were noted. In this way the greatest possible grid control was achieved. The above information was then drafted onto a base map. This was then produced on a sealed base map.

Bedrock exposures and geographic features were recorded on a scale diagram of each line and within a field note book. Individual outcrops were studied to determine the rock type, grain size, bedding/cleavage attitude, veining and mineralization. This information was then drafted onto the 1:2500 scale base map, which was in turn developed into a more complete geological map of the survey area (see Geological Map, in map pocket at back).

In addition, during the survey any and all incorrectly labeled pickets encountered were compensated for in the final drafting of the base map.

Line 82E was found to have a chainage error, whereby each 25 metre picket was separated, consistently, by approximately 27.7 metres (determined by pacing between chainage pickets). As well, line 83E was found to have a separation of only 21.0 metres between each 25 metre picket.

5. GEOLOGY OF MAP AREA

The map area as a whole shows less than 1% bedrock exposure. Approximately 90% of this exposure is found in the south-western portion of the claim group, specifically on claims 677420, 677421 and 674474.

Limited northern outcrop found in the central portion of claim 677427 is of a metamorphosed greywacke showing weak remnant bedding, well developed axial planes cleavage and minor calcite and ankerite veining. The geology of the central portion of the mapped area is mostly covered by glacial-fluvial till (Carter, M.W. et al, 1985), till and swamp. Only three further outcrops of the "metawacke" were located, these are found in the most westerly portion of the claim group and are the only exposure noted on claims 677418 and 677419. An overview of all metawacke outcrops, indicates a pervasive axial planes cleavage striking at approximately 75° and dipping steeply to the south. Also within the metawacke, the bedding is seen to be sub-parallel to the axial plane cleavage, indicating the strata was isoclinally folded.

As mentioned above, most of the outcrop is located in the south-east. This plateau of outcrop is flanked to the northwest by a large swamp which runs the length of the claim group. The south-eastern boundary of this swamp is a 3-4 metre ridge of meta volcanics trending parallel to the regional strike at approximately 75°. South-eastward from this ridge and extending beyond the southern and eastern boundaries of the claim group a series of 0.5 - 2 metre ridges yield fairly continuous outcrop. Exposure in this area is 5 to 10%, and again the ridges are parallel to the regional strike.

Available outcrop indicates a fairly complex volcanic stratigraphy of pillowed, variolitic and massive flows. However, interpretation and the division of these volcanic sub-units is hampered by the lack of continuous north-south exposure. Such exposure would indicate what lies in the troughs between these ridges and firm up the stratigraphic sub-division between the various flow units.

The ridge bordering the swamp marks the beginning of a sequence of alternating massive and variolitic flows. These flows are discontinuous along strike and probably lenticular in form. Within these flows some sericitic altered patches were observed. This alteration is possibly the result of hydrothermal alteration along localized fractures. Commonly within the sediments and the volcanics interstitial secondary pyrite is detected at concentrations of less than 1%. Within the sericitic volcanics, pyrite, and possibly other minor sulphide minerals total 2-3% locally.

The altered volcanic unit also hosts a quartz vein in an outcrop very near the regional contact between the two major lithologies. This outcrop is located at 35 m west of picket 3+75N on line 70E.

150 to 200 metres south-southwestward from the northern volcanic ridge, pillowed flows are encountered showing chloritic sulphide bearing salvages. These pillowed flows persist to the southern and eastern claim boundaries and beyond. Observed also within these pillowed flows are minor calcite, ankerite and quartz veins and occasional quartz "blow outs" (dilatent infillings) up to 0.5 x 1.0 metres in dimension. Larger quartz veins are also encountered at widths up to 0.5 metres. These quartz veins and "blow outs" are composed of milky quartz with minor calcite and no exposed sulphide mineralization.

In the western portion of the map area a stratigraphic boundary between the sedimentary and volcanic rocks can be identified between two outcrops 40 metres apart. This spot is the only one where the two basic rock units outcrop within 125 metres of one another.

However, given:

- The pervasive regional strike
- The more or less parallel relationship between the regional strike and trend of the northern ridge of volcanics
- The relatively good fix on the stratigraphic boundary in the west.

A tentative boundary for the sedimentary-volcanic contact can be placed just north of the volcanic ridge on the edge of the cedar swamp.

