



52L085E0001 2.13058 LENNAN LAKE

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SUMMARY REPORT  
ON THE  
INTEGRATED MINERAL EXPLORATION PROGRAM  
CONDUCTED JUNE 15TH - OCTOBER 31, 1988

AND

PROPOSED MINERAL EXPLORATION PROGRAM & BUDGET  
ON THE  
HELDER LAKE PROJECT  
KENORA MINING DIVISION, ONTARIO

PREPARED FOR

CHAMPION BEAR RESOURCES LTD.

BY

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63. 2/91

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NOVEMBER 10, 1988



52L088E0001 2.13956 LENNAN LAKE

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## 1.1 GENERAL OBSERVATIONS

### SUMMARY

- 1). Mechanisms for ore deposition have been active in the Separation Lake metavolcanic-metasedimentary belt as demonstrated by the Au occurrences at Helder Lake and One Man Lake.
- 2). The mineralizing event is wide spread or more than one mineralizing events have taken place. The Helder Lake occurrence and One Man Lake occurrence are approximately 38 km. apart.
- 3). Gold mineralization is intimately related to arsenopyrite mineralization. Arsenopyrite mineralization has been noted to be wide spread within the iron formation and pervades surrounding metavolcanic rocks in several areas.
- 4). The chert-magnetite iron formation unit is an excellent host for gold mineralization.
  - a). the unit is brittle and competent and being enclosed in incompetent schistose volcanics it forms excellent channel-ways for mineralizing fluids to travel.
  - b). gold mineralization has a chemical affinity for chert-magnetite.
- 5). The geological and geophysical surveys have indicated excellent potential for gold and/or base metal mineralization.

## Comments

Gold mineralization has been noted to occur in two separate locations in the Separation Lake metavolcanics-metasedimentary belt, namely:

- 1). Helder Lake Occurrence
- 2). One Man Lake Occurrence.

### 1). Helder Lake

Gold mineralization occurs within an altered chert-magnetite iron formation horizon. Quartz, quartz-biotite, along with minor arsenopyrite, pyrite, pyrrhotite and chalcopyrite occur as replacements of chert and magnetite. The iron formation had undergone earlier tectonic deformation as evidenced by strong foliation and folio-folding. Shearing has been developed parallel to and along original planes. Replacement mineralization is largely along foliation planes but does occur as crosscutting fractures generally at a low angle to foliation. The magnetite possibly served as a chemical trap for mineralizing fluids.

Geochemical analysis indicate a direct positive relationship between gold values and arsenopyrite content of the rock.

Geochemical analysis indicate that gold mineralization is not of economic grade but are definitely of interest. Sporadic geochemical analysis have returned values as high as 16,000 ppb Au.

Arsenopyrite - occurs as fine disseminated needles in quartz and massive crystalline form along foliation and in fracture.

Pyrite - occurs as semi-massive to massive crystalline form in sharp contact with the overlying amphibolite minor disseminated pyrite occurs below along with the arsenopyrite in quartz.

Exploration to date has provided strong evidence to support the theory that the property has excellent possibility for hosting economic gold deposits.

Conditions for creating gold deposits are:

- 1). a source of gold or gold bearing fluids.
- 2). a media or channel ways for solutions to travel.
- 3). some form of structural and/or geochemical traps to receive and cause gold deposition and accumulate.

These conditions have been discovered to have existed in the area.

- 1). An active gold bearing hydrothermal system has deposited subeconomic gold mineralization in structurally uncomplicated rocks in the Helder Lake area.
- 2). The relatively thin competent iron formation unit sandwiched in incompetent schistose amphibolites provides excellent channel ways for hydrothermal fluids to travel.
- 3). Geophysical and geological investigations have outlined several structurally complex areas deemed favourable for forming traps and hosting economic gold mineralization.

semi-massive mineralization is generally narrow 10cm to 30cm in width and appears to pinch and swell along with the schist zone.

The rock and mineralization is similar to the Helder Lake occurrence and may well be a replacement of chert magnetite iron formation. It is possible that the One Man Lake and Helder Lake occurrences are tied in stratigraphically and may be related by the same mineralizing event.

The shear zone hosting the mineralization is strong. The zone appears to pinch out to the west of the occurrence but is opened and has not been explored to the east where it strikes towards the main portion of the Separation Lake metavolcanic-metasedimentary belt.

Recent exploration and development along iron formation in N.W. Ontario has resulted in a number of discoveries of economic gold deposits. Some of these deposits include Placer Dome's Dona Lake Mine and Musselwhite Prospects, Bond Gold Canada (formerly St. Joe Exploration) and Gold Patricia Mine. Numerous other occurrences and prospects have resulted under continuing exploration.

Success in this area can be attributed to persistent exploration along iron formations which are anomalously high in gold. The deposits are not continuous but are localized by structural and/or chemical traps.

The exposure of the mineralization zone at Helder Lake is probably a fortuitous freak rather than a situation to be expected.

The areas of greatest accumulation of sulfides are more apt to be eroded by glaciations and covered by glacial debris, swamps and lakes. Geological mapping supports this claim. Where geophysical data indicates complicated folding, faulting and/or shearing outcrop area is scanty and located along margins of anomalous areas.

The gold bearing iron formation enriched in sulfides weathers readily and crumbles.

The Helder Lake occurrence itself is probably a subeconomic "teaser".

#### One Man Lake

The One Man Lake occurrence consists of semi-massive to massive gold bearing arsenopyrite, sphalerite along with minor pyrite; chalcopyrite and magnetite hosted in a relatively narrow mafic schist. Granitic rocks encompass the schist zone which varies in thickness from 10 -20 meters.

The schist zone is known to continue over a strike length of 1400 meters and is open to the east. Large portions of this shear zone are covered by overburden or water. Chip samples returned gold values ranging from 20 ppb to 4830 ppb. Chip samples returned gold values over a strike length of 800 meters. The



The Separation Lake iron formation is anomalously high in gold and the deposit at Helder Lake appears to be subeconomic. The significance is that a gold bearing hydrothermal system has been at work and the possibilities of other deposits occurring along this horizon are considered to be excellent.

The Separation Lake metavolcanic belt is virtually virgin territory. Limited prospecting and exploration have been conducted in the belt. The major thrust of exploration was in the late 1940's to the late 1950's where the iron formation was tested for potential iron deposits. Records show no analysis or assaying was carried out for gold.

## 1.2 CONCLUSIONS

- 1). An orderly, systematic mineral exploration program has been conducted in the Helder Lake area. Work to date has down graded several areas and enhanced others as to potential of hosting gold and/or base metals mineralization. A number of excellent target areas have been selected. The next logical step is to test these areas by diamond drilling. Geological investigations have resulted in staking an interesting and promising Au-Zn mineral occurrence at One Man Lake.
- 2). Geophysical and geological mapping have traced the potentially gold bearing iron formation horizon over a total strike length of approximately 16 km. If the One Man Lake occurrence is a part of the same unit the strike length is considerably larger.
- 3). The I.F. unit is generally linear with minor observed distortions. The unit is not continuous but is boudinaged. General major distortions are evident. The I.F. unit is offset by S and Z type folding and faulting along its length.
- 4). Selection of favourable targets for further testing by diamond drilling is based on:
  - a). obvious observed alteration and mineralized zones at Helder Lake and One Man Lake.
  - b). areas of folding, faulting, shearing and alteration along cross cutting or near the favourable iron formation.

c). change in characteristics of mineralization as indicated by geophysical pattern ie. a drop in magnetic intersections may signify hydrothermal alteration and sulfidization of the chert-magnetite iron formation.

Selection of favourable areas for further evidence:

- 1). obvious observed mineralized zones at
  - a). Helder Lake
  - b). One Man Lake.
- 2). areas of faulting and folding, shearing and alteration along or near the iron formation.
- 3). change in characteristic in mineralization as indicated in changes in magnetic patterns probably indicates areas of sulfidization of the iron formation.
- 5). Four areas have been selected as high priority targets for testing by diamond drilling. Three of the high priority areas are in the Helder Lake area between lines 100+00E to 170+00E. The fourth area of high priority is One Man Lake. The areas are (see airborne EM plans 2 & 2a):
  - A). the area of the known hydrothermal alteration and mineralization between lines 100+00E and 113+00E.
  - B). the area of complex and multiple trend conductors between lines 123+00E and 135+00E.
  - C). the area of complex S fold structures to the east of Helder Lake between lines 150+00E to 170+00E. The area

has complex folding, shearing, faulting, alteration and wide spread aspy mineralization.

One Man Lake area - the strongest mineralization has been observed at this locale. The observed structure is strong and has at least 1400 meters strike length. Most of the zone is covered by overburden and water. The structure can be traced by geophysics and should be tested by short diamond drill holes.

Second Priority Targets

- D). Bass Lake area - separate grid approximately 10 km east of Helder Lake
- E). groups of anomalies in limbs of Z fold area between lines 63+00E and 75+00E
- F). groups of anomalies in limbs of S fold area between line 30+00E and 50+00E
- G). structural break located between lines 15+00E and 25+00E.

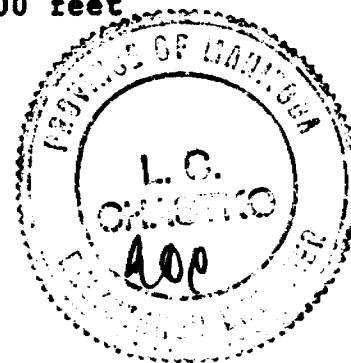
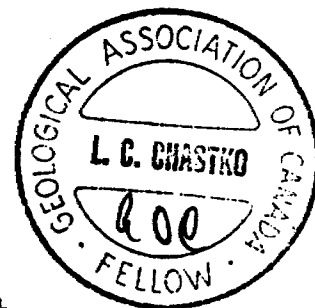
1.3 RECOMMENDATIONS

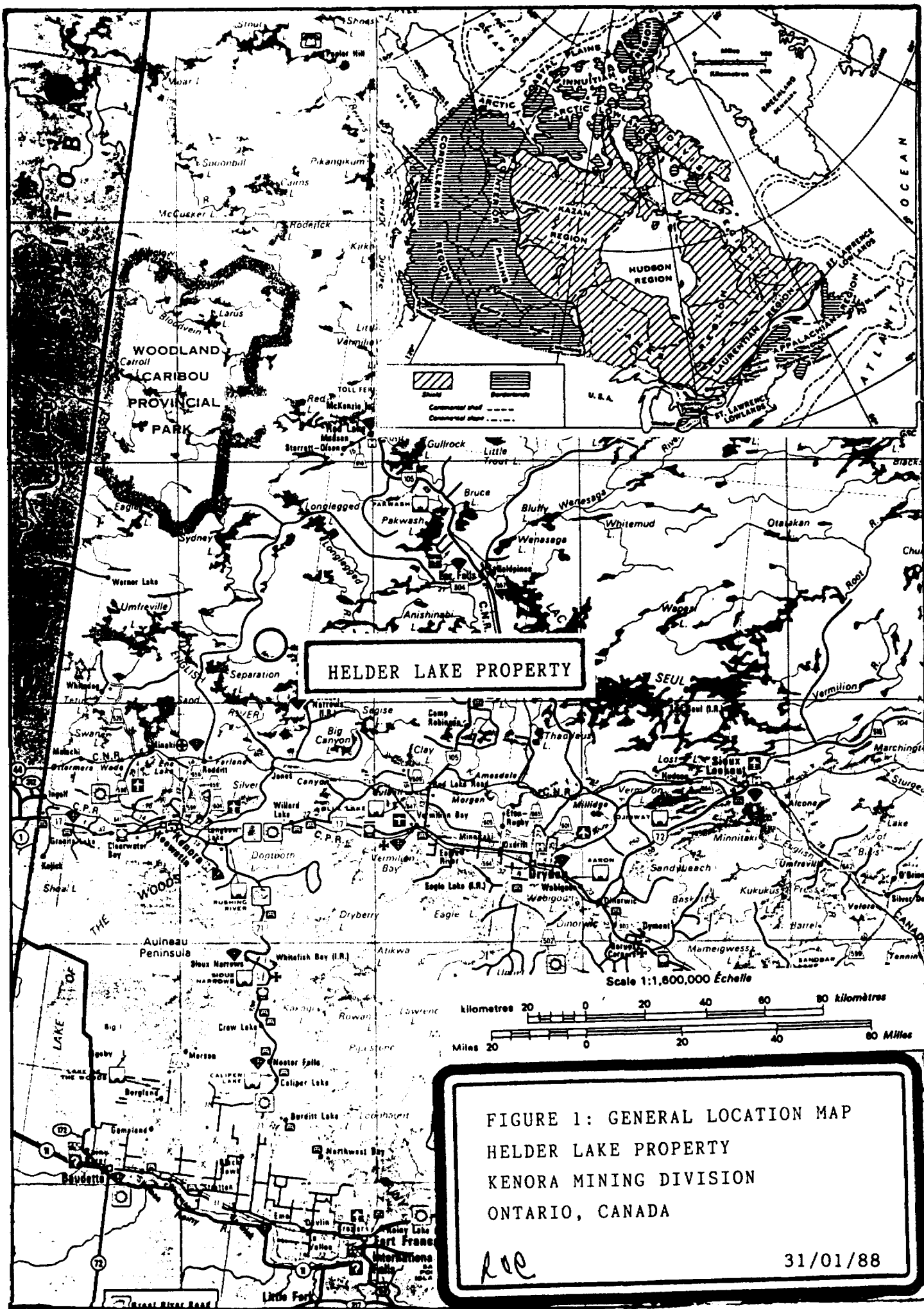
- 1). Fill in grid lines and geophysics should be conducted over key areas where presence of water precluded coverage during the summer program. Some X lines should be established over the Helder-E S fold area to define the exact location of the limbs.
- 2). The One Man Lake occurrence should be gridded and covered by ground geophysics in preparation for diamond drilling.
- 3). Diamond drilling is recommended to test favourable target areas. The area covered by this program is large. A diamond drill program of 30,000 feet is not excessive and is highly recommended on the following areas.

Area A - Known mineral occurrence.	Priority A
6 - 8 holes	2,500 feet
Area B - (Priority A)	
6 - 15 holes	5,000 feet
Area C - S fold Area (Priority A)	
30 35 holes	10,000 feet
One Man Lake (Priority A)	
10 - 15 holes	5,000 feet
Area D - Bass Lake (Priority B)	
4 - 5 holes	1,500 feet
Areas E, F & G (Priority B)	
15 - 20 holes	6,000 feet
TOTAL	30,000 feet

Respectfully submitted

  
L.C. Chastko, P.Eng.  
President



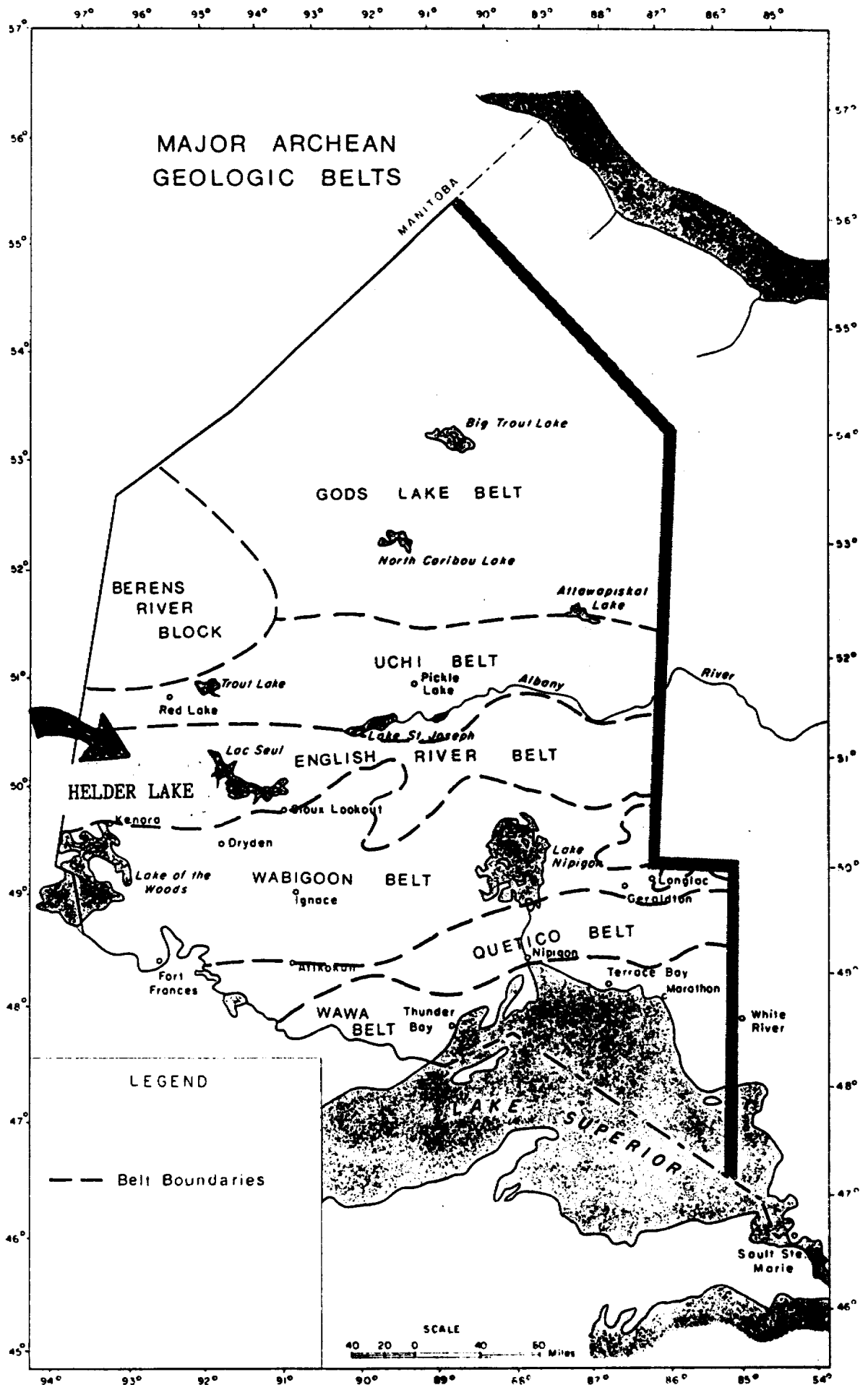


**HELDER LAKE PROPERTY**

FIGURE 1: GENERAL LOCATION MAP  
 HELDER LAKE PROPERTY  
 KENORA MINING DIVISION  
 ONTARIO, CANADA

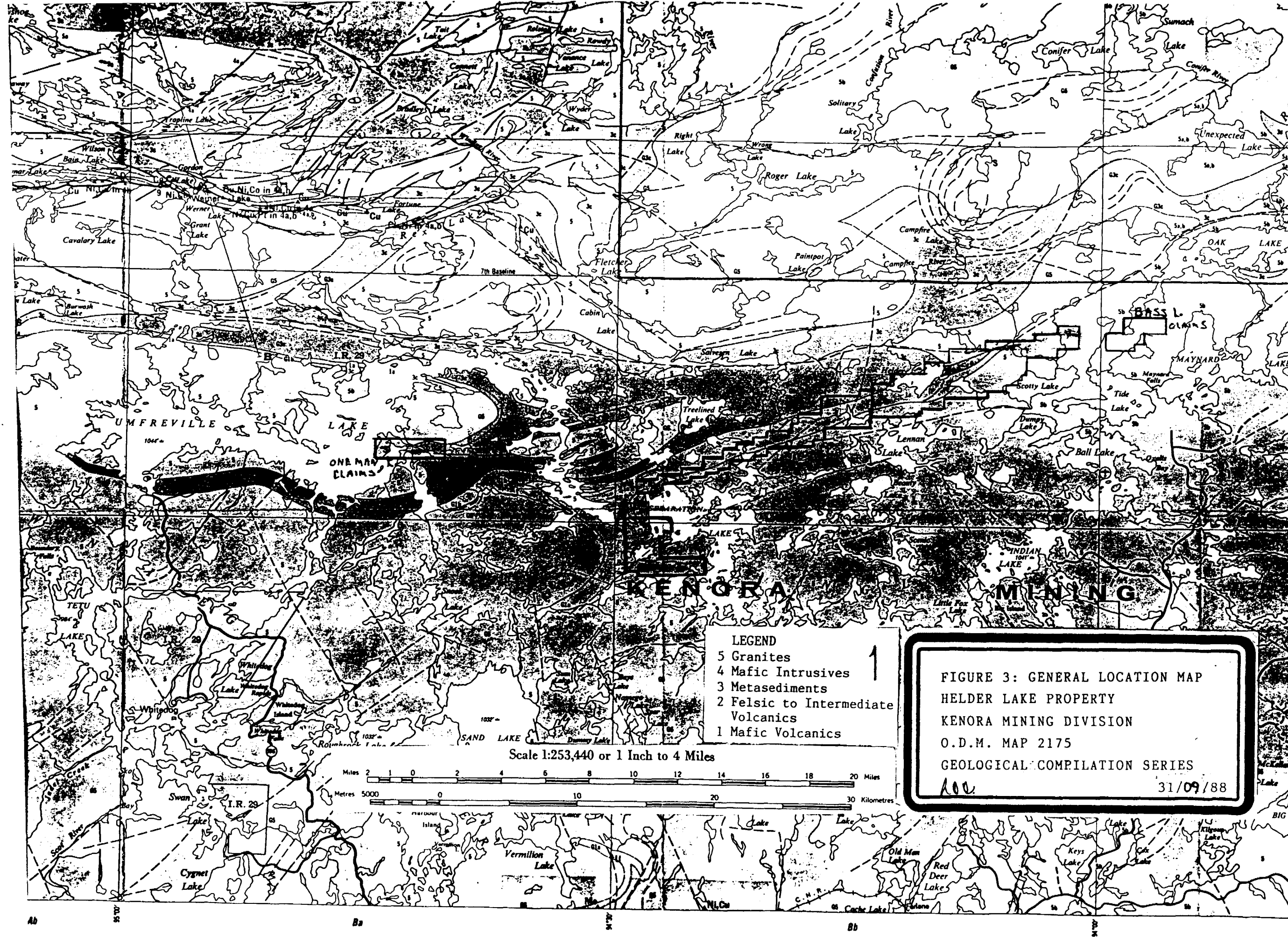
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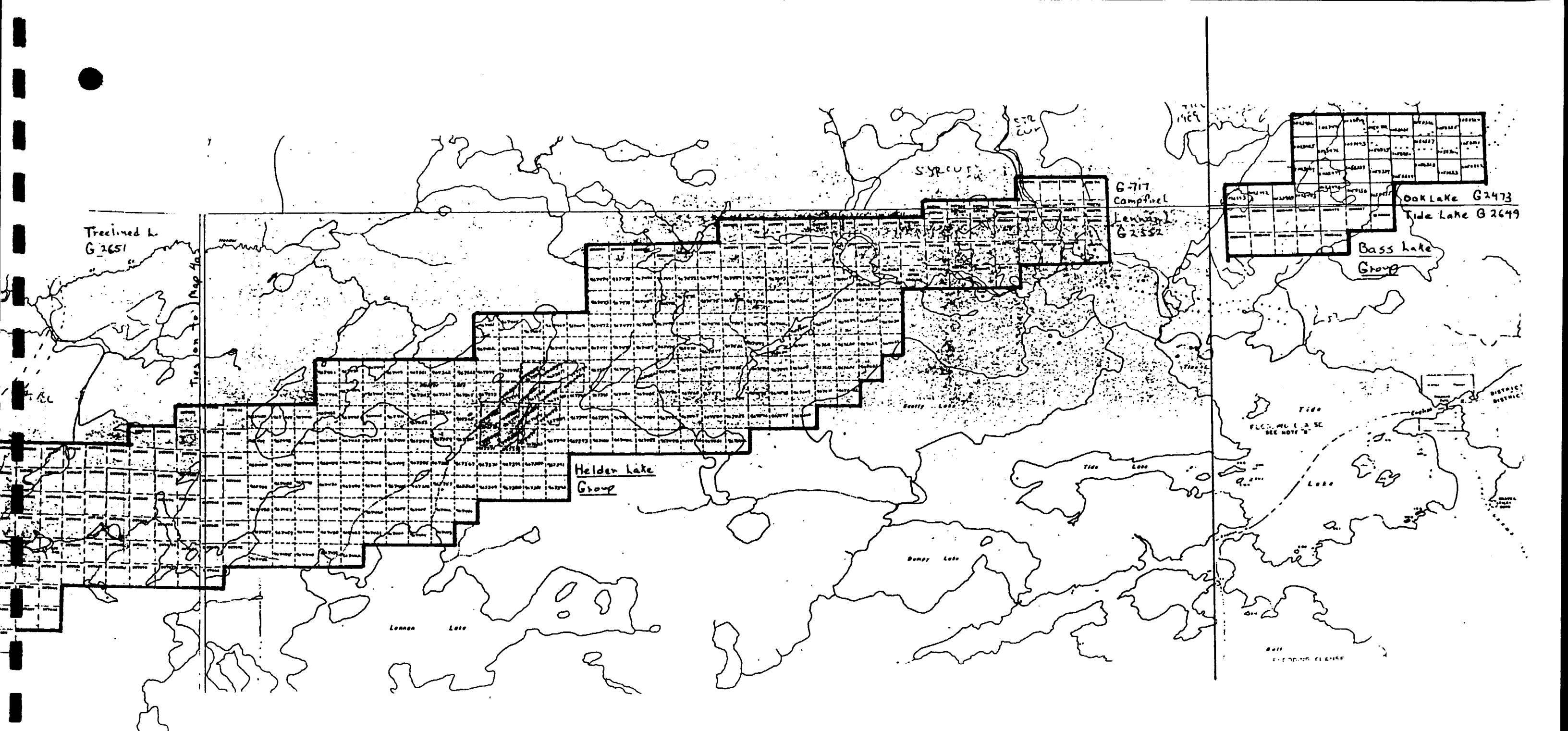
Source - "Mineral Exploration Targets in Northwestern Ontario"

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**FIGURE 1**

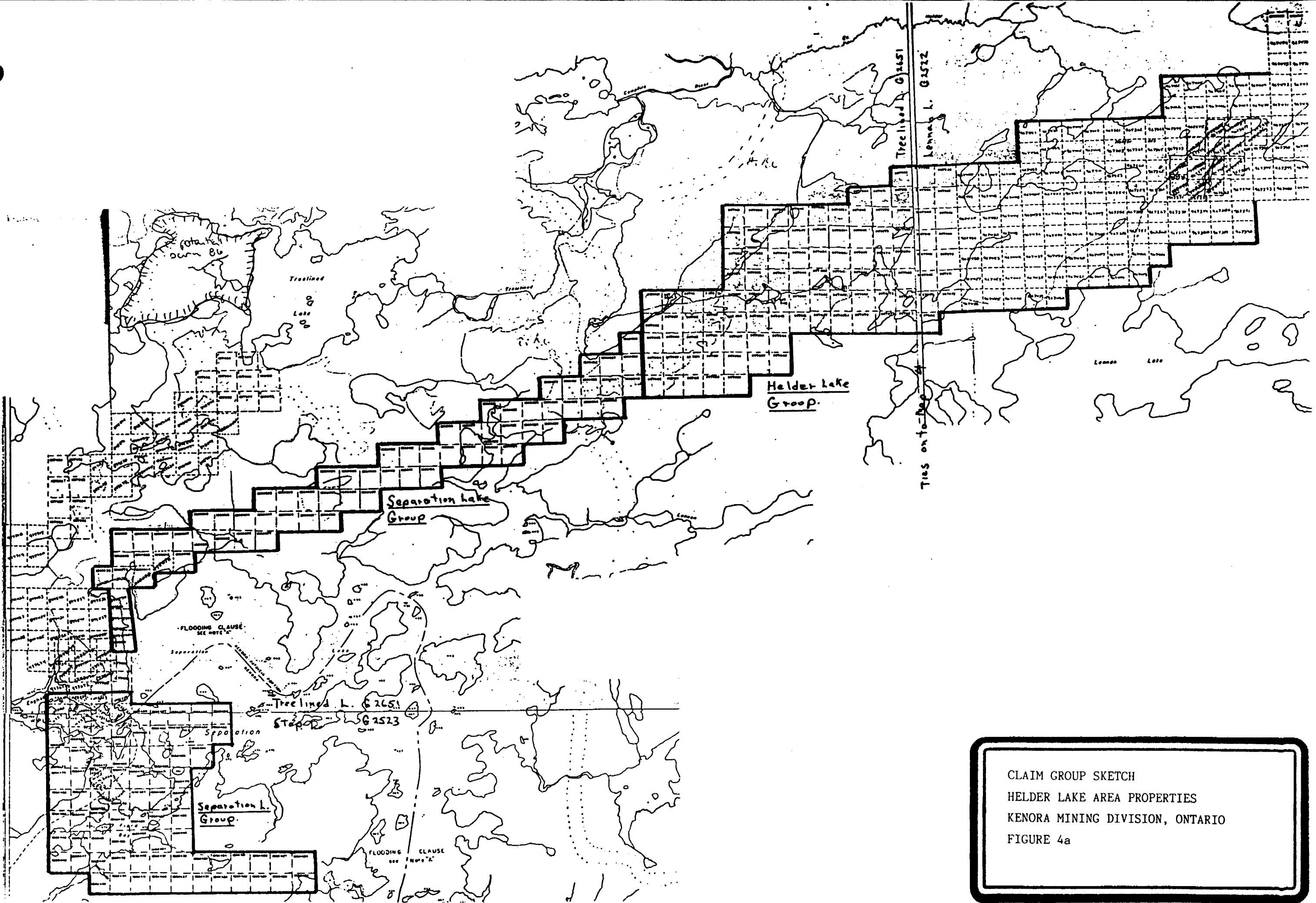


Ab Bb Bc Bd



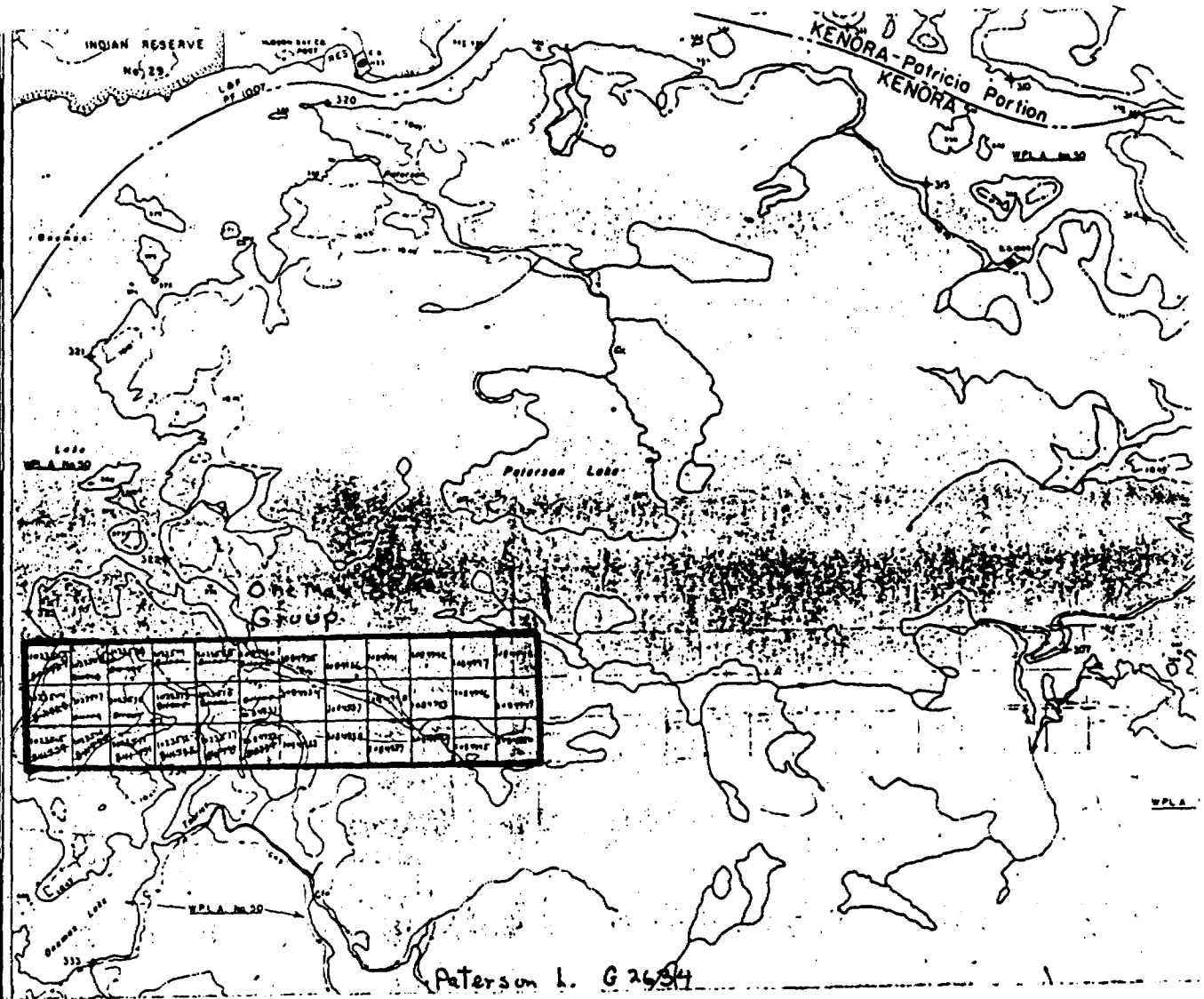


CLAIM GROUP SKETCH  
 HELDER LAKE AREA PROPERTIES  
 KENORA MINING DIVISION, ONTARIO  
 FIGURE 4

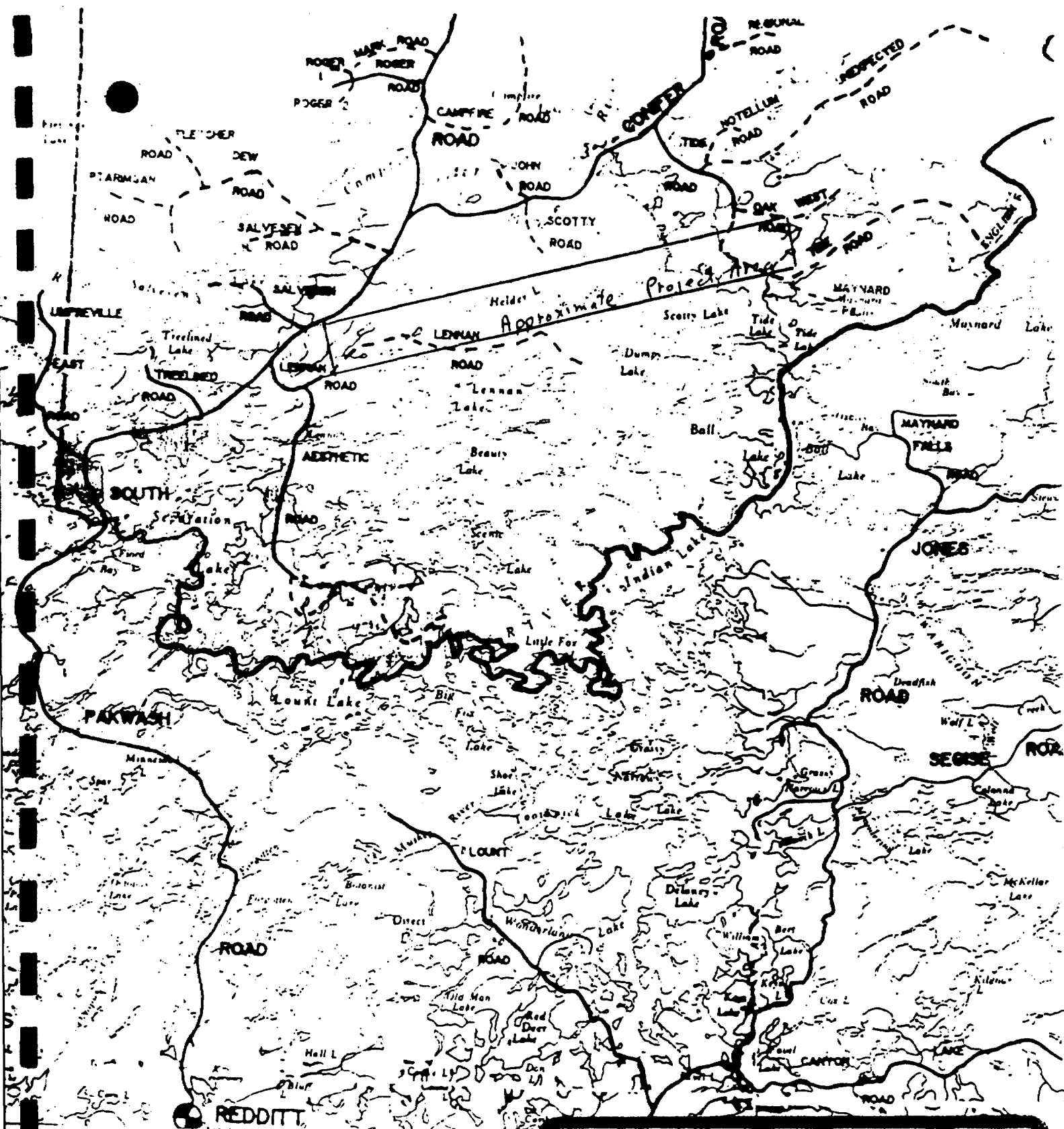


CLAIM GROUP SKETCH  
 HELDER LAKE AREA PROPERTIES  
 KENORA MINING DIVISION, ONTARIO  
 FIGURE 4a


UMFREVILLE LAKE G-2653

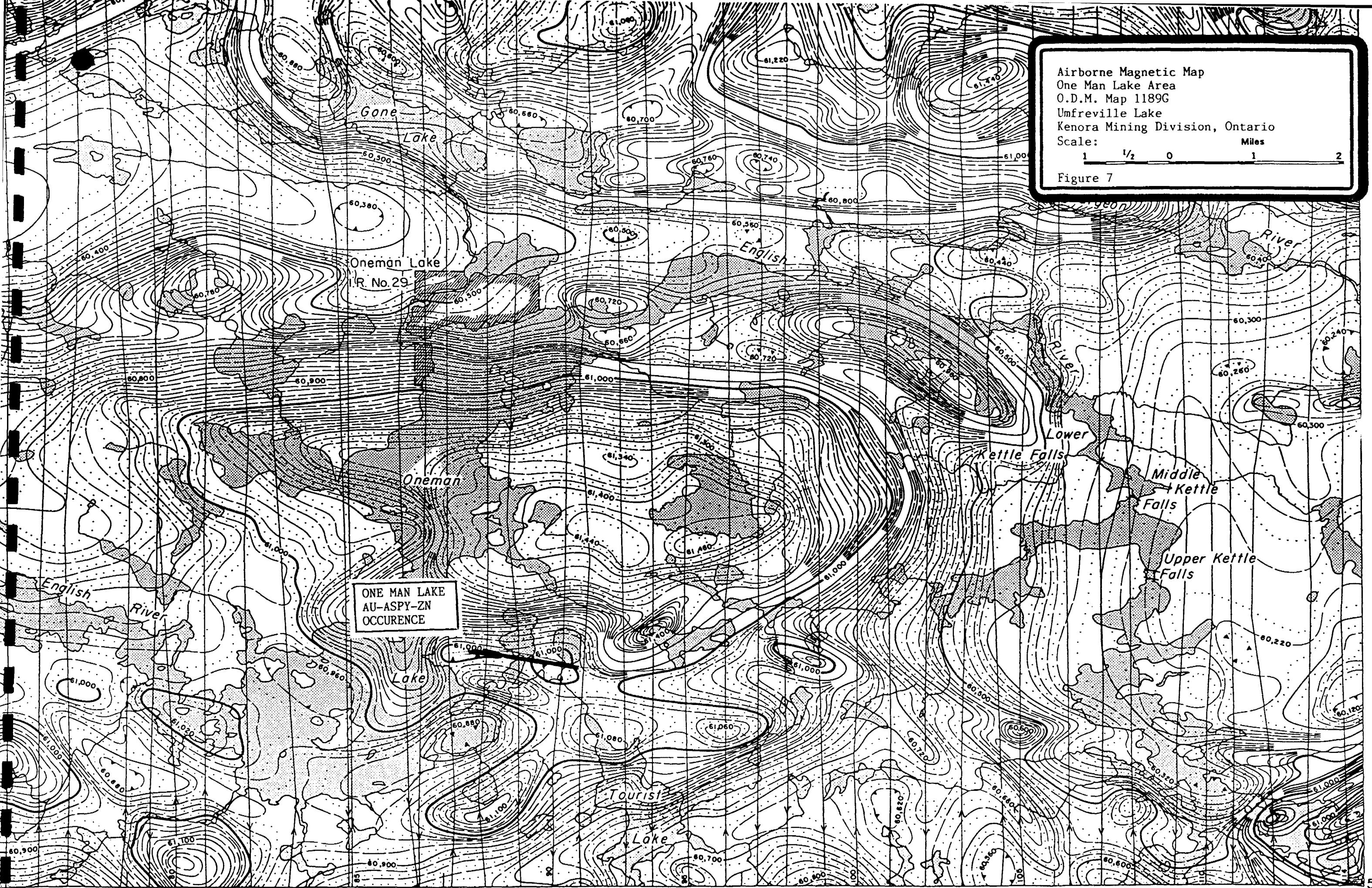


CLAIM GROUP SKETCH  
ONEMAN LAKE PROPERTY  
KENORA MINING DIVISION, ONTARIO  
FIGURE 5



ROAD ACCESS SKETCH  
 HELDER LAKE AREA PROPERTIES  
 KENORA MINING DIVISION, ONTARIO  
 FIGURE 6

Airborne Magnetic Map  
 One Man Lake Area  
 O.D.M. Map 1189G  
 Umfreville Lake  
 Kenora Mining Division, Ontario  
 Scale:  Miles  
 Figure 7



Joins Map 11816, "Lennon Lake"

Joins Map 11886, "Whitedog Lake"

40'

35'

50° 15'  
94° 30'

## PART II GENERAL INFORMATION

### 2.1 INTRODUCTION

Independent Exploration Services Ltd. (I.E.S. Ltd.), on behalf of Champion Bear Resources Ltd., has initiated and conducted a multifaceted integrated mineral exploration program in the Helder Lake area of N.W. Ontario (Kenora Mining Division). The purpose of this report is to summarize mineral exploration activities to date, provide recommendations for further exploration, and a proposed budget to carry out the recommendations.

Due to the complexity and diversity of exploration activities coupled with the vastness of the area covered the report has been subdivided into sections to deal with specific activities and areas.

To date the program has not defined any "ore" bodies of economic consequence. The program has revealed two zones or areas of gold mineralization that are considered to be extremely encouraging.

Ground geophysical surveys have pinpointed a number of favourable anomalies which occur in excellent structural settings for hosting gold mineralization. Geological mapping and sampling indicates that arsenopyrite mineralization is wide spread in the favourable host rock iron formation and also pervades rocks surrounding the iron formation. Geological evidence indicates that gold bearing hydrothermal systems had been active in the area and have resulted in the deposition of the two known occurrences at Helder and One Man Lake.

Much of this area is virgin territory and has not been explored for base metals or gold. Very limited activity was oriented to the search for iron ore.

## 2.2 SCOPE OF PROGRAM

A systematic, multifaceted, integrated mineral exploration program has been implemented to investigate the gold and base metals potential of the Separation Lake metavolcanic belt. This program was sparked by reports dating back to the 1940's when some gold was reported within a chert-magnetite-sulfide iron formation while this iron formation was being tested and prospected for iron ore. The writer visited the property in 1985 and reaffirmed the presence of low grade, but anomalous gold values.

Subsequently in February of 1988 Dighem Surveys Inc. conducted 970 line km. of combined EM, VLF-EM and magnetometer surveys. The results of the airborne survey outlined a number of targets deemed favourable for hosting gold and/or base metals mineralization.

An integrated ground follow-up program was conducted during the period of June 15th - October 31, 1988 to pin point and evaluate targets favourable for hosting economic mineralization.

The ground follow-up program consisted of:

- 1). establishing cut and chained grids for control and reference for ensuring work. The Helder Lake grid

consists of approximately 200 km. of lines and covers a strike length of 16.5 km. The Bass Lake grid consists of approximately 40 km of lines over a strike length of 4.0 km.

- 2). ground geophysical surveys consisting of VLF-EM, total field magnetometer and gradiometer readings collected utilizing the EDA OMNI Plus System.
- 3). Geological mapping.
- 4). Prospecting, stripping and sampling.
- 5). Soil geochemistry was attempted by sampling the humus horizon. This was abandoned as sample locations were poorly distributed due to extreme relief and poor humus development over large areas. A portion of the Helder West area grid has been logged over and the humus layer has been destroyed.



### 2.3 DESCRIPTION, LOCATION AND ACCESS TO PROPERTY

The properties consist of a total of 593 unpatented mining claims (approximately 23,720 acres) distributed in four separated claim groups (figures 4, 4a & 5). The claims are located in the following claim map areas:

Treelined Lake	G-2651
Stop Lake	G-2523
Paterson Lake	G-2634
Lennan Lake	G-2552
Campfire Lake	G-717
Oak Lake	G-2473
Tide Lake	G-2649.

These areas are all within the Kenora Mining Division (Patricia Portion) of Ontario.

A complete list of claims and details is provided in Appendix 1.

All claims are in good standing and unencumbered.

The central area of the property is approximately 60 km. north of Kenora and 80 km. west-south-west of Ear Falls.

The central area of the group is readily accessible by float/ski equipped aircraft. Present logging and road construction in the area provides access to a large portion of the area and overland access will be readily possible within the near future (see Figure 6).

## 2.4 PHYSIOGRAPHY AND VEGETATION

Glacial erosion scoured the Archean terrain to rolling topography of low relief with softer metavolcanic and metasedimentary areas being generally flatter and lower than the more resistant granitic rocks. However, the intrusion of pegmatite and granitic rocks and shear zones have developed into sharp steep cliffs and escarpments in the area. Some of the cliffs exceed 50 meters. Helder Lake itself is located relatively high and has a very small catch basin with no rivers or creeks of consequence draining into it. The water is crystal clear and of high quality. Much of the high granitic area is largely devoid of glacial debris with vegetation clinging to crevices and depressions in the rock. The metavolcanic areas are generally located along linear gullies and overburdened areas.

The area is covered by the Boreal Forest with dormant species of trees being black spruce, jack pine, minor white spruce, birch and poplar. Tag alders and "labrador tea" abound in low wet areas.

## 2.5 PROPERTY OWNERSHIP

Claims K967351 to K967498 incl. (148 claims)

K967566 to K967631 incl. ( 66 claims)

Subtotal 212 claims.

These 212 claims are recorded in the name of Canadian Eagle Exploration Ltd. are under option to Champion Bear Resources Ltd.

Claims K967801 to K967877 incl (77 claims)

Claims K967951 to K967999 incl (49 claims)  
 Claims K1022695 to K1022717 incl (23 claims)  
 Claims K1058300 to K1058305 incl ( 6 claims)  
 Claims K1023473 to K1023495 incl (23 claims)  
 Claims K1058320 to K1058339 incl (20 claims)  
 Claims K1084930 to K1084949 incl (20 claims)  
 Claims K1023550 ( 1 claims)  
 Claims K1023503 to K1023517 incl (15 claims)  
 Claims K1058425 to K1058498 incl (74 claims)  
 Claims K1058518 to K1058525 incl ( 8 claims)  
 Claims K1058578 to K1058640 incl (63 claims)  
 Subtotal 381 Claims.

These 381 claims are all recorded in the name of Champion Bear Resources Ltd. (See Appendix C for details)  
 Records show that as of October 31, 1988 the claims are free and unencumbered.

## 2.6 GENERAL GEOLOGY

The property is located in the Canadian Shield, English River Geologic Belt. The consolidated rocks in the area are Early Precambrian (Archean) in age and are comprised of a metavolcanic-metasedimentary assemblage which are lightly isoclinally folded and strike roughly W.S.W-E.N.E direction. The metavolcanic-metasedimentary assemblage is overlain by a paragneissic sequence of rocks to the north. Large granitic batholiths underlay the areas to the north and south. Pegmatite and granitic dikes frequently intrude the sequence.

## 2.7 ECONOMIC GEOLOGY

No economically viable mineral deposits are located in the claim group area. Assessment records for this area indicated that exploration activities have been almost nonexistent. Records indicate that the iron formation unit stretching from Separation Lake through to Helder Lake had been prospected and tested by limited drilling for iron ore. All of the drill activity was confined between Separation Lake and a lake to the west of Helder designated as "L" Lake. Drill core was never assayed for any other element other than iron.

The story as related to the writer has it that a prospector for the iron ore syndicate was also interested in gold. He apparently prospected from Separation Lake working his way towards Helder Lake. At Helder Lake the iron content dropped off drastically but he did see considerable sulfides and obtained some gold values. At that point in time the syndicate were not interested in gold and closed funding. The prospector returned on his own in the 1940's and drilled 8 Winkie holes. The core was apparently lost and never assayed. There is no record or field evidence of any exploration work to the east of Helder Lake.

Hydraulic stripping at Helder Lake indicates that a substantial hydrothermal system has deposited gold bearing arsenopyrite, pyrite, pyrrhotite, traces of chalcopyrite as a replacement of the original chert magnetite. Erratic but definitive gold values have been recorded over a strike length of approximately 700

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meters. The mineralized zone itself is not considered to be of immediate economic significance. It is significant in indicating that ore forming processes have been active in the area.

Much along the lines of the Helder Lake occurrence the One Man Lake occurrence was unearthed by a prospector in the 1940's. Since that time the area has been staked now and then with nobody conducting any serious exploration work in the area. There is no evidence of any sustained activity or drilling in the areas. Samples taken from the showing area contains disseminated to semimassive arsenopyrite, sphalerite, minor pyrite and magnetite. This again indicates a favourable mineralizing system at work.

The One Man Lake occurrence is located in a narrow amphibolite band which is an extension of the Separation Lake metavolcanic belt. The mineralization is located in a strong shear zone that undoubtedly continues for some distance to the east.

Noranda has been conducting reconnaissance base metals programs in the Separation Lake belt during the summer of 1988. Noranda apparently examined a group of claims located between the two groups of claims held by Champion Bear on Separation Lake and also small groups of claims to the west of Separation Lake.

The possibilities of locating base metal deposits in the area are considered to be good.

## 2.8 HISTORY OF EXPLORATION

1947 - A prospector, Mr. Hawes, drilled 8 Winkie diamond drill holes between the bay of Helder Lake and the small beaver pond to the west. The core was shipped out for assay but was apparently lost and no assay results are on record. The site of three of the drill holes were located. It is a strong possibility the holes were drilled to test the heavy pyrite mineralization and would not have been long enough to intersect the aspy-au bearing horizon.

1959 - Centurion Mines Ltd. drilled 24 holes along the iron formation from Separation Lake and east. The eastern most hole was in the vicinity of the western most portion of the grid area. The drill program was iron oriented and the only assays reported were from iron.

- A stack of diamond drill core (Ext.size) was located on the shore of the western most bay of Helder Lake. There appears to be approximately 1,000 feet of drill core. The camp site is starting to grow over with trees up to 10 feet in height. Drilling appears to have been carried out in the mid 1970's. It is not known where the core came from. The writer believes it may have been drilled on Helder Lake along a sulfide zone 600 meters to the north of the iron formation.

PART III - GEOLOGY

3.1 - LOCAL GEOLOGY - Helder Lake

Results of field mapping on the Helder Lake, Ontario grid indicates that the survey area is underlain by a foliated to shistose mafic metavolcanic rock (amphibolite), which has been intruded by narrow granitic dikes and larger, lensoid granitic bodies, of various compositions. The amphibolite rocks trend to the N.E., and have a thickness of about 1 - 1.5 km. across strike and dip to the north. These rocks are fairly continuous along the entire 16.5 km baseline of the grid (from L172E to L7E). These metavolcanic rocks are bounded to the north and south by granitic and granitic-gneissic rocks. Iron formation rocks are seen to occur as narrow (<<5m to >20m), steeply dipping horizons within the metavolcanic unit. Poor continuity of the the iron formations along strike may be due to pinching out of the units as observed in L114E/101 + 65 N area, where a 6 inch BIF unit is observed as the continuation of the substantial showing area IF. Also, possibly, boudinage of the IF unit occurs, as evidenced by extensional fractures at the L107E area of the showing where geophysics indicates a weakly anomalous area between larger anomaly values. Possible thinning (stretching) of the IF unit is indicated. Outcrops were generally poor in the anomalous regions of the survey area, possibly due to weathering down of the IF rocks. However, since a compass generally did not work properly in these areas, it is an indication that substantial IF does occur below the overburden.

The majority of the IF rocks are near to the boundary with the southern, gneissic rocks. Significant Aspy + py mineralization within the IF unit is limited to the L113E to L103E area (the showing), minor Aspy occurs from L114E to L121E and at L134E, along strike from the showing, and sparse Aspy occurs at L153E and L162E, in IF rocks near to the south granitic rocks. Weak py mineralization in small shears within the metavolcanic unit, as qtz-bte-(py) shear infillings, were also observed, in the L162E to L64E area. Structural features, such as shears and folds were described by the rock units, notably in the eastern end of the grid. Abundant minor features such as folial folding and joint fracture sets were observed. A brief description of the rock units is as follows:

The mafic metavolcanic (amphibolite) rock is primarily black to blue black in colour, vfg, generally hard (silicified). Also, a minor green-black foliated, (relic texture) pillowed basalt occurs at the western end of the survey area. The trend of the rocks is at approx. az 60°, and the rocks dip generally north at 75° or greater. Locally isolated regions contained south dipping rocks were observed. The metavolcanic rocks were normally well foliated, with lesser outcrops of schistose metavolcanics, often near shears and intrusive bodies, also, in the eastern grid area in the area of a suspected tightly folded, sheared area. As well, in the L172E to L100E area, a schistose to weakly friable variety of altered metavolcanic occurs. The rock is described as F-mg Hbl(subhedral crystals) set in a pale brown, rusty matrix of plag +(bte) minerals. Also, in other areas as well, a similar



●  
appearing rock, f-mg Hbl. subhedra set in a matrix of grey, plag + (bte) rock, but much more competent than the rusty variety, occurs in contact with a granitic rock unit (for example L50E). A gradation occurs across strike (into the amphibolite) from mg to vfg plag-Hbl. schist. This variety of mafic metavolcanic is associated with contact metamorphism by granitic rocks, (fluid-metasomatic alteration) and is of limited extent.

Abundant narrow, f-mg granitic dikes displaying sharp contacts, intrude the amphibolite, often nearer to larger igneous bodies. Quartz and siliceous bands (light colour) along foliation planes in the amphibolite in these areas has produced a banded amphibolite. The black, homogeneous coloured, vfg, wkly foliated amphibolite is the most abundant variety of metavolcanic, and is the only variety observed along the entire grid length. Also, a weakly mineralized, garnet + qtz + bte + k feldspar, + (py) altered amphibolite was observed near the 110 baseline along L142E and L143E. A weakly mylonitic, black amphibolite borders the south margin of the iron formation at L109E. The amphibolite has also been altered to a quartzite in a limited number of areas (L153 area north of Aspy bearing BIF). As mentioned, weakly mineralized, minor shears were observed within portions (eastern) of the metavolcanic unit.

In general, the majority of the study area shows an absence of folding and faulting (shears) except for the eastern end of the grid. However, the shears which do occur are helpful in interpreting the structural breaks in the magnetic anomalies

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which are indicated from the ground geophysical studies. In the eastern area of the grid geophysical data indicates a tightly folded pattern to the magnetic anomaly rock types, with distinct breaks in the continuity of the anomalies. Shears were located in the areas where geophysics indicated breaks, and IF rocks were found to correspond to the magnetic anomalies. The trends of the mapped metavolcanics may indicate a tight, "isoclinally" folded nature to the rock unit. The areas of intersection (shear intersecting IF) is shown on the ground geophysics maps to be the areas of the highest magnitude magnetic anomalies. These areas were not available as outcrops. Lake and low ground in the areas of the possible noses and axial planes of these folds may indicate that the structural deformation has resulted in rocks which have been easily eroded to below surface level.

The granitic rocks are composed of the (1) dikes and larger, lensoid rock units, of variable compositions, including f-mg K-feldspar granites, pegmatitic K-feldspar granites, qtz monzonites, granodiorites, a porphyritic, mylonitic granodiorite, and graphic granites (L120 area), which intrude the amphibolite rock unit. Also (2), the generally Fg gneissic rocks which border the amphibolite to the north and south. A variety of rock types are seen in contact with the iron formation rocks. These include a sodic, graphic granite at L119E and L120E, a qtz-muscovite-garnet- K-spar-plag schist at L166E, and a granodiorite gradational to porphyritic granodiorite from L134E to L85E outcroppings. At L161E a mg, K-feldspar-bte granite is in contact along one side of iron formation rock, causing

alteration (a change in mineralogy and appearance). At L163E IF is seen to have both upper and lower contacts with this F-feldspar-bte granitic rock.

As well, IF occurs next to a "two type" lit-par-lit gneiss at the south L95E area. In two instances, L154E and L128E, near the 100 BL, pegmatitic rocks, K-feldspar + qtz + bte + garnet, with accessory magnetite, were observed to correspond with geophysics defined anomalous areas.

A f-mg, qtz rich, pink (k-feldspar), and a white (albite) gneiss with a wkly to well developed gneissic texture occurs at the northern margin of the survey area. These possible paragneisses are fairly continuous and have a similar appearance along the length of the grid.

To the south of the survey area, a two type gneiss (lit-par-lit) occurs. It is composed of narrow (<<1' to >>1') bands of amphibolite derived, dark material, with coarse k-feldspar porphyroblastic grains, alternating with f-mg granitic material bands. Gradation is seen through this banded gneiss towards less dark bands, then xenolithic fragments, then towards a fg, white gneiss without dark banding. This unit (banded gneiss) is continuous along the length of the survey area.

The IF rock was normally a finely laminated, chert (fg, sugary texture) bands, alternating with magnetite bands (lesser), rock type. This rock was often crumbly, easily deteriorated, in the eastern areas of the grid, while other occasions in the eastern

area, and exclusively in the western portion, it is a hard, resistate species. In addition to this fg IF rock, other species of iron formation related rocks were observed in outcrops of IF in contact with granitic rocks, and in rubble samples which were different from the sugary fg chert/magnetite banded IF normally observed in outcrop (at L72E and L162E rubble samples were observed which were not represented in these iron formation outcrops). This rubble was often of a cg quartz, porous, granular aggregate, with an interstitial mass of magnetite grains (groundmass). Surface sampling indicates that these chert-mte IF's were barren of Au-As mineralization.

Also, at L162E, Aspy as 6 isolated grains occurs in a cg, siliceous, mte-poor rock in rubble which has no relation to the finely banded rock observed in the outcrop. These and other easily deteriorated rubble samples indicate that the rock seen in outcrop is likely not representative of the actual IF at depth. Where IF is in contact with granitic rock units, a cg qtz + bte + garnet rock with f-mg magnetite euhedral occurs. This rock is gradational to the finely laminated chert-mte IF away from the contact area. Metamorphism by intruding granitic rock is indicated.

Aspy-py mineralization within the IF is limited to the rocks from L113E to L103E, weakly from L119E to L121E, L134E and L153E to L162E, all in areas near to the contact region with the southern granitic-gneissic rocks. From L113E to L103E, Aspy + py as granular masses, up to 30%, occur in schistose, cg qtz + (bte)

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horizons within the showing area of the IF. At L153E, the Aspy occurs in the altered amphibolite (quartzite) along the hanging wall of the small IF outcropping. Aspy occurs here as mg euhedral laths along foliation planes within the amphibolite. Concentrations of up to 20% along individual planes are observed, while the Aspy comprises only a small (<<5%) amount of the altered rock.

To summarize observations, banded IF is observed to occur as narrow, discontinuous, planar horizons within a larger amphibolite unit, which is bounded to the north and south by various granitic and granitic-gneissic rocks. The rocks have a rough NE trend, and dip to the north, steeply (>70°). Aspy + py mineralization in the BIF is limited to the areas of L103E to L113E, L119E to L121E, L153E and L162E all in areas near to the southern gneissic rocks, actually all near to a mg porphyritic granodiorite. Normally, all IF outcrops are small, (of limited extent), and As + Au values obtained normally increase towards the edge of these outcrops. Increased sulfide content has possibly produced a weaker, easily weathered horizon (s) which is not available as outcrop. IF rock types may be different at depth, since IF rubble is found which is unlike the normally fg, well banded IF found in outcrop.

The showing area, related mineralization, and the study area in general may be briefly characterized as follows:

The volcanic rock has been metamorphosed to amphibolite facies in the eastern area of the grid (based on mineralogy) while in the

western area of the grid, upper greenschist facies metamorphism (presence of chlorite) is presumed. Tops to this volcanic sequence was observed to be to the north; in the area to the west of the grid, where a polymictic felsic Cgl unit with an unconformable lower contact (south) with mafic volcanic rock, and an upper gradational contact into a siltstone composition rock was observed in a north direction. As well possible paragneisses (paleo sandstones) north of the eastern grid area is also an indication of the sequence top direction. The accessory mte observed in simple K-spar-bte pegmatites observed is characteristic of deep seated pegmatite emplacement. The study area is best described as deep seated in the eastern area, and slightly shallower at the western end.

The composition of the showing sulfide mineralogy (Aspy + py + (Cupy)) is also characteristic of a deeper level of mineralization (as opposed to nearer to surface hydrothermal activity, where PbS & Zns are often abundant).

The IF rocks in the showing area have been extensively altered, and are now mostly replaced by the qtz-bte-(garnet) sulfide assembly as opposed to the barren chert-mte of the finely banded IF's. Also, disseminated mte from the IF rocks is often found in the enclosing metavolcanic rocks along foliation planes. The extent (L113E, L153 and L162E) and good zoning of the IF alteration (south to north (up dip) across strike) layered as (qtz-bte/qtz-Aspy/Aspy+py disseminated/py disseminated/massive py cap (north)) is an indication of a fairly large fluid system

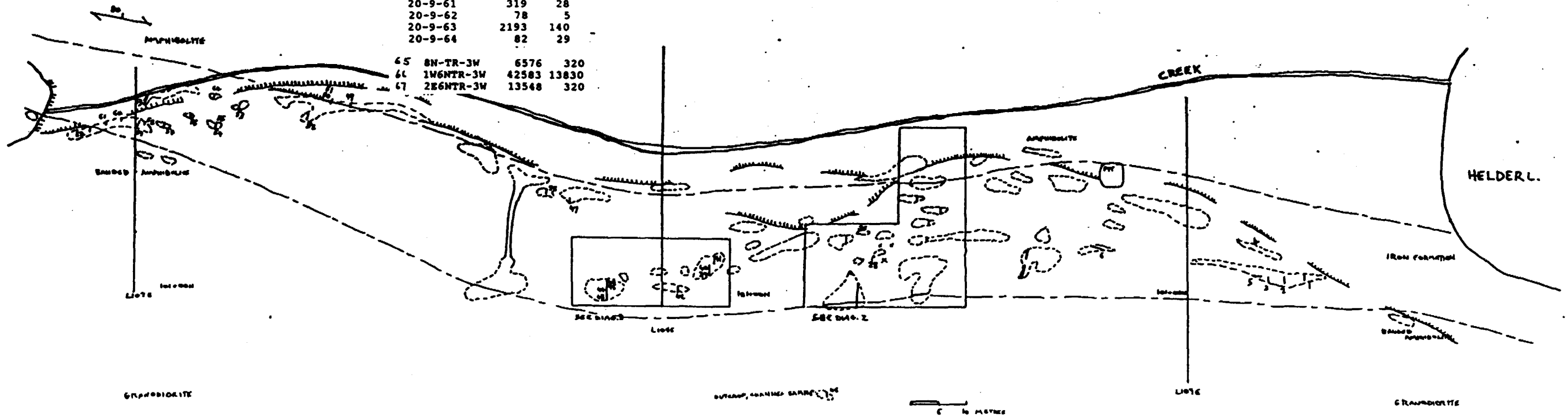
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which acted in the south area. The disjoint but rough linear pattern to the observed Aspy mineralization may indicate that there is a root at depth to which these branches (distal) isolated surface occurrences are connected. The geophysical data is not able to infer the situation that exists at depth.

Within the showing area, found to extend from L103E to L113E, (see fig. # 1) as opposed to L107E to L109E (101 + 00N areas) mapped by B.P. Selco in June and October 1985. Trenching and stripping have discovered continuation of the Aspy-py horizons similar to the .5oz/ton Au site along Aspy bearing of the southern margins of the IF rocks within a narrow shear. As well, a py-sulfide cap (an abrupt end to the mineralization along the north amphibolite contact) is normally observed along the north, hanging wall area of the IF. The Au and As values (.2, .4 oz/ton) are contained within the narrow (4.0') highest shear on the south side of the IF.

A hand sample and thin section record of the variety of amphibolite, gneisses and granitic rocks, as well as the various IF and Aspy, py mineralized rocks are available. (See Appendix # 1.) Also, an appendix #2 is included for the assay values obtained at the various sample locations.

SAMPLE#	AS PPM	AU* PPB	20-9-30	76	19
			20-9-31	22084 / 2090	
			20-9-32	641	51
20-9-1	4193	200	20-9-33	2942	360
20-9-2	1348	32	20-9-34 HS	2584	98
20-9-3	3437	220			
20-9-4	150	8	20-9-35 HS	589	73
20-9-5	65385 / 6430		20-9-36	257	45
			20-9-37 HS	1987	113
20-9-6	1586	720	20-9-38	468	34
20-9-6 HS	1807	172	20-9-39	2539	166
20-9-7	173	15	20-9-40	238	9
20-9-8	116	43			
20-9-9	128	4	20-9-41	282	10
			20-9-42 HS	2703	189
20-9-10	102	9	20-9-43	2320	98
20-9-10 A	396	28	20-9-44	2330	235
20-9-11	1046	85	20-9-45	6451	310
20-9-12	618	66			
20-9-13	203	17	20-9-46	492	35
			20-9-47	352	20
20-9-14	1112	38	20-9-48	10	16
20-9-15	3064	310	20-9-49	90	9
20-9-16	2214	61	20-9-50	144	20
20-9-17 HS	10573 / 201				
20-9-18	26733 / 2230		20-9-51	114	23
			20-9-52 HS	37	6
20-9-19	444	18	20-9-53	50	585
20-9-20	2871	65	20-9-54	1133	148
20-9-21	1147	71	20-9-55	343	43
20-9-22	9408	260			
20-9-23	4084	146	20-9-56	5453	550
			20-9-57	567	47
20-9-24	164	23	20-9-58	92	3
20-9-25 HS	95	350	20-9-59	139	6
20-9-26 HS	66	6	20-9-60 HS	163	7
20-9-28 HS	3310	99			
20-9-29	353	25	20-9-61	319	28
			20-9-62	78	5
			20-9-63	2193	140
			20-9-64	82	29

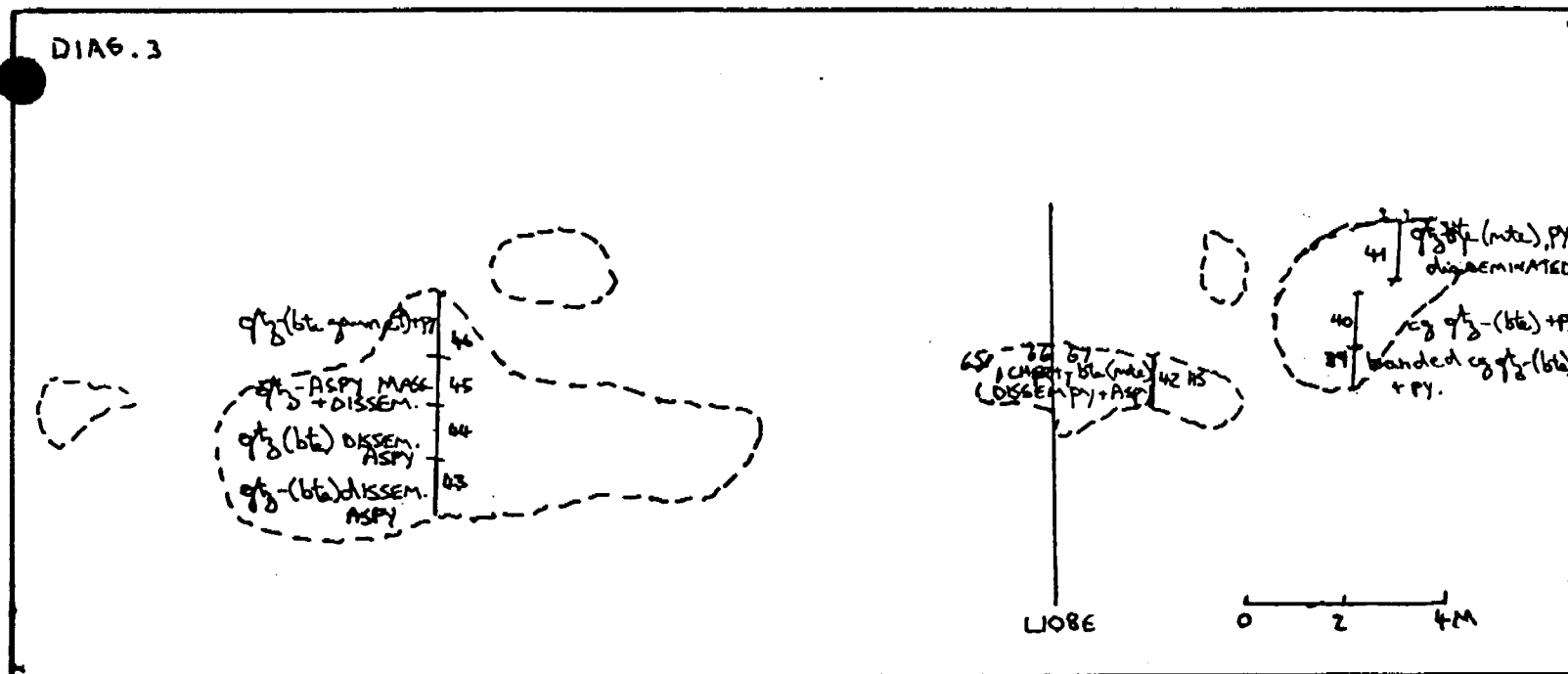
65	8N-TR-3W	6576	320
66	1W6NTR-3W	42583	13830
67	2E6NTR-3W	13548	320



HELDER LAKE AU-ASPY OCCURRENCE  
GEOLOGICAL SKETCH



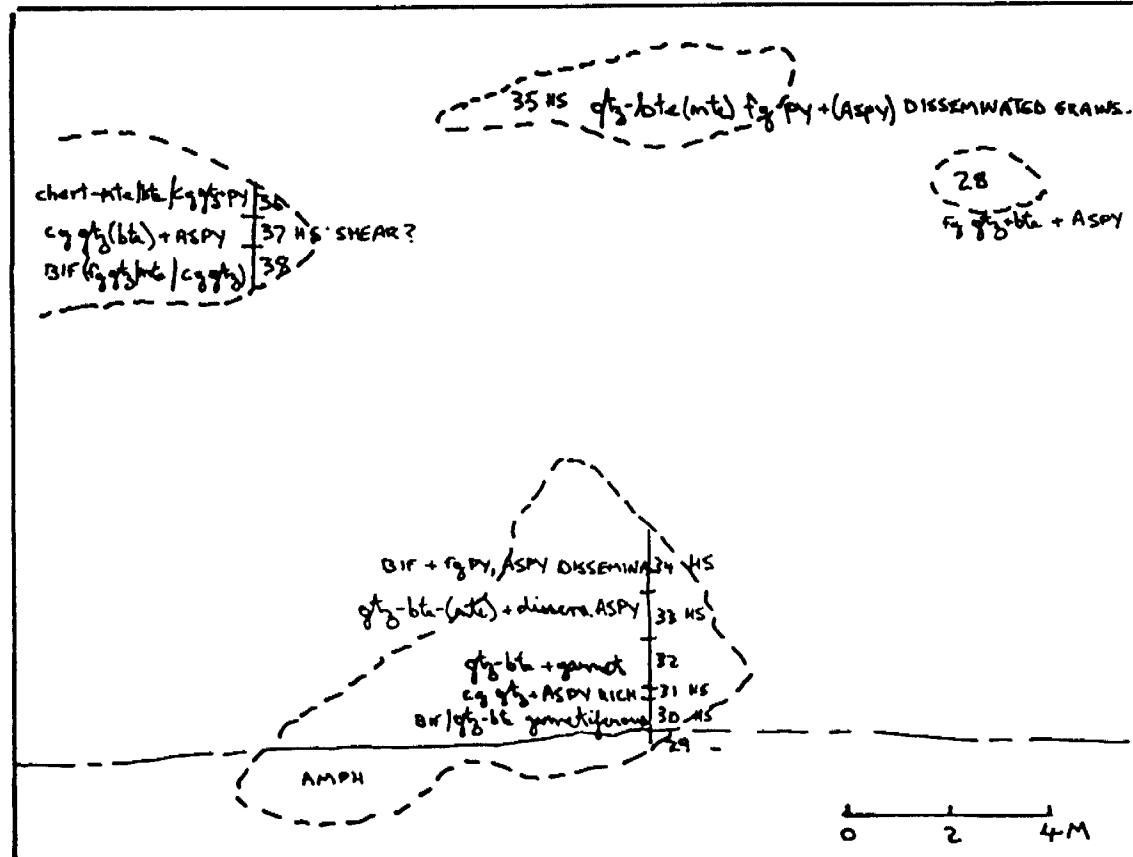
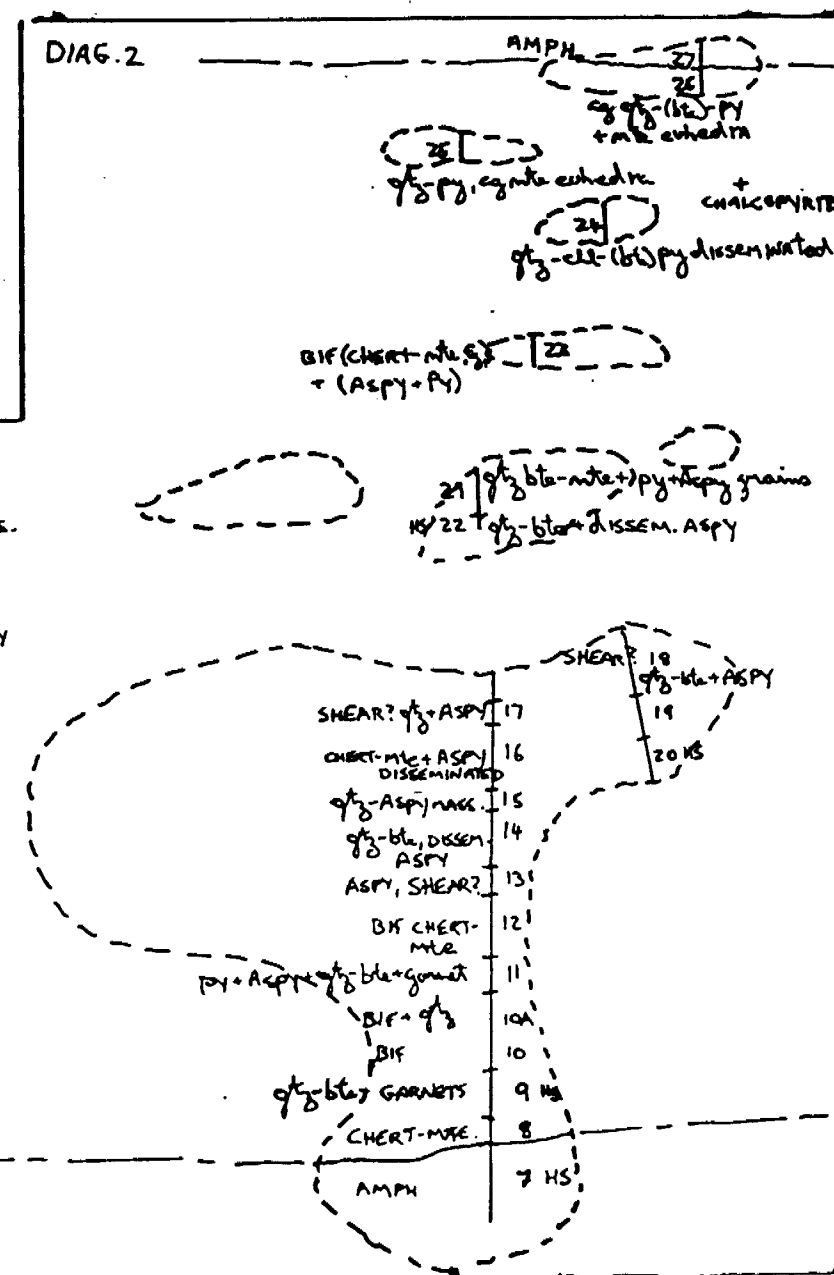
DIAG. 3



SAMPLE#	AS PPH	AU# PPB	20-9-24	164	23	20-9-51	114	23
20-9-1	4193	200	20-9-25 HS	95	350	20-9-52 HS	37	6
20-9-2	1348	32	20-9-26 HS	66	6	20-9-53	50	585
20-9-3	3437	220	20-9-28 HS	3310	99	20-9-54	1133	148
20-9-4	150	8	20-9-29	353	25	20-9-55	343	43
20-9-5	65385	6430	20-9-30	76	19	20-9-56	5453	550
20-9-6	1586	720	20-9-31	22084	2090	20-9-57	567	47
20-9-6 HS	1807	172	20-9-32	641	51	20-9-58	92	3
20-9-7	173	15	20-9-33	2942	360	20-9-59	139	6
20-9-8	116	43	20-9-34 HS	2584	98	20-9-60 HS	163	7
20-9-9	128	4	20-9-35 HS	589	73	20-9-61	319	28
20-9-10	102	9	20-9-36	257	45	20-9-62	78	5
20-9-10 A	396	28	20-9-37 HS	1987	113	20-9-63	2193	140
20-9-11	1046	85	20-9-38	468	34	20-9-64	82	29
20-9-12	618	66	20-9-39	2539	166	65 8N-TR-3W	6576	320
20-9-13	203	17	20-9-40	238	9	66 1W6NTR-3W	42583	13830
20-9-14	1112	38	20-9-41	282	10	67 2E6NTR-3W	13548	320
20-9-15	3064	310	20-9-42 HS	2703	189			
20-9-16	2214	61	20-9-43	2320	98			
20-9-17 HS	10573	201	20-9-44	2330	235			
20-9-18	26733	2230	20-9-45	6451	310			
20-9-19	444	18	20-9-46	492	35			
20-9-20	2871	65	20-9-47	352	20			
20-9-21	1147	71	20-9-48	10	16			
20-9-22	9408	260	20-9-49	90	9			
20-9-23	4084	146	20-9-50	144	20			

HELDER LAKE AU-ASPY OCCURRENCE  
GEOLOGICAL SKETCH

DIAG. 2



Holder Lake Occurrence  
 CROSS SECTION OF SHOWING AREA BIF AT L 108+50 AREA

2 M.

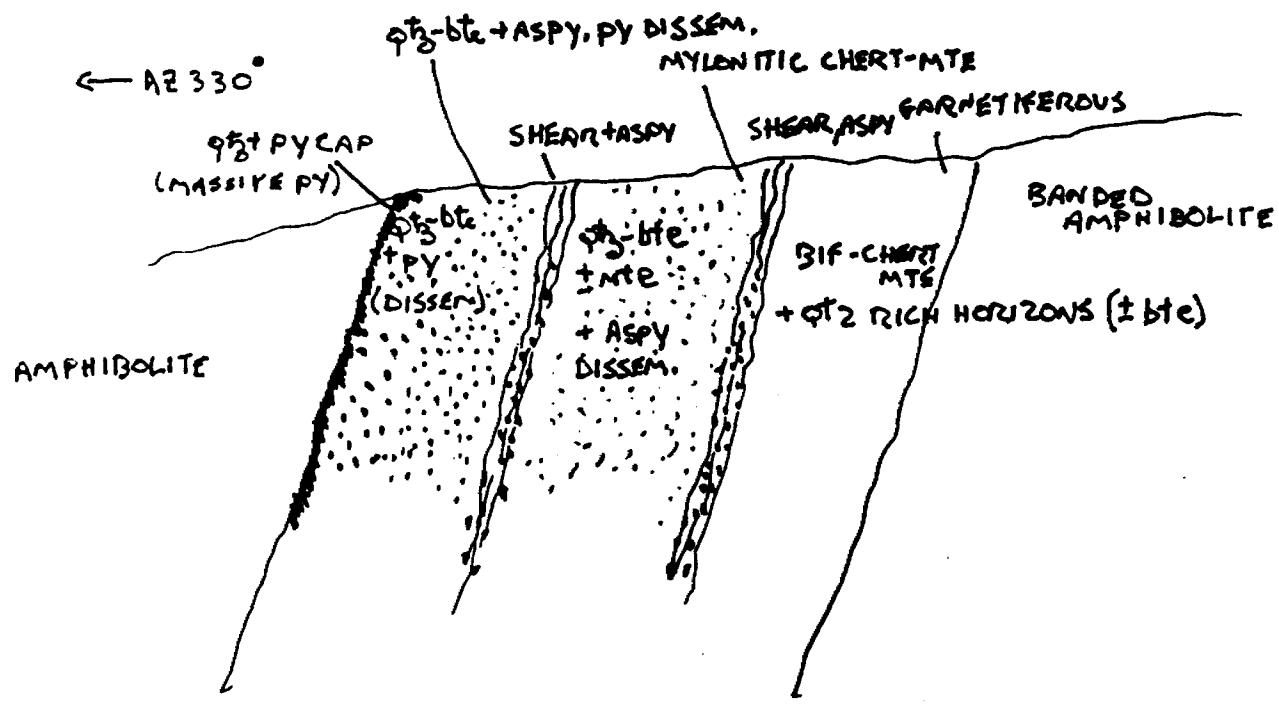


Figure 5

## SEPARATION LAKE

At Separation Lake, near the western end of the grid area, and further west and south, along the Separation Lake north shore, IF outcrops were examined and sampled. These well banded, generally fg chert-mte rocks units were generally void of any type of visible hydrothermal (qtz-bte py/Aspy) alteration. Assays were correspondingly low.

North and west of the grid area, along the claims which cross the English River Road, an examination of the outcrops indicates weakly (py + qtz) mineralized minor shears in the metavolcanic unit as well as one BIF at 80.3 km., which were sampled. (#'s corresponding to footages along the English River Road). These rocks also did not return any favourable As or Au values.

Also, metavolcanic with a unconformable north contact with a cgl. unit, gradational to a siltstone rock types to the north was located NW of the grid area, which is significant in that it indicates that the tops directions for grid area rock pile is probably to the north.

### 3.2 LOCAL GEOLOGY - Bass Lake

The grid area north of Bass Lake (north of Maynard Lake) is characterized by thick overburden, and a general absence of outcroppings of bedrock. Outcrops are limited to the higher ground, north of the baseline, along the high points of ridges which occur north west of the lake in the centre of the grid. Also, along the western area of the grid, large outcroppings of

granitic rocks are observed in an otherwise swampy area. From available outcrops, the metavolcanic and granitic rocks have a similar appearance as those at the eastern end of the Helder Lake grid. Due to the limited bedrock exposure, little can be deduced for an explanation for the anomalous geophysical values along the baseline area.

However, in the L127E area, south of the grid area, cg mte euhedra + epidote in amphibolite was located, the significance being that possibly there is a substantial BIF rock unit in the baseline area, from which replacement alteration has occurred (the introduction of qtz+bte+py+Aspy, and the removal of mte, which is now found as mg-cg euhedral + epidote within the southern, hanging wall amphibolite unit). A similar situation occurs in the showing area and the L134E area at Helder Lake, where mte in the metavolcanic is found near to the mineralized BIF units. The fact that the BIF does not outcrop in the baseline area may indicate that the BIF has been altered to an incompetent character (py sulfide) which has in turn been rapidly eroded and is not available as outcrop.

### 3.3 LOCAL GEOLOGY - One Man Lake

The claims on the NE shore of Umfreville Lake were examined and the mineralization related by Thompson (1947) (the showing) was found to occur in the SE corner of claim 1023504, along the #2-3 post claim line. The showing area occurs to the SW on a low ridge, with granitic rock to the south and dark mafic schist to the north. The best mineralization lies along a line greater than 400' along strike. (#1 to #2).

Less significant mineralization occurs both east and west of the showing area. Chip samples were taken at 13 locations to characterize the Au-As mineralization. Representative hand samples were also collected at each location. (see map and diagram).

The Au-As-Zn mineralization is contained within a dark, mafic foliated to schistose rock (amphibolite) in a continuous, narrow (5m-10m) horizon dissected by 2 - 2' to 4' pink K-feld+Bte pegmatite dikes, along the south contact of schist (north) and granite (south). The rocks strike at approx. az 100° and are near vertical. The entire showing mineralization is contained within this contact horizon and is seen to be variable Qtz-bte alteration of the mafic rock with variable As-Zn-Fe sulfide mineralization. A strongly mineralized narrow shear (Aspy>40%) within the mineralized showing area (#3) is seen to continue to the NE corner of the eastern island (#10) as a 4" shear with Aspy massive mineralization, in unmineralized mafic schist.

A gradation in the mineralization from south to north in the showing area is observed as granitic rock/disseminated qtz-bte ± Aspy disseminated grains/pegmatite/massive Aspy (40%) in qtz-bte alt'd rock/± shear+brecciated siliceous Aspy bearing rock/py+Aspy in siliceous, hard rock/pegmatite/mafic schist (green crumbly rock). Variable distribution of As and ZnS also occurs, the maximum ZnS (20%) occurs to the east at OC#7 as disseminated f-mg black euhedral grains. Often a fg friable, rusty plag-hbl-bte qtz rock is seen within the showing area alteration and mineralization, and also along strike from the showing area. Magnetic deflection of the compass is prominent in a majority of the showing outcroppings (presence of magnetite).

The rock directly to the south of the showing is a mg, pink xenolithic granitic rock, gradational to a pink-bte bearing gneiss. To the north of the narrow schist band lies a fg, pink to white granitic rock, with mte bearing pegmatites (igneous related granitic rock). There are large dike like horizons at the north margin of the mafic schist. The narrow (20 to >40M) schist unit is not seen to continue to the west of the claim line of claim # 1023504.

To the east of the showing, the schist unit continues across the lake and the mineralized contact (#12) bearing Aspy (in a qtz-bte bearing schist) is observed at the eastern shore of the lake. The schist unit, with weak mineralization, continues to the east, in an area of little outcrop. Rusty, py mineralized, crumbly rock, with magnetic deflection is observed regularly along the

east side of the showing. On the NE shore of the island (#10), there is a 4" Aspy filled shear in an otherwise unmineralized mafic schist, the shear is to the north of the schist/granite contact area, within the mafic schist.

Au values ranging from 2330 to 4830 ppb (.07 - .16 oz/ton) obtained from the various sample sites. The narrow As rich (#10) returned the highest assay value at 4830 ppb Au (.16 oz/ton).

HELDER LAKE HAND SAMPLE DESCRIPTIONS - Thin Sections

TS - L162E/C1 (103+25N) Aspy grains in qtz+(garnet)+Bte BIF rock unrelated to Fg chert-mte found in OC.

L161E area BIF - cg qtz + mte ground mass.

L161E/C1 (103N) Aspy grains along fol'n planes in quartzite-hanging wall of BIF OC.

L147E/110BL Example of Fg bte-granitic gneiss.

L143E/110+75N qtz-bte alt'n of amphibolite.

TS - L144E/107+50N HS of aluminus alt'n of schist, py+mte, corresponds to geophysics anomaly.

L134E-2,3 Aspy in amph. at shoreline, Mte in amph. near shoreline.

L124E/A qtzite-BIF related rock

L121E/105N mg gneiss

L119E/A3 - silicious py +((Aspy)) in BIF.

TS - L113E/BB - sugary quartzite along south contact of BIF/amphibolite.

L113E/B - granitic gneiss to north of BIF outcrops.

TS - L108E/101+00N - massive Aspy along fol'n (+fractures).



TS - L108E/101+00N - massive Aspy in schistose shear horizon of BIF.

TS - L108E - showing- south trench-grab samples of py/aspy zones in trench area.

L109 area A,B,C,D, across south amphibolite/BIF contact.

TS - L104E (113+75N) HS shows Fg granitic rock + silicious, bte rock (Amph alt'd)+py?, rock area corresponds to anomaly.

L104A, BIF area.

TS - L103D - massive Aspy in BIF OC.

L94E/104N - silicious, Fg hbl-plag-bte Qtz schist + amphibolite along foliation planes.

L91E 106+25N (2) hard, finely banded chert/mte BIF.

L91E 106+25N - bte-granitic gneiss, mylonitic.

TS - L72 BIF - outcrops Fg, banded chert-mte.

TS - L72 - rubble- cg Qtz+mte ground mass BIF rubble.

L66E/123N - porphyroblasts of K-spar in granitic gneiss, mylonitic texture.

TS - L63E - shear north of L. Lake Qtz-bte+(py).

L61E/124N - hbl schist.

TS - L49E/130N - hbl-plag schist (alt'd amphibolite)

Bass Lake - L125/104S (shoreline) sample of mte-epd. qtz pod in  
plag-hble schist in area that corresponds to anomaly.

L112 +50E/ shoreline

HS Suite 21-9-1 to 21-9-6

BIF + mineralization (see Diag. of Area).

(L113E BB outcrop followed to shoreline to West). (L112  
+50).

L111+50E/ shoreline 21-9-7 to 21-9-10 HS suite BIF to south  
of L112+50E BIF.

L109+50E to L107E showing area

HS suite 20-9 1 2 3 4 5 6 7

9

17

20 21 22

24

26

28

TS30 TS31

TS33 34 TS35

37

42

49

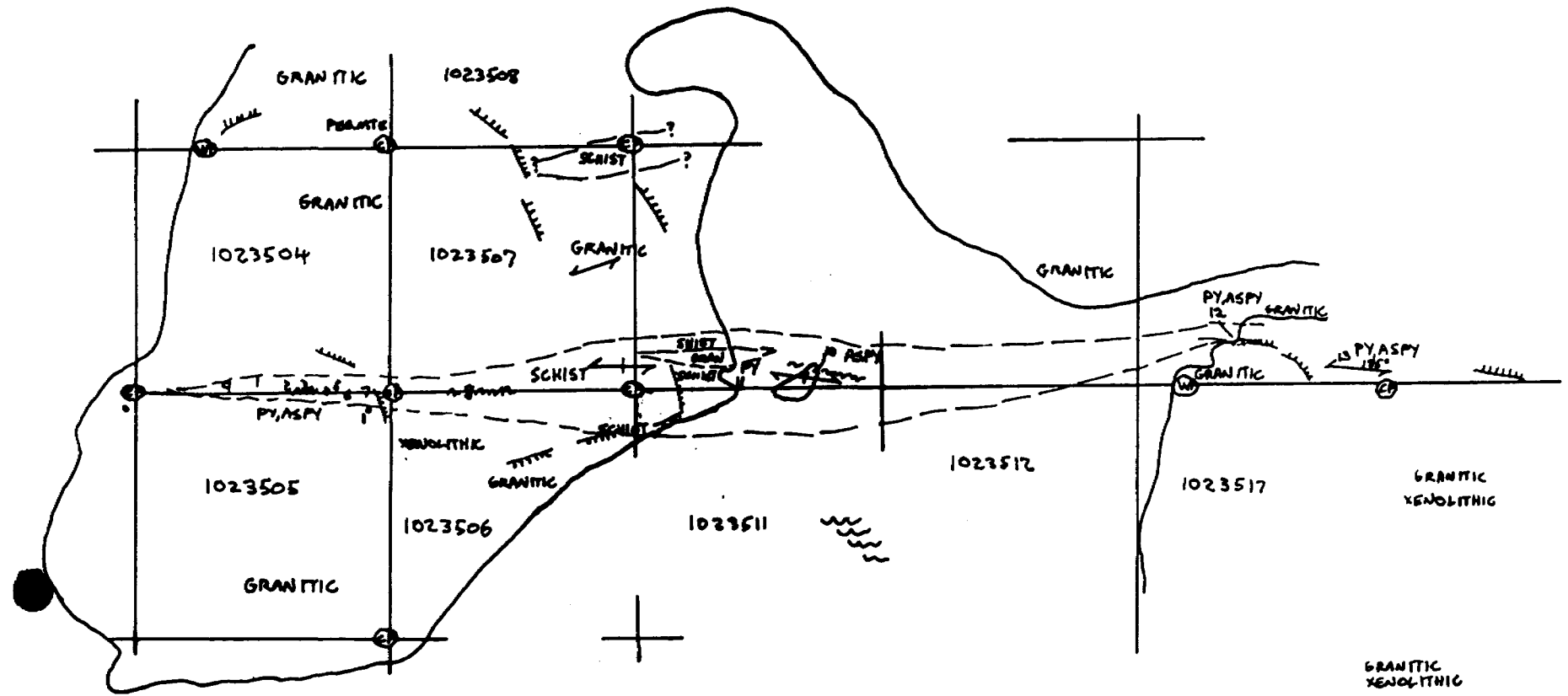
TS50 TS51 52

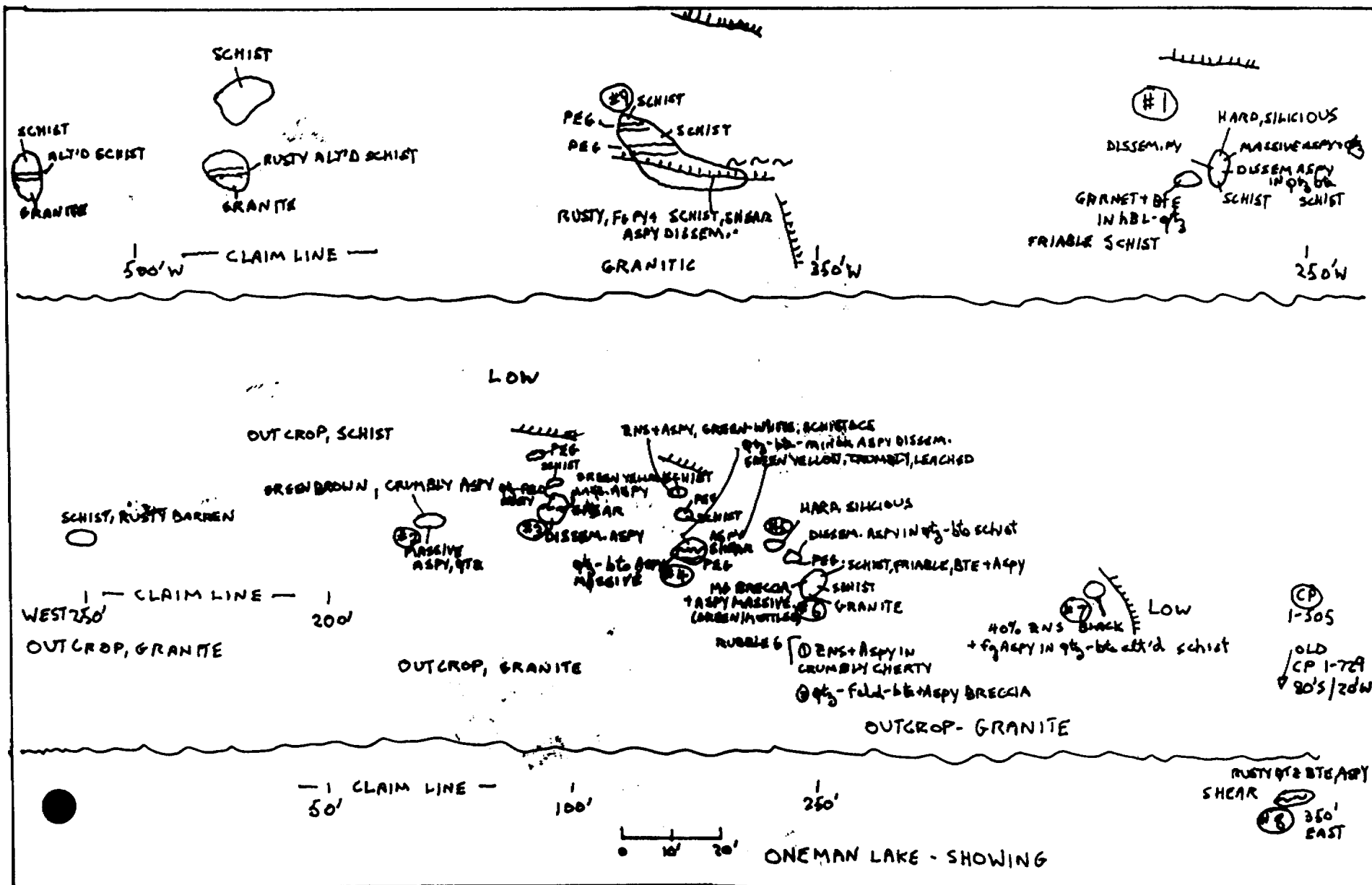
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# ONEMAN LAKE GEOLOGY - SAMPLE LOCATIONS



- GEOLOGIC CONTACT
- SHEAR
- RIDGE
- CLAIM POST LOCATED
- SAMPLE LOCATION
- OLD CLAIM POST (1-841729)





**GEOCHEMICAL ANALYSIS CERTIFICATE**

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCl-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR NH FE SR CA P LA CR NG BA YI B W AND LIMITED FOR Na K AND AL. NO DETECTION LIMIT BY ICP IS 3 PPM.  
 - SAMPLE TYPE: ROCK Au\* ANALYSIS BY ACID LEACH/AA FROM 10 GR SAMPLE.