No faulting or major shear zones were noted in the map area.

6. CONCLUSIONS AND RECOMMENDATIONS

Mineralization in the area includes narrow calcite and iron carbonate veins as well as quartz veins and dilatent quartz infillings. Sulphides were limited to less than 1% disseminated pyrite in both greywacke and volcanics with the sericitically altered volcanics and pillow salvages showing marginally higher levels. The large apparently continuous quartz veins show no visible tourmaline or sulphide mineralization. Assays of grab samples are pending. Tracing of possible en echelon dilatent zones and of apparently continuous quartz veins, for localized mineralized zones, is prohibited by limited exposure.

A recent geophysical survey over the map area (Barnett, G.A. et al, 1987) gave a generally flat magnetic response. However, a moderate Frazer Filter anomaly and a moderate to strong EM16 crossover were detected parallel and apparently related to the stratigraphic boundary between the two major rock units. With this in mind, a quartz vein identified 35 metres west of picket 3+75N on Line 70E is an occurrence which might warrant further investigation. This quartz vein, although not visually mineralized, within this limited surface outcrop, is located near the lithologic contact within sericitized mafic volcanics. This geological and geophysical setting is very similar to "The Contact Structure" which is located along the same geological contact 7.5 kilometres to the west.

The author was recently involved in a 7,000 metre drill program conducted on "the contact structure". This program outlined approximately 122,000 tons of drill indicated and inferred ore grade vein material.

For the above mentioned reasons it is recommended that a stripping program be undertaken along the vein to gain a

better view of the vein's width and length, and possible gold contact.

The stripping should commence at the original site of vein bearing outcrop and, initially, extend 50 metres east and west along its strike. The stripping should be followed by detailed mapping and channel sampling across the vein at 3 metre intervals down the length of the stripped area.

One further recommendation would be that lines 82E and 83E be re-chained completely from the base line north to the claim boundary, before and if any further use of these grid lines is required.

Respectfully submitted,  
A.C.A. HOWE INTERNATIONAL LTD.

A handwritten signature in cursive script, appearing to read "Terry Matheson", with a long horizontal flourish extending to the right.

Terry R. Matheson, B.Sc.H.

7. BIBLIOGRAPHY

Barnett, G.A. et al  
1987

Geophysical Study of Pan Empire  
Grid; Pancontinental Kondrat and  
Tenacity optioned claims, Ontario;  
unpublished company report.

Carter, M.W. et al  
1985

Precambrian Geology of McComber  
Township, District of Thunder Bay,  
Ontario Geological Survey Map P.  
2853.

CERTIFICATE

I, Terry R. Matheson of Apt. #2, 123 Victoria St., Truro, N.S. certify that:

1. I am a field geologist employed by the consulting firm of A.C.A. Howe International Ltd. and reside at the above address.
2. I am a graduate of Acadia University and hold a Bachelor of Science with Honours, in Geology.
3. I have worked in the field of Geoscience continuously since June 1986.
4. This report is based on a knowledge of the Norben property gained from personal examination of the property and a review of private geological reports.
5. I have no interest direct or indirect in the Norben property, nor do I expect to receive any.

Dated at Toronto, this 28th day of May, 1987.

  
Terry R. Matheson, B.Sc.





42E12NW8185 2.10231 MCCOMBER

900

File: 674474 #270 MI

Type of Survey(s): **Geological (Report + Drafting)** Township or Area: **M<sup>c</sup>Comber Twp G166**

Claim Holder(s): **Tenacity Mining Corp. Ltd** Prospector's Licence No.: **T1107**

Address: **P.O. Box 65, Beardmore, Ont. POT 1G0**

Survey Company: **A.C.H. Howe International Ltd** Date of Survey (from & to): **01 05 87 to 23 05 87** Total Miles of line Cut: **9.58**

Name and Address of Author (of Geo-Technical report): **Terry Matheson c/o Suite 400, 199 Bay St, Toronto, Ont M5T 1G4**

Credits Requested per Each Claim in Columns at right

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Electromagnetic	
	Magnetometer	
	Radiometric	
For each additional survey: using the same grid: Enter 20 days (for each)	Other	
	Geological	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	Electromagnetic	
	Magnetometer	
	Radiometric	
	Other	
	Geological ✓	4.75
	Geochemical	
Airborne Credits Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	Days per Claim
	Magnetometer	
	Radiometric	