DATE RECEIVED: OCT 14 1988 DATE REPORT MAILED: *Oct 20/88* SIGNED BY: *C. Long* B. TOTT, C. LONG, B. CHAN, J. WANG; CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION File # 88-5213

SAMPLE#	No	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	S	Au	Tb	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Hg	Ba	Ti	B	Al	Na	K	W	Au*	
	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	PPM	PPM	PPM	PPM	PPM	PPM	PPM	PPM	%	%	PPM	PPM	%	PPM	%	PPM	%	%	%	%	PPM	PPM	
OWL-1	2	317	233	2280	5.0	149	42	146	7.10	23503	5	ND	1	3	136	27	32	48	.44	.000	2	77	.25	26	.03	2	1.29	.03	.19	1	4020	.13
OWL-2	4	83	95	1669	1.2	90	16	75	3.70	22424	5	ND	2	11	45	14	2	40	1.04	.000	5	33	.10	50	.03	4	1.95	.07	.21	1	205	
OWL-3	2	373	255	3956	9.6	73	20	192	3.94	36046	5	ND	1	2	120	2	17	47	.01	.003	2	22	.27	17	.01	2	.71	.01	.15	1	2330	.07
OWL-4	2	583	104	17738	12.4	250	84	140	9.99	39960	5	ND	1	1	366	2	10	33	.01	.010	2	23	.10	9	.02	3	.35	.01	.10	1	2840	.09
OWL-5	1	163	48	414	1.8	119	56	437	5.80	6397	5	ND	1	13	6	2	7	175	.01	.015	2	147	1.40	63	.16	2	3.62	.07	1.06	1	260	
OWL-6	3	460	191	37293	14.3	337	96	170	10.04	31431	5	ND	1	4	700	32	2	12	.79	.001	2	30	.05	15	.01	2	1.73	.03	.06	1	3910	.13
OWL-7	1	230	52	113	2.5	112	35	243	2.10	1100	5	ND	1	17	2	2	2	35	3.77	.026	2	33	.21	7	.02	2	6.00	.26	.04	2	54	
OWL-8	1	188	9	511	.8	64	16	256	3.99	1774	5	ND	1	43	9	2	2	45	3.00	.022	2	45	.92	10	.07	2	3.94	.08	.11	1	50	
OWL-9	1	74	41	92	.4	41	9	586	2.90	146	5	ND	1	20	1	2	2	08	3.76	.015	2	193	.75	45	.10	3	6.66	.32	.20	4	20	
OWL-10	4	149	7	39	4.3	502	39	56	16.69	24636	5	5	1	12	1	2	369	16	.15	.011	2	27	.16	9	.01	2	.57	.02	.13	2	4030	.16
OWL-11	1	73	14	190	.2	77	17	175	3.07	858	5	ND	2	35	2	2	2	51	4.20	.024	3	79	.41	36	.03	7	7.01	.21	.11	9	35	
OWL-12	1	2410	6	105	2.3	67	26	187	6.14	640	5	ND	1	20	2	2	2	45	1.62	.021	2	52	1.25	50	.05	3	3.12	.13	.22	1	96	
OWL-13	2	140	9	139	.3	85	24	522	4.19	300	5	ND	2	51	2	2	2	49	4.06	.022	3	75	.63	18	.00	2	5.61	.29	.09	1	21	
11132/BD SOUTH CONTACT	2	22	5	36	.3	27	44	81	1.26	5985	5	ND	1	2	1	2	20	4	.14	.015	2	11	.15	15	.01	2	.31	.04	.02	3	116	
11132/BUDD LX 1	2	22	4	31	.2	46	11	437	9.35	17444	5	ND	1	3	1	4	2	1	.00	.018	2	11	.04	6	.01	3	.03	.01	.01	1	550	
11132/BUDD LX 2	1	70	10	57	.7	26	42	270	13.83	160	5	ND	2	8	1	2	2	2	.60	.009	3	36	.05	9	.01	2	.13	.01	.01	1	61	
STD C/AU-R	10	50	41	134	6.8	69	30	1013	6.32	39	20	7	30	40	19	17	21	60	.52	.097	39	50	.92	177	.07	33	1.95	.06	.13	12	690	

Assay required for correct result for Zn, As > 1%

## PART IV GEOCHEMICAL ANALYSIS OF ROCK AND SOIL SAMPLES

### 4.1 COLLECTION OF SAMPLES

Rock samples consisted of chip samples of relatively fresh surface material with minor weathering. Samples were collected along zones or areas of specific geological interest and not on a systematic grid pattern.

Sample numbers corresponding to geochemical analysis numbers are provided on accompanying geological plans.

Soil samples consisted of collecting the humus horizon. An attempt was made to collect samples on a regular grid pattern providing profiles over the specific iron formation of interest. Soil sampling was abandoned to a large extent in the Helder Lake area as the rugged relief and poor humus distribution did not offer reasonable distribution of samples. The western most portion of the grid was recently logged over and the humus layer has been disturbed and destroyed. The data in areas where humus samples were collected are provided on accompanying plans (Geochemical Series).

### 4.2 GEOCHEMICAL ANALYSIS was conducted by:

Acme Analytical Laboratories Ltd.

852 E. Hastings Street

Vancouver, B.C. V6A 1R6

#### 4.3 SAMPLE PREPARATION AND ANALYSIS

- 1). Soil samples are dried at 60° and sieved to -80 mesh.
- 2). Rock samples are pulverized to -100 mesh.

0.5 gram sample is digested with 3ml. 3-1-2 HCl - HNO<sub>3</sub> - H<sub>2</sub> at 95°C for 1 hour and is diluted to 10 ml with water. Extracted metals are determined by:

- 1). inductively coupled Argon Plasma (ICP)
- 2). Au is determined by Atomic Absorption (AA) using a background correction.

The rock and soil samples collected were analyzed for Au and As only with the exception of rock samples collected at One Man Lake which were analyzed for 31 elements. A copy of the original Geochemical Analytical Certificates is provided in Appendix A and B.



APPENDIX A

GEOCHEMICAL ANALYSIS

ROCK SAMPLES

ACME ANALYTICAL LABORATORIES LTD. DATE RECEIVED: JULY 09 1988  
 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
 PHONE(604)253-3158 FAX(604)253-1716 DATE REPORT MAILED: *July 14/88.*

**GEOCHEMICAL ANALYSIS CERTIFICATE**

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Leong* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION PROJECT-HELDER LAKE File # 88-2549 Page 1

SAMPLE#	As PPM	Au* PPB
L103E/A	1675	14
L103E/A1	41	11
L103E/A2	98	1
L103E/A3	85	11
L103E/A4	119	16
L103E/A5	38	24
L103E/A6	27	44
L103E/A7	12	24
L103E/A8	52	5
L103E/A9	100	3
L103E/BB2	402	44
L103E/BB3	89	16
L103E/BB4	238	40
L104E/A	3	1
L104E/A1	13	2
L104E/A2	4	1
L104E/A3	8	1
L104E/A4	2	2
L104E/A5	4	1
L109E/AA	2864	2120
L109E/AA1	2391	230
L109E/AA2	2611	90
L109E/AA3	1039	50
L109E/AA4	8706	985
L109E/AA5	1769	51
L109E/AA6	1775	52
L109E/AA7	248	29
L109E/AA9	3511	290
L109E/AA10	258	27
L109E/AA11	202	6
L109E/AA12	2518	96
L109E/AA13	47	5
L113E/B1	1242	9
L113E/B2	1661	38
L113E/B3	91	13
L113E/B4	1505	46
STD C/AU-R	40	520

SAMPLE#	As PPM	Au* PPB
L113E/B5	24	2
L113E/B6	50	11
L113E/B7	239	1
L113E/B8	173	14
L113E/B9	402	1
L113E/B10	178	6
L113E/B11	119	1
L113E/B12	20	1
L113E/B13	283	12
L113E/B14	293	1
L113E/B15	5889	9
L113E/B16	73	22
L113E/B17	228	10
L113E/B18	511	75
L113E/BB	185	169
L113E/BB1	13427	2670
L119E/A	2958	29
L119E/A1	189	132
L119E/A2	2813	32
L119E/A3	4896	38
L119E/A4	1945	88
L120E/B	185	11
L120/C	1022	1
L120/C1	857	12
L127/A	19	6
L127/A1	4	3
L127/A2	7	4
L133/A	13	1
STD C/AU-R	38	495

SAMPLE#	As PPM	Au* PPB
H-88-106A	259	11
H-88-107A	3	31
H-88-108A	273	1
H-88-111A	3	2
H-88-113A	4	1
H-88-114A	8	9
H-88-114B	7	1
H-88-118A	89	1
H-88-118B	542	11
H-88-121A	35	10
H-88-122A	17	1
H-88-122B	28	4
H-88-123A	11	1
H-88-124A	28	425
H-88-124B	4	8
H-88-124C	18	1
H-88-124D	29	16
H-88-130A	32	1
STD C/AU-R	41	500

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHO (604)253-3158 FAX(604)253-1716

DATE RECEIVED: JUL 13 1988  
DATE REPORT MAILED: *July 19/88*

### GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR NG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Leong* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION FILE # 88-2669

SAMPLE#	As PPM	Au* PPB
L101E/AA	3	7
L101E/AA1	3	4
L101E/AA2	2	24
L120+50E/LAKE SHORE	94	6
L121E/AA	9	3
L121E/AA1	166	86
L142E/A	2	6
L142E/B	2	4
L144E/A	2	2
L145E/A	4	1
L145E/B	2	1
L153E/A	331	7
L153E/A1	121	7
L153E/A2	612	3
L154E/A	2	10
L154E/B	80	6
L154E/B1	141	12
L154E/B2	160	8
L156E/A	325	10
L156E/A1	93	1
L156E/A2	86	1
L156E/A3	17	3
L160E/4+50W	2	1
L160E/2+00W	39	3
LC-88-1	47	1
LC-88-2	4991	50
LC-83-3	8661	350
STD C/AU-R	41	520

SAMPLE#	AS PPM	AU* PPB
H-88-107B	279	10
H-88-107C	358	55
H-88-108C	766	57
H-88-139A	12	5
H-88-141A	5	3
H-88-141B	5	4
H-88-144A	3	3
H-88-145A	4	2
H-88-146A	2	3
CUT-A1	500	38
CUT-A2	1811	49
CUT-A3	2818	144
CUT-A4	749	28
PIT-A1	92	7
PIT-A2	21	1
PIT-A3	22	13
PIT-A4	20	8
PIT-A5	51	47
PIT-A6	68	22
PIT-A7	52	13
PIT-A8	80	6
PIT-A9	33	16
PIT-A10	60	10
STD C/AU-R	40	530

ACME ANALYTICAL LABORATORIES LTD.  
852 HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHONE (604) 253-3158 FAX (604) 253-1716

DATE RECEIVED: AUG 3 1988

DATE REPORT MAILED: *Aug. 10/88..*

### GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER. THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: ROCK AU\* ANALYSES BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Toy* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION PROJECT HELDER LAKE FILE # 88-3250 Page 1

SAMPLE#	As PPM	Au* PPB
H-88-95A	30	10
H-88-95B	9	7
H-88-95C	5	1
H-88-96A	8	6
H-88-97B	16	1
H-88-97C	4	1
H-88-108Bi	48	1
H-88-108Bii	56	1
H-88-108Biii	5934	1
H-88-108Biv	315	5
H-88-135A	12	1
H-88-137A	3	2
H-88-137B	2	4
H-88-146A	43	7
H-88-146B	2	1
H-88-148A	2	2
H-88-149A	2	1
H-88-169B	4	1
TL100	2	1
TL108A	2	1
TL119A	2	1
TL119B	3	5
TR1	30	20
L88E A	4	4
L88E Ai	4	9
L91E A	2	7
L94E A	6	5
L106+20E 113+50N	3	1
L151E A	2	1
L151E B	6	2
L151E C	13	1
L153E A3	2	2
L154E F	2	2
L154E F1	11	1
L154E F2	4	3
L155E F	6	3
STD C/AU-R	40	480

SAMPLE#	As PPM	Au* PPB
L157E A	2	2
L159E A	29	1
L159E A1	7	1
L160E AA	9	1
L161E A	2	2
L161E B	2	1
L161E B1	7	1
L161E B1A	4	1
L162E 104+50	2	1
L162E A	2	1
L162E B	2	2
L162E C	25	2
L162E C1	1597	1
L163E A	2	3
L164E A	212	1
L164E B	2	2
LC-88-4	7389	1720
LC-88-5	269	27
LC-88-6	5621	665
TL106A	112	4
TR-2W-108-14/7	1252	93
TL106B	9	7
STD C/AU-R	38	490



*Sept. 9/88*

**EOCHEMICAL ANALYSIS CERTIFICATE**

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
 - SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Leong* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION LTD. FILE # 88-4136 Page 1

SAMPLE#	As PPM	Au* PPB
63.7A	34	7
73.9A	2	6
73.9B	3	1
73.9C	4	4
74.0	2	1
75.85	16	13
76.1A	12	1
76.1B	5	6
76.1C	17	8
76.1D	2	1
76.1J	2	1
80.3A	9	1
80.3B	15	1
80.3C	35	1
80.3D	264	2
80.3E	390	1
80.3F	79	1
80.3G	41	1
80.3H	22	8
L13/A	134	8
L32/A	6	1
L33/A	15	1
L40/A	53	1
L70E/A	204	3
L74E/112+50N	7	3
L75E/113+25N	12	2
L-88-47A	2	9
L-88-72A	7	1
L-88-73A	4	10
L-88-73B	3	23
L-88-73C	4	8
L-88-77A	4	7
L-88-77B	6	14
L-88-79A	2	3
SL-1	2	2
SL-2	25	4
STD C/AU-R	41	475

SAMPLE#	As PPM	Au* PPB
SL-3	10	26
SL-4	2	8
SL-5	3	1
SL-6	2	1
SL-88-18A	7	1
SL-88-21A	2	2
SL-88-21B	6	1
SL-88-21C	2	1
SL-88-23A	137	5
SL-88-23B	280	1
SL-88-23C	22	1
STD C/AU-R	43	520

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHO (604)253-3158 FAX(604)253-1716

DATE RECEIVED: SEP 28 1988

DATE REPORT MAILED: *Oct. 3/88.*

### GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR NG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Leong* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION FILE # 88-4830 Page 1

SAMPLE#	As PPM	Au* PPB	
20-9-1	4193	200	
20-9-2	1348	32	
20-9-3	3437	220	
20-9-4	150	8	
20-9-5	65385 ✓	6430	.2
20-9-6	1586	720	.02
20-9-6 HS	1807	172	
20-9-7	173	15	
20-9-8	116	43	
20-9-9	128	4	
20-9-10	102	9	
20-9-10 A	396	28	
20-9-11	1046	85	
20-9-12	618	66	
20-9-13	203	17	
20-9-14	1112	38	
20-9-15	3064	310	.01
20-9-16	2214	61	
20-9-17 HS	10573 ✓	201	
20-9-18	26733 ✓	2230	.07
20-9-19	444	18	
20-9-20	2871	65	
20-9-21	1147	71	
20-9-22	9408	260	
20-9-23	4084	146	
20-9-24	164	23	
20-9-25 HS	95	350	.01
20-9-26 HS	66	6	
20-9-28 HS	3310	99	
20-9-29	353	25	
20-9-30	76	19	
20-9-31	22084 ✓	2090	.07
20-9-32	641	51	
20-9-33	2942	360	.01
20-9-34 HS	2584	98	
20-9-35 HS	589	73	
STD C/AU-R	44	490	

SAMPLE#	As PPM	Au* PPB	
20-9-36	257	45	
20-9-37 HS	1987	113	
20-9-38	468	34	
20-9-39	2539	166	
20-9-40	238	9	
20-9-41	282	10	
20-9-42 HS	2703	189	
20-9-43	2320	98	
20-9-44	2330	235	
20-9-45	6451	310	.01
20-9-46	492	35	
20-9-47	352	20	
20-9-48	10	16	
20-9-49	90	9	
20-9-50	144	20	
20-9-51	114	23	
20-9-52 HS	37	6	
20-9-53	50	585	.02
20-9-54	1133	148	
20-9-55	343	43	
20-9-56	5453	550	.02
20-9-57	567	47	
20-9-58	92	3	
20-9-59	139	6	
20-9-60 HS	163	7	
20-9-61	319	28	
20-9-62	78	5	
20-9-63	2193	140	
20-9-64	82	29	
21-9-1	91	6	
21-9-2	315	8	
21-9-3	6385	35	
21-9-4	428	4	
21-9-5	581	9	
21-9-6	1891	15	
21-9-7	28	5	
STD C/AU-R	41	530	

SAMPLE#	As PPM	Au* PPB
21-9-8	4	15
21-9-9	7	6
21-9-10	10	2
134-1	2	3
134-2	425	6
134-3	11	5
134-4	3	24
L103A	183	36
L103B	192	26
L103D	7343	570 .02
L103E	54	5
L103G	92	13
L114/168N	15	4
L107E/100+70 APP	7	2
STD C/AU-R	41	510

— Assay required for correct result for As > 10,000 ppm.

SAMPLE#	As PPM	Au* PPB
8N-TR-3W	6576	320
1W6NTR-3W	42583	13830
2E6NTR-3W	13548	320
NTL-L139E	31	6
STD C	37	-

Assay required for correct result for  $As > 1\%$

APPENDIX B

GEOCHEMICAL ANALYSIS

ROCK SAMPLES

ACME ANALYTICAL LABORATORIES LTD.  
852 B. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHONE(604)253-3158 FAX(604)253-1716

DATE RECEIVED: AUG 27 1988

DATE REPORT MAILED: *Oct 26/88*

### GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: P1-P21 HUMUS P22 ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

SIGNED BY *C. Long* D. TOYE, C. LEONG, B. CHAN, J. WANG; CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION FILE # 88-5320 Page 1

SAMPLE#	As PPM	Au* PPB
L56E 131+00N	6	3
L56E 130+75N	8	2
L56E 130+50N	12	1
L56E 130+25N	9	2
L56E 130+00N	5	2
L56E 129+75N	9	1
L56E 129+50N	15	1
L56E 129+25N	9	2
L56E 129+00N	10	1
L56E 128+75N	8	2
L56E 128+50N	6	1
L56E 128+25N	10	3
L56E 128+00N	10	4
L56E 127+75N	13	2
L56E 127+50N	12	1
L56E 127+25N	16	2
L56E 127+00N	11	3
L56E 126+75N	16	3
L56E 126+50N	17	1
L56E 126+25N	5	1
L56E 126+00N	3	2
L56E 125+75N	10	2
L56E 125+50N	9	3
L56E 125+25N	11	1
L56E 125+00N	8	1
L58E 131+00N	6	4
L58E 130+75N	9	2
L58E 130+50N	2	2
L58E 130+25N	6	4
L58E 130+00N	7	4
L58E 129+75N	2	2
L58E 129+50N	4	2
L58E 129+25N	3	1
L58E 129+00N	8	2
L58E 128+75N	6	1
L58E 128+50N	8	2
STD C/AU-S	39	51



SAMPLE#	As PPM	Au* PPB
L58E 128+25N	11	1
L58E 128+00N	13	1
L58E 127+75N	16	1
L58E 127+50N	17	3
L58E 127+25N	13	1
L58E 127+00N	13	1
L58E 126+75N	17	1
L58E 126+50N	15	2
L58E 126+25N	12	1
L58E 126+00N	13	3
L58E 125+75N	10	1
L58E 125+50N	16	1
L58E 125+25N	8	3
L58E 125+00N	11	1
L60E 131+00N	10	2
L60E 130+50N	10	1
L60E 130+25N	6	1
L60E 130+00N	13	2
L60E 129+75N	10	1
L60E 129+25N	2	1
L60E 129+00N	5	2
L60E 128+75N	12	1
L60E 128+50N	6	1
L60E 128+25N	6	1
L60E 128+00N	7	1
L60E 127+75N	9	1
L60E 127+50N	7	1
L60E 127+25N	12	2
L60E 127+00N	4	6
L60E 126+75N	5	1
L60E 126+50N	14	4
L60E 126+25N	12	3
L60E 126+00N	11	5
L60E 125+75N	16	2
L60E 125+50N	12	4
L60E 125+25N	21	1
STD C/AU-S	40	51

SAMPLE#	As PPM	Au* PPB
L60E 125+00N	14	4
L62E 128+00N	9	1
L62E 127+75N	6	1
L62E 127+50N	9	1
L62E 127+25N	9	1
L62E 127+00N	9	2
L62E 126+75N	10	1
L62E 126+50N	7	1
L62E 126+25N	5	1
L62E 126+00N	9	1
L62E 125+75N	4	1
L62E 125+50N	10	2
L62E 125+25N	16	1
L62E 124+75N	7	1
L62E 124+50N	7	1
L62E 124+00N	11	1
L62E 123+75N	17	2
L62E 123+50N	9	1
L62E 123+25N	5	1
L62E 123+00N	9	1
L64E 128+00N	4	1
L64E 127+75N	4	1
L64E 127+50N	2	1
L64E 127+25N	8	2
L64E 127+00N	2	1
L64E 126+75N	10	4
L64E 126+25N	7	1
L64E 126+00N	8	3
L64E 125+75N	7	1
L64E 125+50N	5	1
L64E 125+25N	7	1
L64E 125+00N	12	2
L64E 124+75N	7	1
L64E 124+50N	12	1
L64E 124+25N	7	2
L64E 124+00N	7	1
STD C/AU-S	41	48

SAMPLE#	As PPM	Au* PPB
L64E 123+75N	2	1
L64E 123+25N	8	1
L64E 123+00N	3	1
L66E 127+00N	2	1
L66E 126+75N	2	2
L66E 126+50N	6	3
L66E 126+25N	3	1
L66E 126+00N	4	1
L66E 125+75N	8	2
L66E 125+50N	9	2
L66E 125+25N	2	2
L66E 124+75N	4	2
L66E 124+50N	2	1
L66E 124+25N	3	1
L66E 124+00N	6	1
L66E 123+75N	2	1
L66E 123+25N	5	1
L66E 123+00N	9	2
L66E 122+75N	4	1
L66E 122+50N	5	1
L66E 122+25N	6	1
L66E 122+00N	2	2
L66E 115+00N	4	1
L66E 114+50N	7	1
L66E 114+00N	2	1
L66E 113+75N	6	2
L66E 113+50N	7	1
L66E 113+25N	7	1
L66E 113+00N	16	1
L66E 112+75N	5	2
L66E 112+25N	9	1
L66E 112+00N	4	1
L66E 111+75N	9	2
L66E 111+50N	4	1
L66E 111+25N	10	1
L66E 111+00N	6	1
STD C/AU-S	42	48

SAMPLE#	As PPM	Au* PPB
L66E 110+75N	8	3
L66E 110+50N	10	1
L66E 110+25N	5	1
L67E 127+00N	10	2
L67E 126+75N	4	1
L67E 126+50N	8	1
L67E 126+25N	14	4
L67E 126+00N	11	2
L67E 125+75N	11	2
L67E 125+50N	8	2
L67E 125+25N	8	1
L67E 125+00N	4	1
L67E 124+75N	11	2
L67E 124+50N	6	1
L67E 124+25N	8	1
L67E 124+00N	5	1
L67E 123+75N	3	1
L67E 123+50N	5	1
L67E 123+25N	5	1
L67E 123+00N	2	1
L67E 122+75N	2	1
L67E 122+50N	4	1
L67E 122+25N	4	1
L67E 122+00N	5	1
L68E 127+00N	5	2
L68E 126+75N	7	1
L68E 126+50N	8	2
L68E 126+25N	5	1
L68E 125+75N	19	6
L68E 125+50N	8	1
L68E 125+25N	6	1
L68E 125+00N	11	2
L68E 124+75N	6	2
L68E 124+50N	2	1
L68E 124+25N	3	1
L68E 124+00N	6	1
STD C/AU-S	36	51

SAMPLE#	As PPM	Au* PPB
L68E 123+75N	5	1
L68E 123+50N	11	4
L68E 123+25N	8	1
L68E 123+00N	2	1
L68E 122+75N	3	1
L68E 115+00N	6	1
L68E 114+75N	8	2
L68E 114+50N	8	1
L68E 114+25N	10	1
L68E 114+00N	9	1
L68E 113+75N	10	3
L68E 113+50N	12	1
L68E 113+25N	20	1
L68E 113+00N	11	1
L68E 112+75N	8	16
L68E 112+50N	13	1
L68E 112+25N	7	2
L68E 112+00N	3	1
L68E 111+75N	8	1
L68E 111+50N	7	1
L68E 111+25N	2	1
L68E 111+00N	6	2
L68E 110+75N	8	1
L68E 110+50N	6	3
L68E 110+25N	7	1
L68E 110+00N	2	1
L69E 127+00N	5	3
L69E 126+75N	12	2
L69E 126+50N	4	1
L69E 126+25N	7	1
L69E 126+00N	6	1
L69E 125+75N	7	2
L69E 125+50N	12	1
L69E 125+25N	6	1
L69E 125+00N	9	1
L69E 124+75N	5	1
STD C/AU-S	41	51

SAMPLE#	As PPM	Au* PPB
L69E 124+50N	4	4
L69E 124+25N	5	3
L69E 124+00N	4	1
L69E 123+75N	5	1
L69E 123+50N	4	1
L69E 123+25N	7	4
L70E 127+00N	11	1
L70E 126+75N	8	1
L70E 126+50N	12	2
L70E 126+25N	8	1
L70E 126+00N	8	1
L70E 125+75N	9	1
L70E 125+50N	7	1
L70E 125+25N	7	1
L70E 125+00N	12	1
L70E 124+75N	9	1
L70E 124+50N	2	2
L70E 124+25N	6	2
L70E 124+00N	3	1
L70E 123+75N	10	1
L70E 123+50N	5	1
L70E 123+25N	7	1
L70E 123+00N	5	1
L70E 115+00N	19	2
L70E 114+75N	7	1
L70E 114+50N	10	2
L70E 114+25N	6	1
L70E 114+00N	5	1
L70E 113+75N	5	1
L70E 113+50N	6	1
L70E 113+25N	47	2
L70E 113+00N	20	2
L70E 112+75N	7	1
L70E 112+50N	3	1
L70E 112+25N	10	1
L70E 112+00N	2	1
STD C/AU-S	38	47

SAMPLE#	As PPM	Au* PPB
L70E 111+75N	7	1
L70E 111+50N	6	2
L70E 111+25N	5	1
L70E 111+00N	8	1
L70E 110+75N	8	1
L70E 110+50N	9	1
L70E 110+25N	11	1
L70E 110+00N	5	2
L71E 127+00N	10	1
L71E 126+75N	7	1
L71E 126+50N	7	1
L71E 126+25N	9	2
L71E 126+00N	3	1
L71E 125+75N	3	1
L71E 125+50N	7	2
L71E 125+25N	5	1
L71E 125+00N	6	1
L71E 124+75N	6	1
L71E 124+50N	7	4
L71E 124+25N	6	2
L71E 124+00N	3	1
L71E 123+75N	7	1
L71E 123+50N	8	1
L71E 123+25N	6	3
L71E 123+00N	10	1
L71E 122+75N	10	2
L72E 125+75N	8	1
L71E 122+00N	8	3
L71E 124+75N	9	1
L71E 124+50N	10	1
L71E 124+25N	5	2
L71E 124+00N	8	1
L71E 123+75N	7	1
L71E 123+50N	2	2
L71E 123+25N	9	1
L71E 123+00N	4	1
STD C/AU-S	45	51

SAMPLE#	As PPM	Au* PPB
L72E 122+50N	6	1
L72E 122+25N	7	1
L72E 122+00N	11	3
L72E 121+75N	6	1
L72E 121+50N	7	1
L72E 121+25N	8	1
L72E 121+00N	8	2
L72E 120+75N	7	1
L72E 120+50N	8	2
L72E 120+25N	4	1
L72E 120+00N	8	1
L72E 115+00N	6	2
L72E 114+75N	2	1
L72E 114+50N	11	2
L72E 114+25N	8	1
L72E 114+00N	10	2
L72E 113+75N	11	1
L72E 113+50N	26	2
L72E 113+25N	12	1
L72E 113+00N	12	1
L72E 112+75N	10	1
L72E 112+50N	7	2
L72E 112+25N	2	2
L72E 112+00N	7	3
L72E 111+75N	5	1
L72E 111+50N	5	1
L72E 111+25N	5	1
L72E 111+00N	8	1
L72E 110+75N	4	1
L72E 110+50N	8	2
L72E 110+25N	5	4
L73E 125+00N	11	2
L73E 124+75N	7	3
L73E 124+50N	6	4
L73E 124+25N	9	2
L73E 124+00N	12	1
STD C/AU-S	38	47



SAMPLE#	As PPM	Au* PPB
L73E 123+75N	5	1
L73E 123+50N	3	1
L73E 123+25N	7	2
L73E 123+00N	5	1
L73E 122+75N	4	3
L73E 122+50N	6	1
L73E 122+25N	9	2
L73E 122+00N	7	1
L73E 121+75N	3	1
L73E 121+50N	8	2
L73E 121+25N	6	4
L73E 121+00N	10	3
L73E 120+75N	8	1
L73E 120+50N	10	2
L73E 120+25N	9	1
L73E 120+00N	6	1
L74E 115+00N	11	4
L74E 114+75N	10	3
L74E 114+50N	8	1
L74E 114+25N	3	1
L74E 114+00N	9	2
L74E 113+75N	8	1
L74E 113+50N	5	1
L74E 113+25N	7	1
L74E 113+00N	7	1
L74E 112+75N	9	2
L74E 112+50N	6	1
L74E 112+25N	8	1
L74E 112+00N	10	1
L74E 111+75N	6	1
L74E 111+50N	6	2
L74E 111+25N	5	1
L74E 111+00N	7	1
L74E 110+75N	6	1
L74E 110+50N	4	2
L74E 110+25N	3	1
STD C/AU-S	42	47

SAMPLE#	As PPM	Au* PPB
L74E 110+00N	3	2
L75E 125+00N	3	1
L75E 125+00N B/L	8	2
L75E 124+75N	15	4
L75E 124+50N	15	1
L75E 124+25N	10	1
L75E 124+00N	10	3
L75E 123+75N	10	1
L75E 123+50N	6	2
L75E 123+25N	3	3
L75E 123+00N	3	1
L75E 122+75N	2	1
L75E 122+50N	4	2
L75E 122+25N	5	1
L75E 122+00N	6	2
L75E 121+75N	5	3
L75E 121+50N	11	1
L75E 121+25N	3	1
L75E 121+00N	2	2
L75E 120+75N	16	1
L75E 120+50N	10	1
L75E 120+25N	9	2
L75E 120+00N	4	1
L76E 115+00N	8	1
L76E 114+75N	5	4
L76E 114+50N	3	1
L76E 114+25N	5	1
L76E 114+00N	5	1
L76E 113+75N	8	1
L76E 113+50N	12	4
L76E 113+25N	4	1
L76E 113+00N	4	1
L76E 112+75N	9	1
L76E 112+50N	9	2
L76E 112+25N	5	1
L76E 112+00N	10	1
STD C/AU-S	38	52

SAMPLE#	As PPM	Au* PPB
L76E 111+75N	5	1
L76E 111+50N	12	3
L76E 111+25N	7	1
L76E 111+00N	4	2
L76E 110+75N	6	1
L76E 110+50N	4	1
L76E 110+25N	2	2
L76E 110+00N	2	1
L77E 125+50N	12	1
L77E 125+25N	12	2
L77E 125+00N	4	1
L77E 124+75N	5	1
L77E 124+50N	6	1
L77E 124+25N	5	1
L77E 124+00N	6	1
L77E 123+75N	9	2
L77E 123+50N	4	1
L77E 123+25N	7	1
L77E 123+00N	11	2
L77E 122+75N	12	1
L77E 122+50N	7	1
L77E 122+25N	9	1
L77E 122+00N	4	2
L77E 121+75N	8	1
L77E 121+50N	3	2
L77E 121+25N	13	1
L77E 121+00N	5	1
L77E 120+75N	11	1
L77E 120+50N	12	1
L77E 120+25N	12	2
L77E 120+00N	9	1
L79E 127+75N	11	1
L79E 125+50N	5	1
L79E 125+25N	6	1
L79E 125+00N	11	1
L79E 124+75N	9	1
STD C/AU-S	41	48

SAMPLE#	As PPM	Au* PPB
L79E 124+50N	20	1
L79E 124+25N	12	1
L79E 124+00N	14	3
L79E 123+50N	12	2
L79E 123+25N	7	3
L79E 123+00N	8	1
L79E 122+75N	9	1
L79E 122+50N	12	4
L79E 122+25N	15	5
L79E 122+00N	6	1
L79E 121+75N	19	1
L79E 121+50N	7	4
L79E 121+25N	12	1
L79E 121+00N	8	1
L79E 120+75N	14	1
L79E 120+50N	16	2
L79E 120+25N	11	1
L79E 120+00N	9	2
L108E 5+00N	7	1
L108E 4+75N	12	1
L108E 4+50N	14	2
L108E 4+25N	7	1
L108E 4+00N	5	2
L108E 3+75N	5	1
L108E 3+50N	9	3
L108E 3+25N	19	1
L108E 3+00N	6	1
L108E 2+75N	6	1
L108E 2+50N	6	1
L108E 2+25N	6	1
L108E 2+00N	7	1
L108E 1+75N	13	2
L108E 1+50N	12	1
L108E 1+00N	4	1
L108E 0+75N	7	1
L108E 0+50N	9	4
STD C/AU-S	40	49

SAMPLE#	As PPM	Au* PPB
L108E 0+25N	9	2
L108E 0+00N	7	4
L108E 0+25S	8	1
L108E 0+50S	6	3
L108E 0+75S	11	1
L108E 1+00S	9	2
L108E 1+75S	5	1
L108E 2+00S	5	1
L108E 2+25S	2	4
L108E 2+50S	6	1
L108E 2+75S	5	1
L108E 3+00S	2	2
L110E 5+00N	2	3
L110E 4+75N	5	1
L110E 4+50N	6	1
L110E 4+25N	16	1
L110E 4+00N	7	4
L110E 3+75N	4	2
L110E 3+50N	3	1
L110E 3+25N	4	2
L110E 3+00N	3	1
L110E 2+75N	3	1
L110E 2+50N	6	1
L110E 2+25N	8	1
L110E 2+00N	5	1
L110E 1+75N	7	1
L110E 1+50N	7	1
L110E 1+25N	2	4
L110E 1+00N	2	1
L110E 0+75N	6	1
L110E 0+50N	3	2
L110E 0+25N	6	1
L110E 0+00N	7	1
L110E 0+25S	8	1
L110E 0+50S	8	1
L110E 0+75S	6	1
STD C/AU-S	38	52

SAMPLE#	As PPM	Au* PPB
L110E 1+00S	10	2
L110E 1+25S	11	3
L110E 1+50S	6	6
L110E 1+75S	11	2
L110E 2+00S	5	1
L110E 2+50S	8	1
L110E 2+75S	5	4
L110E 3+00S	7	1
L112E 5+00N	10	3
L112E 4+75N	7	4
L112E 4+50N	27	4
L112E 4+25N	13	1
L112E 4+00N	13	2
L112E 3+75N	14	2
L112E 3+50N	10	3
L112E 3+25N	15	3
L112E 3+00N	8	1
L112E 2+75N	3	1
L112E 2+50N	2	1
L112E 2+25N	2	1
L112E 2+00N	2	1
L112E 1+75N	3	2
L112E 1+50N	3	2
L112E 1+25N	5	3
L112E 1+00N	4	2
L112E 0+75N	8	3
L112E 0+50N	7	1
L112E 0+25N	5	3
L112E 0+00N	4	2
L112E 0+25S	17	2
L112E 0+50S	19	6
L112E 0+75S	10	4
L112E 1+00S	4	1
L112E 1+25S	11	2
L112E 1+50S	13	2
L112E 1+75S	6	1
STD C/AU-S	45	53

SAMPLE#	As PPM	Au* PPB
L112E 2+00S	2	4
L112E 2+25S	6	1
L112E 2+50S	6	6
L112E 2+75S	4	5
L123E 3+00N	8	4
L123E 2+75N	6	1
L123E 2+50N	8	1
L123E 2+25N	8	3
L123E 2+00N	6	1
L123E 1+75N	4	1
L123E 1+50N	8	2
L123E 1+25N	9	3
L123E 1+00N	6	1
L123E 0+75N	10	3
L123E 0+50N	10	1
L123E 0+25N	6	3
L123E 0+00N	6	1
L123E 0+25S	3	1
L123E 0+50S	2	1
L123E 0+75S	8	2
L123E 1+00S	5	3
L123E 1+25S	5	2
L123E 1+50S	9	1
L123E 1+75S	9	1
L123E 2+00S	8	4
L123E 2+25S	8	1
L123E 2+50S	6	2
L123E 2+75S	8	1
L123E 3+00S	8	2
L125E 3+00N	10	1
L125E 2+50N	8	1
L125E 2+25N	6	1
L125E 2+00N	9	6
L125E 1+75N	8	1
L125E 1+50N	15	4
L125E 1+25N	6	2
STD C/AU-S	43	50

SAMPLE#	As PPM	Au* PPB
L125E 1+00N	3	4
L125E 0+75N	6	1
L125E 0+50N	6	4
L125E 0+25N	10	2
L125E 0+00N	9	3
L125E 0+25S	4	9
L125E 0+50S	2	1
L125E 0+75S	5	1
L125E 1+00S	7	5
L125E 1+25S	11	2
L125E 1+50S	4	1
L125E 1+75S	7	3
L125E 2+00S	2	1
L125E 2+25S	5	1
L125E 2+50S	2	3
L125E 2+75S	4	3
L125E 3+00S	9	1
L127E 10+25N	8	3
L127E 10+00N	6	1
L127E 9+75N	3	2
L127E 9+50N	5	1
L127E 9+25N	5	1
L127E 9+00N	3	1
L127E 8+75N	4	1
L127E 8+50N	5	1
L127E 8+25N	10	3
L127E 8+00N	13	2
L127E 7+75N	10	9
L127E 7+50N	7	1
L127E 7+25N	5	1
L127E 7+00N	6	2
L127E 6+75N	4	1
L127E 6+50N	5	1
L127E 6+25N	5	1
L127E 6+00N	15	1
L127E 5+75N	8	2
STD C/AU-S	37	47



SAMPLE#	As PPM	Au* PPB
L127E 5+50N	6	1
L127E 5+25N	2	2
L127E 5+00N	7	2
L127E 4+75N	9	1
L127E 4+50N	4	2
L127E 4+25N	3	2
L127E 4+25N A	2	2
L127E 4+00N	8	4
L127E 3+75N	8	1
L127E 3+50N	4	4
L127E 3+25N	12	1
L127E 3+00N	5	1
L127E 2+75N	6	2
L127E 2+50N	3	4
L127E 2+25N	8	2
L127E 2+00N	6	1
L127E 1+75N	8	4
L127E 1+50N	5	2
L127E 1+25N	3	1
L127E 1+00N	5	1
L127E 0+75N	6	2
L127E 0+50N	6	1
L127E 0+25N	5	2
L127E 0+00N	5	2
L127E 0+25S	2	1
L127E 0+50S	2	3
L127E 0+75S	6	3
L127E 1+00S	6	4
L127E 1+25S	5	2
L127E 1+50S	4	1
L127E 1+75S	8	1
L127E 2+00S	10	2
L127E 2+25S	11	2
L127E 2+50S	9	4
L127E 2+75S	9	3
L127E 3+00S	2	2
L127E 10+75S	14	3
STD C/AU-S	39	49

SAMPLE#	As PPM	Au* PPB
L136E 1+75N	3	1
L136E 1+50N	6	2
L136E 1+00N	10	1
L136E 0+75N	17	2
L136E 0+50N	4	3
L136E 0+25N	16	4
L136E 0+00N	9	5
L136E 0+25S	6	1
L136E 0+50S	2	2
L136E 0+75S	4	1
L136E 1+00S	3	2
L136E 1+25S	4	1
L136E 1+50S	12	3
L136E 1+75S	6	1
L136E 2+00S	11	1
L136E 2+25S	6	1
L136E 2+50S	7	1
L136E 2+75S	2	3
L136E 3+25S	10	1
L138E 3+00N	4	1
L138E 2+75N	12	2
L138E 2+50N	5	1
L138E 2+25N	6	1
L138E 2+00N	6	2
L138E 1+75N	4	1
L138E 1+50N	9	2
L138E 1+25N	9	1
L138E 1+00N	6	1
L138E 0+75N	9	4
L138E 0+50N	5	1
L138E 0+25N	5	3
L138E 0+00N	6	4
L138E 0+25S	5	2
L138E 0+50S	4	15
L138E 0+75S	6	1
L138E 1+00S	5	1
L138E 1+25S	9	4
STD C/AU-S	39	52

SAMPLE#	As PPM	Au* PPB
L138E 1+50S	6	5
L138E 1+75S	8	4
L138E 2+00S	8	3
L138E 2+25S	8	2
L138E 2+50S	10	6
L138E 2+75S	9	3

ACME ANALYTICAL LABORATORIES LTD.  
852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6  
PHO (604)253-3158 FAX(604)253-1716

DATE RECEIVED: JUL 25 1988

DATE REPORT MAILED: *Aug. 3/88.*

### GEOCHEMICAL ANALYSIS CERTIFICATE

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL. AU DETECTION LIMIT BY ICP IS 3 PPM.  
- SAMPLE TYPE: P1-P6 HUMUS P7 ROCK AU\* ANALYSIS BY ACID LEACH/AA FROM 10 GM SAMPLE.

ASSAYER: *C. Leong* D. TOYE OR C. LEONG, CERTIFIED B.C. ASSAYERS

INDEPENDENT EXPLORATION PROJECT A, LAKE FILE # 88-3035 Page 1

SAMPLE#	As PPM	Au* PPB
L100+00E ST103+75N	7	1
L100+00E ST103+50N	4	1
L100+00E ST103+25N	11	1
L100+00E ST103+00N	4	1
L100+00E ST102+50N	8	1
L100+00E ST102+25N	11	1
L100+00E ST102+00N	5	1
L100+00E ST101+50N	5	4
L100+00E ST101+25N	7	2
L100+00E ST101+00N	6	1
L101+00E ST104+00N	9	1
L101+00E ST103+75N	9	2
L101+00E ST103+00N	10	1
L101+00E ST102+75N	5	1
L101+00E ST102+50N	35	6
L101+00E ST102+25N	3	1
L101+00E ST100+75N	7	6
L101+00E ST100+50N	2	8
L102E ST104+00N	11	1
L102E ST103+75N	9	1
L102E ST103+25N	5	1
L102E ST103+00N	9	1
L102E ST100+00N	7	1
L103E ST104+00N	8	1
L103E ST103+75N	7	1
L103E ST100+00N	14	4
L104E 103+25N	7	1
L104E 100+00N	3	1
L105E 104+00N	9	2
L105E 102+50N	9	1
L105E 100+25N	2	1
L105E BLN	15	2
L106E 104N	14	3
L106E 103+75N	25	1
L106E 103+50N	16	5
L106E 103+25N	7	2
STD C/AU-S	37	53

SAMPLE#	As PPM	Au* PPB
L106E 103+00N	11	12
L106E 102+75N	20	7
L106E 102+50N	12	6
L106E 100+50N	12	2
L106E 100+25N	5	7
L106E BLN	14	1
L107E 104N	11	9
L107E 103+75N	14	1
L107E 103+50N	10	6
L107E 103+25N	13	1
L107E 103+00N	9	1
L107E 102+75N	10	1
L107E 102+50N	11	1
L107E 102+00N	22	3
L107E 101+75N	7	2
L107E 101+50N	11	1
L107E 101+25N	8	3
L107E 101+00N	11	12
L107E 100+75N	9	4
L107E 100+50N	11	9
L107E 100+25N	11	1
L107E BLN	15	1
L108E 103N	15	4
L108E 102+75N	20	1
L108E 102+50N	12	5
L108E 102+25N	15	1
L108E 102+00N	4	1
L108E 101+75N	5	28
L108E 101+25N	28	67
L108E 101+00N	94	2
L108E 100+75N	27	1
L108E 100+50N	9	26
L109E 101+50N	32	1
L109E 101+25N	37	1
L109E 101+00N	13	1
L109E 100+75N	19	1
STD C/AU-S	41	50

SAMPLE#	As PPM	Au* PPB
L109E 100+50N	7	1
L109E 100+25N	23	5
L109E 100+00N	8	2
L118E 104N	23	3
L118E 103+75N	14	4
L118E 103+50N	7	1
L118E 103+25N	9	1
L118E 103+00N	11	2
L118E 102+75N	6	1
L118E 102+50N	18	8
L118E 102+25N	43	2
L118E 102+00N	21	1
L118E 101+75N	11	2
L118E 101+50N	9	1
L118E 101+25N	8	3
L118E 101+00N	15	2
L118E 100+75N	8	2
L118E 100+50N	8	1
L118E 100+25N	4	4
L118E BLN	11	2
L119E 104+00N	7	1
L119E 103+75N	4	1
L119E 103+50N	6	1
L119E 103+25N	7	1
L119E 103+00N	3	2
L119E 102+75N	7	1
L119E 102+25N	39	1
L119E 102+00N	27	1
L119E 101+75N	16	2
L119E 101+50N	5	1
L119E 100+75N	5	1
L119E 100+50N	10	1
L119E 100+25N	5	1
L119E BLN	2	1
L120E 104+25N	8	2
L120E 104+00N	9	11
STD C/AU-S	40	53

SAMPLE#	As PPM	Au* PPB
L120E 103+50N	6	9
L120E 103+00N	8	1
L120E 102+50N	10	1
L120E 102+25N	42	2
L120E 100+00N	11	1
L121E 104+75N	9	2
L121E 104+50N	19	1
L121E 104+25N	9	1
L121E 104+00N	16	1
L121E 103+75N	5	2
L121E 103+50N	5	1
L121E 103+25N	4	1
L121E 103+00N	8	1
L121E 102+75N	7	1
L121E 102+50N	18	1
L121E 102+25N	34	1
L121E 102+00N	18	2
L121E 101+75N	14	1
L121E 101+50N	5	1
L121E 101+25N	9	1
L121E 101+00N	12	2
L121E 100+75N	6	1
L121E 100+50N	7	2
L121E 100+25N	8	1
L121E 100+00N	6	1
L122E 104+50N	8	1
L122E 104+25N	12	1
L122E 104+00N	14	1
L122E 103+75N	2	1
L122E 103+50N	5	2
L122E 103+25N	3	1
L122E 103+00N	6	1
L122E 102+75N	3	2
L122E 102+25N	4	1
L122E 102+00N	9	1
L122E 101+75N	15	1
STD C/AU-S	40	51

SAMPLE#	As PPM	Au* PPB
L122E 101+50N	46	1
L122E 101+25N	18	1
L122E 101+00N	8	1
L122E 100+75N	15	2
L122E 100+50N	9	1
L122E 100+25N	12	2
L122E 100+00N	10	1
L152E 105+00N	4	1
L152E 104+75N	3	1
L152E 104+25N	16	2
L152E 104+00N	4	1
L152E 103+75N	2	1
L152E 103+50N	9	1
L152E 103+25N	4	2
L152E 103+00N	30	1
L152E 102+75N	6	4
L152E 102+50N	7	1
L152E 102+25N	11	1
L152E 102+00N	14	1
L152E 101+75N	11	3
L152E 101+50N	6	2
L152E 101+25N	5	1
L152E 101+00N	6	1
L153E 105+00N	4	1
L153E 104+75N	11	2
L153E 103+75N	3	1
L153E 103+50N	4	1
L153E 103+25N	37	1
L153E 103+00N	32	1
L153E 102+75N	15	4
L153E 102+50N	10	2
L153E 102+25N	13	1
L153E 102+00N	28	1
L153E 101+75AN	9	1
L153E 101+75N	17	18
L153E 101+50N	9	1
STD C/AU-S	41	53



SAMPLE#	As PPM	Au* PPB
L153E 101+25N	9	1
L153E 101+00N	9	1
L154E 105+00N	2	2
L154E 104+75N	8	1
L154E 104+50N	5	1
L154E 104+25N	4	1
L154E 104+00N	10	2
L154E 103+75N	11	1
L154E 103+50N	26	1
L154E 103+25N	38	4
L154E 103+00N	1978	6
L154E 102+75N	18	1
L154E 102+50N	19	14
L154E 102+25N	17	1
L154E 102+00N	7	1
L154E 101+75N	6	2
L154E 101+50N	11	1
L154E 101+25NA	11	2
L154E 101+25NB	6	2
L154E 101+25NC	6	3
L154E 101+00N	14	2
L155E 105+00N	6	1
L155E 104+75N	5	1
L155E 104+50N	9	1
L155E 104+25N	3	1
L155E 104+00N	2	1
L155E 103+75N	9	1
L155E 103+50N	6	9
L155E 103+25N	9	2
L155E 103+00N	9	1
L155E 102+75N	3	1
L155E 102+50N	6	1
L155E 102+25N	10	6
L155E 102+00N	10	2
L155E 101+75N	5	1
L155E 101+50N	14	3
L155E 101+00N	6	7
STD C/AU-S	41	52

## PART V GEOPHYSICAL SURVEYS

### 5.1 GEOPHYSICAL SURVEY RESULTS

VLF-EM, total field magnetometer and gradiometer readings were recorded utilizing an EDA Omni-Plus integrated system. Readings were taken along picket lines spaced at 100 meters and station intervals along picket lines were 12.5 meters.

The field data is recovered daily in two formats:

- 1). The data is transferred from the memory banks of the instruments to magnetic disks via a "NEC Multispeed" Lap Top Computer.
- 2). The data is saved on hard copy print out for backup purposes.

The data processing and plotting of maps was carried out utilizing the Geosoft software package operated on an IBM PS2 (Model 60) computer interface with an H.P. Plotter.

The diurnal correction of the total field magnetic data was done automatically during the data dump procedure by interfacing the field magnetometer with the base station magnetometer. The sample interval on the base station unit was programmed for 30 seconds.

The gradiometer survey records the vertical magnetic gradient between the upper and lower sensor. The vertical distance between the two sensors is 0.5 meters.

The VLF-EM module of the Omni Plus was tuned to two stations.

- 1). NKL - Jim Creek, Washington, operating at a frequency of 24.8 KH<sub>m</sub>.
- 2). NAA - Cutler, Maine, operating at a frequency of 24.0 KH<sub>m</sub>.

During the latter part of the surveys problems were encountered obtaining a usable signal from Jim Creek, Washington, therefore, only Cutler, Maine was used.

## 5.2 PRESENTATION OF RESULTS

The results of the geophysical VLF-EM - T.F. magnetometer and gradiometer surveys are presented at a scale of 1:5000 on accompanying plans. Due to the large area surveyed the data is presented on 6 plans. The previously hand contoured data on the 1987 grid has been replotted at the same scale to provide uniformity.

## COMMENTS

The ground geophysical VLF-EM and Magnetometer surveys traced and pin pointed the airborne geophysical anomalies, thus providing a sound basis for evaluation by diamond drilling. The iron formation of interest is readily traced over a strike length of approximately 16.0 km. The ground geophysical surveys indicate that:

- 1). The BIF horizon is discontinuous along strike. This is believed to be caused by:

- a). slip-strike shearing and boudinaging
- b). faulting and minor displacement
- c). S & Z type folding and/or faulting.

Line 107+00E, 108+00E and 109+00E cross the Helder Lake occurrence. The VLF-EM and magnetic response is strong. The strongest VLF-EM and magnetometer response is strongest to the west from 96+00E to 100+00E. This is probably due to larger concentration of magnetite within the BIF. The BIF was observed to thin from approximately L110+00E to L113+00E at which point it pinches out.

One would expect that where the replacement of magnetite has been concentrated the magnetic response should decrease. Thus the accumulation of economic mineralization would be in magnetic low areas along the iron formation. However, as little is presently known about the area:

- 1). If replacement has not been complete as in the Helder occurrence area the magnetic response remains strong.
- 2). Due to boudinaging of the BIF in areas of greater thickness considerable magnetite may remain even though considerable magnetite has been replaced.

High concentrations of magnetic mineralization is apparent in the S fold structure in the area of lines 155+00E to 165+00E.

Areas of high and low magnetic responses should be tested to determine if the magnetic response can be used as a key to concentration of mineralization.

●  
Cross cutting shears and faults crossing and/or parallel but proximal to the BIF may also be loci for mineral deposition.

A number of VLF-EM responses outside of the BIF are probably due to shear zones. The strength of the VLF-EM responses along some of these zones indicate the presence of strongly conductive sulfides and/or graphite. Wall rock alteration and mineralization has been observed in the vicinity of these shears in a number of localities.

Based on combined geophysical, geochemical and geological evidence the areas as designated and discussed in the conclusion are deemed to be most favourable for hosting economic gold and/or base metals mineralization.

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File: CL.HELDER.1  
Report: Can.Eagle.Option

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CLAIM NO.	S. DATE	TIME	R. DATE	DUE DATE	STAKER	HOLDER	T. DATE	AREA	W. DUE
967618	Feb 5 87	10:00 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967619	Feb 5 87	1:00 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967620	Feb 6 87	2:00 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967621	Feb 6 87	11:30 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967622	Feb 7 87	9:00 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967623	Feb 7 87	11:00 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967624	Feb 7 87	1:30 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967625	Feb 8 87	9:30 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967626	Feb 8 87	11:00 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967627	Feb 8 87	3:45 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967628	Feb 8 87	2:30 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967629	Feb 8 87	1:00 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967630	Feb 8 87	8:00 AM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.
967631	Feb 7 87	3:45 PM	Feb 11 87	Feb 11 88	S. Ombash	Can. Eagle Expl.	Feb 25 87	Lennan Lake (8-2522)	20 da.







File: CL.HELDER.3

Report: ChampionBear Claims

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Nov 1/88

CLAIM NO	S. DATE	TIME	R. DATE	DUE DATE	STAKER	HOLDER	T. DATE	AREA	W. DUE ASSES
1058300	Jul 10 88	9:00 AM	Jul 10 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	
1058301	Jul 10 88	11:00 AM	Jul 10 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	
1058302	Jul 10 88	2:30 PM	Jul 10 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	
1058303	Jul 11 88	9:15 AM	Jul 11 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	
1058304	Jul 11 88	10:30 AM	Jul 11 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	
1058305	Jul 11 88	1:00 PM	Jul 11 88	Jul 10 89	Kerry Grieves	Champion Bear Resources Ltd.	Oct 14 88	Lennan Lake, 82522	

CLAIM NO	S. DATE	TIME	R. DATE	DUE DATE	STAKER	HOLDER	T. DATE	AREA	ASSESS W. DUE
1023473	Jul 7 88	1:30 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023474	Jul 7 88	3:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023475	Jul 7 88	4:45 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023476	Jul 7 88	12:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023477	Jul 7 88	7:00 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023478	Jul 6 88	5:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023479	Jul 6 88	3:30 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023480	Jul 6 88	7:00 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023481	Jul 6 88	8:45 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023482	Jul 6 88	1:45 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023483	Jul 6 88	6:30 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023484	Jul 7 88	8:45 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023485	Jul 7 88	10:15 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023486	Jul 7 88	6:30 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023487	Jul 5 88	5:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023488	Jul 6 88	12:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023489	Jul 6 88	10:15 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023490	Jul 5 88	8:45 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023491	Jul 5 88	10:15 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023492	Jul 5 88	3:45 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023493	Jul 5 88	2:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1023494	Jul 5 88	12:00 PM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1023495	Jul 5 88	7:00 AM	Jul 15 88	Jul 15 89	E. Ombash	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1058320	Jul 4 88	5:00 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058321	Jul 4 88	11:00 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058322	Jul 4 88	9:15 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058323	Jul 4 88	7:30 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058324	Jul 4 88	12:45 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058325	Jul 4 88	3:30 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058326	Jul 3 88	4:30 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058327	Jul 3 88	10:45 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058328	Jul 3 88	9:00 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058329	Jul 3 88	7:30 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058330	Jul 3 88	12:30 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058331	Jul 3 88	2:15 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058332	Jul 2 88	4:30 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058333	Jul 2 88	2:00 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058334	Jul 2 88	10:30 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058335	Jul 2 88	3:30 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058336	Jul 1 88	8:15 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1058337	Jul 1 88	9:45 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Tide Lake (6-2649)	
1058338	Jul 1 88	1:00 PM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	
1058339	Jul 1 88	9:00 AM	Jul 15 88	Jul 15 89	L. Chastko	Champion Bear Resources Ltd.	Jul 25 88	Oak Lake (6-2473)	



CLAIM NO	S. DATE	TIME	R. DATE	DUE DATE	STAKER	HOLDER	T. DATE	AREA	ASSESS
1084930	Sep 14 88	5:00 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084931	Sep 14 88	2:30 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084932	Sep 14 88	1:00 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084933	Sep 15 88	8:00 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084934	Sep 15 88	11:00 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084935	Sep 15 88	3:45 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084936	Sep 15 88	2:00 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084937	Sep 15 88	12:30 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084938	Sep 15 88	9:15 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084939	Sep 16 88	7:45 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084940	Sep 16 88	11:15 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084941	Sep 16 88	2:30 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084942	Sep 17 88	9:00 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084943	Sep 17 88	11:30 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084944	Sep 16 88	9:00 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084945	Sep 18 88	8:30 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084946	Sep 17 88	1:15 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084947	Sep 17 88	4:00 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084948	Sep 18 88	3:00 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1084949	Sep 18 88	1:15 PM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023500	Sep 18 88	11:00 AM	Oct 4 88	Oct 4 89	Walter Chubb	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023503	Sep 17 88	10:30 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023504	Sep 17 88	12:45 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023505	Sep 17 88	2:00 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023506	Sep 16 88	11:00 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023507	Sep 16 88	2:00 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023508	Sep 17 88	9:00 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023509	Sep 16 88	4:00 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023510	Sep 16 88	12:45 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023511	Sep 16 88	8:30 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023512	Sep 15 88	9:45 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023513	Sep 15 88	11:00 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023514	Sep 15 88	3:45 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023515	Sep 15 88	2:00 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023516	Sep 15 88	12:30 PM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	
1023517	Sep 15 88	8:15 AM	Oct 4 88	Oct 4 89	Louis C.Chastko	Champion Bear Resources Ltd.	Oct 14 88	Paterson Lake (8-2634)	







APPENDIX 3



Ontario  
Division of Mines

**HONOURABLE LEO BERNIER, *Minister of Natural Resources***

**DR. J. K. REYNOLDS, *Deputy Minister of Natural Resources***

**G. A. Jewell, *Executive Director, Division of Mines***

**E. G. Pye, *Director, Geological Branch***

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PRELIMINARY MAP **P. 1028**  
GEOLOGICAL SERIES

OPERATION KENORA-SYDNEY LAKE  
**UMFREVILLE-SEPARATION LAKES SHEET**

DISTRICT OF KENORA

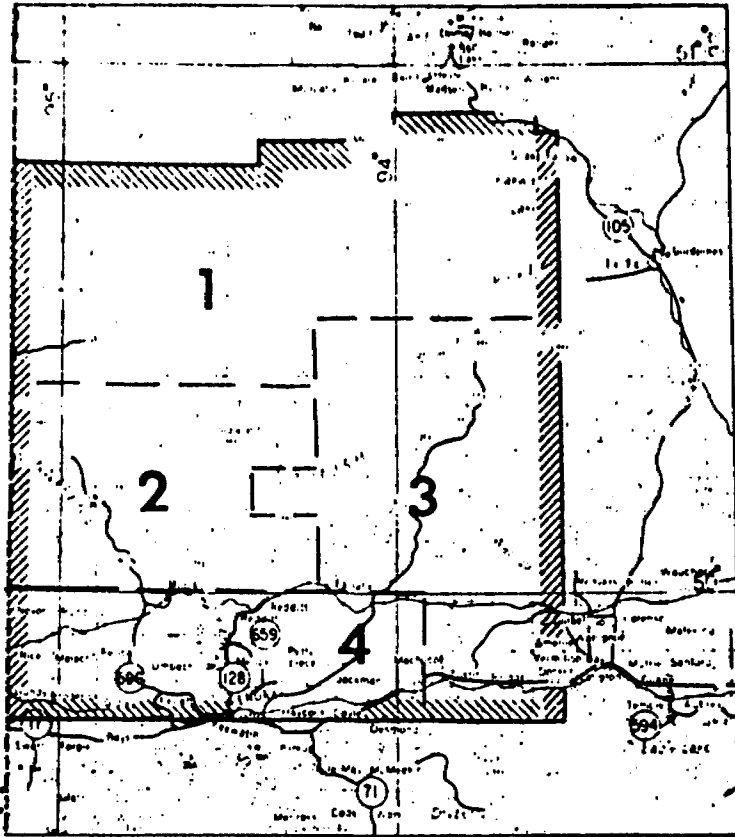
Scale: 1 inch to 1 mile or 1:63,360

NTS Reference: 52 L/1W, 2, 3E, 6E, 7, 8W  
ODM-GSC Aeromagnetic Maps: 1180G, 1181G, 1188G, 1189G  
MDMNR-ODM-GSC Aeromagnetic Maps: 1193G, 1194G  
ODM Geological Compilation Series Map: 2175

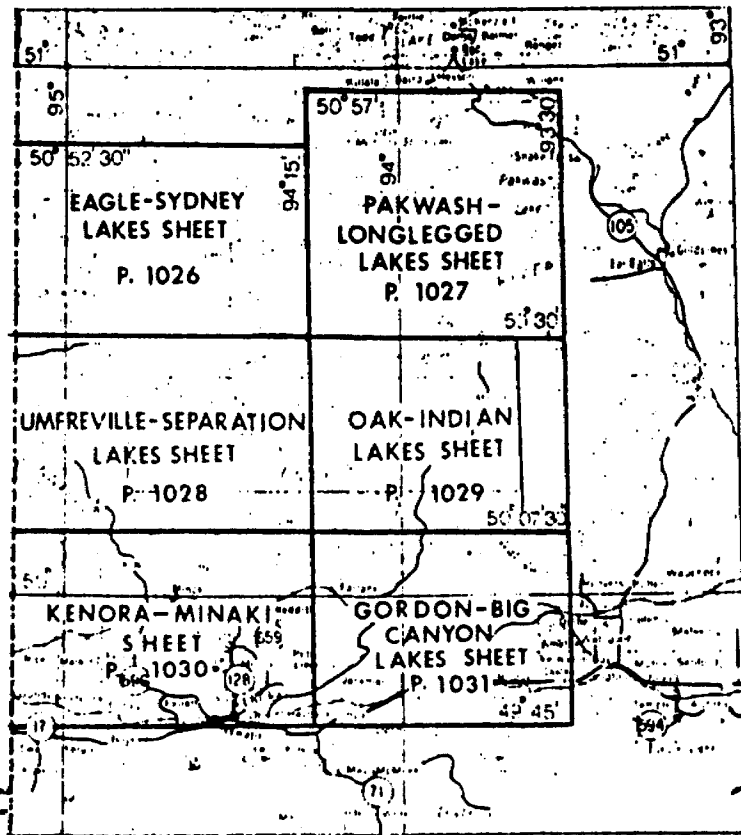
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M A N I T O B A



M A N I T O B A



INDEX MAP

Scale: 1 inch to 25 miles  
Or 1:1,584,000

METASEDIMENTS AND DERIVED MIGMATITE

3

- 3 Unsubdivided
- 3a Arkose
- 3b Quartzite
- 3c Conglomerate
- 3d Argillite, slate, siltstone
- 3e Greywacke
- 3f Biotite-quartz-plagioclase + amphibole sandstone  
(nil to 10 percent granitic mobilizate)
- 3g Metatexite\* (generally between 10 and 70 percent  
metatects)
- 3h Inhomogeneous diatexite\*\* (generally 70 to 95  
percent medium-grained to pegmatitic grani-  
toid mobilizate)
- 3i Homogeneous diatexite\* (generally greater than  
95 percent medium-grained to pegmatitic granitoid  
mobilizate)
- 3j Garnetiferous
- 3k Cordierite
- 3n Cataclastic diatexite<sup>2</sup>
- 3o Cataclastic metatexite<sup>2</sup>
- 3p Intrusive mobilizate
- 3q Metatexite characterized by intercalation of fine-  
grained greywacke (unreacted) and incipiently  
mobilized semi-pelitic to pelitic lithologies
- 3r Volcanic conglomerate (predominantly mafic to  
intermediate clasts and matrix with less than 5  
percent trondhjemite plutonic clasts)
- 3s Mafic trondhjemite to quartz diorite diatexite  
(Colour Index generally >20)

METAVOLCANICS

FELSIC TO INTERMEDIATE METAVOLCANICS

2

- 2 Unsubdivided
- 2a Dacite to rhyolite, massive to foliated
- 2b Tuff to lapilli-tuff
- 2c Agglomerate, tuff-breccia, pyroclastic breccia
- 2d Quartz and/or feldspar porphyry flows
- 2e Quartz and/or feldspar porphyry dikes

INTERMEDIATE TO MAFIC METAVOLCANICS

1

- 1 Unsubdivided
- 1a Massive to foliated flows
- 1b Pillowed flows
- 1c Amygdaloidal flows
- 1d Porphyritic flows
- 1f Mafic tuff, agglomerate
- 1h Coarse-grained flows and intrusions
- 1i Amphibolitized mafic metavolcanics, foliated to  
gneissic
- 1j Migmatized mafic metavolcanics (10 to 50 percent  
granitic injection component)
- 1k Garnetiferous

---

Sil Zone of silicification

---

METAMORPHOSED EARLY TECTONIC TO SYNTECTONIC PLUTONIC ROCKS  
FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

6

- 6 Unsubdivided
- 6a Foliated biotite trondhjemite
- 6b Foliated to massive hornblende and biotite-hornblende trondhjemite to quartz diorite
- \* 6c Massive to weakly foliated biotite trondhjemite to granodiorite
- 6d Massive to weakly foliated porphyritic biotite granodiorite to trondhjemite
- 6e Hybrid biotite-hornblende and hornblende trondhjemite to quartz diorite
- 6f Massive to weakly foliated medium- to coarse-grained biotite quartz monzonite
- 6h Foliated to gneissic biotite trondhjemite to granodiorite
- 6i Foliated biotite granodiorite
- 6j Cataclastic biotite trondhjemite to granodiorite
- 6k Inhomogeneous, massive to foliated biotite and hornblende-biotite trondhjemite to granodiorite
- 6l Massive homogeneous biotite trondhjemite
- 6m Foliated hornblende-biotite trondhjemite
- 6n Xenolithic
- 6o Massive to weakly foliated hornblende-biotite trondhjemite to granodiorite
- 6p Massive to foliated magnetite-biotite trondhjemite to granodiorite
- 6q Massive to foliated porphyritic biotite granodiorite to quartz monzonite
- 6r Massive to weakly foliated biotite trondhjemite to granodiorite (Colour Index > 5)
- 6t Foliated equigranular to subely porphyritic granodiorite to quartz monzonite

MAFIC TO ULTRAMAFIC INTRUSIVE ROCKS

5

- 5 Unsubdivided
- 5a Gabbro
- 5b Porphyritic/porphyroblastic gabbro
- 5c Diorite, quartz diorite
- 5d Anorthositic gabbro, gabbroic anorthosite
- 5e Ultramafic rocks and their altered equivalents
- 5f Hornblendite, biotite hornblendite
- 5g Amphibolite
- 5i Porphyritic/porphyroblastic diorite

FELSIC TO INTERMEDIATE GNEISSIC ROCKS

4

- 4 Unsubdivided
- 4a Amphibole gneiss (25 percent of bands contain > 10 percent amphibole)
- 4b Biotite gneiss (50 percent of bands contain > 10 percent biotite)
- 4c Potassic feldspar gneiss (25 percent of bands contain > 10 percent K-feldspar)
- 4d Leucogneiss (essentially quartz and plagioclase)
- 4e Migmatitic gneiss (rafts of amphibolite in foliated to gneissic trondhjemitic host).



LEGEND<sup>1</sup>

PHANEROZOIC  
CENOZOIC  
QUATERNARY  
RECENT

Lake, stream, and swamp deposits

PLEISTOCENE

Sand, gravel, ground moraine, varved clays

Unconformity

PRECAMBRIAN

MIDDLE TO LATE PRECAMBRIAN (PROTEROZOIC)

MAFIC INTRUSIVE ROCKS

9

9a Diabase (dikes)

EARLY PRECAMBRIAN (ARCHEAN)

UNMETAMORPHOSED LATE TECTONIC TO POST TECTONIC PLUTONIC ROCKS

FELSIC TO INTERMEDIATE INTRUSIVE ROCKS

8

8 Unsubdivided

8a (Massive fine- to coarse-grained equigranular) biotite quartz monzonite to granite (sensu stricto), Colour Index  $\leq 5$

8b (Massive medium- to coarse-grained equigranular) biotite quartz monzonite to granite (sensu stricto) Colour Index 5 to 15

8c (Massive) porphyritic biotite granodiorite to trondhemite

8d (Massive) porphyritic biotite granodiorite

8e (Massive) porphyritic biotite quartz monzonite

8f Pegmatitic biotite and muscovite-biotite quartz monzonite to granite (sensu stricto)

8g (Massive to weakly foliated) hornblende-biotite granodiorite

8h (Foliated to cataclastic) porphyritic biotite granodiorite

8i (Massive to weakly foliated) biotite granodiorite

8j Porphyritic syenite

8k Xenolithic

8m Quartz monzonite with mafic clots of biotite and garnet

8p Massive porphyritic hornblende-biotite granodiorite to trondhemite

8q Massive muscovite-biotite and biotite-muscovite quartz monzonite

INTERMEDIATE TO MAFIC INTRUSIVE ROCKS

7

7 Unsubdivided

7a Diorite

7b Hornblende and biotite-hornblende quartz diorite

7c Massive to foliated biotite and hornblende-biotite porphyritic diorite (plagioclase phenocrysts)

7d Biotite and hornblende-biotite quartz diorite to trondhemite (more leucocratic than 7b)

7e Porphyritic hornblende and biotite-hornblende quartz diorite to granodiorite (quartz and K-feldspar phenocrysts)

1. This is basically a field legend and is subject to revision as a result of subsequent field work and/or laboratory investigations.
2. Commonly characterized by shimmer aggregates of coarse-grained muscovite.
  - a. The letter 'A' preceding a code refers to airborne observation, e.g. A11, A8,6 = granitic rocks, airborne observation.
  - b. The letter 'C' preceding a code refers to compiled information, eg. C 1a.
  - c. The letter 'D' enclosed in brackets preceding a code refers to data compiled from diamond drill logs filed for assessment work credits, Ministry Natural Resources at Toronto, Kenora, and Red Lake, eg. 'D1a'.
  - d. The 'G' preceding a code refers to geophysically interpreted lithology as ascertained from Federal-Provincial aeromagnetic maps, eg. 'G8,9'.
  - e. C8,9 refers to compiled unsubdivided granitic rocks.
  - f. In the case of multi-phase granitic outcrops, the various granitic units are listed in order of decreasing relative abundance and separated by commas, eg. 8a, 6a, 5c = 8a > 6a > 5c.  
Brackets immediately following a xenolithic granitic lithology indicate both type and relative abundance of xenoliths present, eg. 6an (3g, 5g) indicates metatexite and amphibolite xenoliths in foliated trondhjemite in which the former exceeds the latter.
  - g. Subdivisions of major rock units do not indicate age relations.
  - h. An arrow ( → ) between code letters signifies a gradation between the two rock types eg. 8a→1, unmetamorphosed quartz monzonite to granodiorite.
    - \* Metatexite refers to a migmatite produced by metatexis and characterized by a stromatic to phlebitic structure.
    - \*\* Diatexite refers to migmatitic lithologies produced by advanced stage fusion rendering obliteration of stromatic to phlebitic structure. Diatexite is thus a rock of plutonic appearance characterized by variable proportions of metasedimentary enclaves, melanosome schlieren, etc.









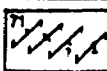
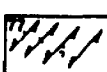
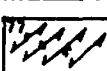
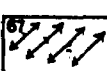
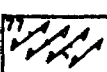














METAL AND MINERAL REFERENCE

Ag	.....	Silver
asp	.....	Arsenopyrite
Au	.....	Gold
be	.....	Beryl
Co	.....	Cobalt
cp	.....	Chalcopyrite
Cr	.....	Chromium
ct	.....	Cordierite
Cu	.....	Copper
gf	.....	Graphite
gn	.....	Galena
gt	.....	Garnet
mag	.....	Magnetite
mo	.....	Molybdenite
Ni	.....	Nickel
Pb	.....	Lead
po	.....	Pyrrhotite
Pt	.....	Platinum
py	.....	Pyrite
qv	.....	Quartz Vein
S	.....	Sulphide Mineralization
sp	.....	Sphalerite
st	.....	Stone
ta	.....	Tantalite
tour	.....	Tourmaline
U	.....	Uranium
urp	.....	Uranophane
V	.....	Vanadium
W	.....	Tungsten
Zn	.....	Zinc

Past Producing Mines (ON MAPS P. 1028, 1030)

- 1) Champion Mine, 1900 and 1925-26 (Haycock Township)
- 2) Gordon Lake Mine (1962-1972) Consolidated Canadian Faraday Limited
- 3) Treasure Mine, 1898, (Haycock Township)
- 4) Werner Lake Cobalt Mine (1940-1944), Kenora Prospectors and Miners Limited

GEOLOGICAL AND MINING SYMBOLS

	Glacial striae, direction of ice movement known or assumed
	Esker
	Small bedrock exposure
	Area of bedrock exposure
	Data point within area of bedrock exposure
	Bedding, top unknown; inclined
	Bedding, top (arrow) from grain gradation, (inclined, overturned)
	Lava flow; top (arrow) from pillow shape and packing
	Foliation; inclined, vertical, dip value indeterminant but direction known, strike only measurable
	Cataclastic Foliation; inclined, vertical, dip value indeterminant but direction known, strike only measurable
	Gneissosity; inclined, vertical, dip value indeterminant but direction known, strike only measurable
	Schistosity; inclined, vertical, dip value indeterminant but direction known, strike only measurable
	Primary flowage foliation; inclined, vertical, dip value indeterminant but direction known, strike only measurable
	Mineral Lineation; plunge known, plunge indeterminant
	Jointing (inclined)
	Antiform; trend and plunge of fold axis known, unknown
	Synform; trend and plunge of fold axis known, unknown
	Minor folds, with plunge
	Geological boundary, Geological boundary, position interpreted
	Geological boundary, deduced from geophysics
	Lineament
	Fault
	Cataclastic Zone
	Mineral Occurrence
	Drill Hole with lithologic codes and mineralization
	Past Producing Mine
	Shaft

#### SOURCES OF INFORMATION

Geology of Operation Kenora-Sydney Lake by F.W. Breaks, W.D. Bond, G.H. McWilliams and C.F. Gower.

Geology of Umfreville-Separation Lakes Sheet by G.H. McWilliams, W.D. Bond, F.W. Breaks, D. Findlay, and Denver Stone, and other assistants, 1974.

Geology from published and unpublished maps of the Ontario Division of Mines, Ministry of Natural Resources as per attached reference list.

Geology is not tied to survey lines.

Assessment Files Research Offices, Ontario Division of Mines, Toronto.

Regional Geologist's Files, Ministry Natural Resources, Kenora.

MDMNR-ODM-GSC Aeromagnetic Map: 7124G, scale 1 inch to 4 miles or 1:253,440.

Magnetic declination approximately  $6^{\circ}46'E$  at centre of sheet, 1974.

Issued 1975.

Information from this publication may be quoted if credit is given to the Ontario Division of Mines. It is recommended that reference to this map be made in the following form:

Breaks, F.W., Bond, W.D., McWilliams, G.H., Gower, C.F., Findlay, D., and Stone, Denver

1975: Operation Kenora-Sydney Lake, Umfreville-Separation Lakes Sheet, District of Kenora; Ontario Div. of Mines, Prelim. Map P.1028 Geol. Ser., scale 1 inch to 1 mile or 1:63,360. Geology 1974.



1000001-017

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Report: Helder Assessment88  
CLAIM NO. AREA

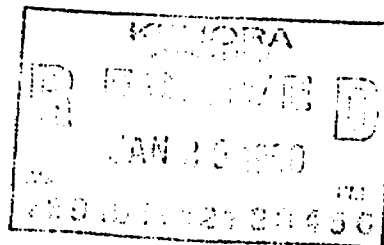
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File: CL.HELDER.2  
Report: Helder Assessment88  
CLAIM NO AREA

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DOCUMENT NO  
W9001-017

File: CL.HELDER.2  
Report: Helder Assessment88  
CLAIM NO AREA

Page 3

CLAIM NO	AREA
967959 ✓	Lennan (G-2522)
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967969 ·	Lennan (G-2522)
967970 ·	Lennan (G-2522)

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Ministry of  
Natural  
Resources  
Ontario

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

DOCUMENT NO  
W9001-072

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

2.13056

The Mining Act

Type of Survey(s) <b>Geological</b>		Township or Area <b>Lennan Lake G-2522</b>	
Claim Holder(s) <b>Champion Bear Resources Ltd.</b>		Prospector's Licence No. <b>T-5146</b>	
Address <b>3805-7A Street S.W.; Calgary, Alberta; T2T 2Y8</b>			
Survey Company <b>Independent Exploration Services Ltd.</b>	Date of Survey (from & to) Day   Mo.   Yr.   Day   Mo.   Yr. <b>23   06   88   30   09   88</b>	Total Miles of line Cut <b>70 km</b>	
Name and Address of Author (of Geo-Technical report) <b>L.C. Chastko/ P. Barc PO Box 7, Station A; Winnipeg, Man. R3K 1Z9</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	20
	Geochemical	
Man Days	Geophysical	Days per Claim
Complete reverse side and enter total(s) here	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	
Airborne Credits	Geophysical	Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

Mining Claim		Expend. Days Cr.
Prefix	Number	
K	967354	20
	967355	20
	967356	20
	967357	20
	967358	20
	967359	20
	967365	20
	967366	20
	967367	20
	967370	20
	967371	20
	967372	20
	967373	20
	967375	20
	967376	20
	967377	20
	967378	20
	967379	20
	967383	20
	967384	20
	967385	20
	967386	20

Mining Claim		Expend. Days Cr.
Prefix	Number	
K	967388	20
	967389	20

**RECEIVED**  
APR 27 1990  
MINING LANDS SECTION

*See also  
W9001-017*

<b>KENORA MINING DIV.</b>	
<b>RECEIVED</b>	
APR 17 1990	
AM	PM
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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: April 11/90

Recorded Holder or Agent (Signature): *[Signature]*

Total number of mining claims covered by this report of work. 24

For Office Use Only	
Total Days Cr. Recorded 480	Date Recorded <i>April 17/90</i>
Date Approved as Recorded <i>See revised work statement</i>	Mining Record <i>[Signature]</i> Branch Director

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  
*L.C. Chastko, 701 R1*

067251



Ontario

Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

June 1, 1990

Mining Recorder  
Ministry of Northern Development and Mines  
808 Robertson Street  
P.O. Box 5200  
KENORA, Ontario  
P4N 3X9

Dear Sir:

RE: Notice of Intent dated May 1, 1990 for Geological Survey  
submitted on Mining Claim K 967354 et al in Lennan Lake

---

The assessment work credits, as listed with the above-mentioned Notice of Intent  
have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your  
records.

Yours sincerely

W.R. Cowan  
Provincial Manager, Mining Lands  
Mines and Minerals Division

JS/dv1  
Enclosure

cc: Mr. W.D. Tieman  
Mining and Lands Commissioner  
Toronto, Ontario

Champion Bear Resources Ltd.  
Calgary, Alberta

Mining Lands Section  
3rd Floor, 880 Bay Street  
TORONTO, Ontario  
M5S 1Z8

Telephone: (416) 965-4888

Your File: W9001-072  
Our File: 2.13056

Resident Geologist  
Kenora, Ontario

L.C. Chastko/P. Barc  
Winnipeg, Manitoba



File  
2.13056

Date  
April 2/1990

Mining Recorder's Report of  
Work No.  
W9001-017

Recorded Holder  
**CHAMPION BEAR RESOURCES & CANADIAN EAGLE EXPLORATIONS LIMITED**

Township or Area  
**TREFLINED LAKE & LENNON LAKE AREAS**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<p>Geophysical</p> <p>Electromagnetic <u>(VLF) 16.6</u> days</p> <p>Magnetometer <u>34.2</u> days</p> <p>Radiometric _____ days</p> <p>Induced polarization _____ days</p> <p>Other _____ days</p>	See attached sheets
<p>Section 77 (19) See "Mining Claims Assessed" column</p>	
<p>Geological _____ days</p>	
<p>Geochemical _____ days</p>	
<p>Man days <input type="checkbox"/> Airborne <input type="checkbox"/></p> <p>Special provision <input type="checkbox"/> Ground <input type="checkbox"/></p> <p><input type="checkbox"/> Credits have been reduced because of partial coverage of claims.</p> <p><input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.</p>	

Special credits under section 77 (16) for the following mining claims

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       insufficient technical data filed

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



File # 2.43058  
 Mining Recorder's Report of Work No. 99007-017  
 Date April 3/1990  
*May*

Recorded Holder  
**Champion Bear Resources & Canadian Eagle Explorations Ltd.**

Township or Area  
**Treelined Lake and Lennon Lake Areas**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b>	
Electromagnetic _____ days	K 967419 967425-26
Magnetometer _____ days	967436 967443-44
Radiometric _____ days	967451 to 453 incl. 967459-60
Induced polarization _____ days	967467 967469 to 473 incl.
Other _____ days	967476 to 478 incl. 967488 to 493 incl. 967571 to 576 incl.
Section 77 (19) See "Mining Claims Assessed" column	967588 967803-04 967807-08 967813
Geological <u>20</u> days	967816 to 818 incl. 967825 to 827 incl. 967832 to 836 incl. 967840 to 843 incl. 967847 to 850 incl.
Geochemical _____ days	967852-53 967858-59 967865 967868 967871 to 873 incl.
Man days <input type="checkbox"/> Airborne <input type="checkbox"/>	
Special provision <input checked="" type="checkbox"/> Ground <input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims.	
<input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	

Special credits under section 77 (16) for the following mining claims

15 days Geological K 967397, 967591, 967802, 967839, 967843, 967854, 967970  
 10 days Geological K 967396, 967418, 967442, 967468, 967475, 967479, 967487  
 967809, 967811-12, 967836, 967867, 967955  
 5 days Geological K 967387, 967494, 967587, 967864, 967966-67

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       insufficient technical data filed

K 967435  
 967458  
 967589  
 967822-23  
 967963

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.



Recorded Holder  
**Champion Bear Resources Ltd.**

Township or Area  
**Lennan Lake**

Type of survey and number of Assessment days credit per claim	Mining Claims Assessed
<b>Geophysical</b> Electromagnetic _____ days Magnetometer _____ days Radiometric _____ days Induced polarization _____ days Other _____ days Section 77 (19) See "Mining Claims Assessed" column Geological <u>15.4</u> days Geochemical _____ days Man days <input type="checkbox"/> Airborne <input type="checkbox"/> Special provision <input type="checkbox"/> Ground <input type="checkbox"/> <input checked="" type="checkbox"/> Credits have been reduced because of partial coverage of claims. <input type="checkbox"/> Credits have been reduced because of corrections to work dates and figures of applicant.	K 967354 to 359 incl. 967365 to 367 incl. 967370 to 373 incl. 967375 to 379 incl. 967383 to 386 incl. 967388-89  No credit given for portions of claims underwater

Special credits under section 77 (16) for the following mining claims

[Empty box for special credits]

No credits have been allowed for the following mining claims

not sufficiently covered by the survey       insufficient technical data filed

[Empty box for no credits]

The Mining Recorder may reduce the above credits if necessary in order that the total number of approved assessment days recorded on each claim does not exceed the maximum allowed as follows: Geophysical - 80; Geological - 40; Geochemical - 40; Section 77(19) - 60.

DOCUMENT NO.  
W9001-017

File: CL.HELDER.1  
Report: Helder Assessment88  
CLAIM NO. AREA

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File: CL.HELDER.2  
Report: Helder Assessment88  
CLAIM NO AREA

Page 2

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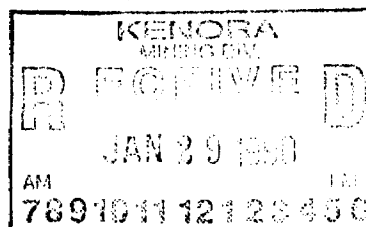


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W9001-017

File: CL.HELDER.2  
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CLAIM NO AREA

Page 3

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967970 ✓	Lennan (G-2522)





Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines

June 1, 1990

Mining Recorder  
Ministry of Northern Development and Mines  
808 Robertson Street  
P.O. Box 5200  
KENORA, Ontario  
P4N 3X9

Dear Sir:

RE: Notice of Intent dated April 3, 1990 for Geophysical (Electromagnetic (VLF) and Magnetometer) and Geological Survey submitted on Mining Claim K 967387 et al in Treelined and Lennan Lake

The assessment work credits, as listed with the above-mentioned Notice of Intent have been approved as of the above date.

Please inform the recorded holder of these mining claims and so indicate on your records.

Yours sincerely

W.R. Cowan  
Provincial Manager, Mining Lands  
Mines and Minerals Division

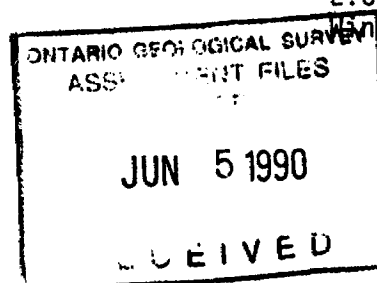
JS/dvl  
Enclosure

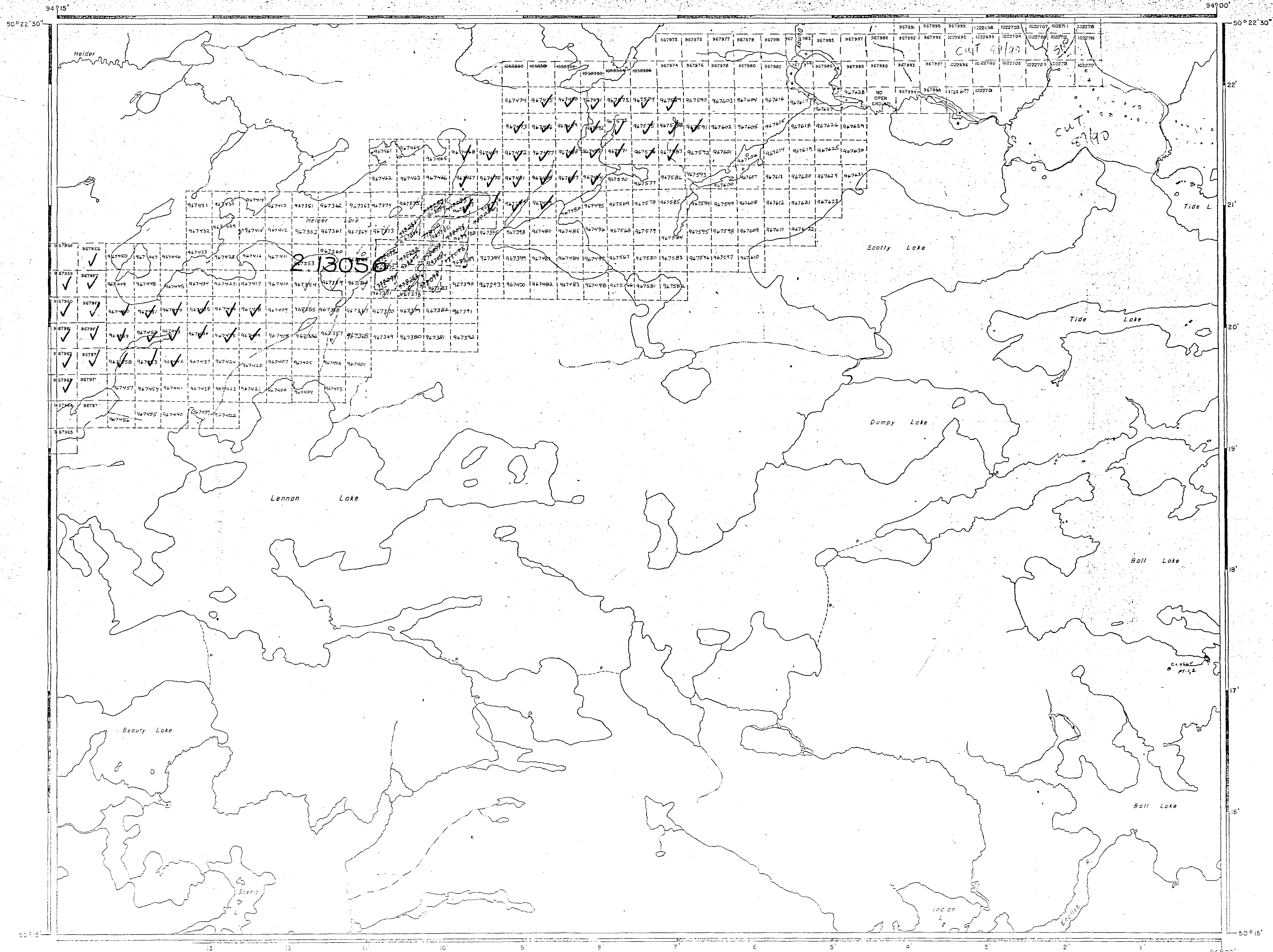
cc: Mr. W.D. Tieman  
Mining and Lands Commissioner  
Toronto, Ontario

Champion Bear Resources Ltd.  
Calgary, Alberta

Resident Geologist  
Kenora, Ontario

L.C. Chastko/P. Barc  
Winnipeg, Manitoba





**LEGEND**

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKOG
- MINES
- TRAVERSE MONUMENT

**DISPOSITION OF CROWN LANDS**

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LEASE, SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER-IN-COUNCIL	
RESERVATION	
CANCELLED	
SAND & GRAVEL	

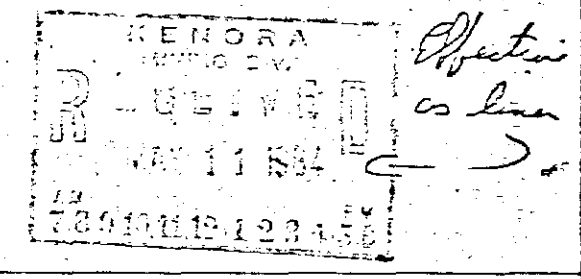
NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 2, 1912, WERE PAID IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

**REFERENCES**

**AREAS WITHDRAWN FROM DISPOSITION**

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M. & S. - MINING AND SURFACE RIGHTS

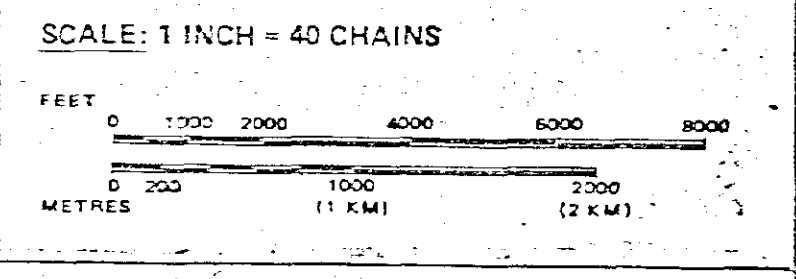
Description	Order No.	Date	Disposition	File



**FLOODING**

Flooding reserve to H.E.P.C. to contour 1065' adjacent to Scully and Dumpy Lakes, to contour 1049' adjacent to Ball and Tide Lakes

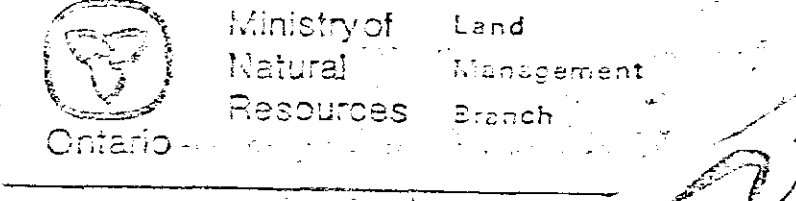
File 68337



**AREA**

**LENNAN LAKE**

M.N.R. ADMINISTRATIVE DISTRICT  
 KENORA  
 MINING DIVISION  
 KENORA  
 LAND TITLES / REGISTRY DIVISION  
 KENORA (PATRICIA PORTION)



LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES:
  - TOWNSHIPS, BASE LINES, ETC.
  - LOTS, MINING CLAIMS, PARCELS, ETC.
- UNSURVEYED LINES:
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON-PERMANENT STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL S-DRELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	○
"    SURFACE RIGHTS ONLY	○
"    MINING RIGHTS ONLY	○
LEASE, SURFACE & MINING RIGHTS	□
"    SURFACE RIGHTS ONLY	□
"    MINING RIGHTS ONLY	□
LICENCE OF OCCUPATION	○
ORDER-IN-COUNCIL	○
RESERVATION	○
CANCELLED	○
SAND & GRAVEL	○

NOTE: MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6, 1913 VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT, R.S.O. 1970, CHAP. 380, SEC. 63, SUBSEC. 1.

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

- M.R.O. - MINING RIGHTS ONLY
- S.R.O. - SURFACE RIGHTS ONLY
- M.-S. - MINING AND SURFACE RIGHTS

Destination: Order No. Date Disposition File

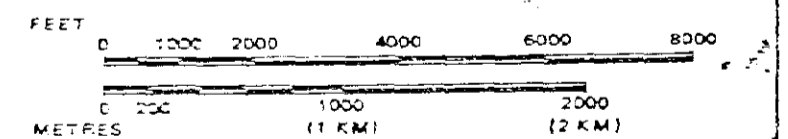
FLOODING

RESERVE FLOODING RIGHTS AND LAND UNDER THE WATERS OF THE ENGLISH RIVER BETWEEN SEPARATION RAPIDS AND CARIBOU FALLS INCLUDING THE STURGEON RIVER, BELOW CONTOUR ELEVATION 1049.0, G.S.C. D.J.M. 1919, TO H.E.P.C. OF ONTARIO FOR THE DEVELOPMENT OF WATER POWER AT CARIBOU FALLS.  
FOR DETAIL OF CONTOUR, REFER TO PLAN No. U.2-27, cot'd 15th MARCH 1956. (H.E.P.C. PLAN No. BOC-3359).  
W.P.L.A. No. 557, dated 21st DECEMBER 1955. File 34175.

NOTE "A"

RESERVE FLOODING RIGHTS ON THE ENGLISH RIVER FROM THE UPPER END OF SEPARATION RAPIDS TO THE FOOT OF MAYNARD FALLS, INCLUDING SEPARATION LAKE, BEAUTY LAKE, AND LENNAN CREEK, TO A CONTOUR 5 ABOVE THE HIGH WATER MARK. File 24179, 63307.  
RESERVATION REQUESTED 30th NOVEMBER, 1955.