Mining Claims Traversed (List in numerical sequence)

Prefix	Mining Claim Number	Expend. Days Cr.
TB	677415	4.75
	677416	4.75
	677418	4.75
	677420	4.75
	677421	4.75
	677425	4.75
	677427	4.75
	674474	4.75
	677419	4.75

MINING LANDS SECTION RECEIVED JUN 24 1987

THUNDER BAY MINING DIVISION RECEIVED JUN 18 1987

AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures \$  ÷ 15 = Total Days Credits

Instructions  
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Date: **June 18/87** Recorded Holder or Agent (Signature): **Jy Math**

For Office Use Only

Total Days Cr. Recorded: **42.75** Date Recorded: **June 18 1987** Mining Recorder: **Audrey M. Hayes**

Date Approved or Recorded: **June 18 1987** Branch Director: **[Signature]**

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying: **Jy Math P.O. Box 65 Beardmore, Ont. POT 1G0**

Date Certified: **June 18/87** Certified by (Signature): **Jy Math**



Ministry of Northern Development and Mines  
Ontario

Report of Work  
(Geophysical, Geological, Geochemical and Expenditures)

# 205

Instructions: - Please type or print.  
- If number of mining claims traversed exceeds space on this form, attach 21st Note: - Only days credits calculated in the "Expenditures" section may be entered in the "Expend. Days Cr." columns.  
- Do not use shaded areas below.

File 674474 Land Management Mining Act 210231

Type of Survey(s) <b>GEOLOGICAL</b>	Township or Area <b>MCCOMBER TWP. 616</b>
Claim Holder(s) <b>TENACITY MINING CORPORATION LTD.</b>	Prospector's Licence No. <b>T 1107</b>
Address <b>P.O. Box 238, BEARDMORE, ONT. POT 160</b>	
Survey Company <b>A.C.A. HOWE INTERNATIONAL</b>	Date of Survey (from & to) <b>01 05 87 23 05 87</b>
Name and Address of Author (of Geo-Technical report) <b>TERRY MATHESON % SUITE 400, 199 BAY ST, TORONTO, ONT. M5J-1L4</b>	Total Miles of line cut <b>9.58</b>

Credits Requested per Each Claim in Columns at right

Mining Claims Traversed (List in numerical sequence)

Special Provisions	Geophysical	Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	- Electromagnetic	
	- Magnetometer	
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological <input checked="" type="checkbox"/>	
	Geochemical	
Man Days Complete reverse side and enter total(s) here	Geophysical	Days per Claim
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological <input checked="" type="checkbox"/>	<b>30.9</b>
	Geochemical	
Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Prefix	Mining Claim Number	Expend. Days Cr.	Prefix	Mining Claim Number	Expend. Days Cr.
TB.	677415	30.9			
	677416	30.9			
	677418	30.9			
	677419	30.9			
	677420	30.9			
	677421	30.9			
	677425	30.9			
	677427	30.9			
	674474	30.9			

RECEIVED

JUN - 4 1987

MINING LANDS SECTION

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

Calculation of Expenditure Days Credits

Total Expenditures  ÷ 15 = Total Days Credits

Instructions  
Total Days Credits may be apportioned at the claim holder's choice. Enter number of days credits per claim selected in columns at right.

Total number of mining claims covered by this report of work.

Date **MAY 25 1987** Recorded Holder or Agent (Signature) *Paul Brugger*

For Office Use Only

Total Days Cr. Recorded **278.1** Date Recorded **May 26, 1987** Mining Recorder *[Signature]*

Date Approved as Recorded **1987.10.27** Branch Director *[Signature]*

Certification Verifying Report of Work

I hereby certify that I have a personal and intimate knowledge of the facts set forth in the Report of Work annexed hereto, having performed the work or witnessed same during and/or after its completion and the annexed report is true.

Name and Postal Address of Person Certifying **P.O. Box 238, BEARDMORE, ONT. POT 160**

(P. BRUGGER)

Date Certified **MAY 25 1987** Certified by (Signature) *Paul Brugger*

### Assessment Work Breakdown

Man Days are based on eight (8) hour Technical or Line-cutting days. Technical days include work performed by consultants, draftsmen, etc..

Type of Survey												
Technical Days	X	7	=	Technical Days Credits	+	Line-cutting Days	=	Total Credits	+	No. of Claims	=	Days per Claim
14.03		7		98.22		180		278.22		9		30.9

Type of Survey												
Technical Days	X	7	=	Technical Days Credits	+	Line-cutting Days	=	Total Credits	+	No. of Claims	=	Days per Claim
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Type of Survey												
Technical Days	X	7	=	Technical Days Credits	+	Line-cutting Days	=	Total Credits	+	No. of Claims	=	Days per Claim
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Type of Survey												
Technical Days	X	7	=	Technical Days Credits	+	Line-cutting Days	=	Total Credits	+	No. of Claims	=	Days per Claim
<input style="width: 50px; height: 20px;" type="text"/>		7		<input style="width: 50px; height: 20px;" type="text"/>		<input style="width: 50px; height: 20px;" type="text"/>		<input style="width: 50px; height: 20px;" type="text"/>		<input style="width: 50px; height: 20px;" type="text"/>		<input style="width: 50px; height: 20px;" type="text"/>

**THUNDER BAY**  
 MINING DIVISION  
**RECEIVED**  
 MAY 26 1987

A.1  
 7/8/9/10/11/12/1/2/3/4/5/6 PM

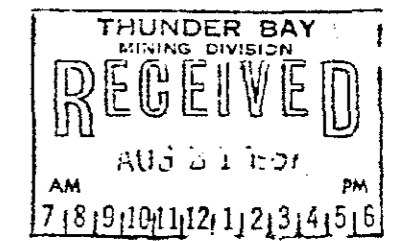
G-166

IRWIN TWP G-164

THUNDER BAY  
 RECEIVED  
 M.I.R. ADMINISTRATIVE DISTRICT  
 THUNDER BAY  
 MINING DIVISION  
 LAND TITLES / REGISTRY DIVISION  
 THUNDER BAY

- ① PIT NO. 20-4 FILE NO. 59767
- ② GRAVEL FILE NO. 59767
- ③ GRAVEL FILE NO. 59767
- ④ GRAVEL FILE NO. 59767

AREAS WITHDRAWN FROM DISPOSITION				
Description	Order No.	Date	Description	File
SEC 36/80	W.29/83	20/10/83	S.R.O.	158528



LEGEND

PATENTED LAND	(P)
PATENTED FOR SURFACE RIGHTS ONLY	(P)
LEASE	(L)
LICENSE OF OCCUPATION	(L.O.)
CROWN LAND SALES	(C.S.)
LOCATED LAND	(Loc.)
CANCELLED	(C)
MINING RIGHTS ONLY	(M.F.O.)
SURFACE RIGHTS ONLY	(S.R.O.)
HIGHWAY & ROUTE NO.	(17)
ROADS	(---)
TRAILS	(---)
RAILWAYS	(---)
POWER LINES	(---)
MARCH OR MUSKEG	(---)
MINES	(X)

*Note: Use only with summer north locations or when space is limited*

SCALE: 1 INCH = 40 CHAINS

FEET: 0 1000 2000 4000 6000 8000

METRES: 0 200 1000 2000 (1 KM) (2 KM)