SCALE: 1 INCH = 40 CHAINS



AREA TREELINED LAKE

M.N.R. ADMINISTRATIVE DISTRICT

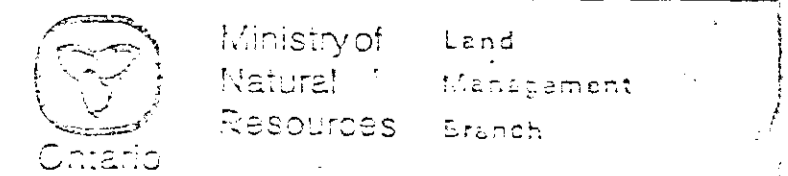
KENORA

MINING DIVISION

KENORA

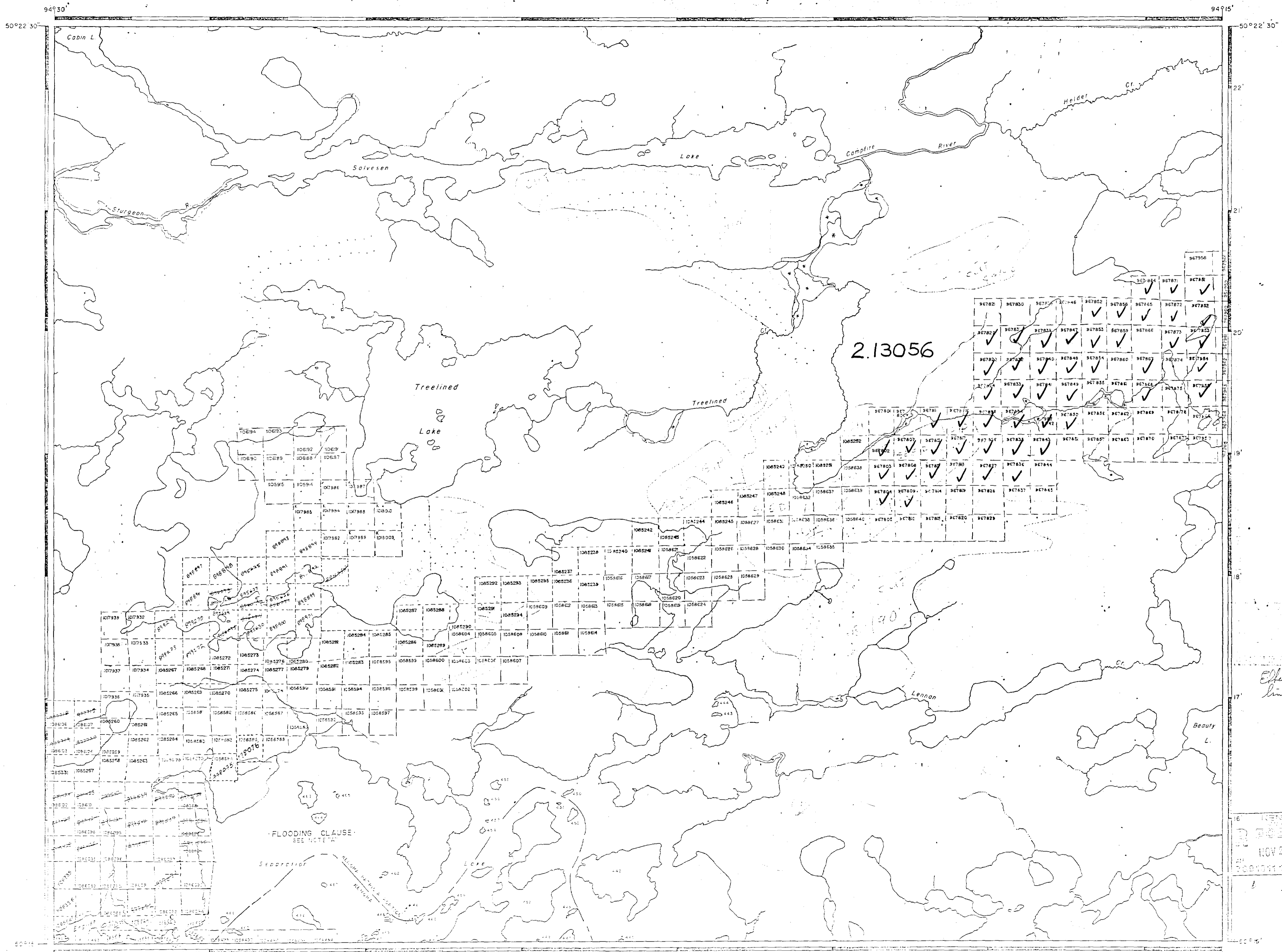
LAND TITLES / REGISTRY DIVISION

KENORA / KENORA (PATRICIA PORTION)



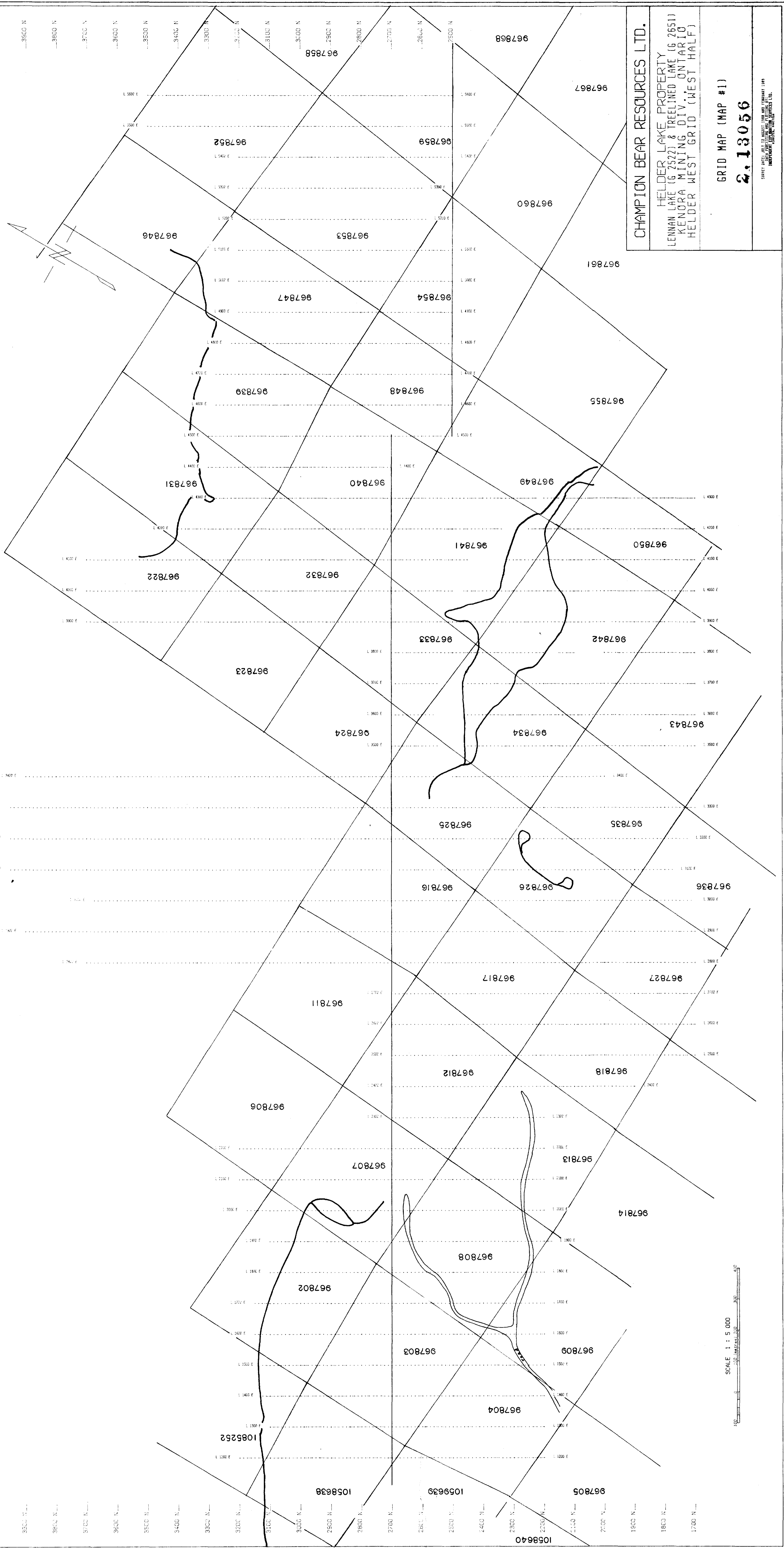
Date: FEB. 14th, 1954

Sheet: G-2651



STOP LAKE AREA G-2623



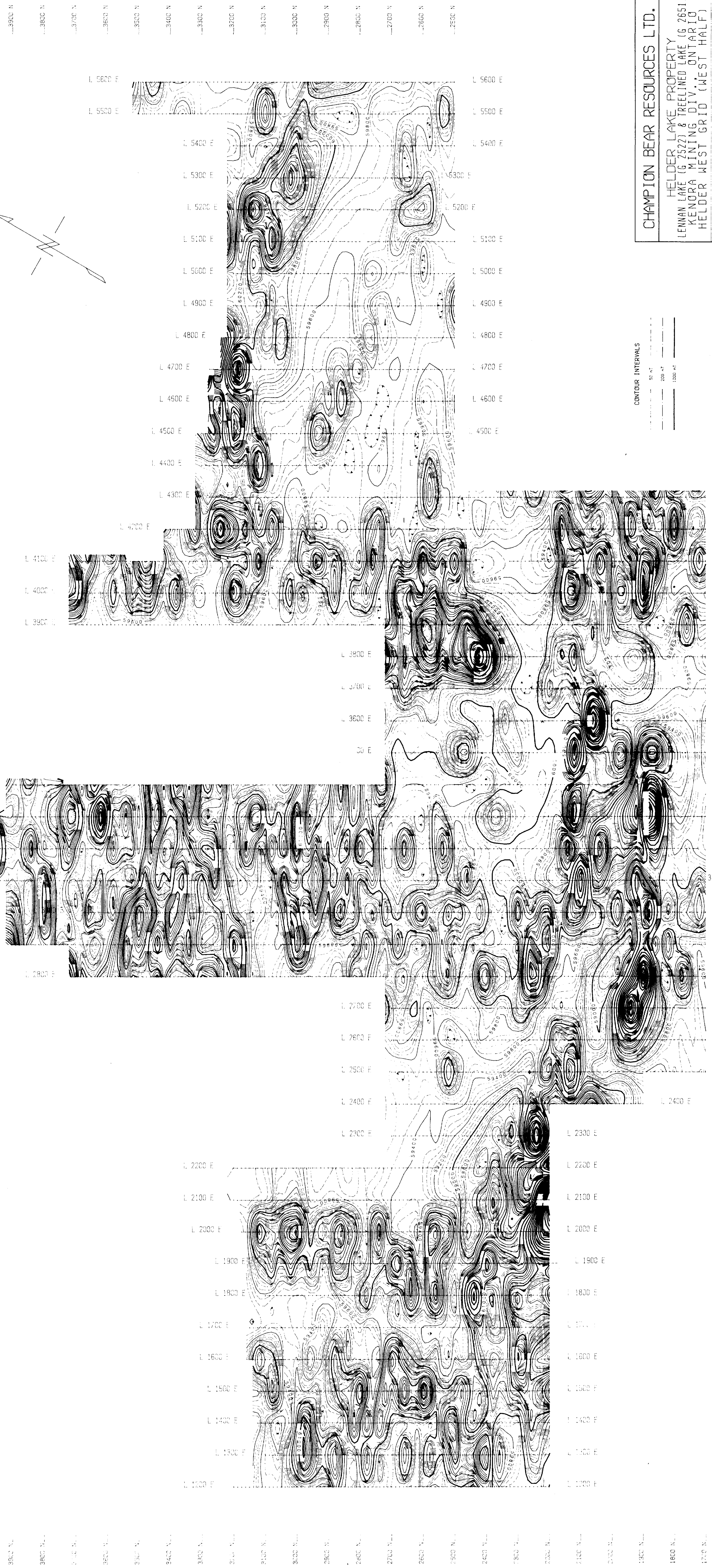
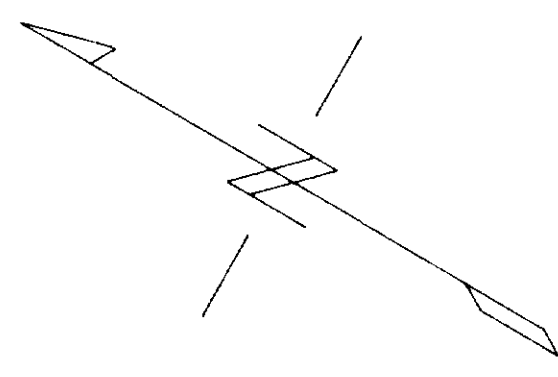


CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENNAN LAKE (6 2522) & TRELINED LAKE (6 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

GRID MAP (MAP #1)  
**2,13056**

SCALE: 1:5,000  
 100 200 300 400 500 600 700 800 900 1000



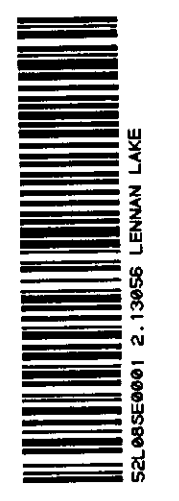
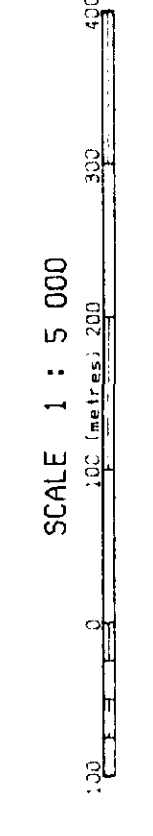


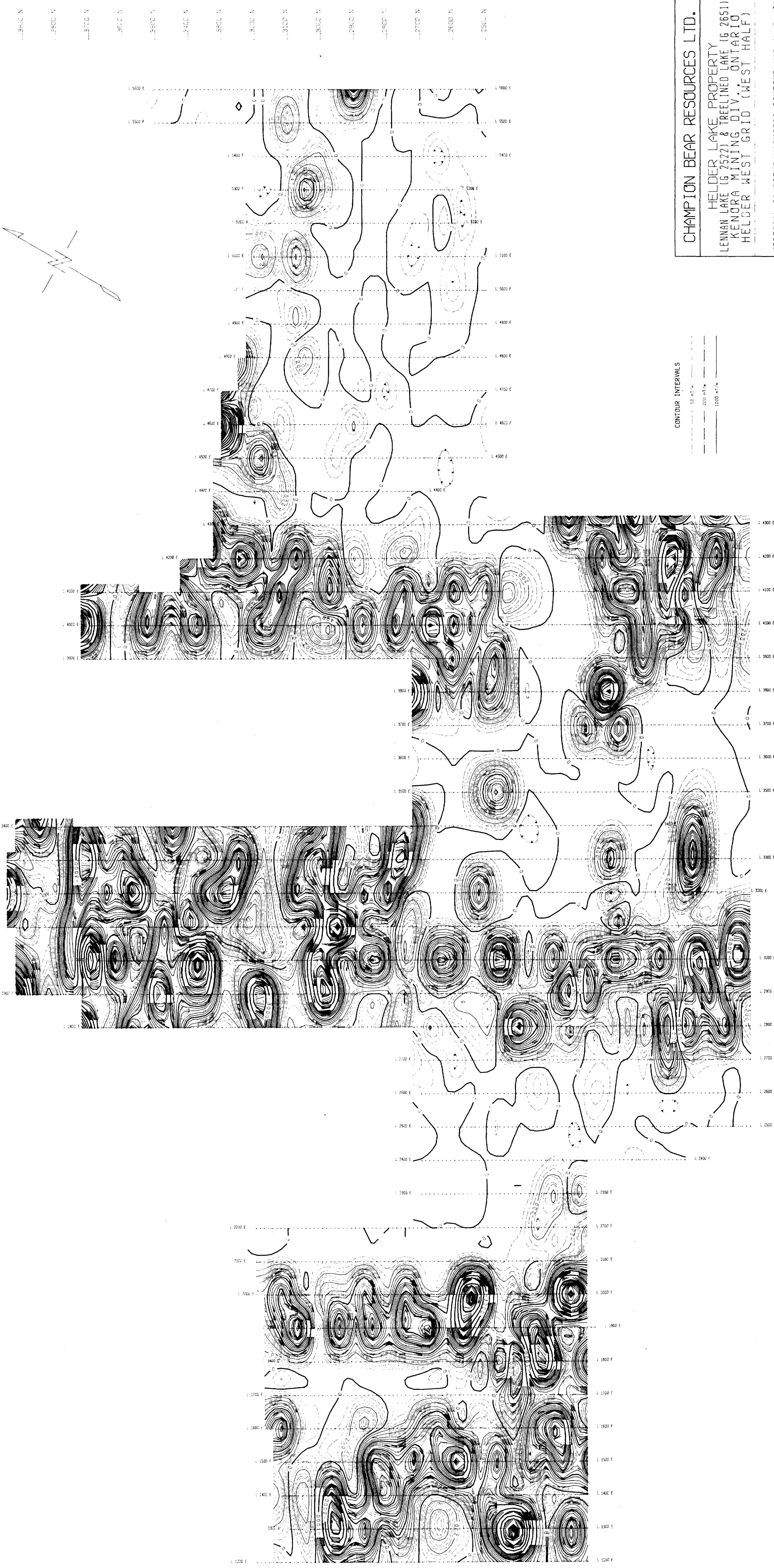
CONTOUR INTERVALS  
50 FT  
100 FT  
200 FT  
500 FT

CHAMPION BEAR RESOURCES LTD.  
HELDER LAKE PROPERTY  
LENNAN LAKE (G 2527) & TREELINED LAKE (G 2651)  
KENORA MINING DIV., ONTARIO  
HELDER WEST GRID (WEST HALF)

TOTAL FIELD MAGNETIC CONTOUR MAP (MAP #2)  
(BASE STATION CORRECTED)  
**2-13056**

CHAMPION BEAR RESOURCES LTD.  
1000 UNIVERSITY AVENUE  
TORONTO, ONTARIO M5G 1R7  
CANADA





CONTOUR INTERVALS  
 50 mT  
 100 mT  
 200 mT

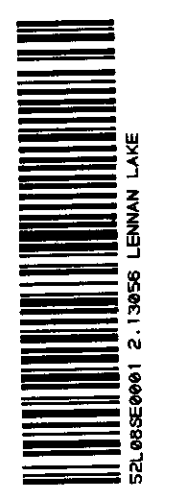
CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENNAN LAKE (6 2522) & TRELINED LAKE (6 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

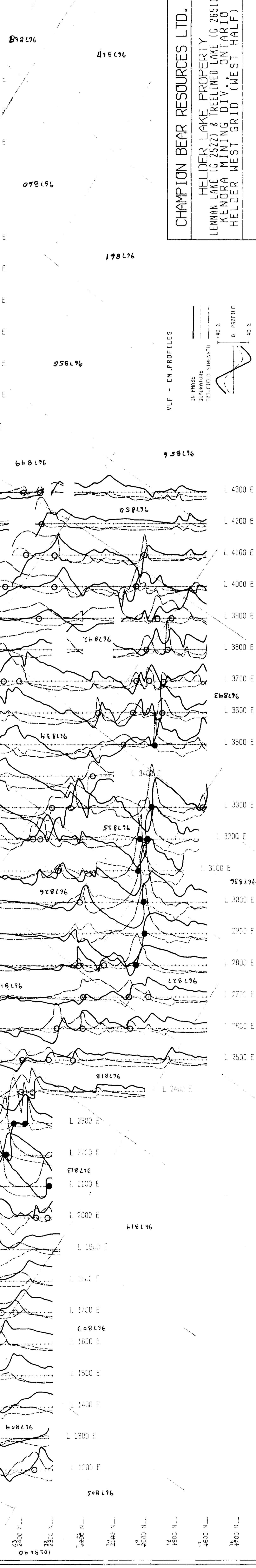
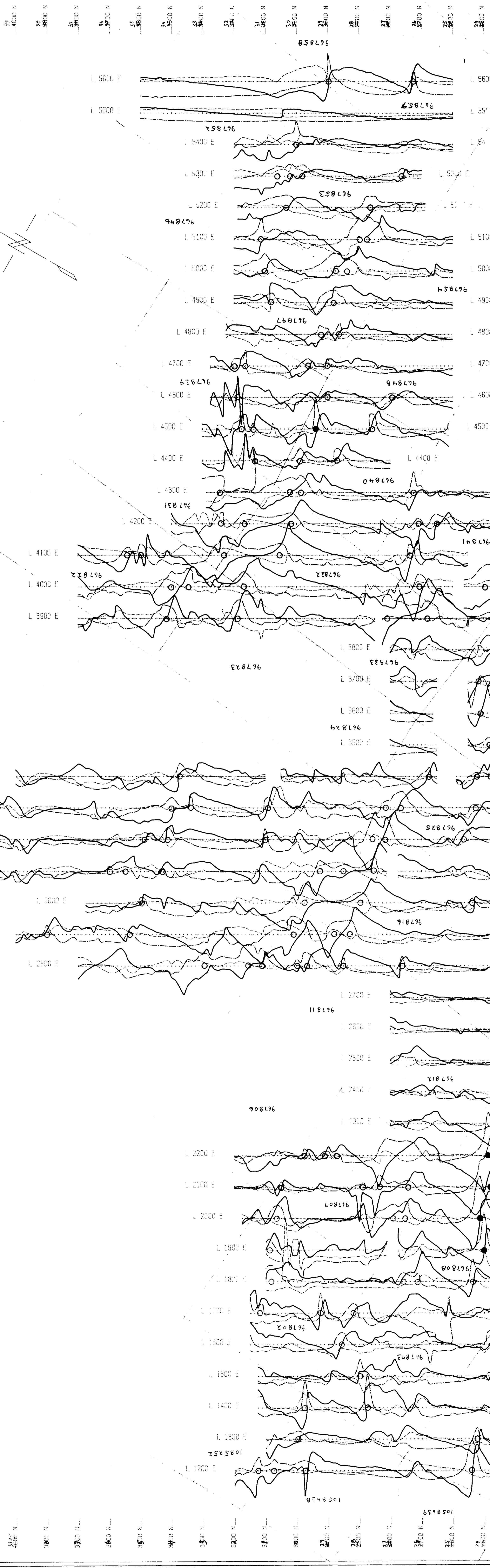
VERTICAL GRADIENT MAGNETIC CONTOUR MAP (MAP #3)  
**2,13056**

PROPERTY OF CHAMPION BEAR RESOURCES LTD.  
 1987  
 ALL RIGHTS RESERVED  
 REPRODUCED BY CHAMPION BEAR RESOURCES LTD.

SCALE 1 : 5 000

3600 N  
 3550 N  
 3500 N  
 3450 N  
 3400 N  
 3350 N  
 3300 N  
 3250 N  
 3200 N  
 3150 N  
 3100 N  
 3050 N  
 3000 N  
 2950 N  
 2900 N  
 2850 N  
 2800 N  
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 1700 N

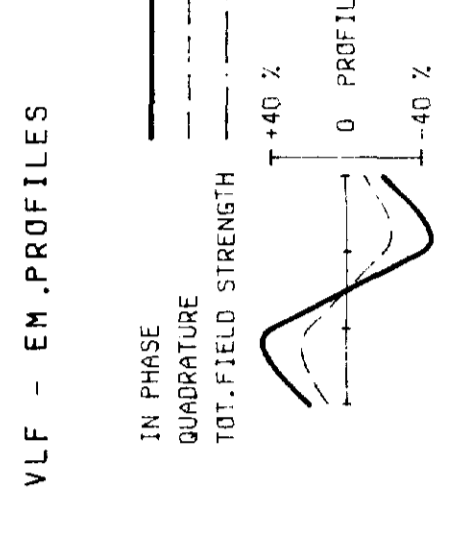




CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE, PROPERTY  
 LENNAN LAKE (G 2522) & TRELINED LAKE (G 2651)  
 KENDRA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

VLF-EM PROFILE MAP (MAP #4)  
**2.13056**

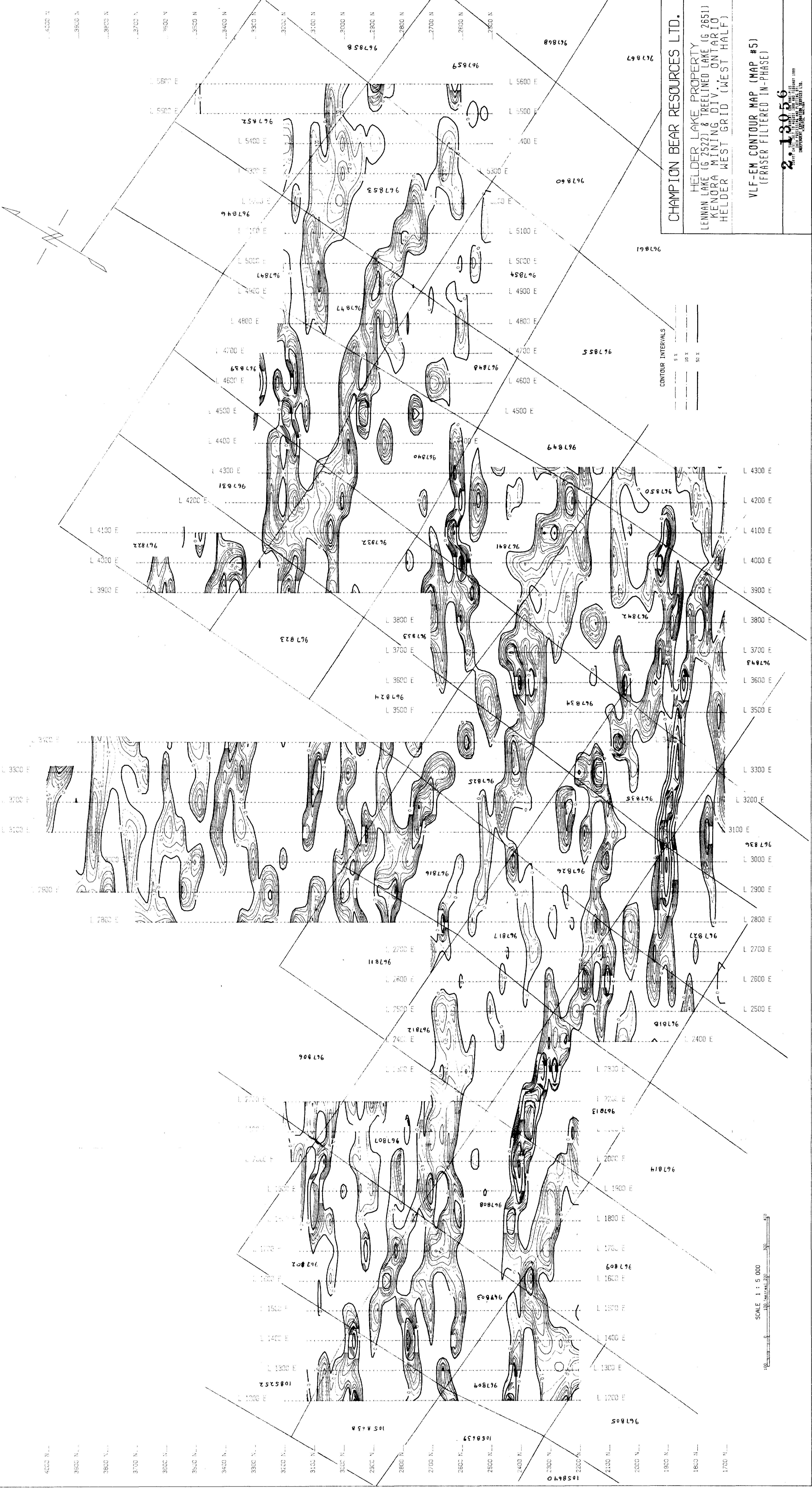
Ta Location: CUTLER, MAINE (NMA 24.0 kHz)  
 Instrument: EDN DM1-PLUS



SCALE 1 : 5,000







**CHAMPION BEAR RESOURCES LTD.**  
 HELDER LAKE PROPERTY  
 LENNOX LAKE (G 2522) & TREELINE LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

VLF-EM CONTOUR MAP (MAP #5)  
 (FRASER FILTERED IN-PHASE)

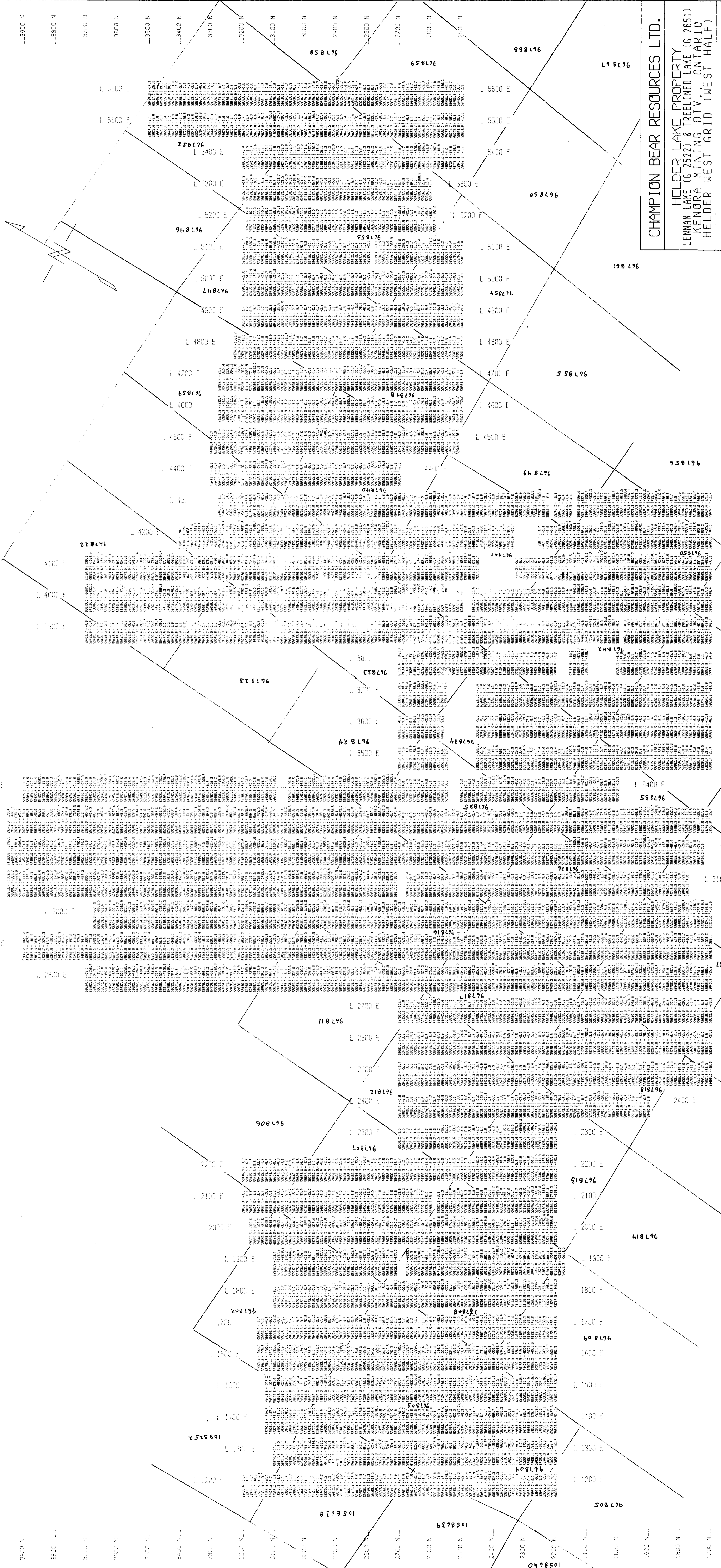
213056  
CHAMPION BEAR RESOURCES LTD.  
 1000 WILSON AVENUE, SUITE 100  
 KENORA, ONTARIO P7A 6K7  
 TEL: (807) 338-8888  
 FAX: (807) 338-8889  
 WWW.CHRAMPIONBEAR.COM

CONTOUR INTERVALS  
 5m  
 10m  
 20m

SCALE 1 : 5 000  
 100m 200m 300m 400m 500m



260

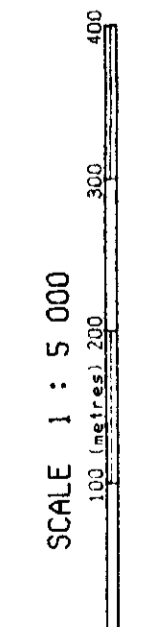


**CHAMPION BEAR RESOURCES LTD.**

HELDER LAKE PROPERTY  
 LENMAN LAKE (G 2522) & TREETINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

**MAGNETIC POSTINGS (MAP #6)  
 (TOT. FIELD & VERT. GRADIENT)  
 2.13056**

DATE ACQUIRED: 1988  
 BY: J. W. HARRIS  
 PROJECT: CHAMPION BEAR RESOURCES LTD.

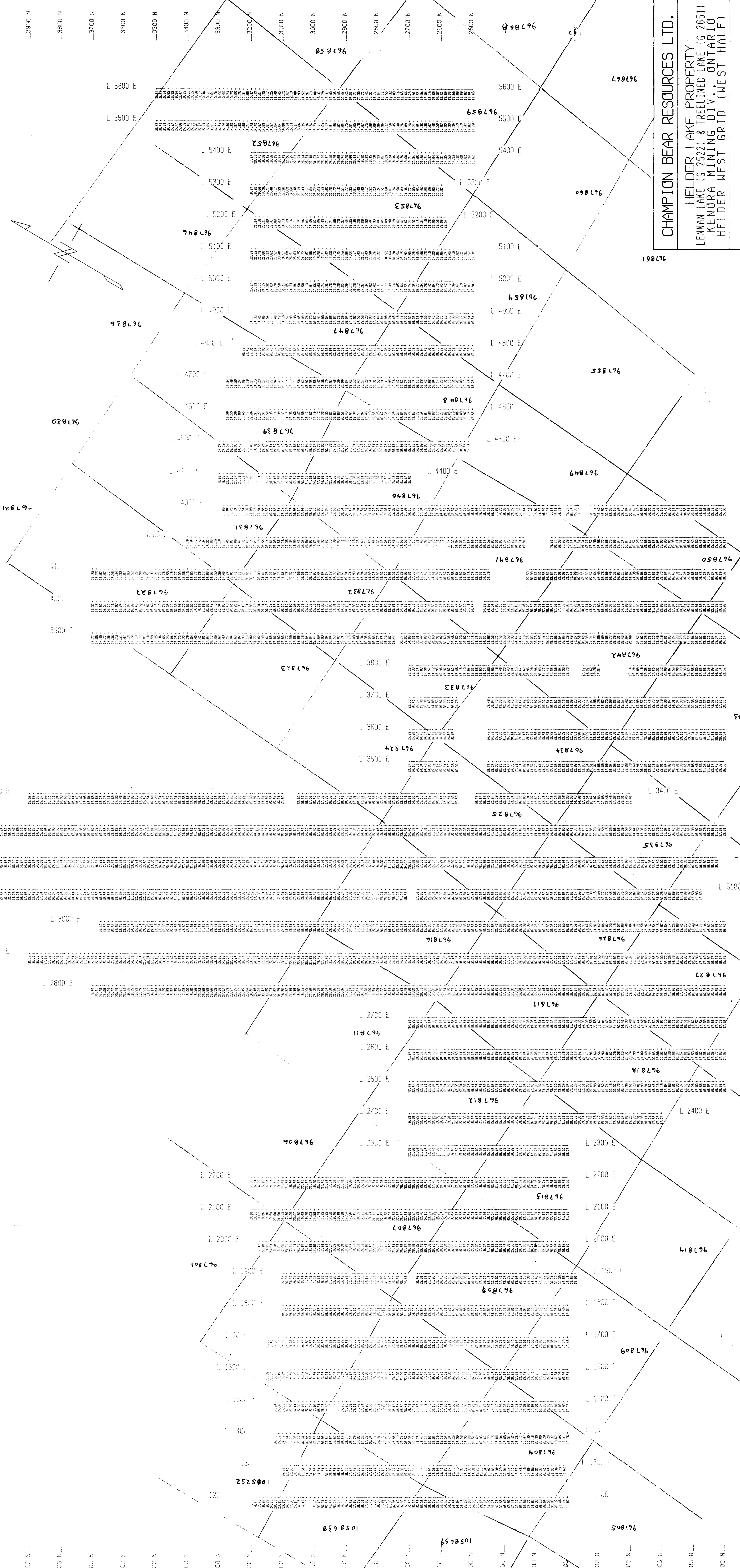




**CHAMPION BEAR RESOURCES LTD.**  
 HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENDRA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

VLF-EM POSTINGS (MAP #7)  
 (IN-PHASE & QUADRATURE)

**6-13056**  
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**CHAMPION BEAR RESOURCES LTD.**  
 HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENDORA MINING DIV., ONTARIO  
 HELDER WEST GRID (WEST HALF)

VLF-EM POSTINGS (MAP #7)  
 (TOTAL FIELD STRENGTH)  
**2-13056**  
PRINTED AT THE GEOLOGICAL SURVEY OF CANADA, OTTAWA, ONTARIO

SCALE 1 : 5 000  
1:5000



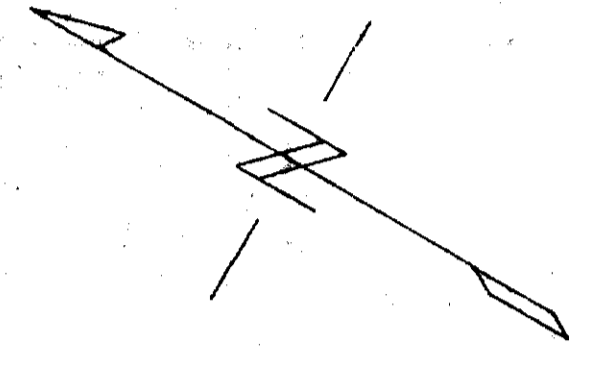
290

CHAMPION BEAR RESOURCES LTD.

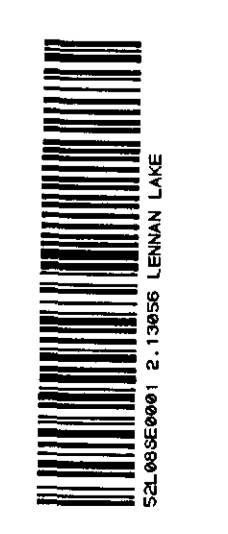
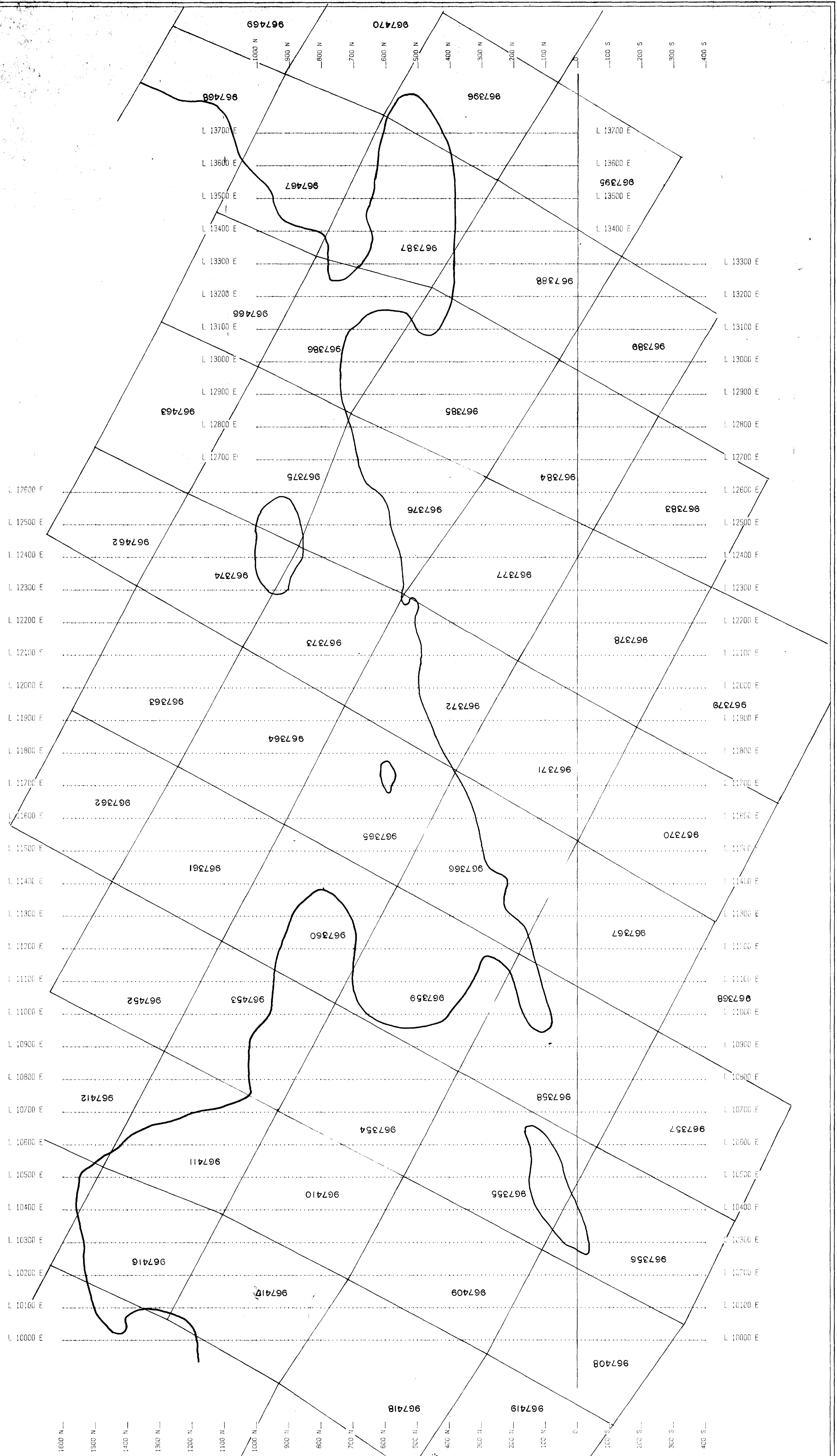
HELDER LAKE PROPERTY  
LENNAN LAKE (G. 2522)  
KENDRA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

GRID MAP (MAP #1)  
**2.13056**

DATE: 1997  
BY: [Signature]



SCALE 1 : 5 000



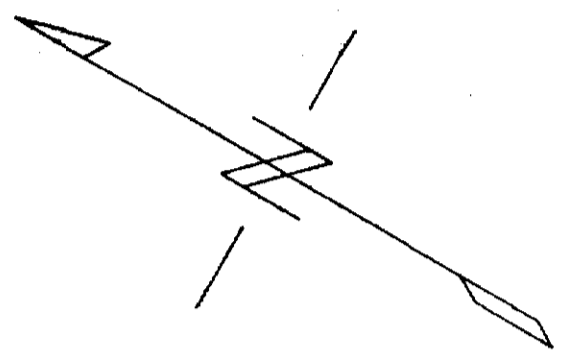
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522)  
KENORA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

TOTAL FIELD MAGNETIC CONTOUR MAP (MAP #2)  
(BASE STATION CORRECTED)

2-13056

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ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM



SCALE 1 : 5 000  
100 METERS 300

CONTOUR INTERVALS

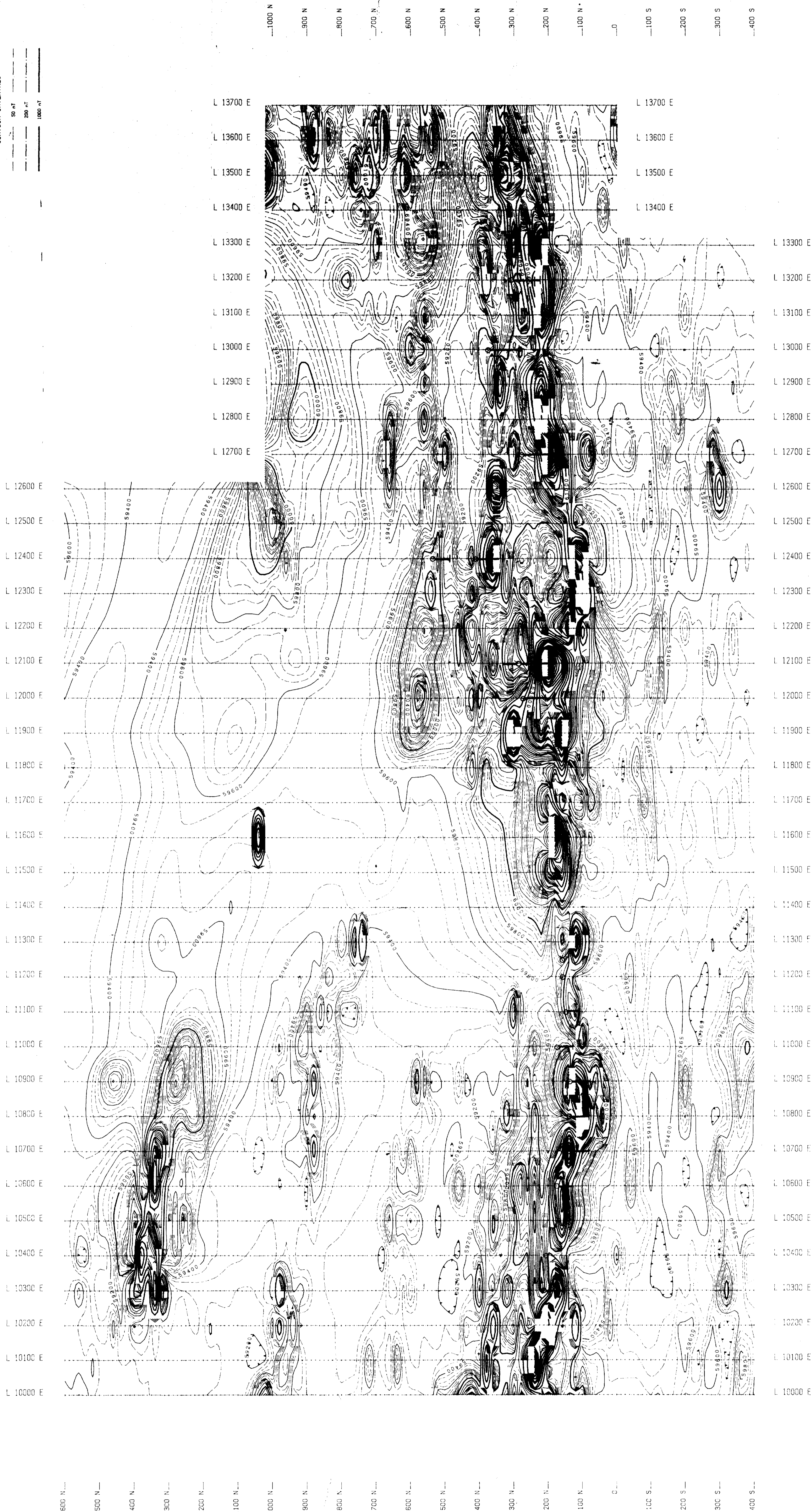
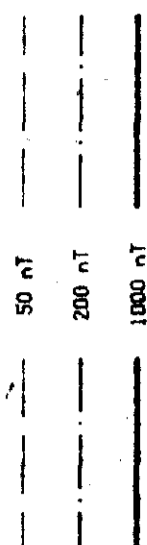


ILLUSTRATION 2-13056 LENNAN LAKE

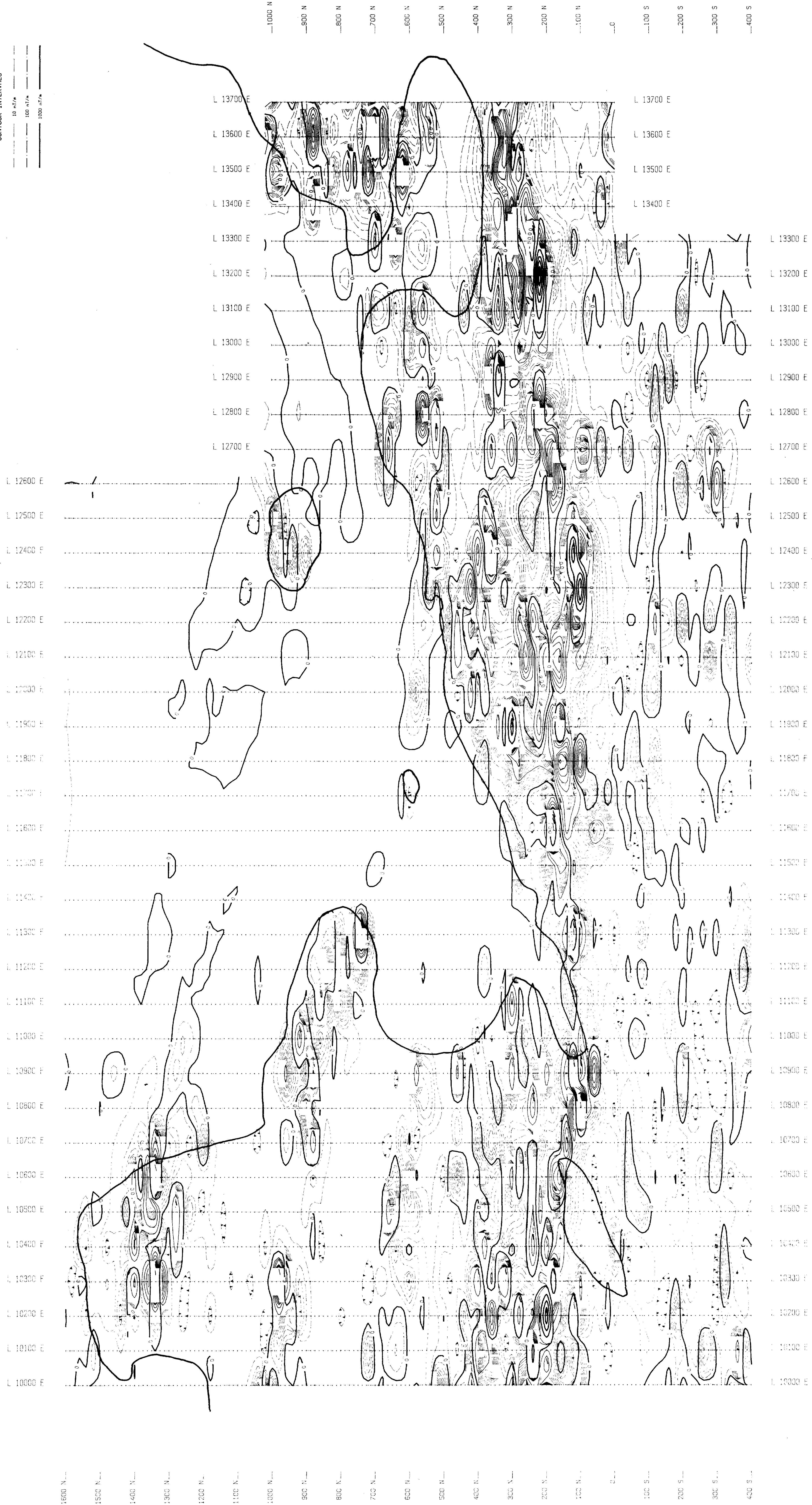
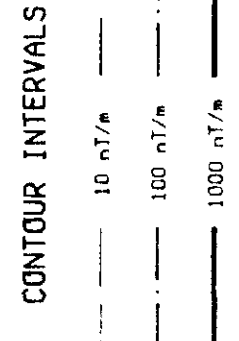
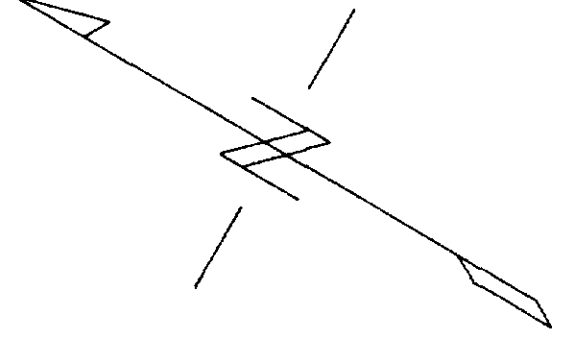
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522)  
KENORA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

VERTICAL GRADIENT MAGNETIC CONTOUR MAP (MAP #3)

2.13056

DATE ACQUIRED: 1987  
BY: CHAMPION BEAR RESOURCES LTD.  
PROJECT: LENNAN LAKE  
MAP #3



CHAMPION BEAR RESOURCES LTD.

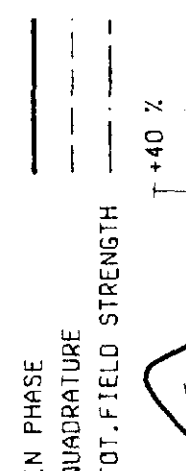
HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522)  
KENDRA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

VLF-EM PROFILE MAP (MAP #4)  
(IN-PHASE & QUADRATURE)

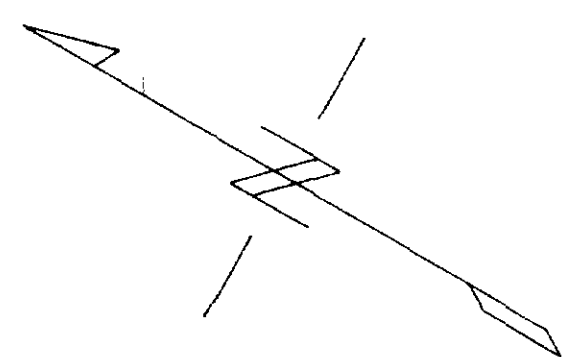
2-13056

SURVEY INSTRUMENTS SERVICE (P.O. BOX 1000)  
SHERBROOKE, QUEBEC J1L 1P6  
INDEPENDENT ELECTROMAGNETIC SERVICES LTD.

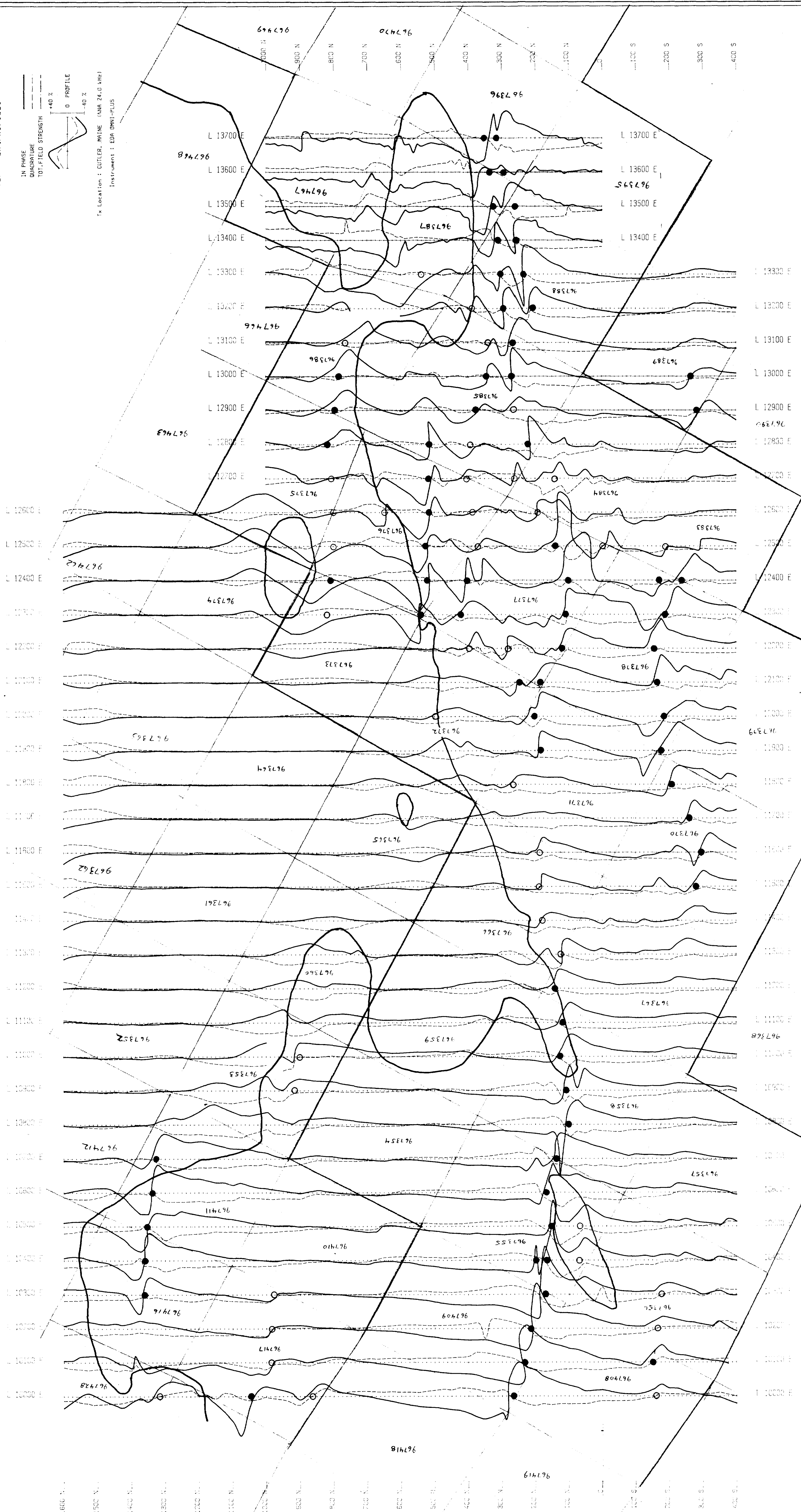
VLF - EM PROFILES



Location: OUTER MAIN (NMA 24.0 kHz)  
Instrument: EDR (DM)-PLUS



SCALE 1 : 5 000



0300



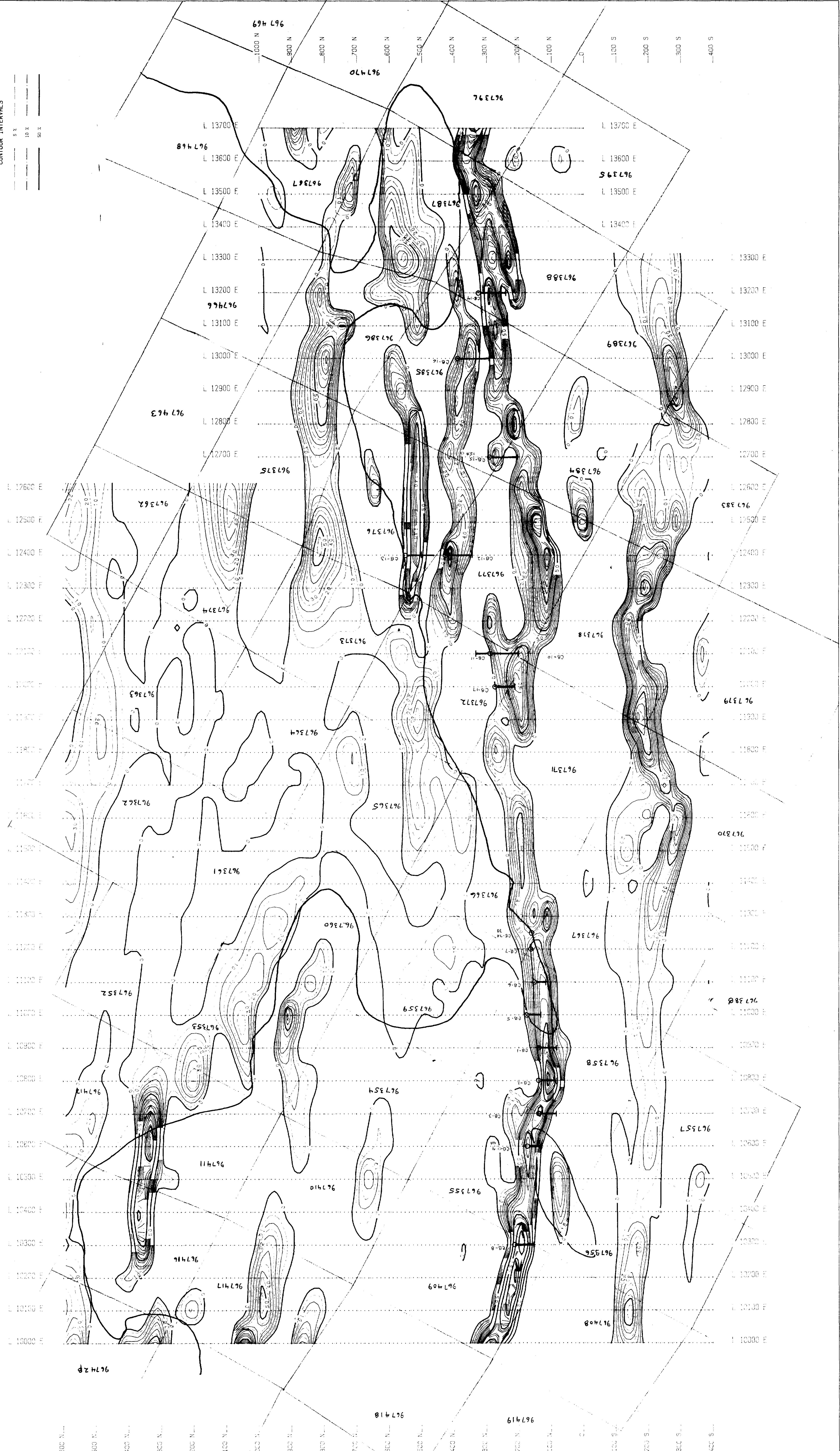
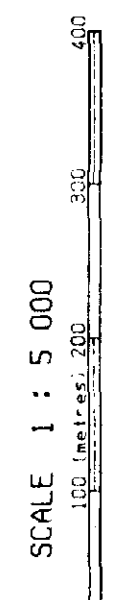
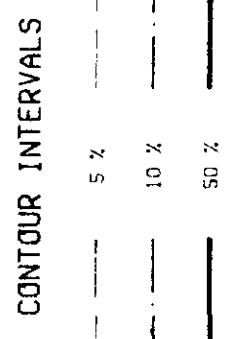
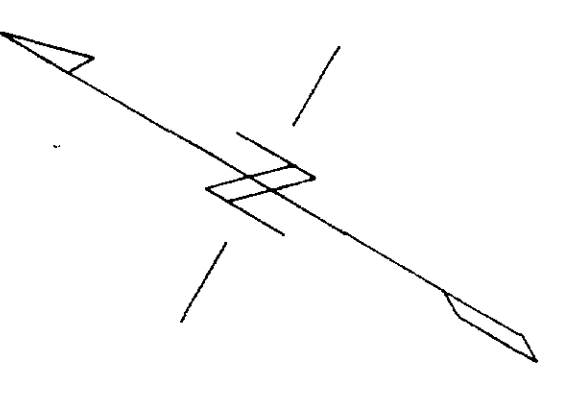
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522)  
KENOPA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

2. 13056

VLF-EM CONTOUR MAP (MAP #5)  
(FRASER FILTERED IN-PHASE)

STUDY AREA: HELDER LAKE PROPERTY, LENNAN LAKE (G 2522), KENOPA MINING DIV., ONTARIO  
MAP #5: VLF-EM CONTOUR MAP (FRASER FILTERED IN-PHASE)  
DATE: 1995  
BY: CHAMPION BEAR RESOURCES LTD.

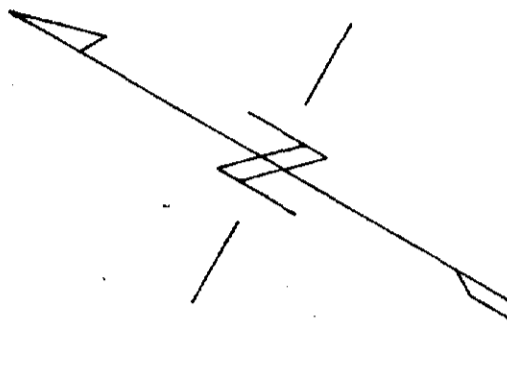




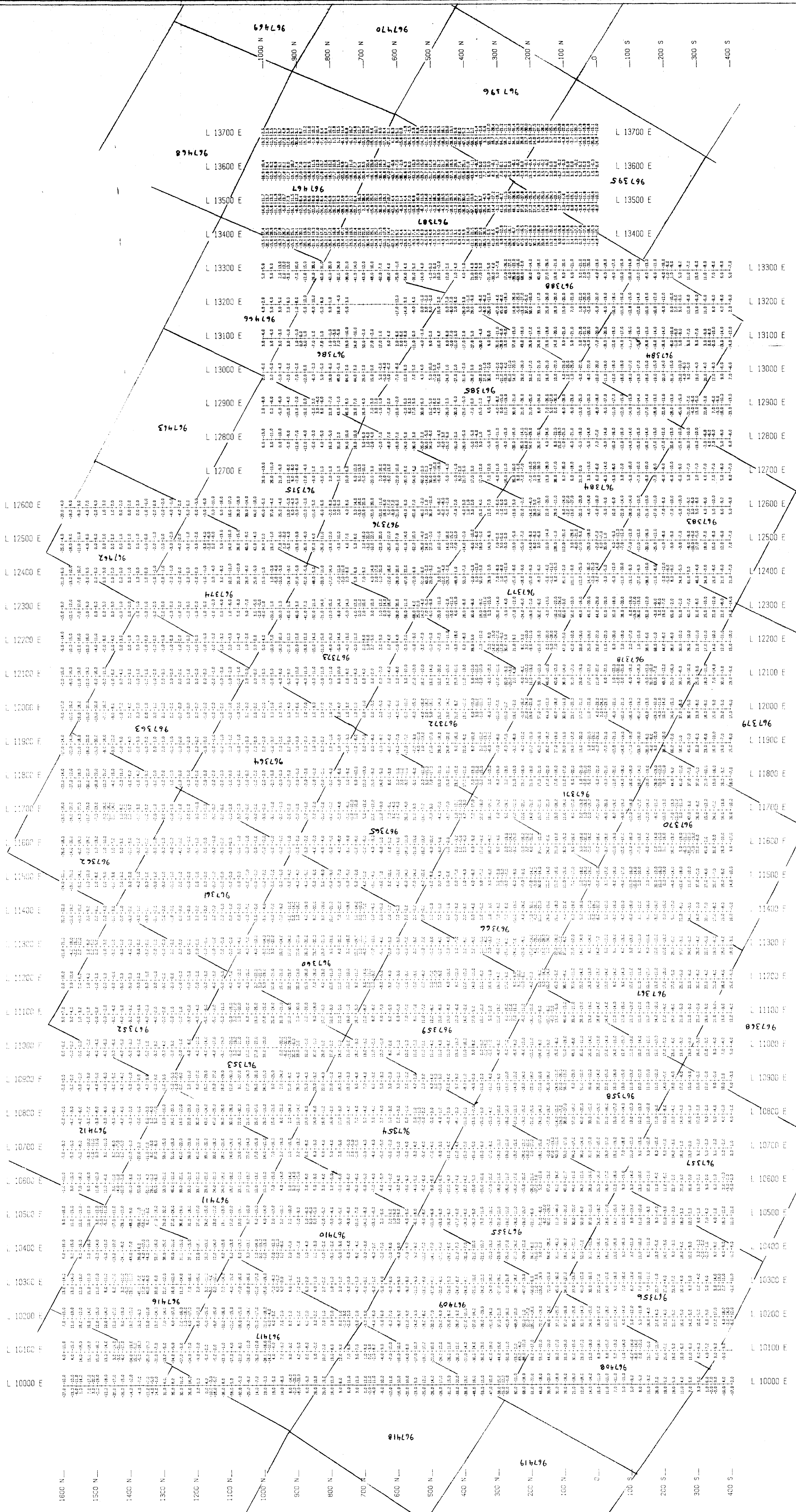
**CHAMPION BEAR RESOURCES LTD.**  
HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522)  
KENORA MINING DIV., ONTARIO  
CENTRAL HELDER GRID

**VLP-EM-130165 (MAP #7)**  
(IN-PHASE & QUADRATURE)

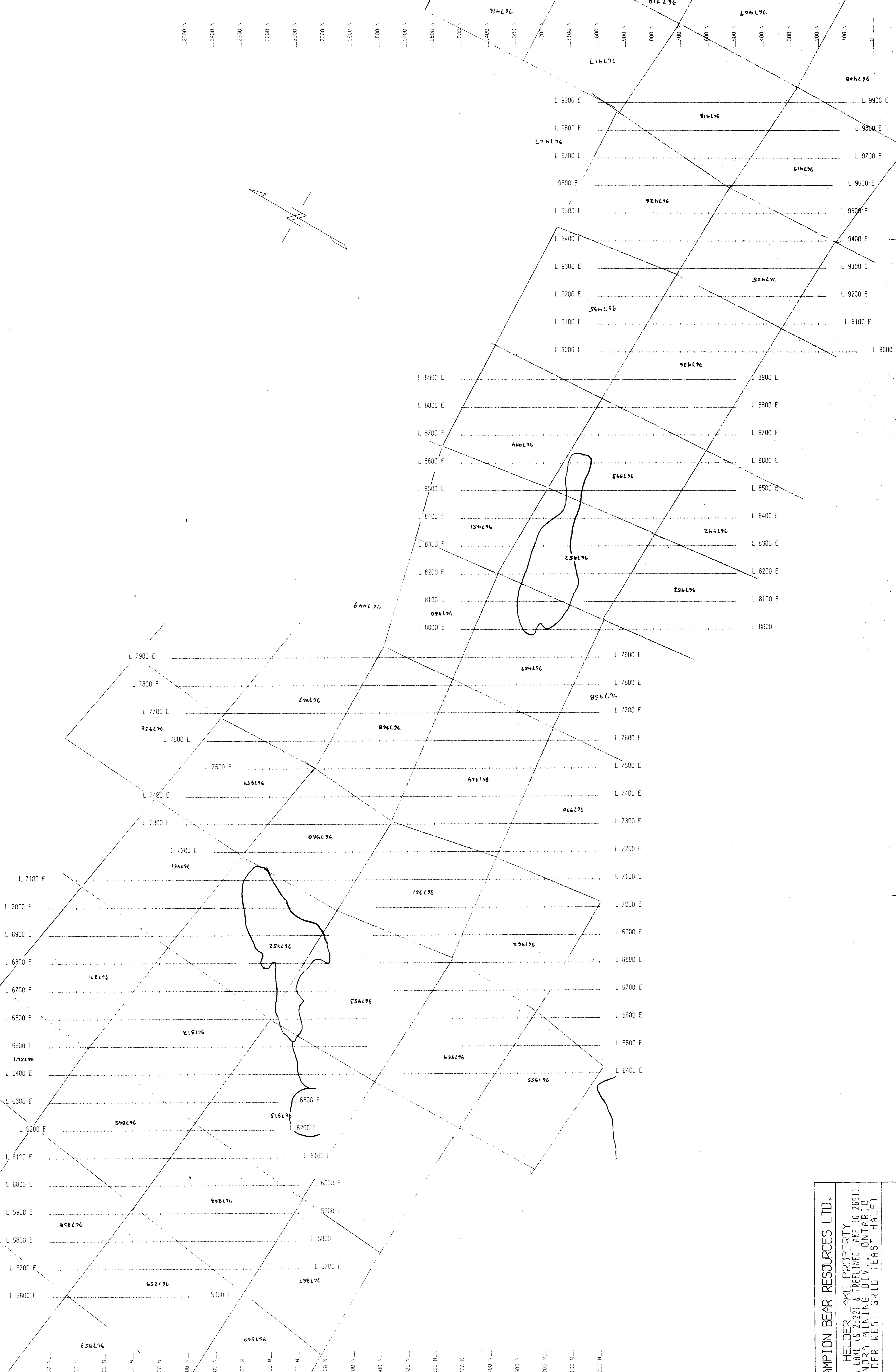
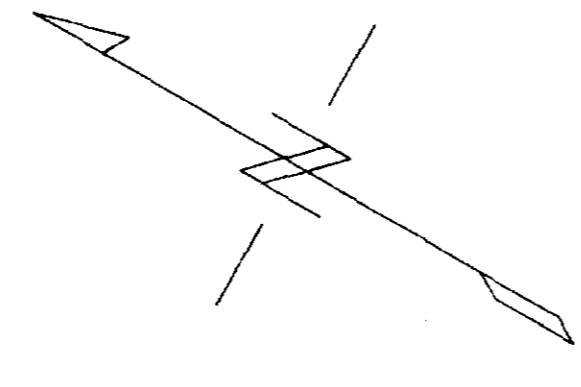
SHRINK TO ORIGINAL SIZE OF MAP  
PRINTED BY THE UNIVERSITY OF TORONTO PRESS  
UNIVERSITY MICROFILMS INTERNATIONAL



SCALE 1 : 5 000



SCALE 1 : 5 000



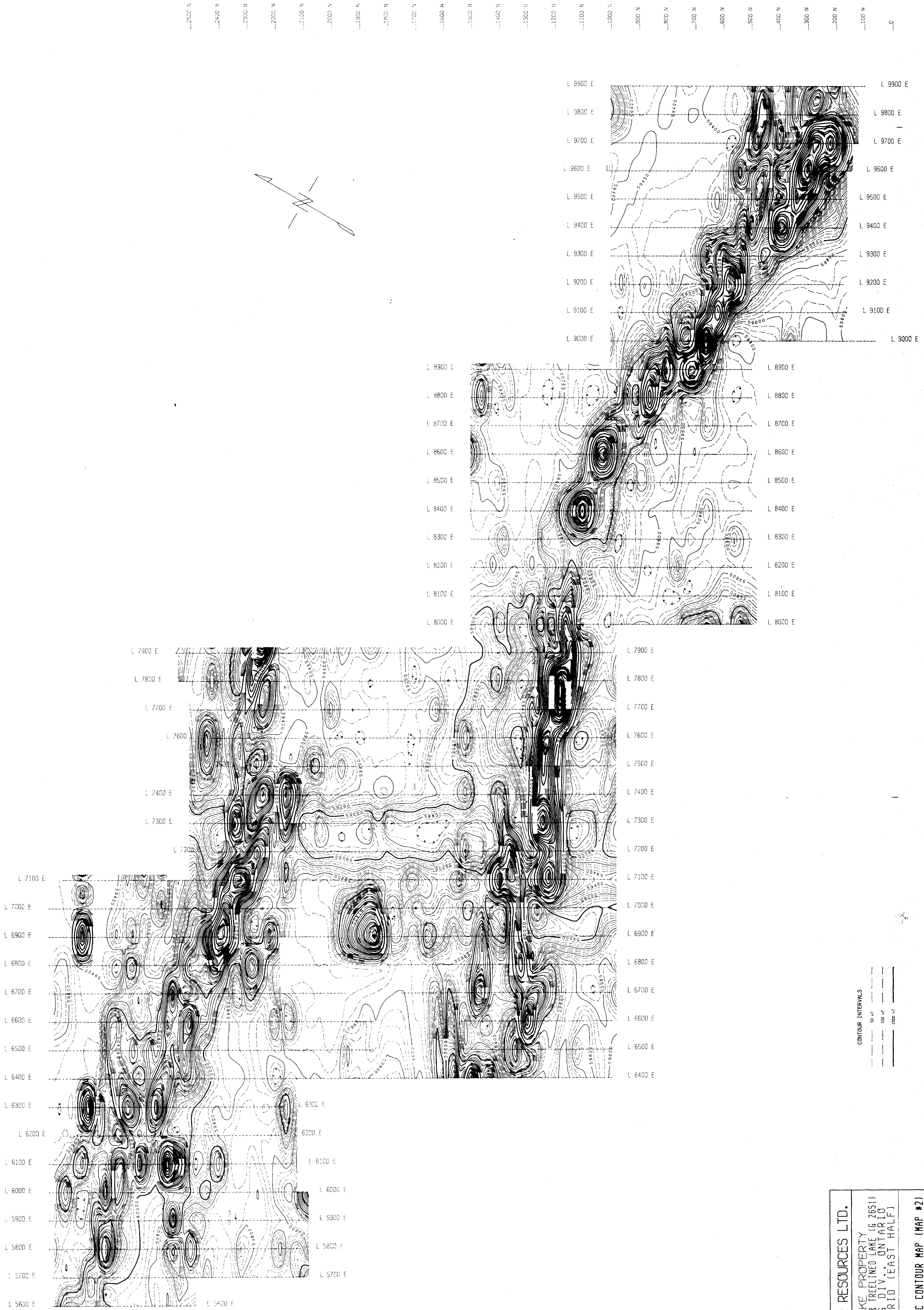
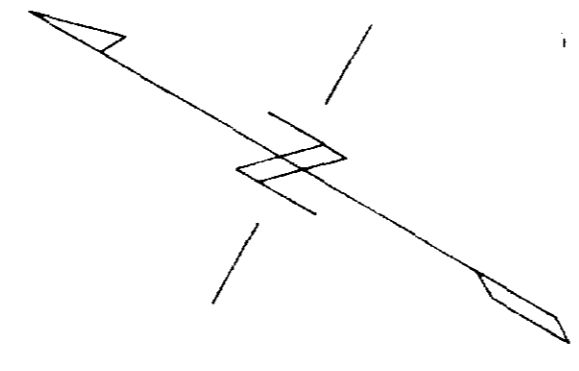
CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENWAN LAKE (6 2522) & TRELINED LAKE (6 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (EAST HALF)

GRID MAP (MAP #1)  
**2.13056**

MINING DIVISION, ONTARIO  
 1997



SCALE 1 : 5 000



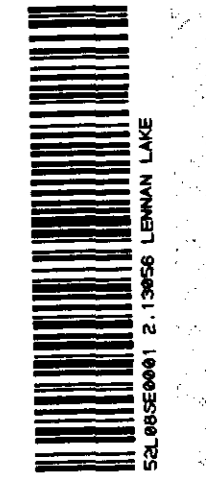
CONTOUR INTERVALS  
 50' ft  
 100' ft  
 200' ft  
 500' ft

CHAMPION BEAR RESOURCES LTD.

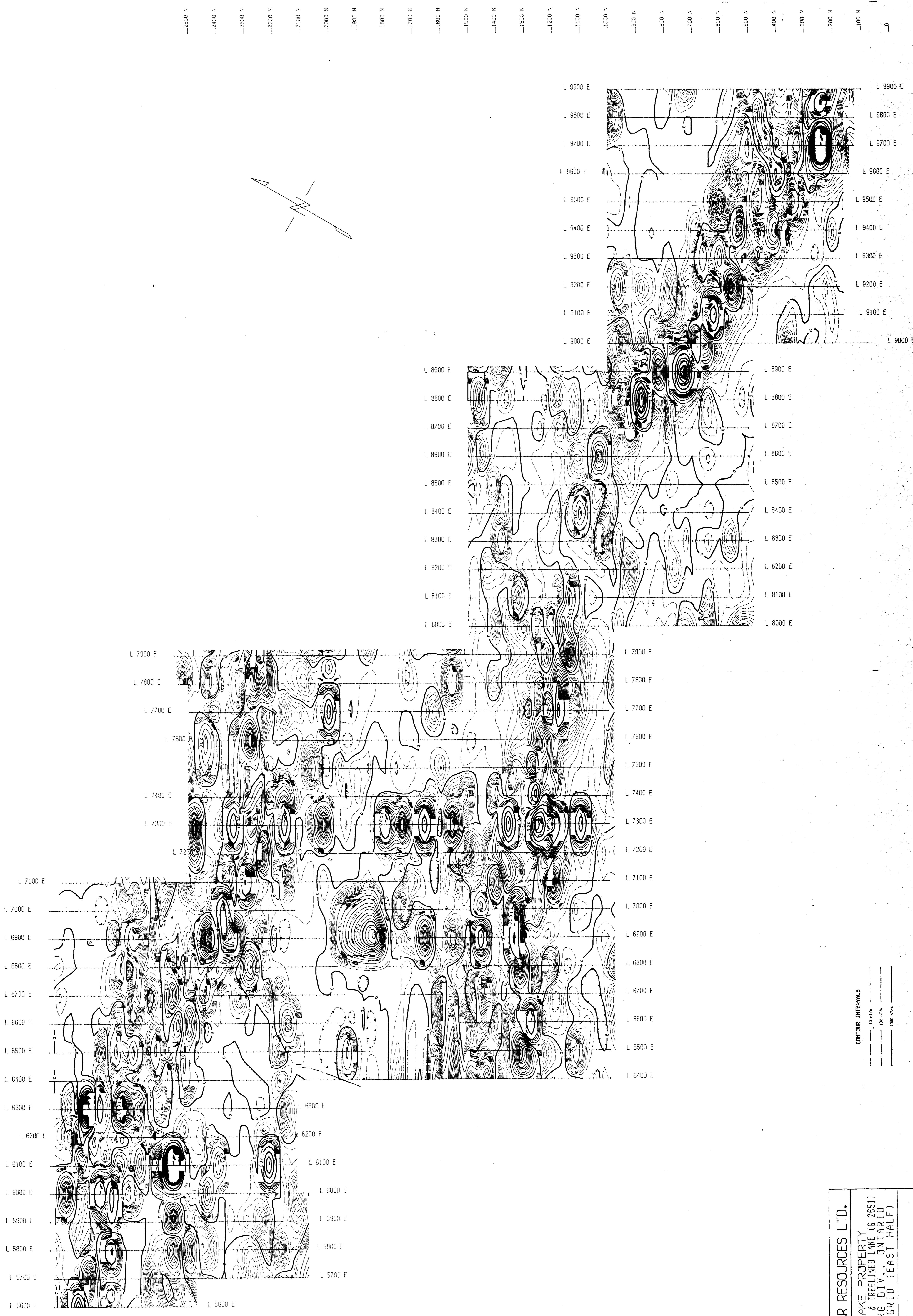
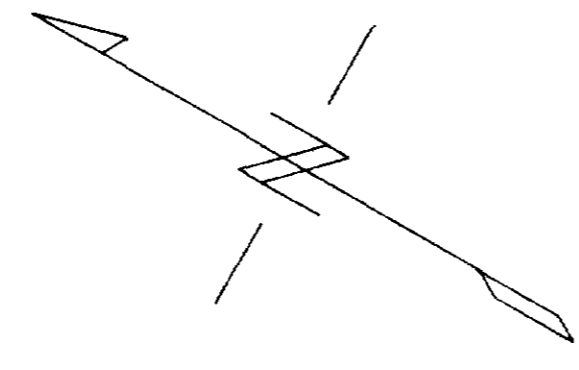
HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (EAST HALF)

TOTAL FIELD MAGNETIC CONTOUR MAP (MAP #2)  
 (BASE STATION CORRECTED)

21956  
 CHAMPION BEAR RESOURCES LTD.



SCALE 1 : 5 000

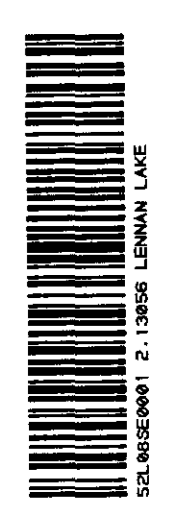


CONTOUR INTERVALS  
10 γ  
50 γ  
100 γ  
200 γ

CHAMPLION BEAR RESOURCES LTD.  
HELDER LAKE PROPERTY  
LENAN LAKE (G 7572) & TREELINED LAKE (G 76511)  
KENDRA MINING DIV., ONTARIO  
HELDER WEST GRID (EAST HALF)

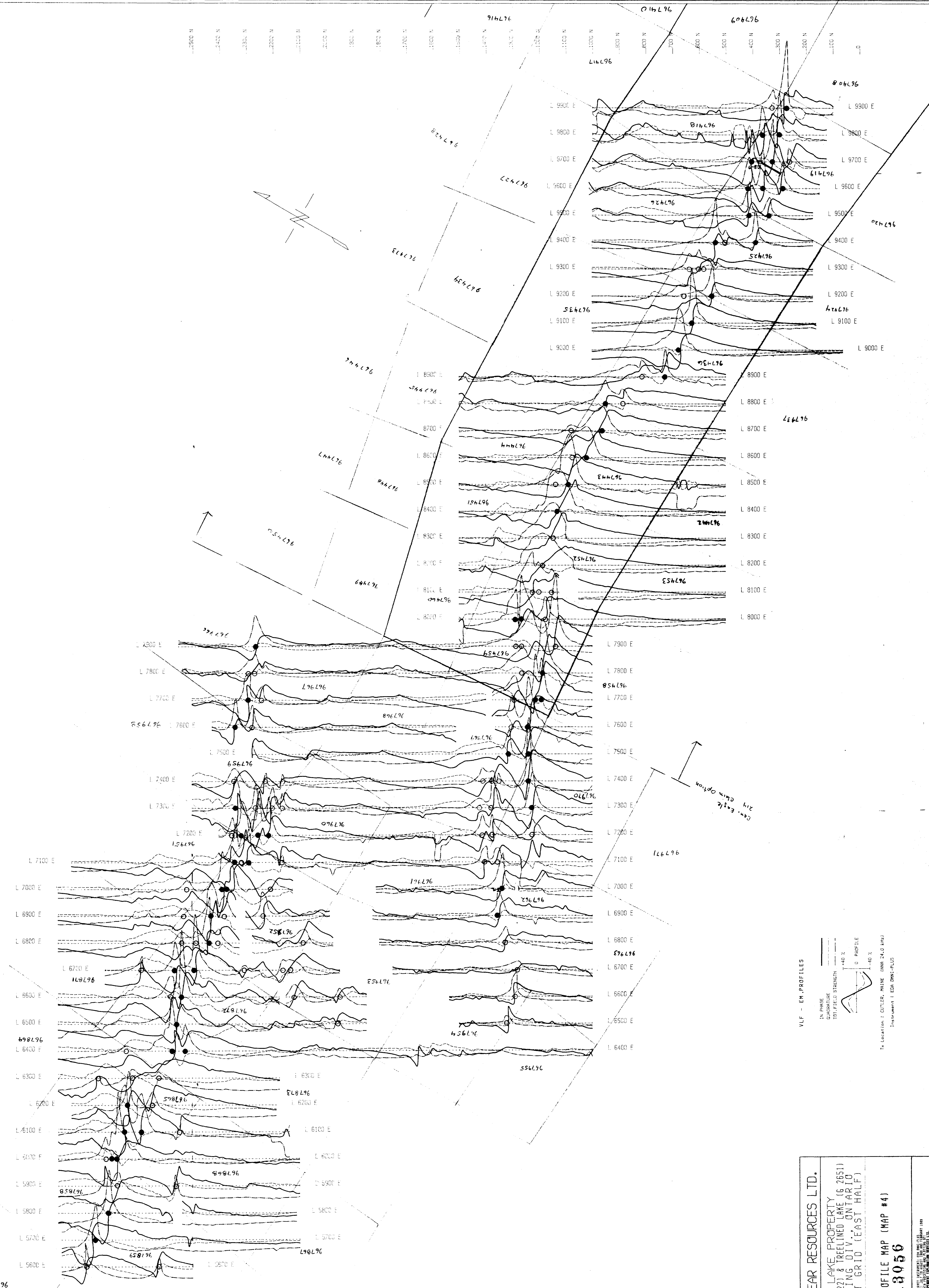
VERTICAL GRADIENT MAGNETIC CONTOUR MAP (MAP #3)  
**2.13056**

MAP PREPARED BY: [unreadable]  
DATE: [unreadable]  
SCALE: 1:5000



390

SCALE 1 : 5,000

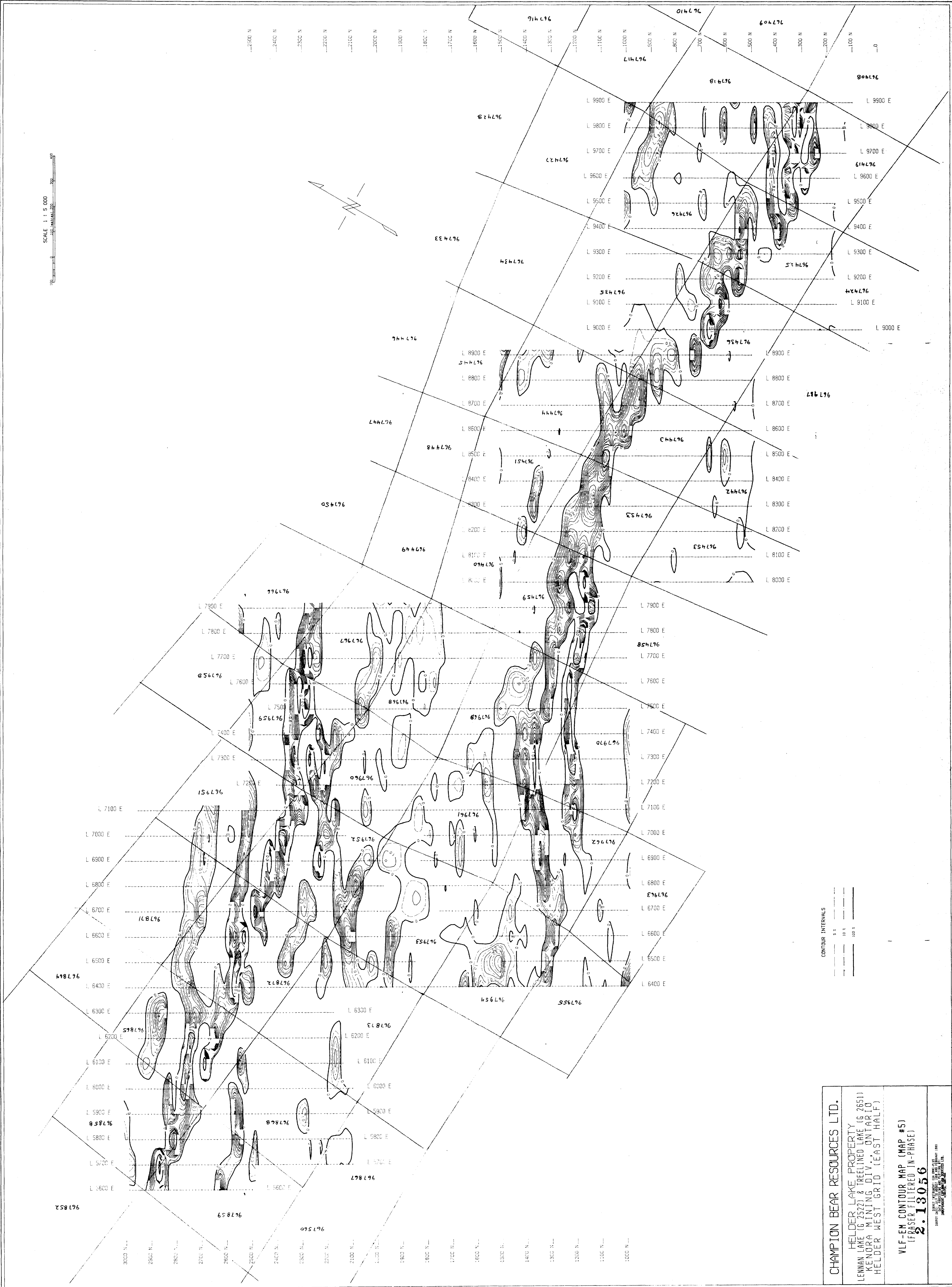
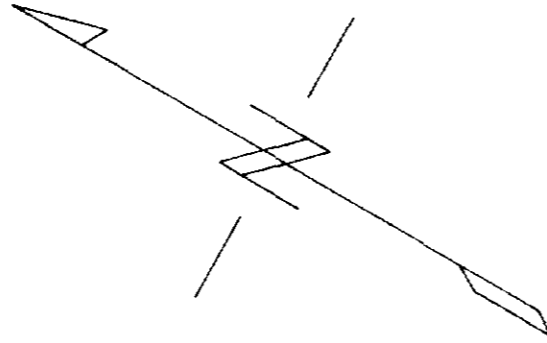


**CHAMPION BEAR RESOURCES LTD.**  
 HELDER LAKE PROPERTY  
 LENMAN LAKE (6 2522) & TRELIMED LAKE (6 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (EAST HALF)

VLF-EM PROFILE MAP (MAP #4)  
**2.13056**

DATE: 1997  
 BY: [unreadable]  
 CHECKED: [unreadable]  
 APPROVED: [unreadable]

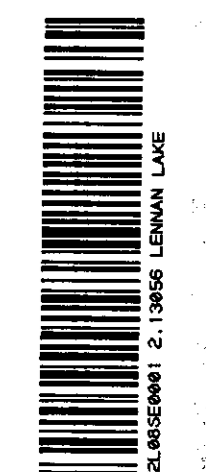
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CHAMPION BEAR RESOURCES LTD.  
HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522) & TREELINE LAKE (G 2651)  
KENORA MINING DIV., ONTARIO  
HELDER WEST GRID (EAST HALF)

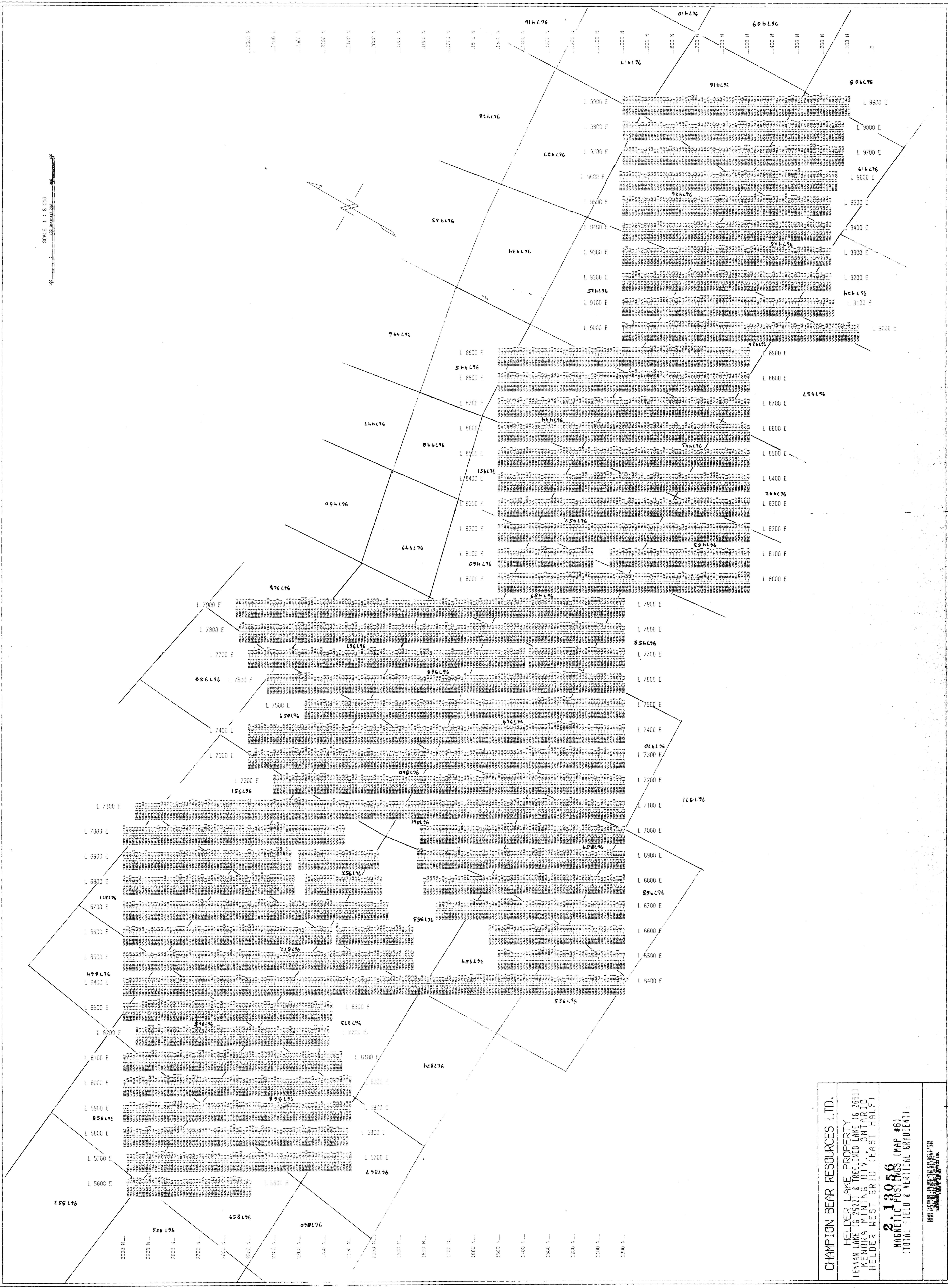
VLF-EM CONTOUR MAP (MAP #5)  
(FRASER FILTERED IN-PHASE)  
**2.13056**

DATE OF SURVEY: 1998  
DATE OF PUBLICATION: 1998  
BY: CHAMPION BEAR RESOURCES LTD.





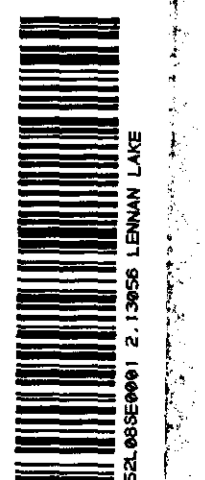
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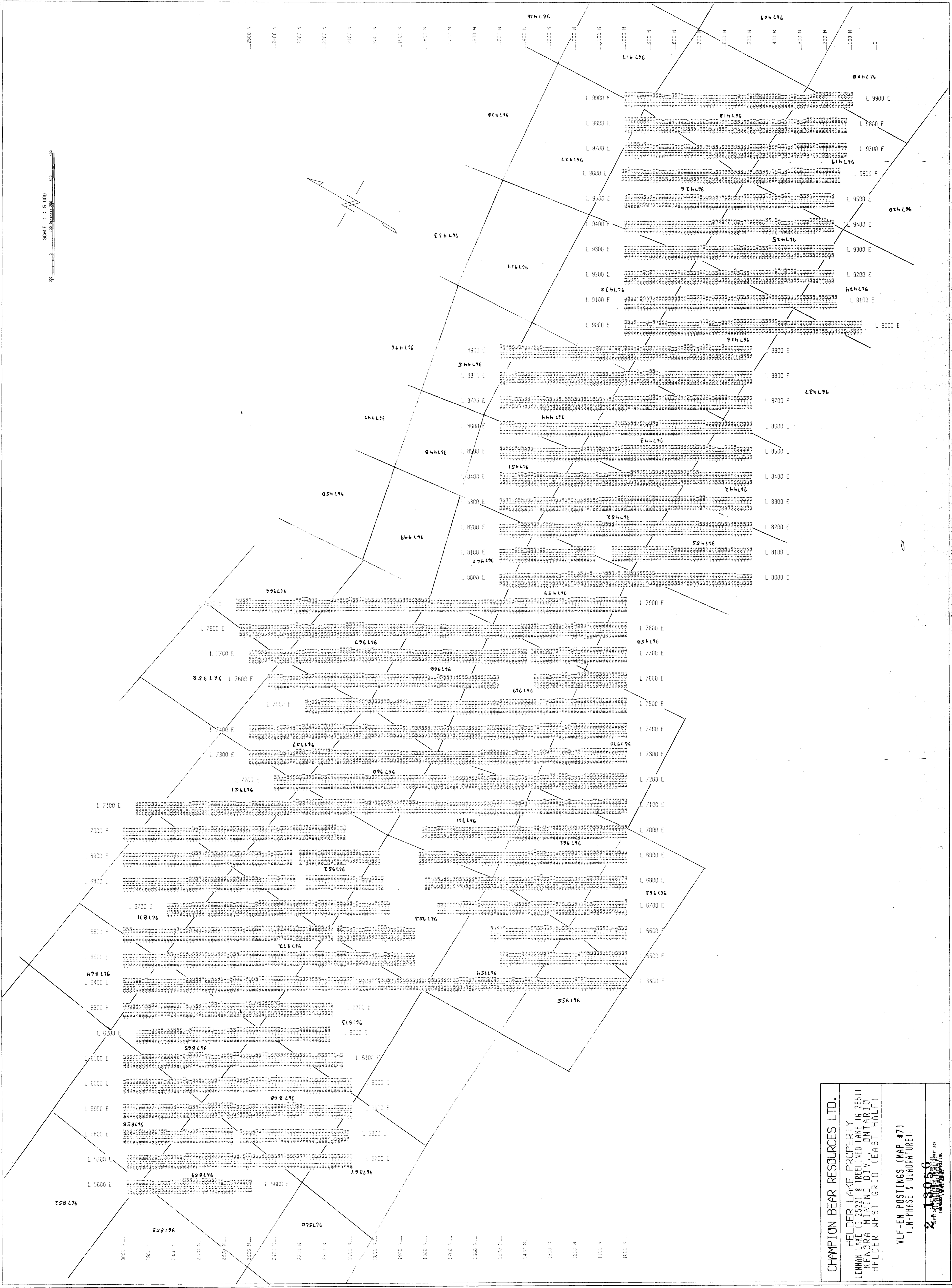
CHAMPION BEAR RESOURCES LTD.  
HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522) & TRELINED LAKE (G 2651)  
KENORA MINING DIV., ONTARIO  
HELDER WEST GRID (EAST HALF)

**2. 13056**  
MAGNETIC POSTINGS (MAP #6)  
(TOTAL FIELD & VERTICAL GRADIENT)

PROPERTY OF CHAMPION BEAR RESOURCES LTD.  
PRINTED IN CANADA



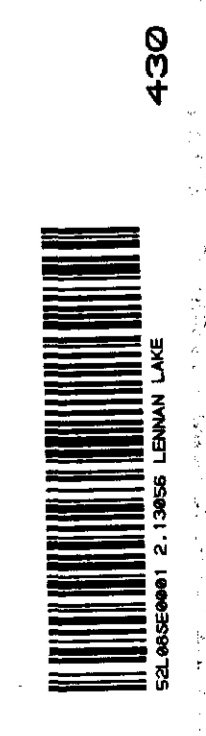
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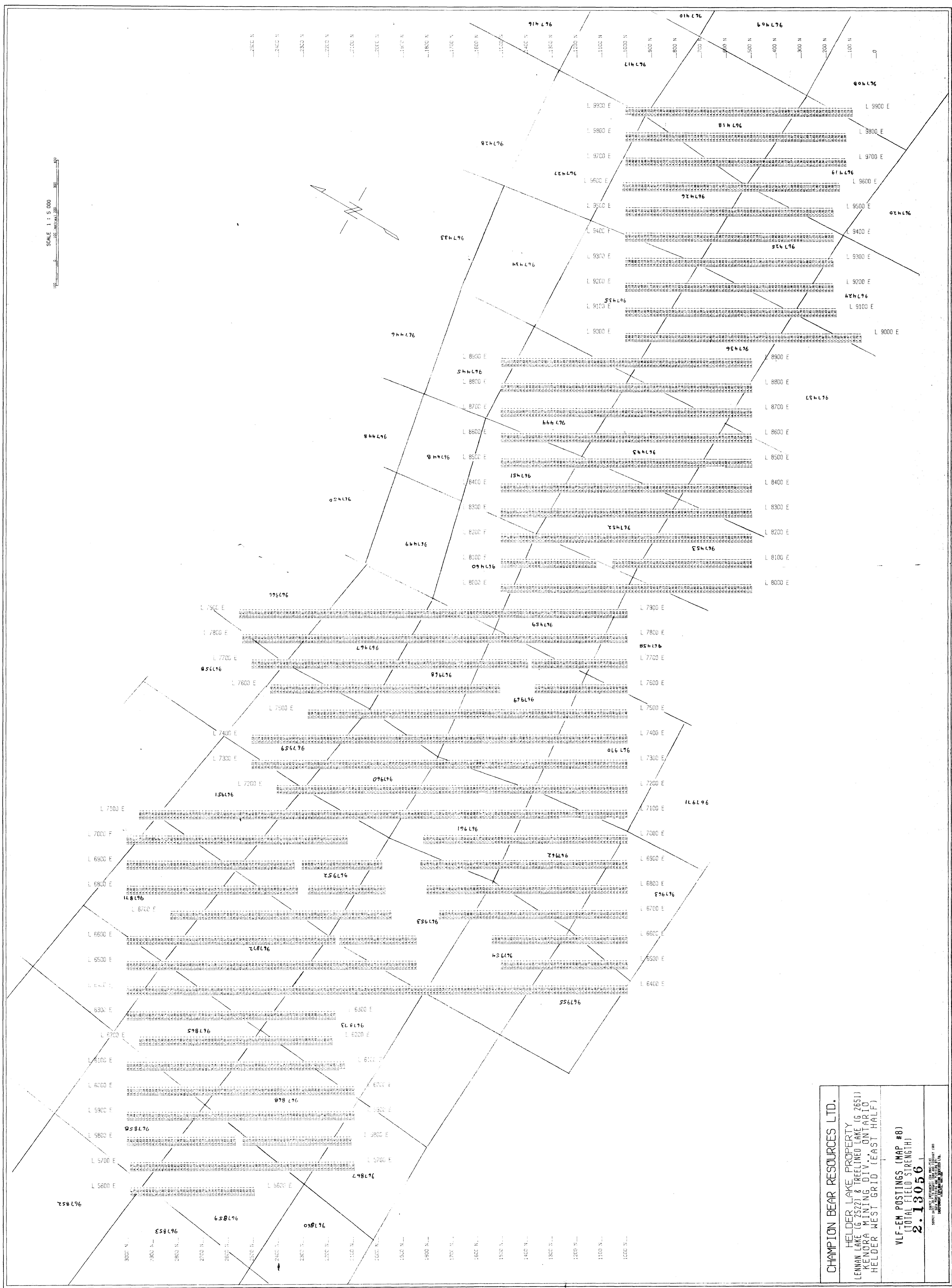
CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LEMAN LAKE (S27) & TWEED LAKE (S 2851)  
 WENOPA MINING DIV. ONTARIO  
 HELDER WEST GRID. (EAST HALF)

VLF-EM POSTINGS (MAP #7)  
 (1st PHASE & QUADRATURE)

2 13056  
 11th Floor, 100 King Street West, Toronto, Ontario M5X 1C4  
 Champion Bear Resources Ltd.