Ministry of Land Management  
 Natural Resources Branch  
 Ontario

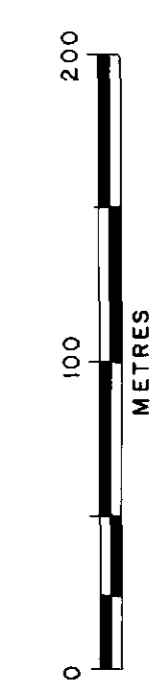
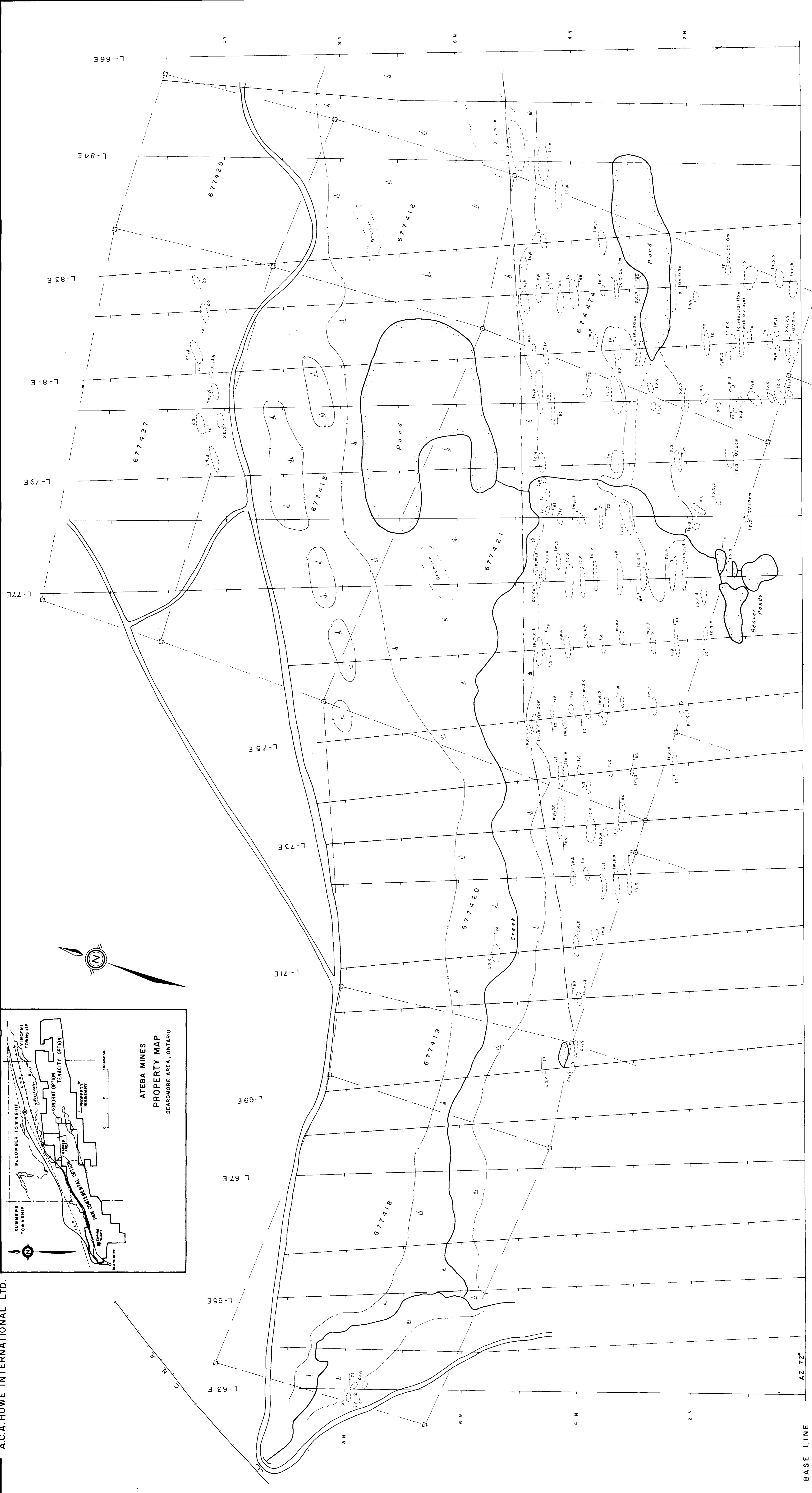
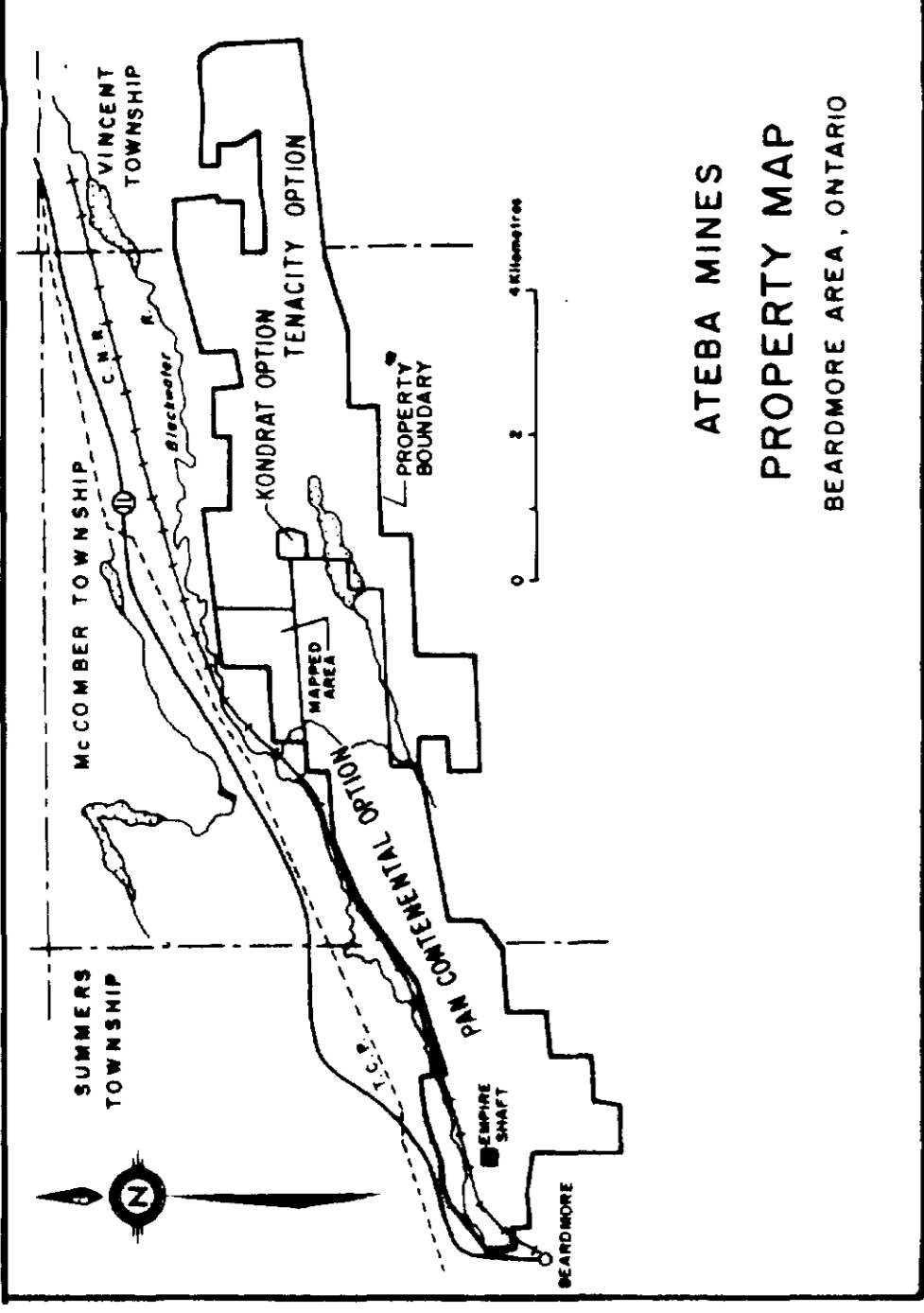
Date: FEBRUARY 10th, 1981  
 Number: Rec. 5, 1985  
**G-166**

SUMMERS TWP G-165

VINCENT TWP G-163



BEARDMORE AREA G-7



**ATEBA MINES**  
 BEARDMORE PROPERTY - ONT.  
*210231*  
**GEOLOGICAL MAP**  
 DATE: MAY 1987 BY: T.M. / gmas MAP NO.

- LEGEND**
- Metavolcanics
    - 100% quartz vein (1-3cm wide)
    - interstitial calcite
    - metasandstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
  - Metagreywacke
    - blanckite enriched vein (1-3cm)
    - blanckite (stream bed)
    - diagenetic vein
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
  - Metasediments
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
    - metasiltstone
  - Other features
    - Claim post & line
    - Outcrop area
    - Intersect stratigraphic boundary
    - Inferred stratigraphic boundary
    - Actual plane cleavage / bedding plane attitude (sub-parallel)
    - Scale
    - Logging road (passable if cleared)
    - Quartz Vein (width indicated)

**BASE LINE**  
 (EASTWARD EXT. OF PAN-EMPIRE TO TENACITY OPT.)  
 AZ. 72°