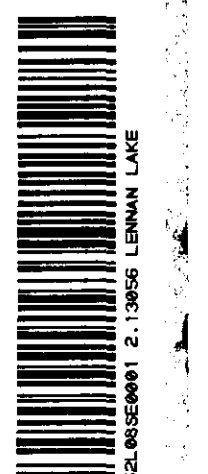
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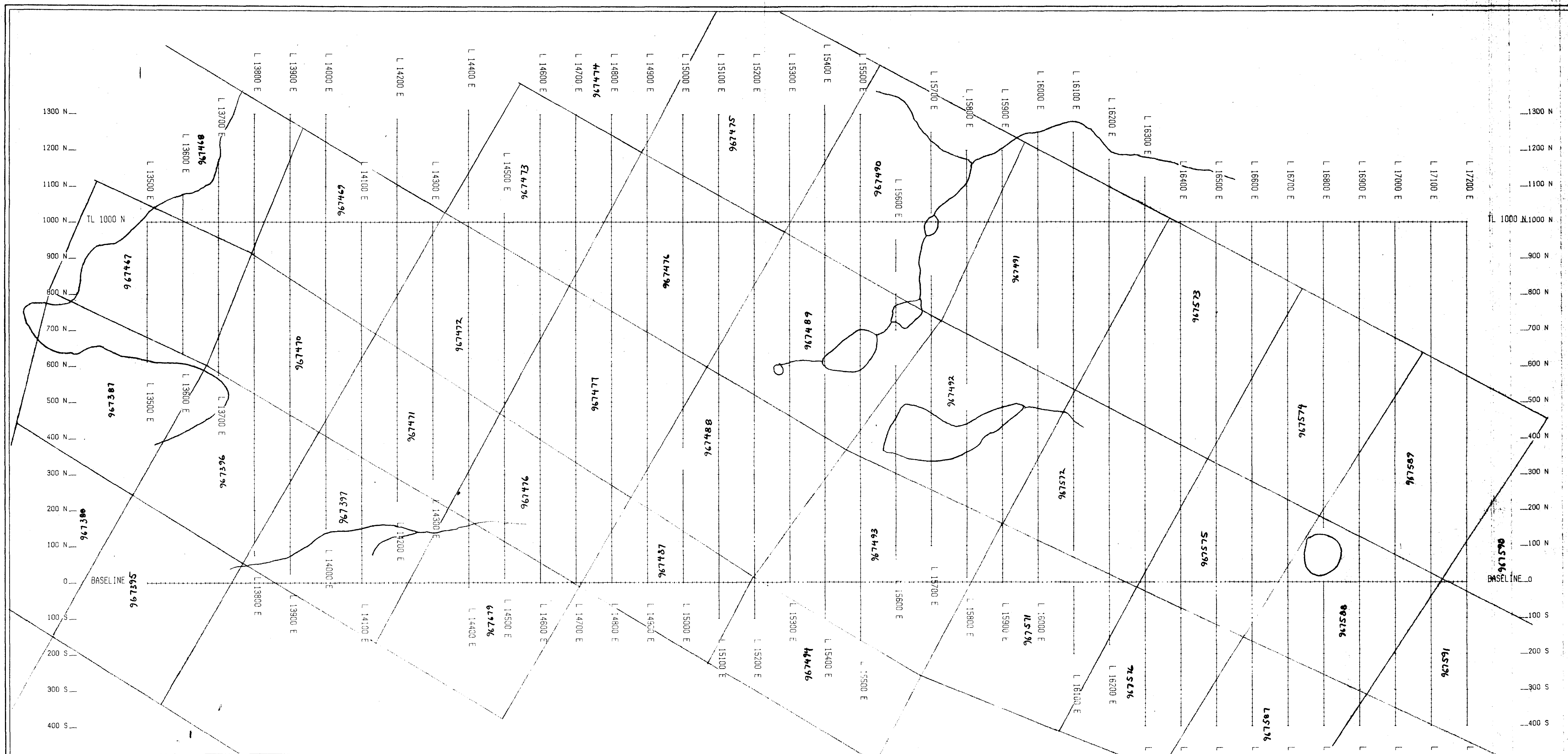


**CHAMPION BEAR RESOURCES LTD.**  
 HELDER LAKE PROPERTY  
 LEWMAN LAKE (G 2522) & TRELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 HELDER WEST GRID (EAST HALF)

VLF-EM POSTINGS (MAP #8)  
 (TOTAL FIELD STRENGTH)  
**2.13056**

DATE: 1997-07-15  
 DRAWN BY: J. B. BROWN  
 CHECKED BY: J. B. BROWN



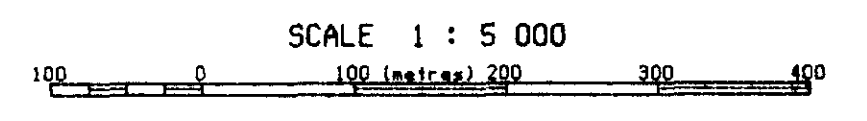
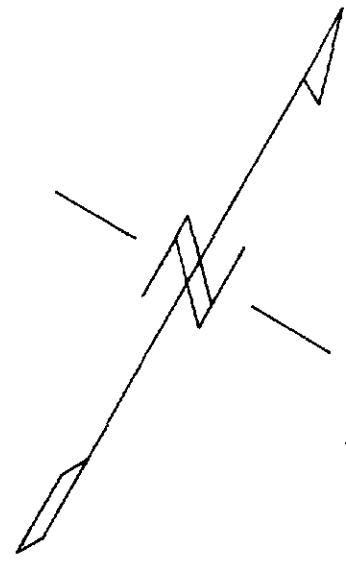


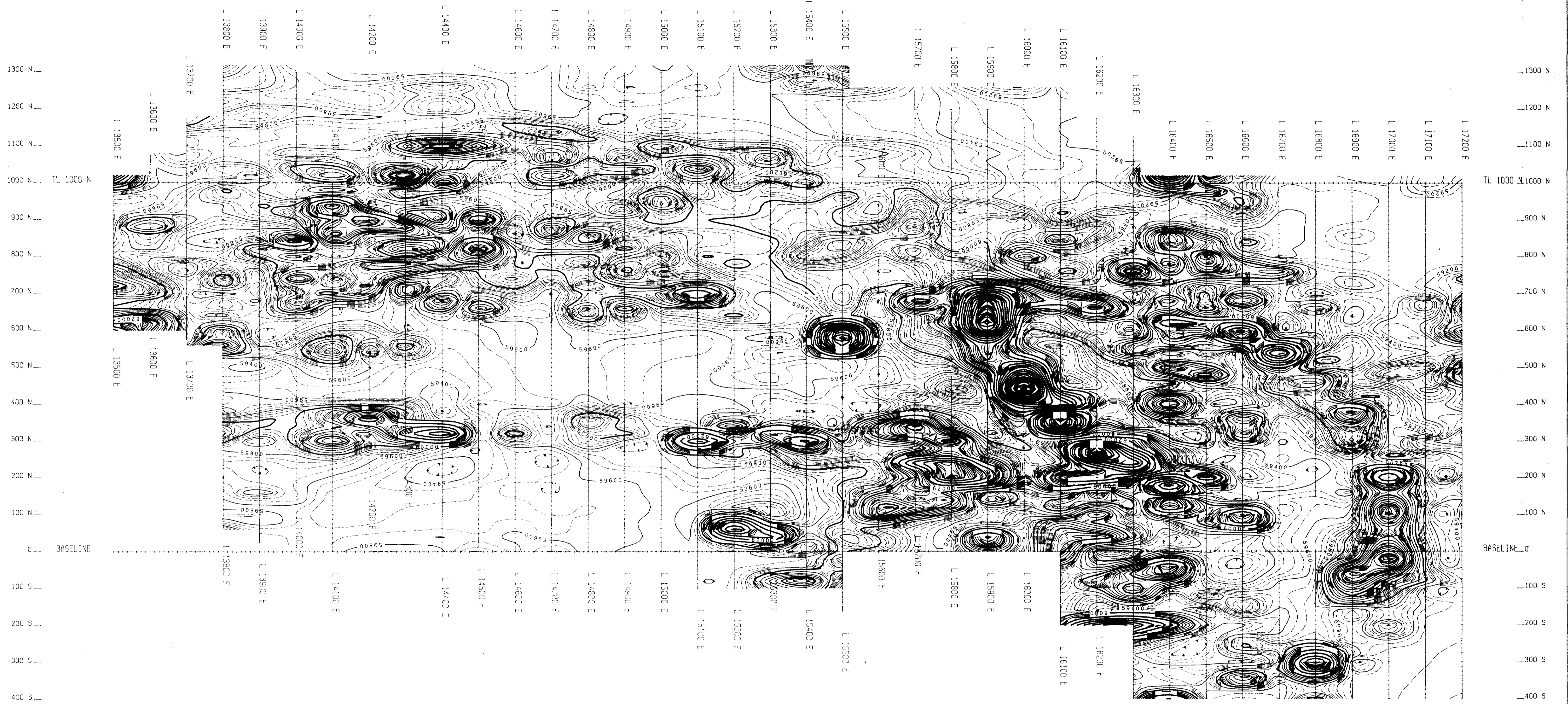
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

GRID MAP (MAP #1)  
**2.13056**

SURVEY DATES: JULY TO AUGUST 1988  
 DATA PROCESSING AND PLOTTING BY  
 INDEPENDENT EXPLOITATION SERVICES LTD.  
 TORONTO, ONTARIO





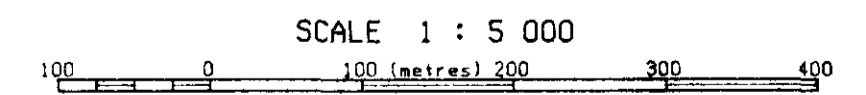
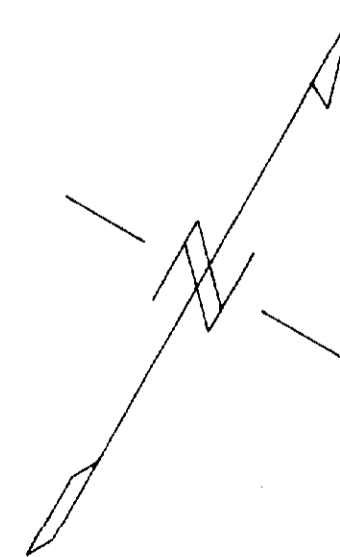
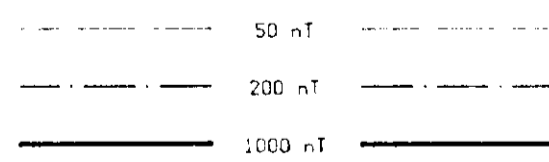
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

TOTAL FIELD MAGNETIC CONTOUR MAP (MAP #2)  
 (BASE STATION CORRECTED)

SURVEY INSTRUMENTS: EDM 0001-PLUS ALSO BASE WAS  
 SURVEY DATE: JULY TO AUGUST 1988  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WINNIPEG, MANITOBA

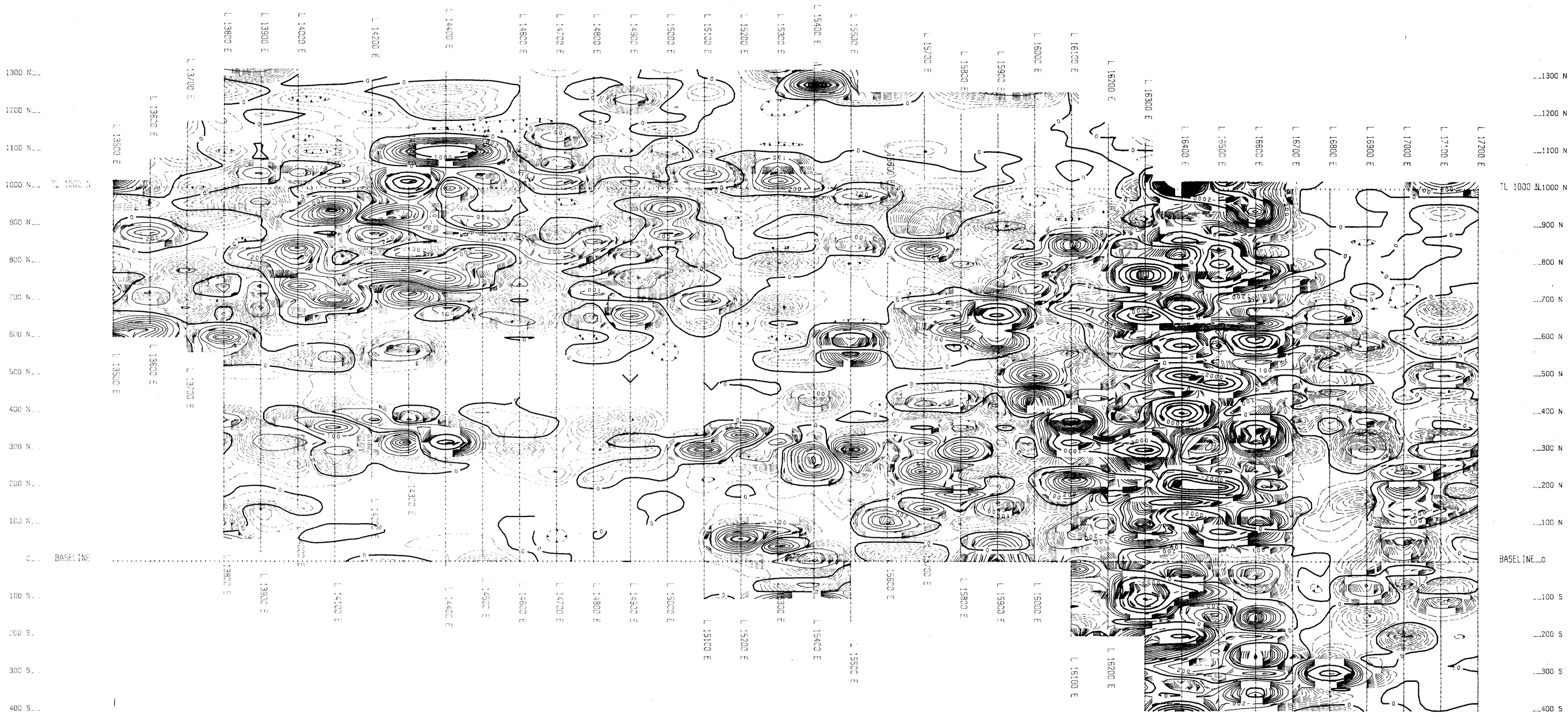
CONTOUR INTERVALS



2.13056



52L0050001 2.13056 LENNAN LAKE

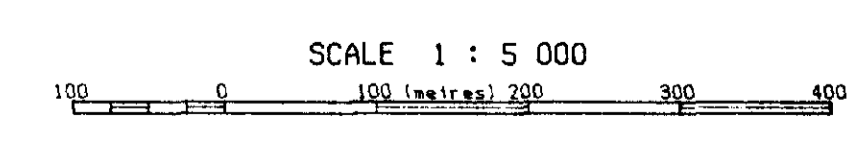
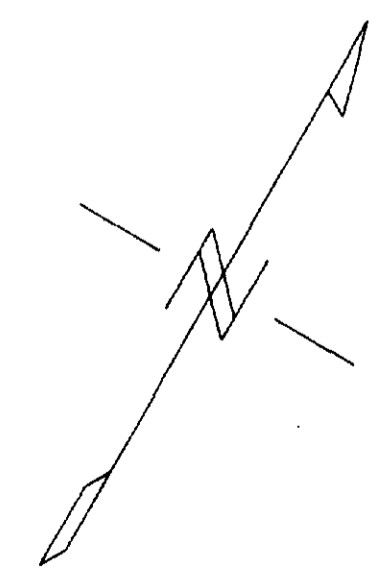
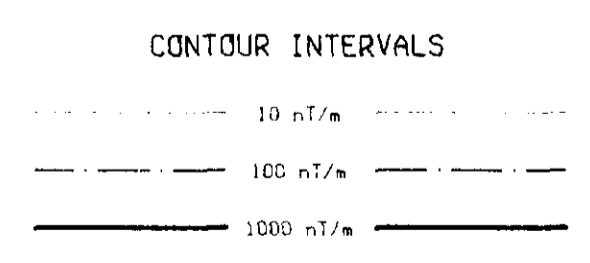


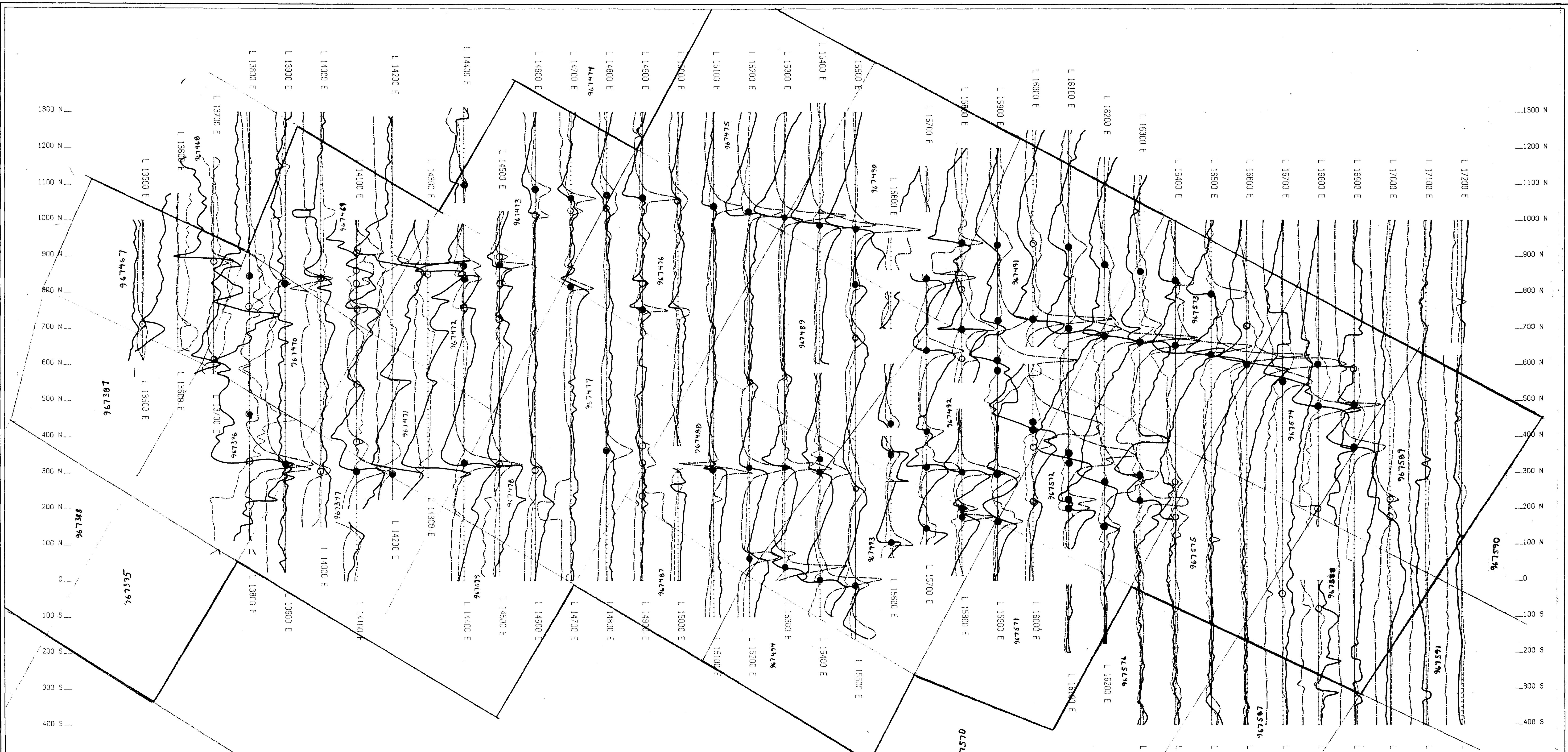
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

VERTICAL GRADIENT MAGNETIC CONTOUR MAP (MAP #3)  
**2.13056**

SURVEY INSTRUMENTS: EDM ONLY PLUS  
 SURVEY DATE: JULY TO AUGUST 1988  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WINNIPEG, MANITOBA





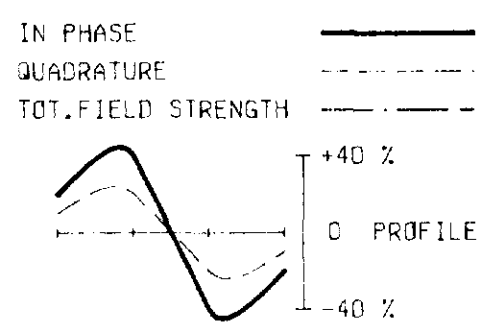
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

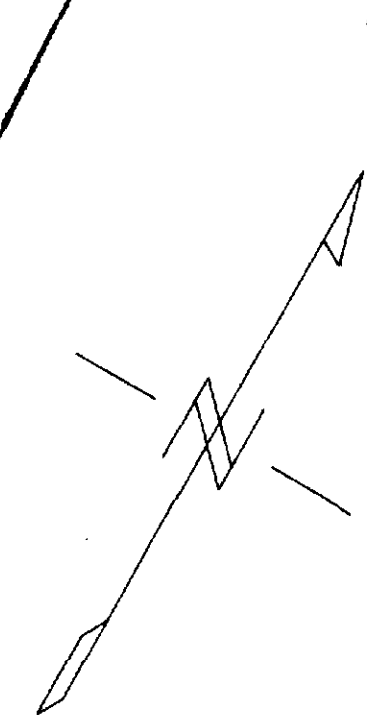
VLF-EM PROFILE MAP (MAP #4)  
**2.13056**

SURVEY INSTRUMENT: EDA OMNI-PLUS  
 SURVEY DATE: JULY TO AUGUST 1998  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLOREATION SERVICES LTD.

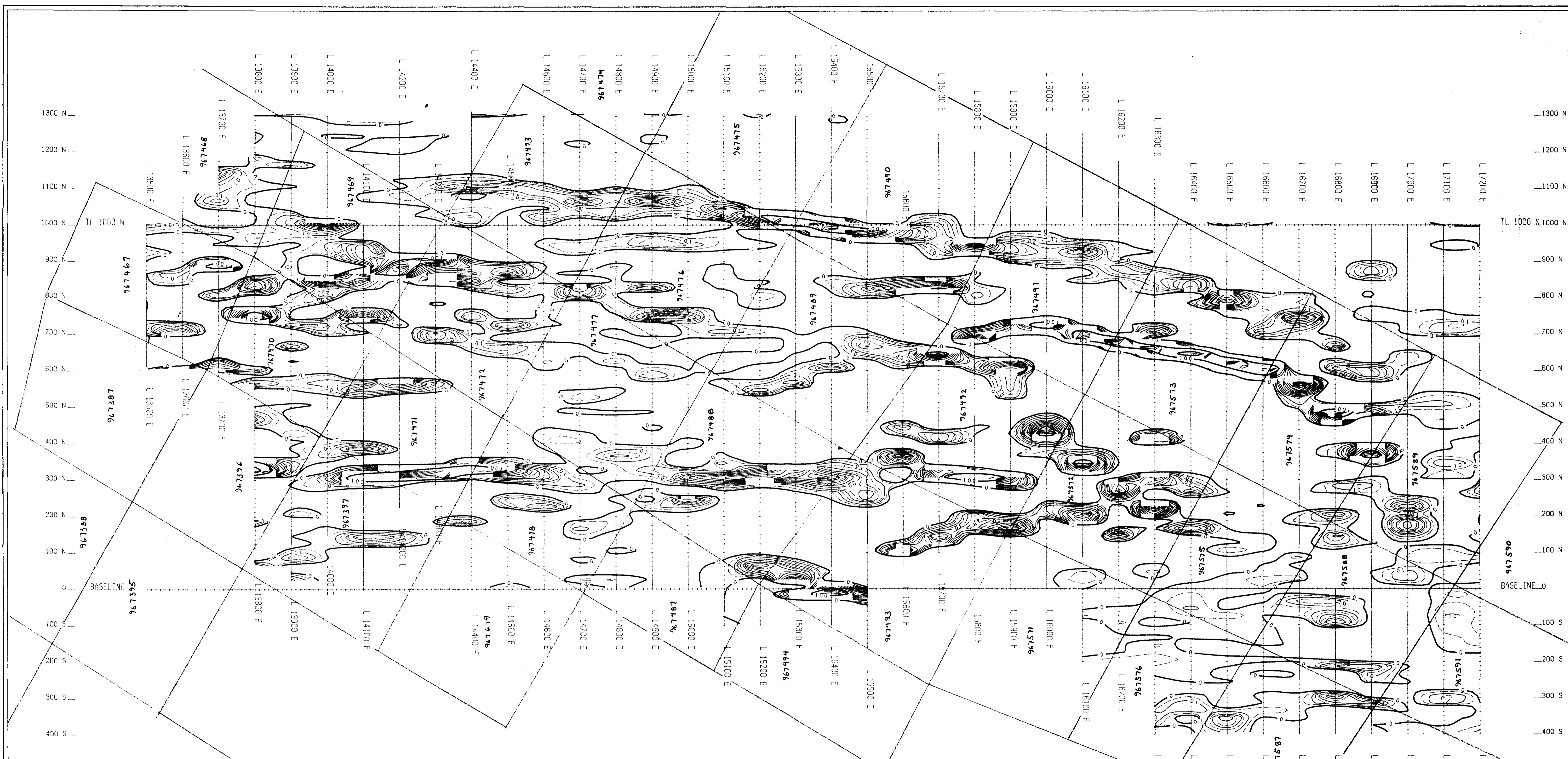
VLF - EM PROFILES



Tx Location: CUTLER, MAINE (NNA 24.0 kHz)  
 Instrument: EDA OMNI-PLUS



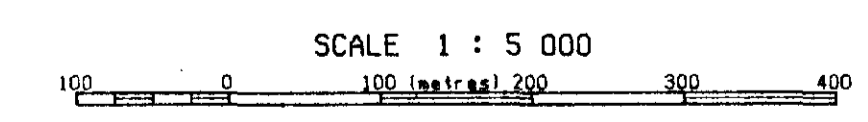
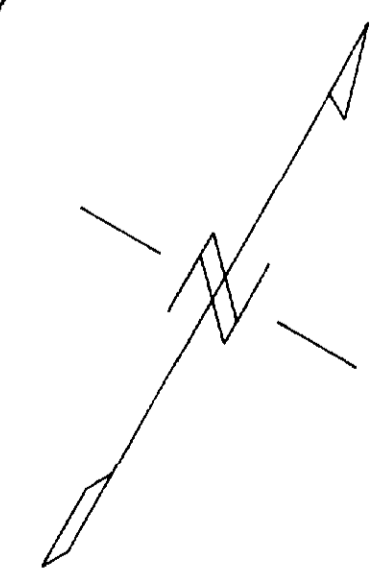
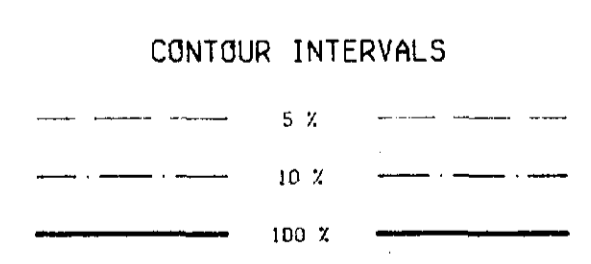
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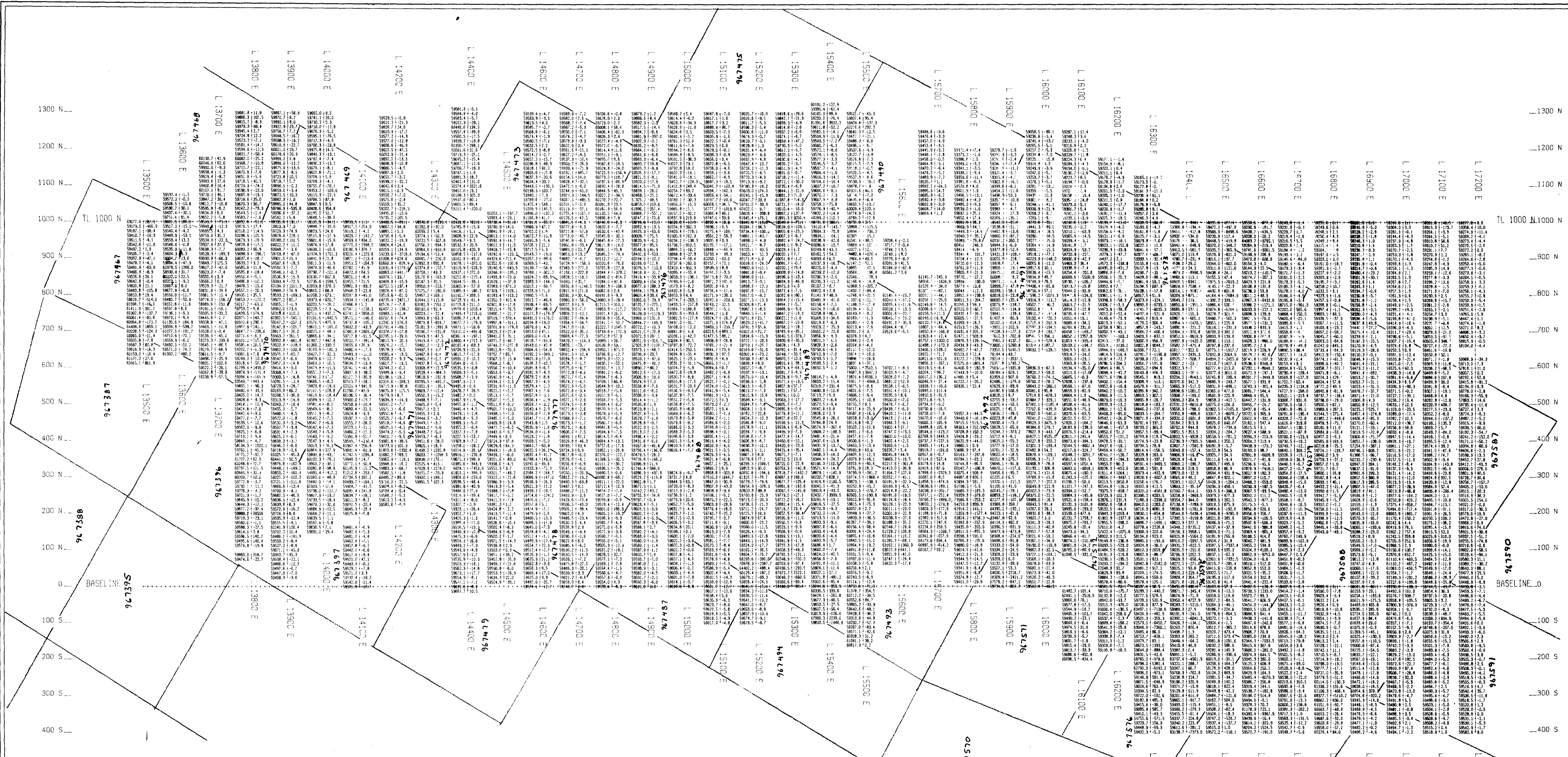
CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

VLF-EM CONTOUR MAP (MAP #5)  
 (FRASER FILTERED IN-PHASE)  
**2.13056**

SURVEY INSTRUMENT: GEM DOME PLUS  
 SURVEY DATES: JULY 19 AUGUST 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT SURVEYING SERVICES LTD.  
 KENORA, ONTARIO





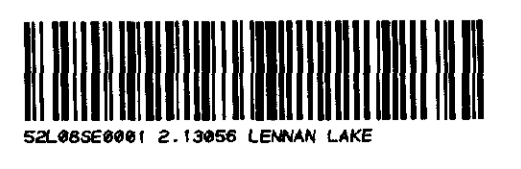


CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENNA LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

MAGNETIC POSTINGS (MAP #6)  
 (TOTAL FIELD & VERTICAL GRADIENT)  
**2.13056**

SCALE 1 : 5 000

Survey Instrument: FOM 4001-25 with Base Station  
 Survey Date: July to August 1989  
 Independent Verification Services Ltd.  
 1000-1000





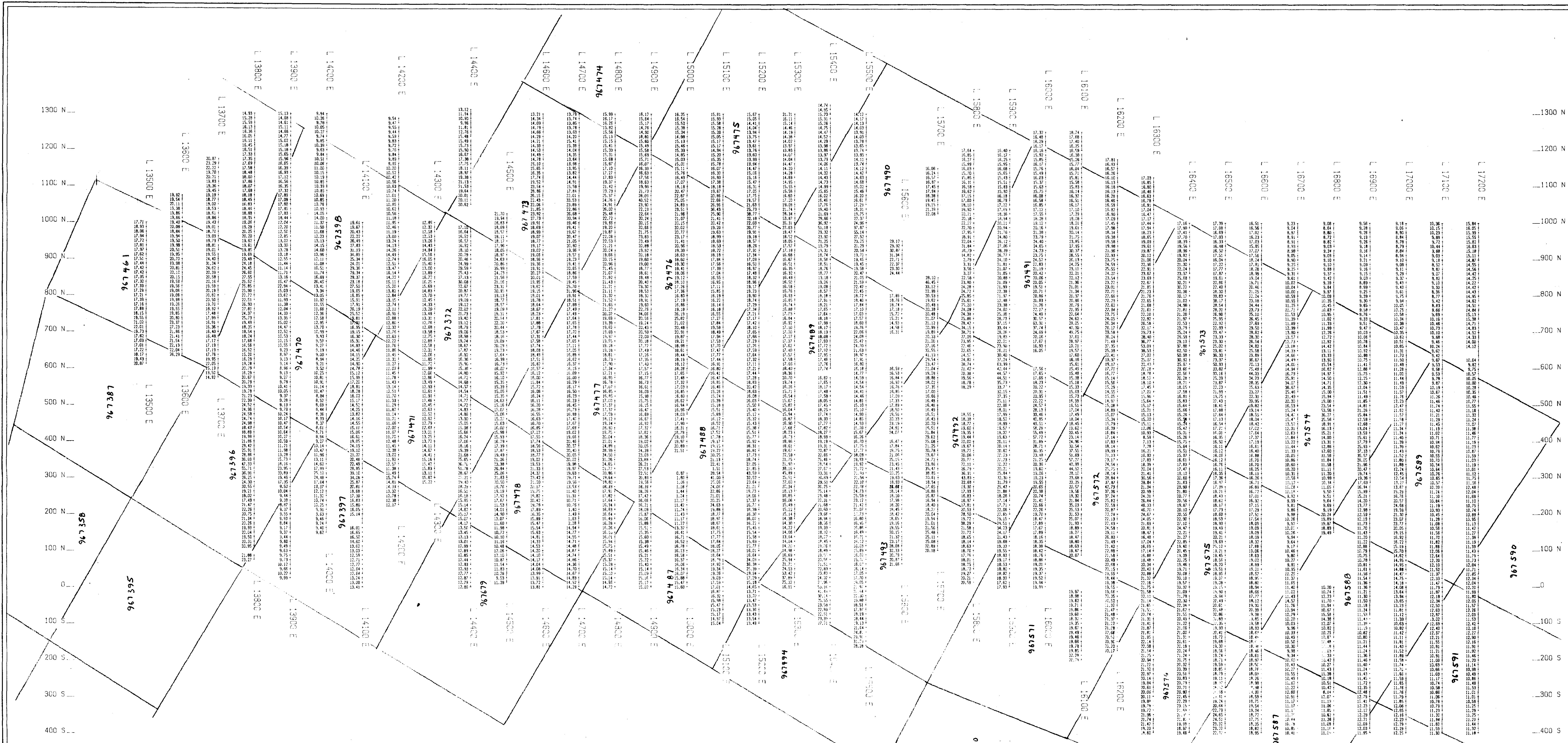
**CHAMPION BEAR RESOURCES LTD.**

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

VLF-EM POSTINGS (MAP #7)  
 (1N-PHASE & QUADRATURE)  
**2.13056**

SWAYNE INSTRUMENTS, S.A. (PVT) LTD.  
 SURVEY INSTRUMENTS & EQUIPMENT  
 1000 W. 10TH AVE. S.W. CALGARY, ALBERTA T2C 1L7  
 INDEPENDENT ELECTRONIC SERVICES LTD.  
 1000 W. 10TH AVE. S.W. CALGARY, ALBERTA T2C 1L7

SCALE 1 : 5 000  
 0 100 200 300 400



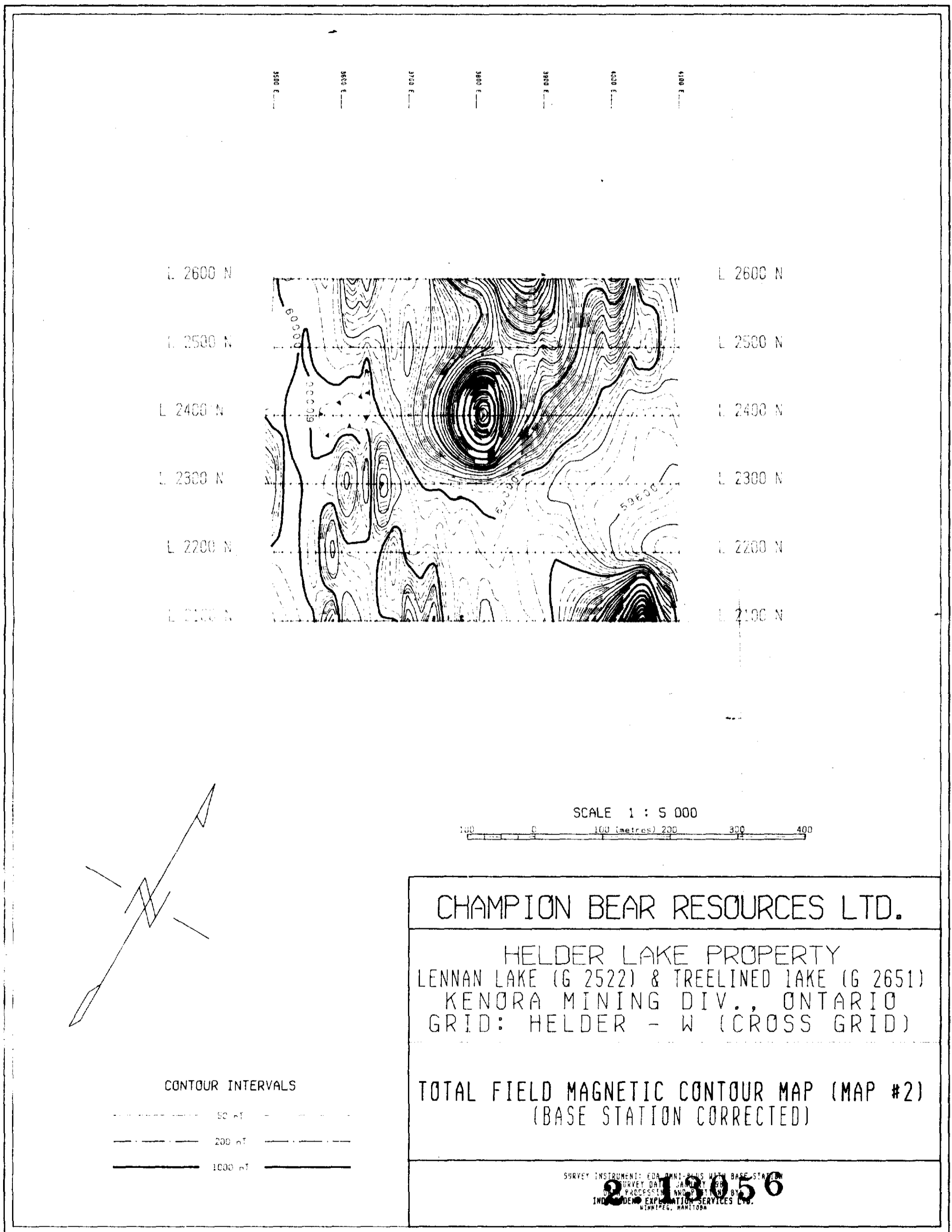
CHAMPION BEAR RESOURCES LTD.

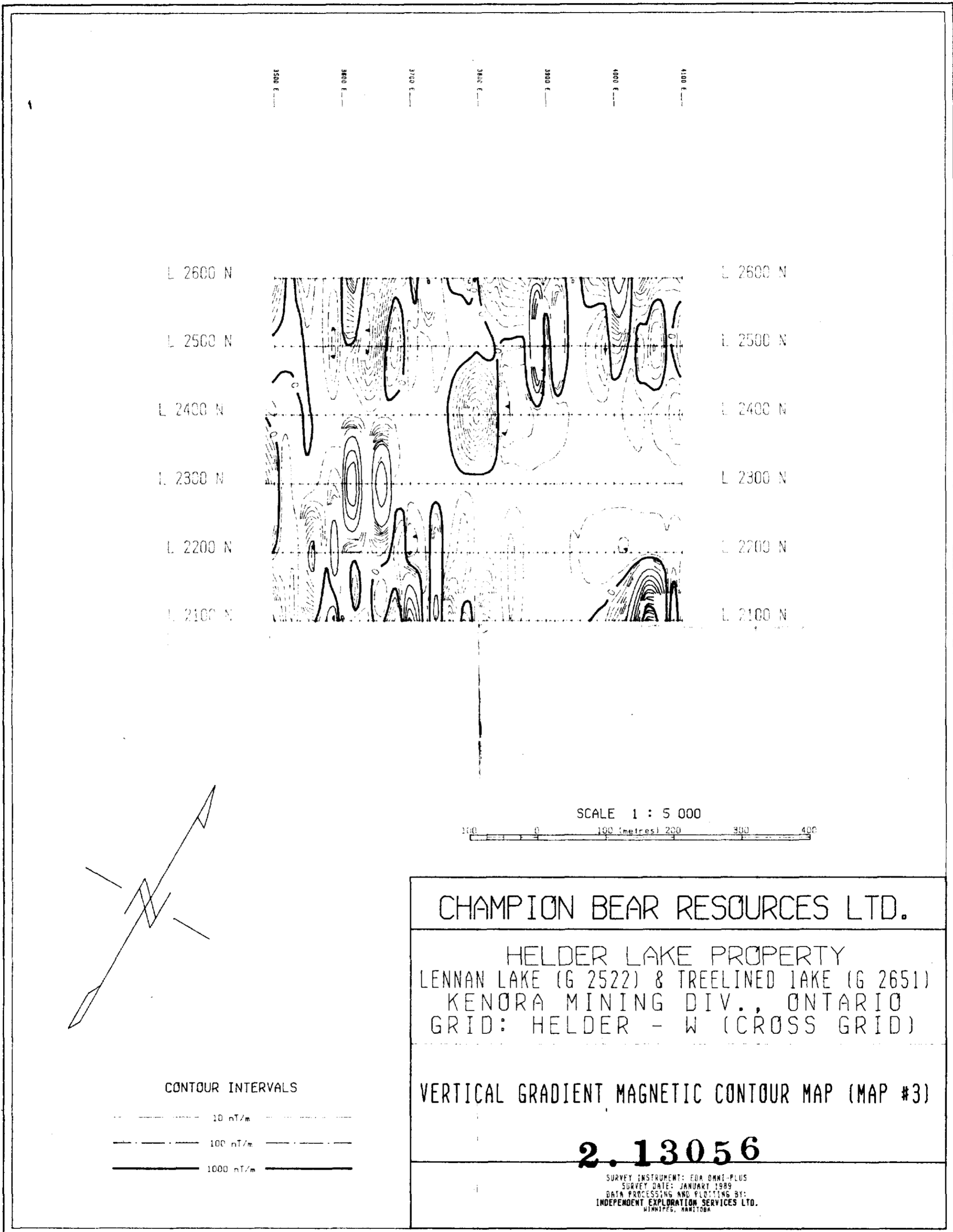
HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E

**2.13056**  
 VLF-EM POSTINGS (MAP #8)  
 (TOTAL FIELD STRENGTH)

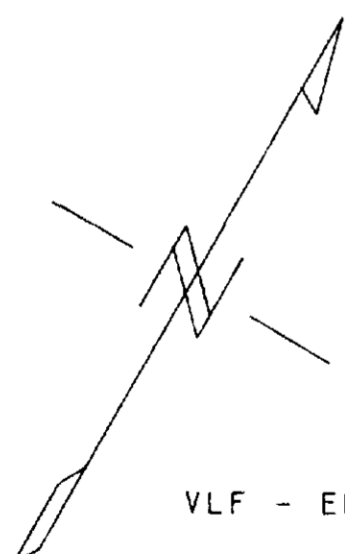
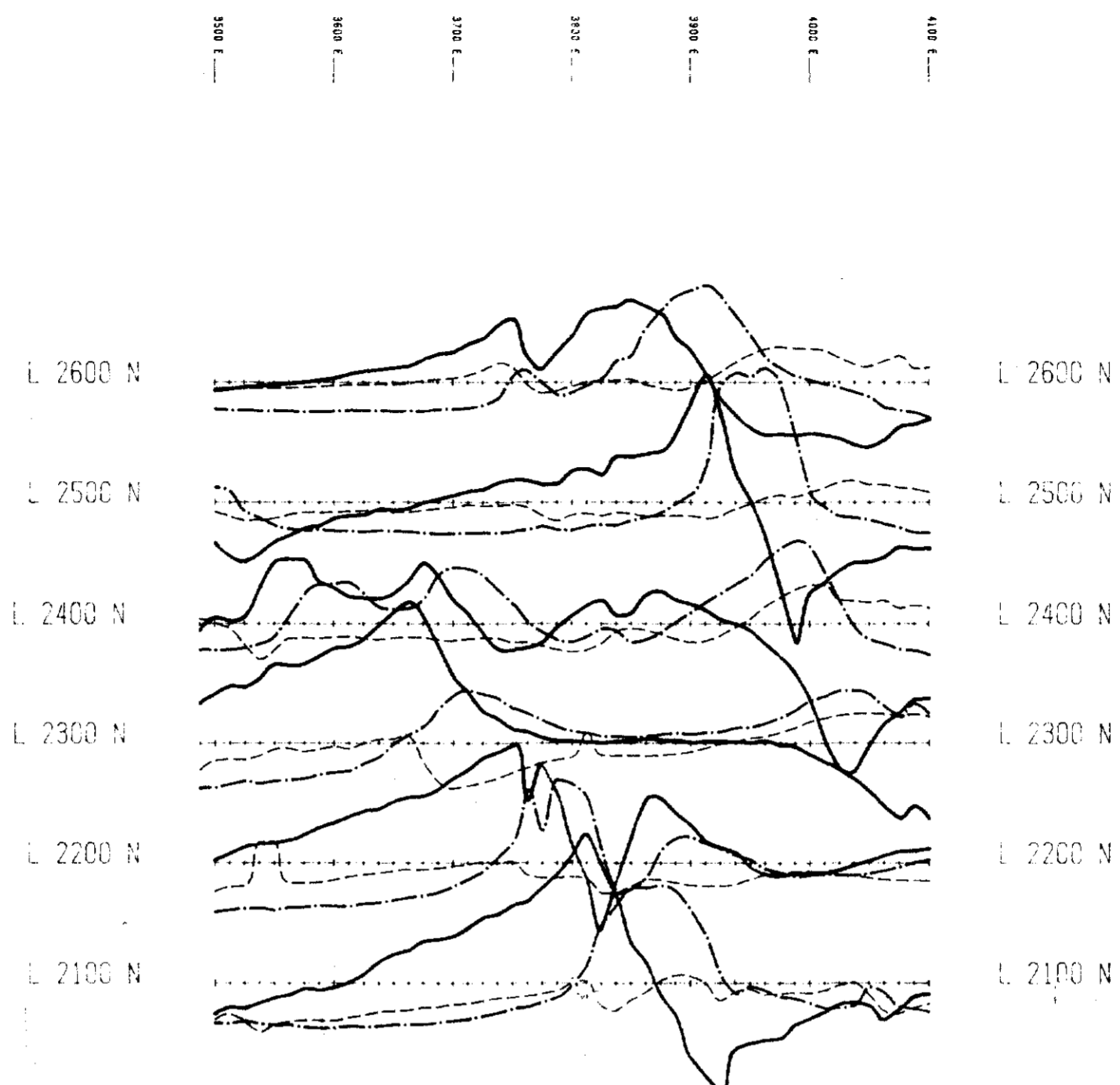
SHEET INFORMATION: E-M 250-1000  
 SHEET DATE: 01/15/03  
 PROJECT: KENORA MINING DIV., ONTARIO  
 INDEPENDENT EVALUATION SERVICES LTD.  
 10/17/02

SCALE 1 : 5 000

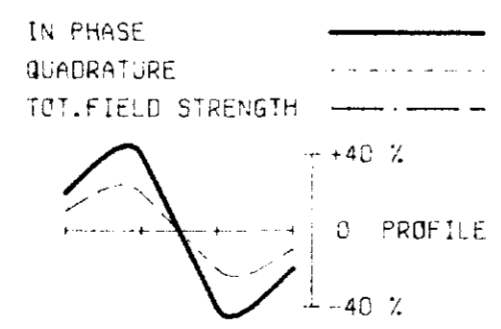




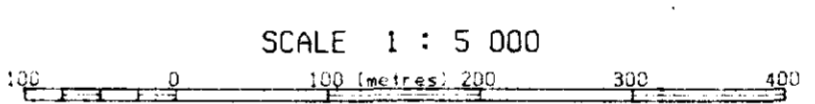
52L00SE0001 2.13056 LENNAN LAKE



VLF - EM PROFILES



Tx Location : CUTLER, MAINE (NNA 24.0 kHz)  
 Instrument : EDA OMNI-PLUS



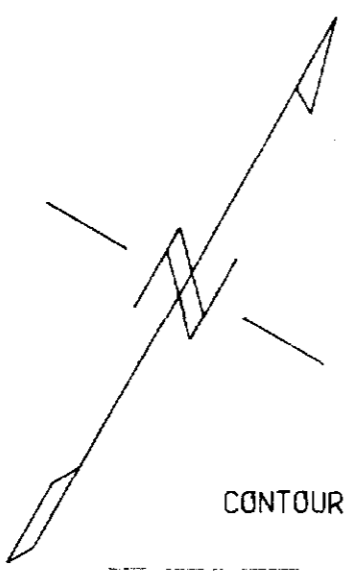
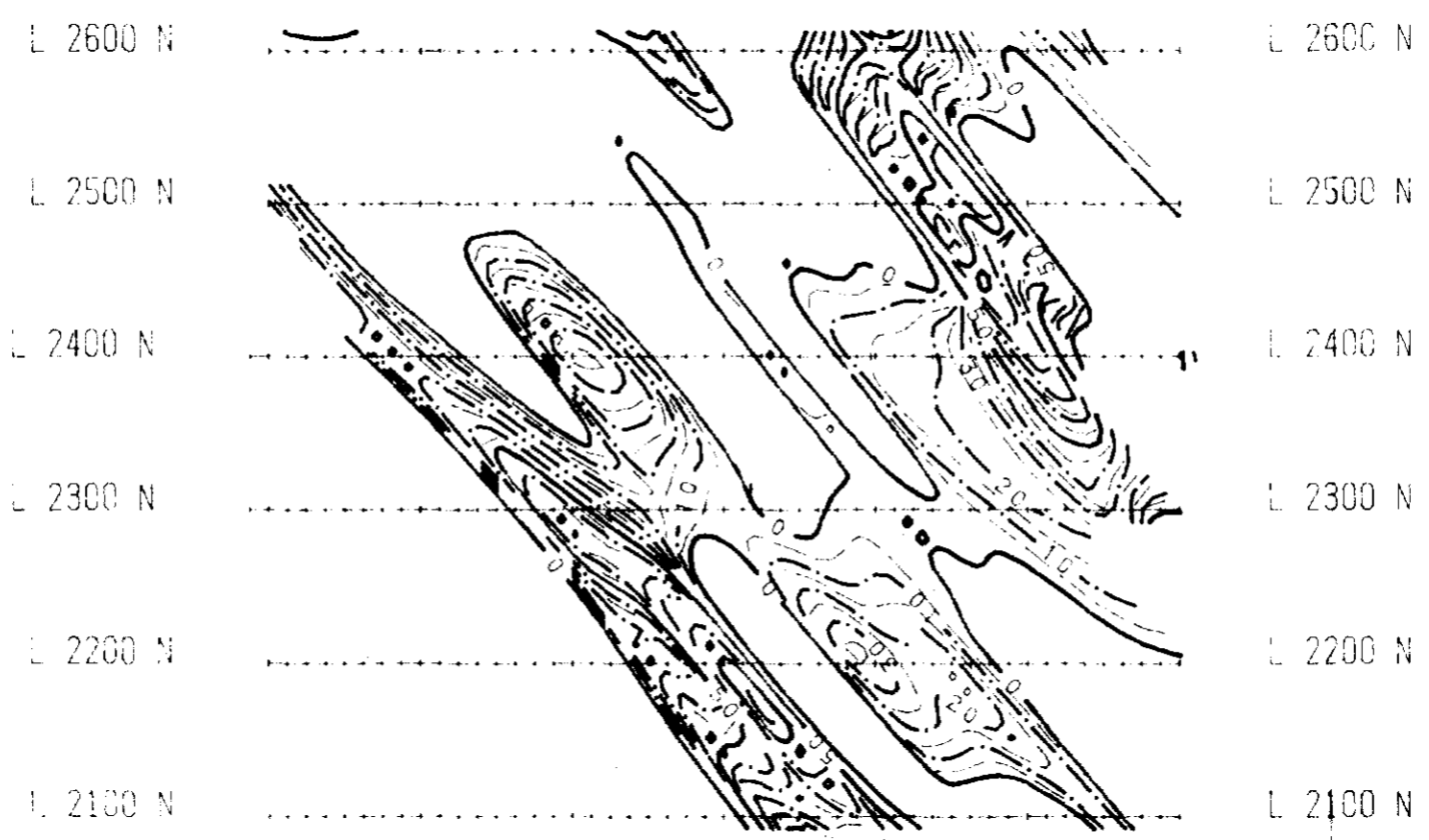
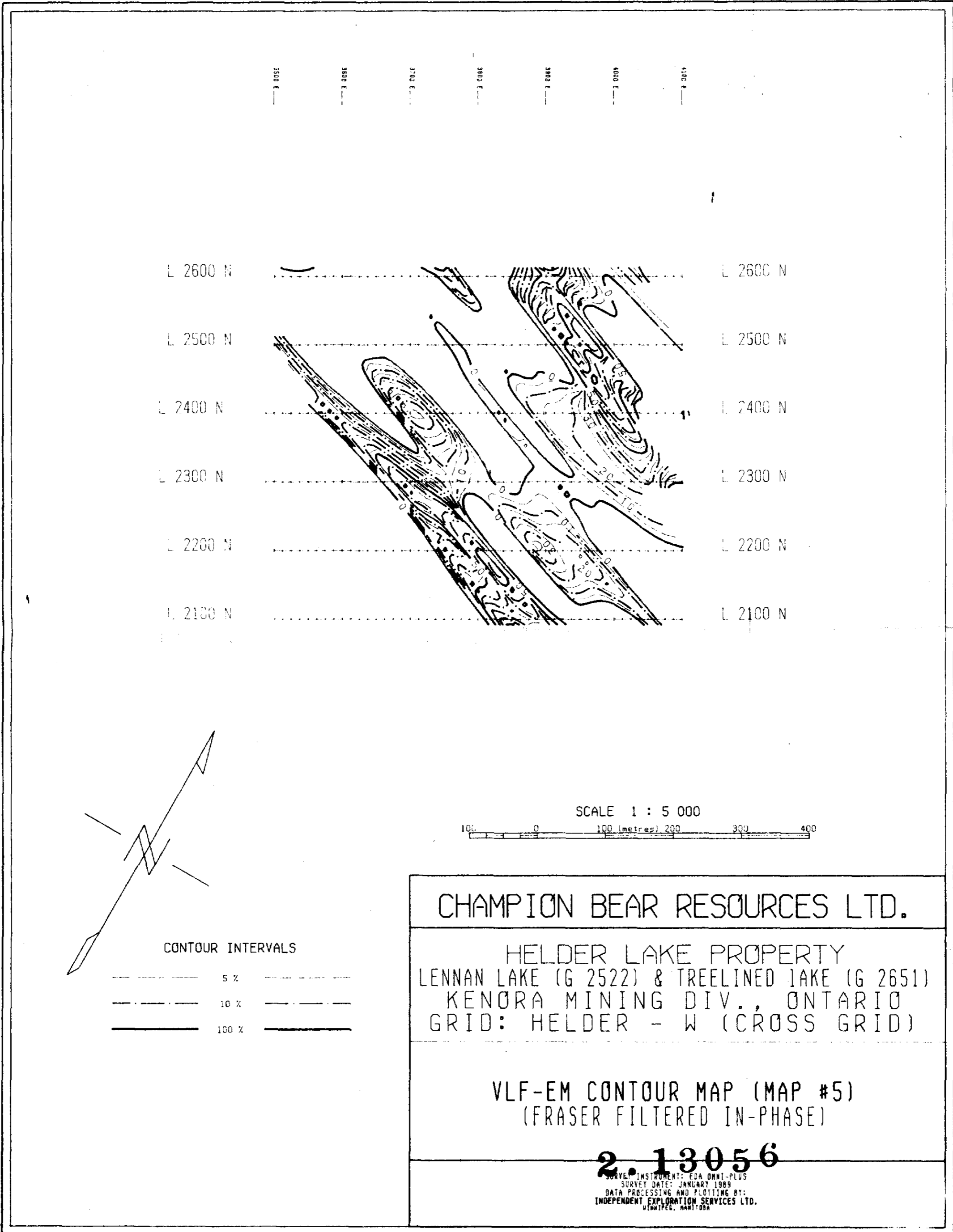
**CHAMPION BEAR RESOURCES LTD.**

HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - W (CROSS GRID)

**VLF-EM PROFILE MAP (MAP #4)**  
**2.13056**

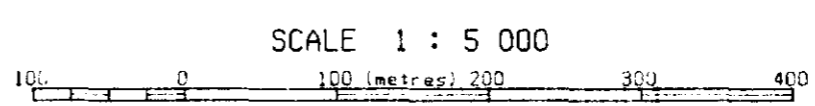
SURVEY INSTRUMENT: EDA OMNI-PLUS  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WINNIPEG, MANITOBA





CONTOUR INTERVALS

-----	5 %	-----
- - - - -	10 %	- - - - -
—————	100 %	—————



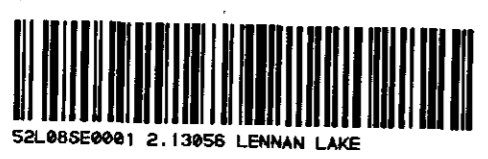
CHAMPION BEAR RESOURCES LTD.

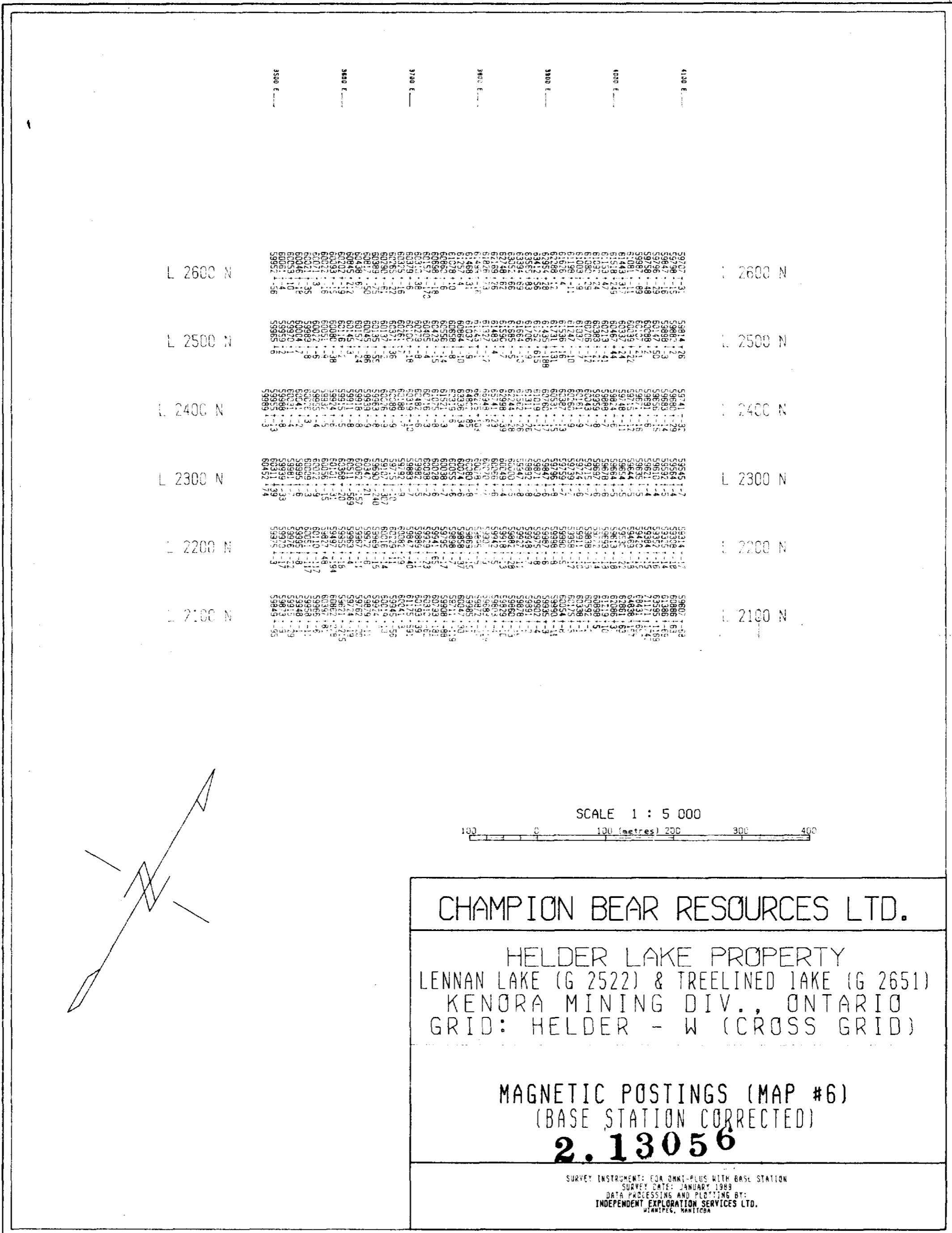
HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - W (CROSS GRID)

VLF-EM CONTOUR MAP (MAP #5)  
 (FRASER FILTERED IN-PHASE)

**2.13056**

SURVEY INSTRUMENT: EDA OHMI-PLUS  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 UTM/PCS: AAH108A



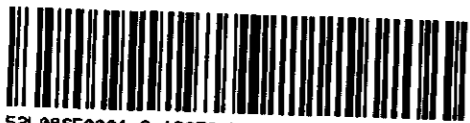


**CHAMPION BEAR RESOURCES LTD.**

HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - W (CROSS GRID)

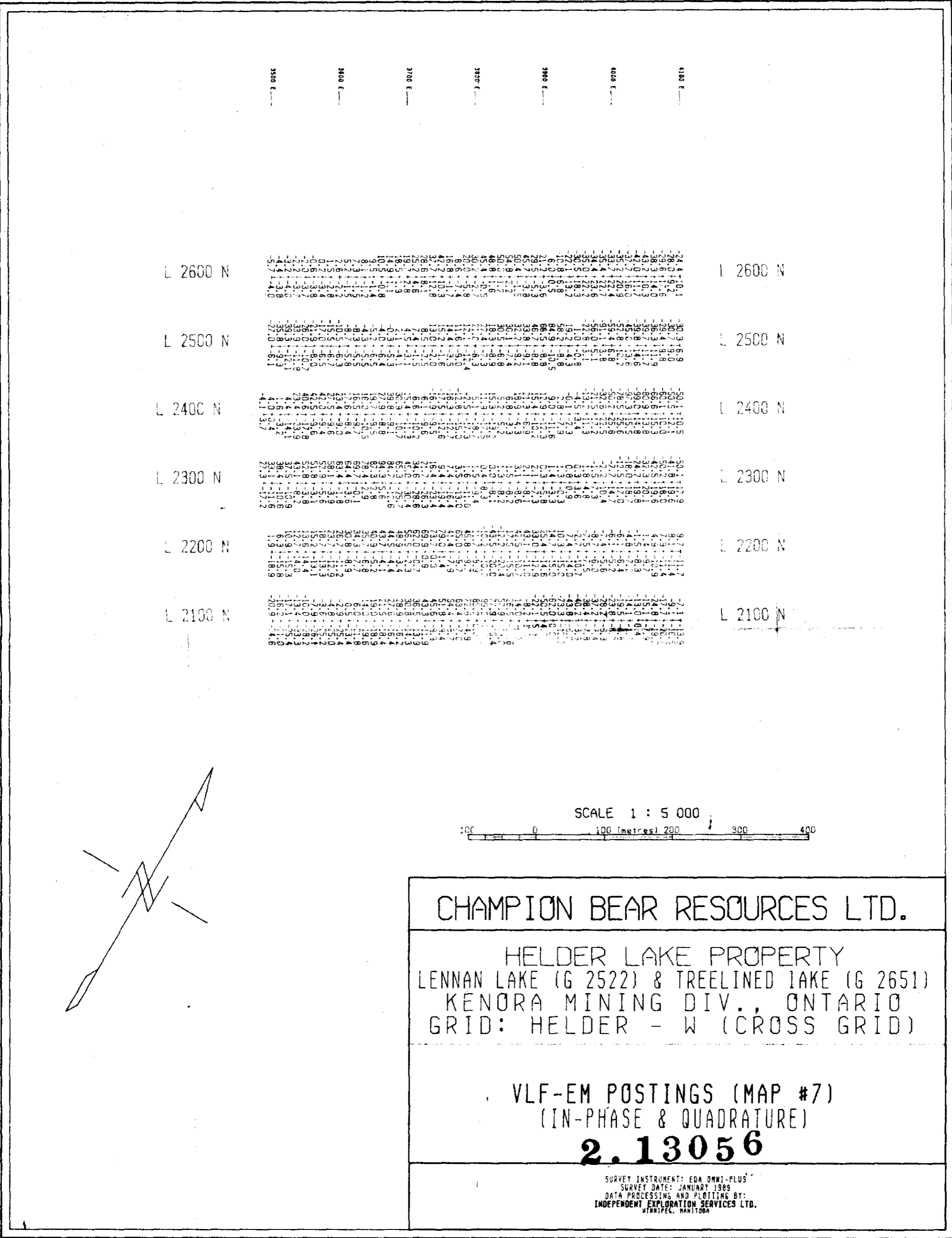
**MAGNETIC POSTINGS (MAP #6)**  
**(BASE STATION CORRECTED)**  
**2.13056**

SURVEY INSTRUMENT: EDA 3MMI-PLUS WITH BASE STATION  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WATNPEC, NANTICOA



52L06SE0001 2.13056 LENNAN LAKE





CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
 LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - W (CROSS GRID)

VLF-EM POSTINGS (MAP #7)  
 (IN-PHASE & QUADRATURE)  
**2.13056**

SURVEY INSTRUMENT: EDA OMNI-PLUS  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 #KRI762, HAMILTON

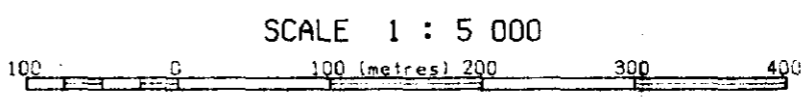
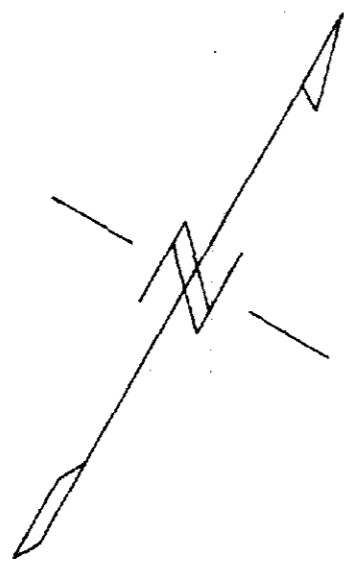


4200 E  
4000 E  
3900 E  
3800 E  
3700 E  
3600 E  
3500 E

L 2600 N  
L 2500 N  
L 2400 N  
L 2300 N  
L 2200 N  
L 2100 N



L 2600 N  
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L 2400 N  
L 2300 N  
L 2200 N  
L 2100 N



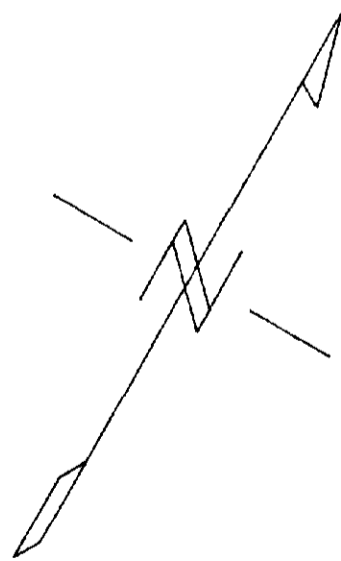
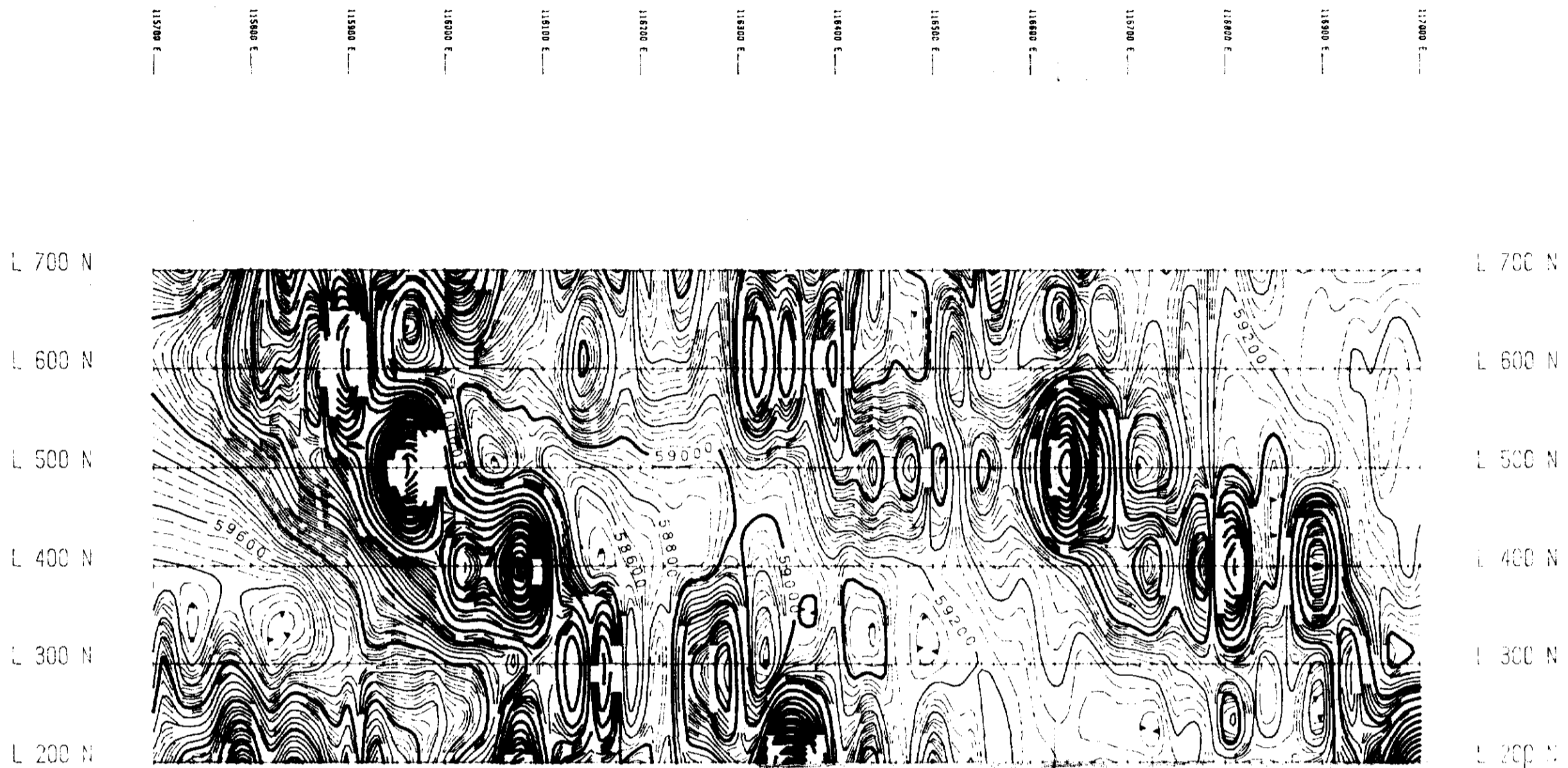
CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE (G 2522) & TREELINED LAKE (G 2651)  
KENORA MINING DIV., ONTARIO  
GRID: HELDER - W (CROSS GRID)

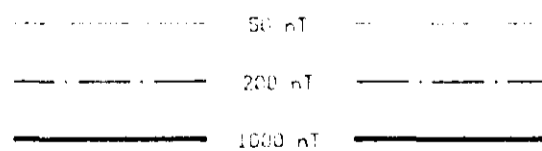
VLF-EM POSTINGS (MAP #8)  
(TOTAL FIELD STRENGTH)

**2-13056**  
SURVEY INSTRUMENTS  
SURVEY DATE: JANUARY 1983  
DATA PROCESSING AND PLOTTING BY  
INDEPENDENT EXPLORATION SERVICES LTD.  
WINNIPEG, MANITOBA

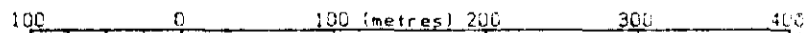




CONTOUR INTERVALS



SCALE 1 : 5 000



CHAMPION BEAR RESOURCES LTD.

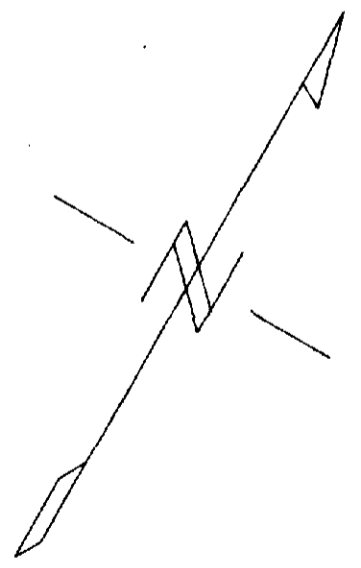
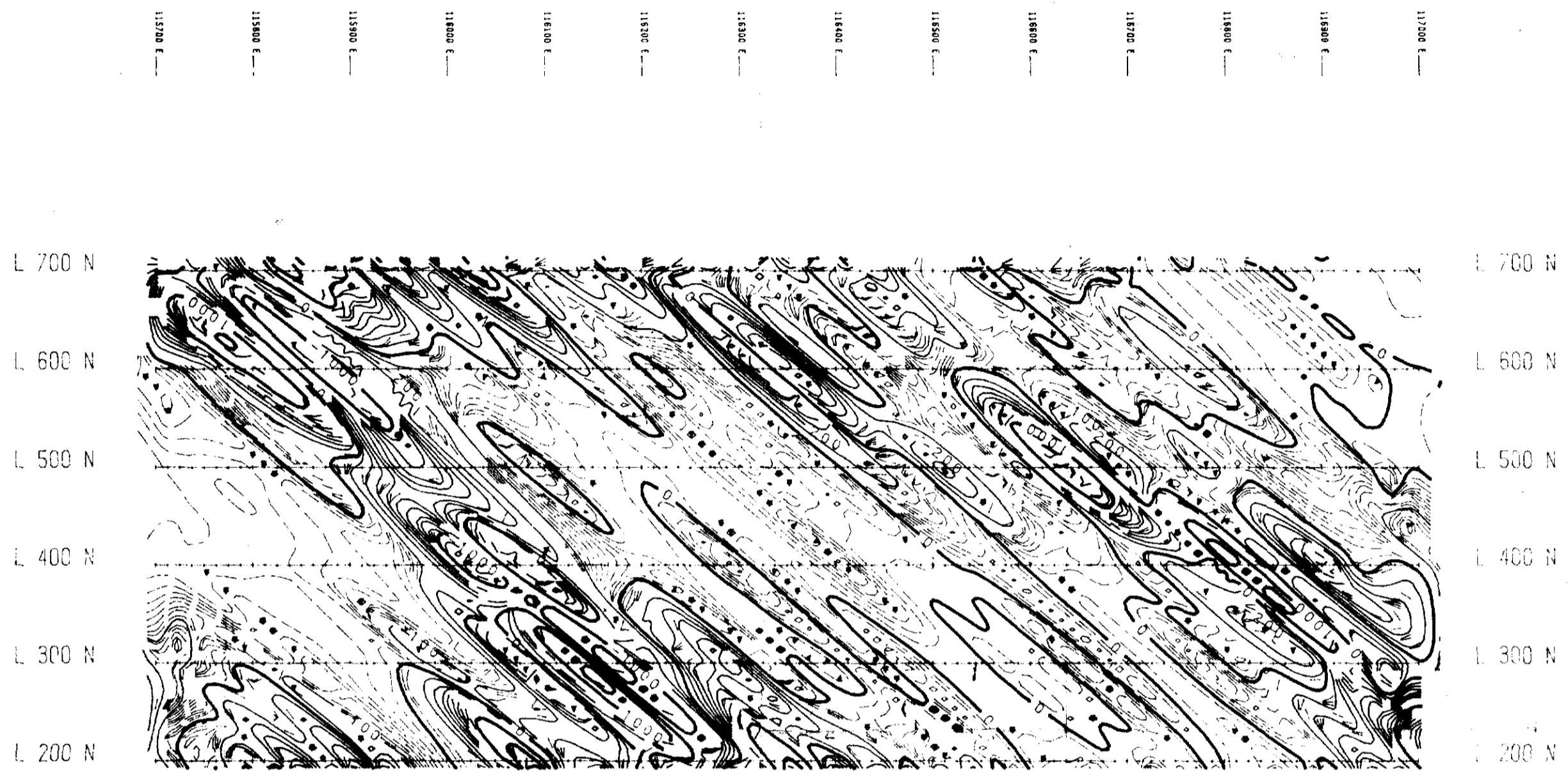
HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E (CROSS GRID)

TOTAL FIELD MAGNETIC CONTOUR MAP (MAP #2)  
 (BASE STATION CORRECTED)

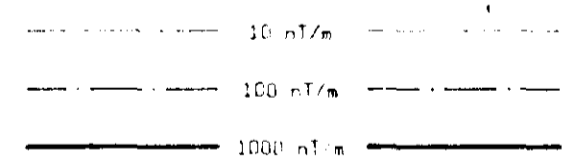
**2.13056**

SURVEY INSTRUMENT: EDI DMM-PLUS WITH BASE STATION  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WINKTEG, MANITOBA





CONTOUR INTERVALS



SCALE 1 : 5 000



CHAMPION BEAR RESOURCES LTD.

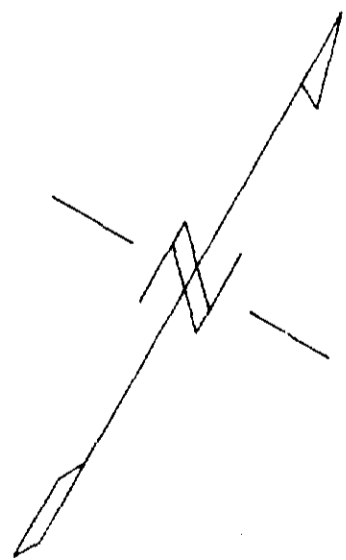
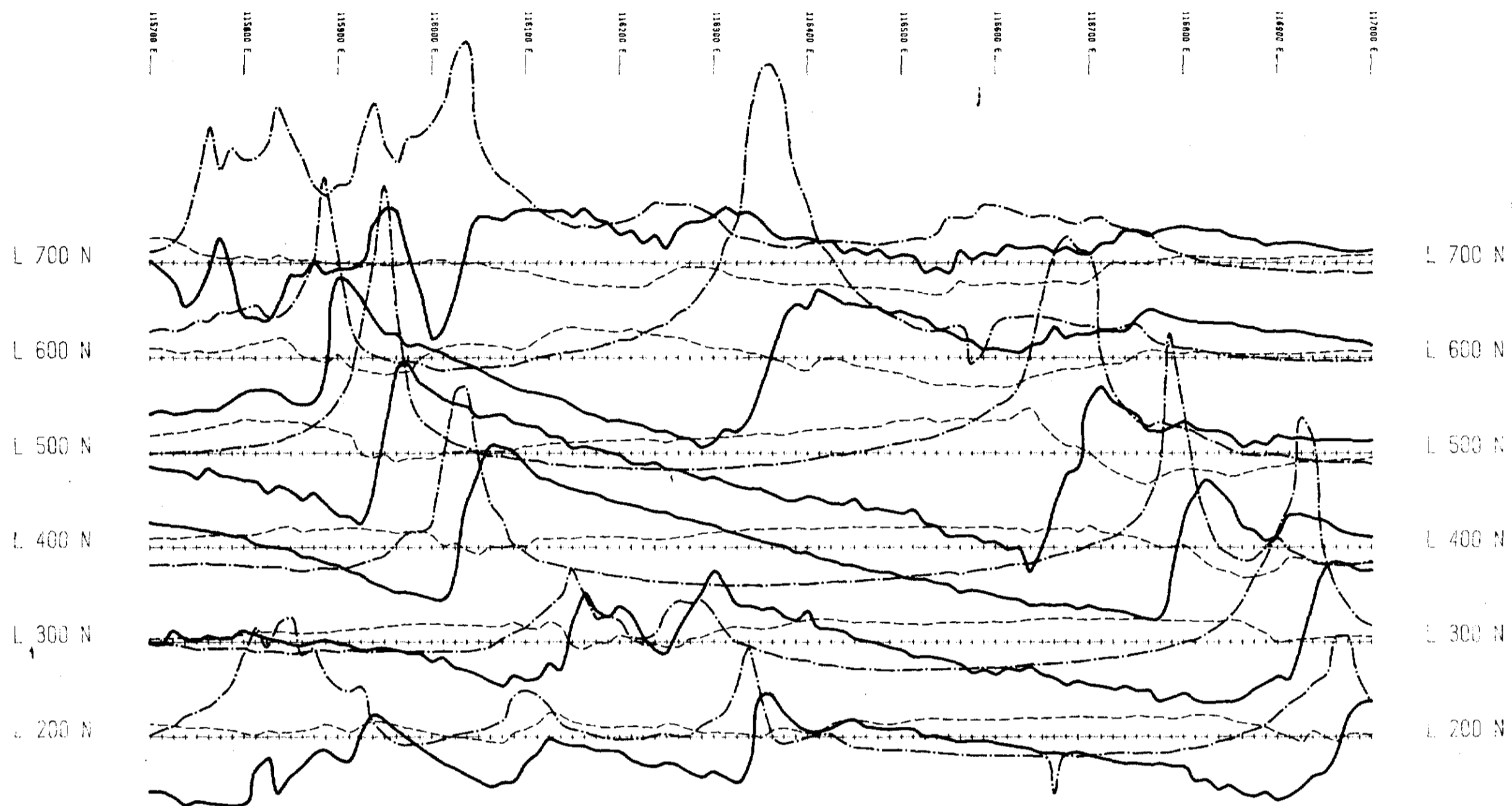
HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E (CROSS GRID)

VERTICAL GRADIENT MAGNETIC CONTOUR MAP (MAP #3)

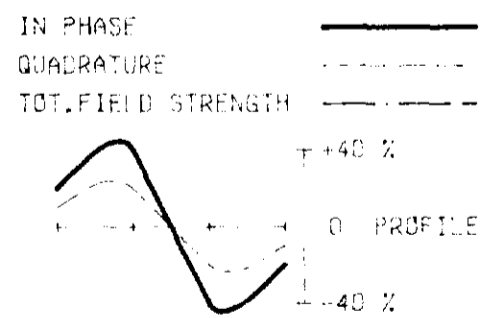
**2.13056**

SURVEY INSTRUMENT: EDA OHMI-PLUS  
 SURVEY DATE: JANUARY 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 WINNIPEG, MANITOBA





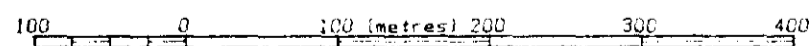
VLF - EM PROFILES



Tx Location : OUTLER, MAINE (NNA 24.0 kHz)

Instrument : EDA OMNI-PLUS

SCALE 1 : 5 000



CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE AREA - G 2522  
KENORA MINING DIV., ONTARIO  
GRID: HELDER - E (CROSS GRID)

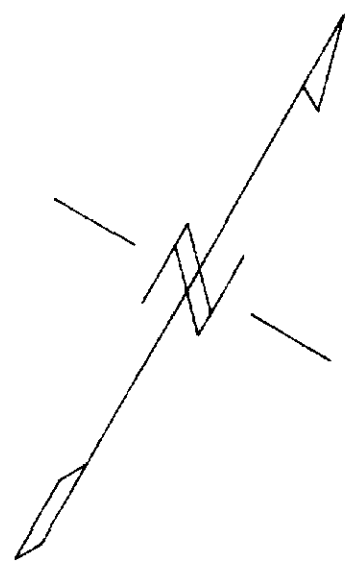
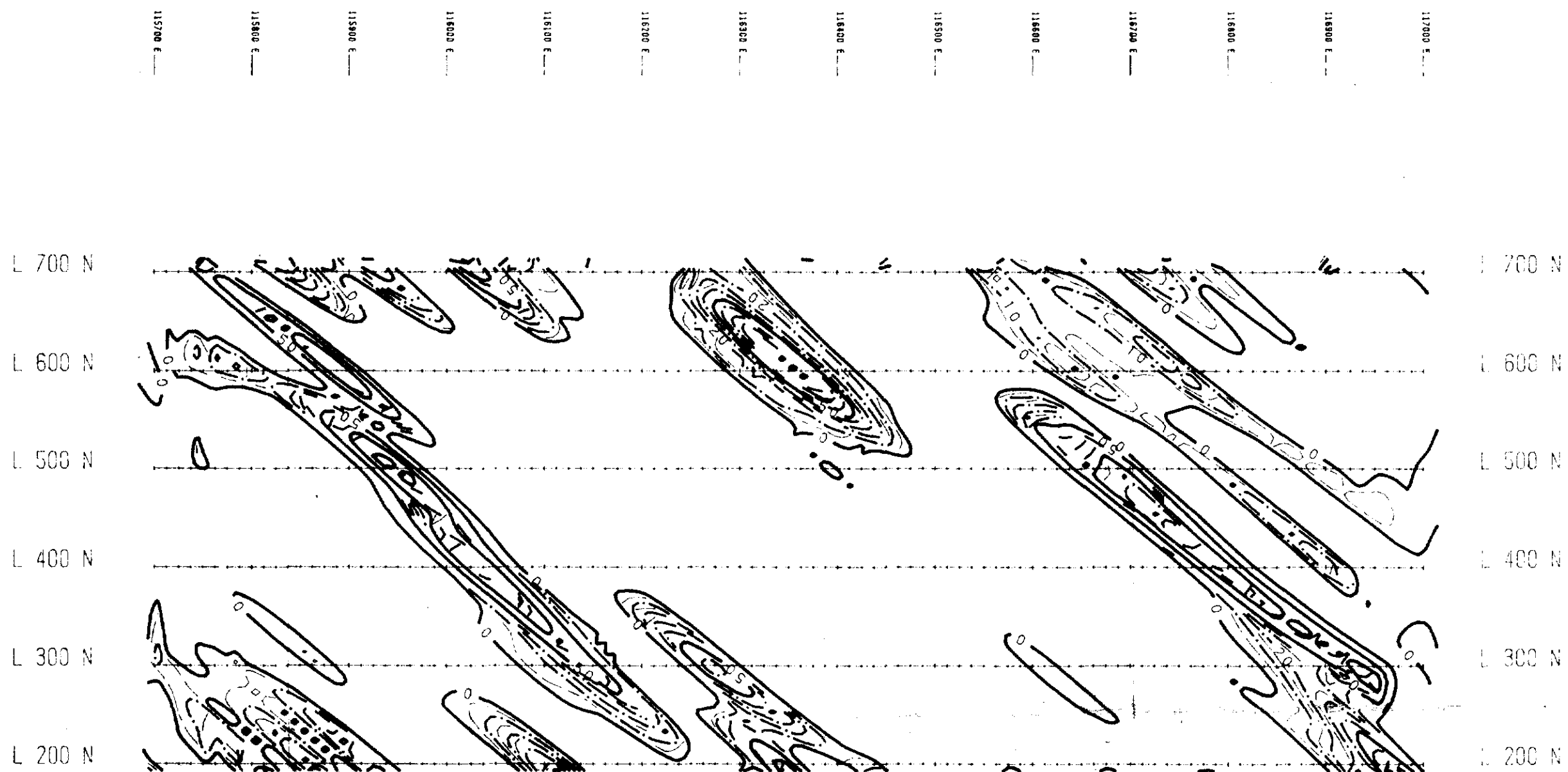
VLF-EM PROFILE MAP (MAP #4)

**2.13056**

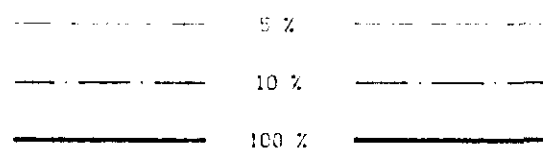
SURVEY INSTRUMENT: EDA OMNI-PLUS  
SURVEY DATE: JANUARY 1989  
DATA PROCESSING AND PLOTTING BY:  
INDEPENDENT EXPLORATION SERVICES LTD.  
VANCOUVER, B.C.



52L685E0001 2.13056 LENNAN LAKE



CONTOUR INTERVALS



SCALE 1 : 5 000



CHAMPION BEAR RESOURCES LTD.

HELDER LAKE PROPERTY  
LENNAN LAKE AREA - G 2522  
KENORA MINING DIV., ONTARIO  
GRID: HELDER - E (CROSS GRID)

VLF-EM CONTOUR MAP (MAP #5)  
(FRASER FILTERED IN-PHASE)

**2.13056**

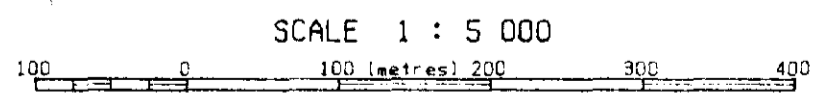
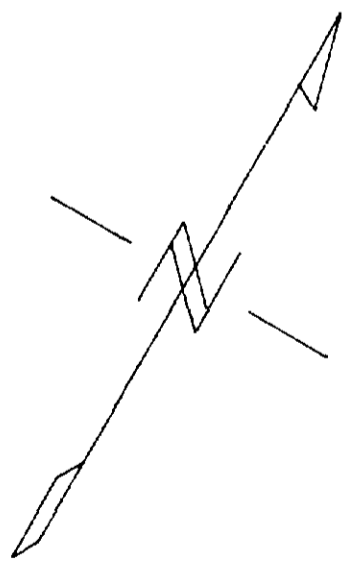
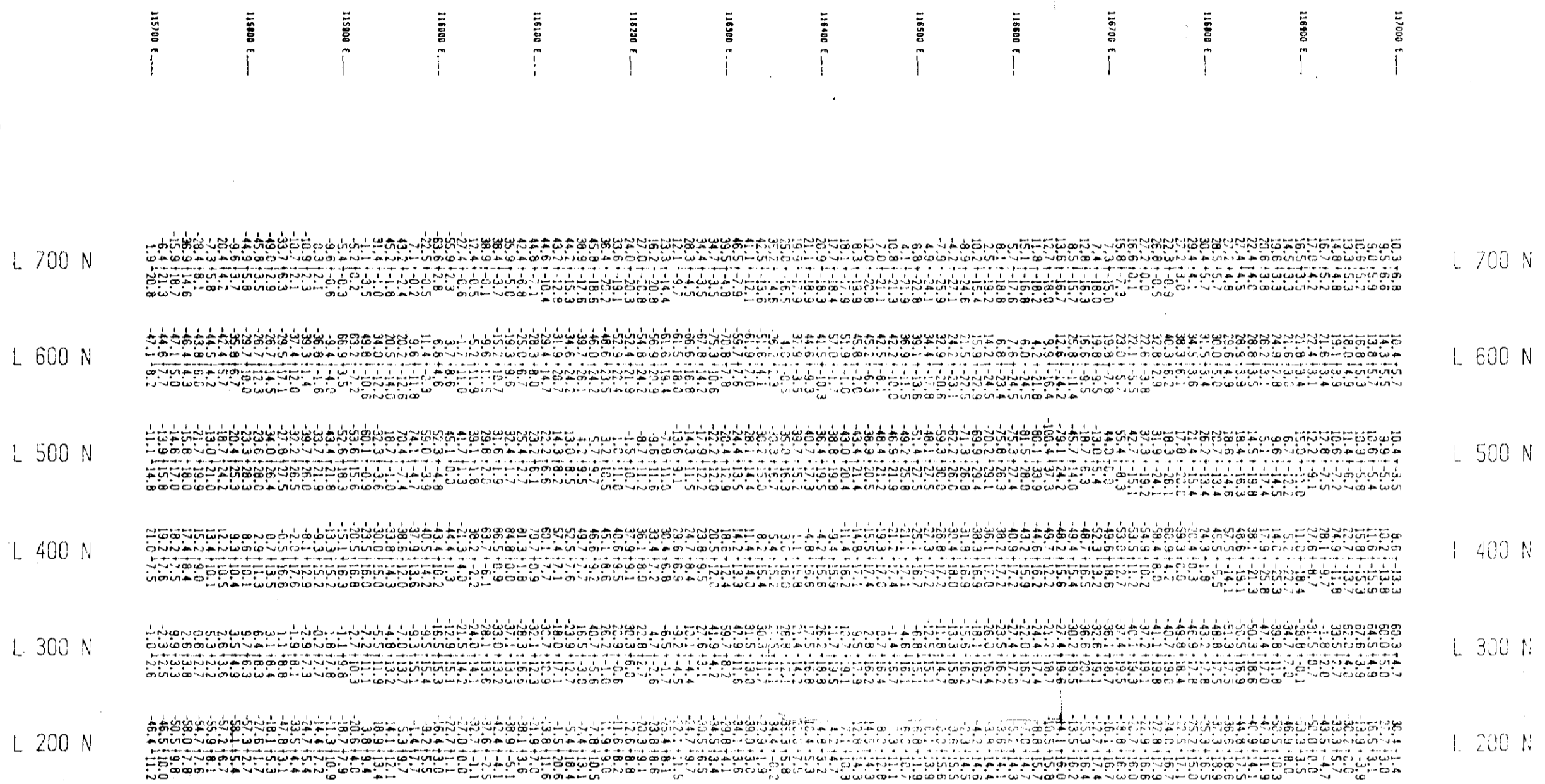
SURVEY INSTRUMENT: EDA OMNI-P-35  
SURVEY DATE: JANUARY 1985  
DATA PROCESSING AND PLOTTING BY:  
INDEPENDENT EXPLORATION SERVICES LTD.  
WINNIPEG, MANITOBA



52L085E0001 2.13056 LENNAN LAKE

630





**CHAMPION BEAR RESOURCES LTD.**

HELDER LAKE PROPERTY  
 LENNAN LAKE AREA - G 2522  
 KENORA MINING DIV., ONTARIO  
 GRID: HELDER - E (CROSS GRID)

VLF-EM POSTINGS (MAP #7)  
 (IN-PHASE & QUADRATURE)

**2.13056**

SURVEY INSTRUMENTS FOR ORNI-PLUS  
 SURVEY DATE: APRIL 1989  
 DATA PROCESSING AND PLOTTING BY:  
 INDEPENDENT EXPLORATION SERVICES LTD.  
 SUDBURY, ONTARIO









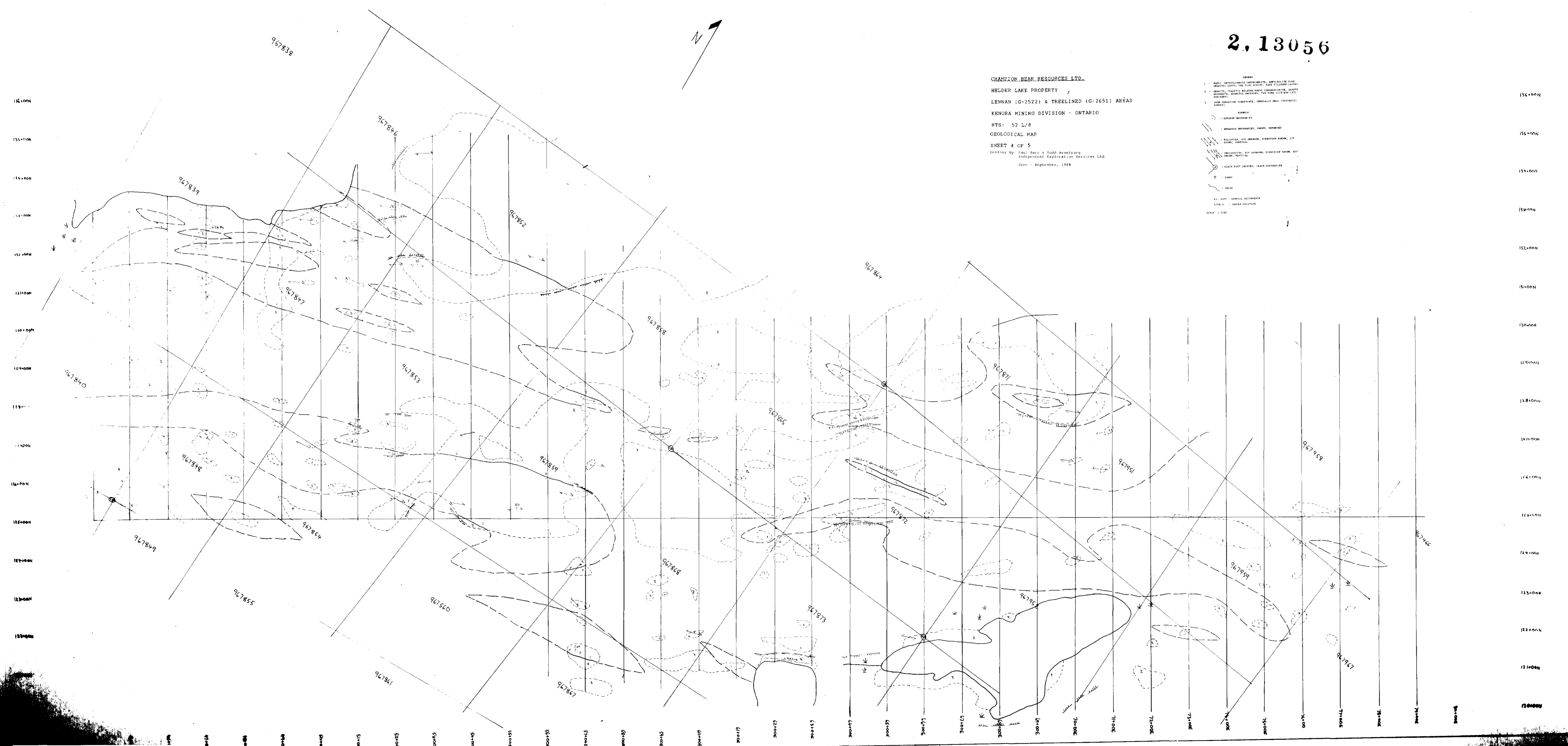


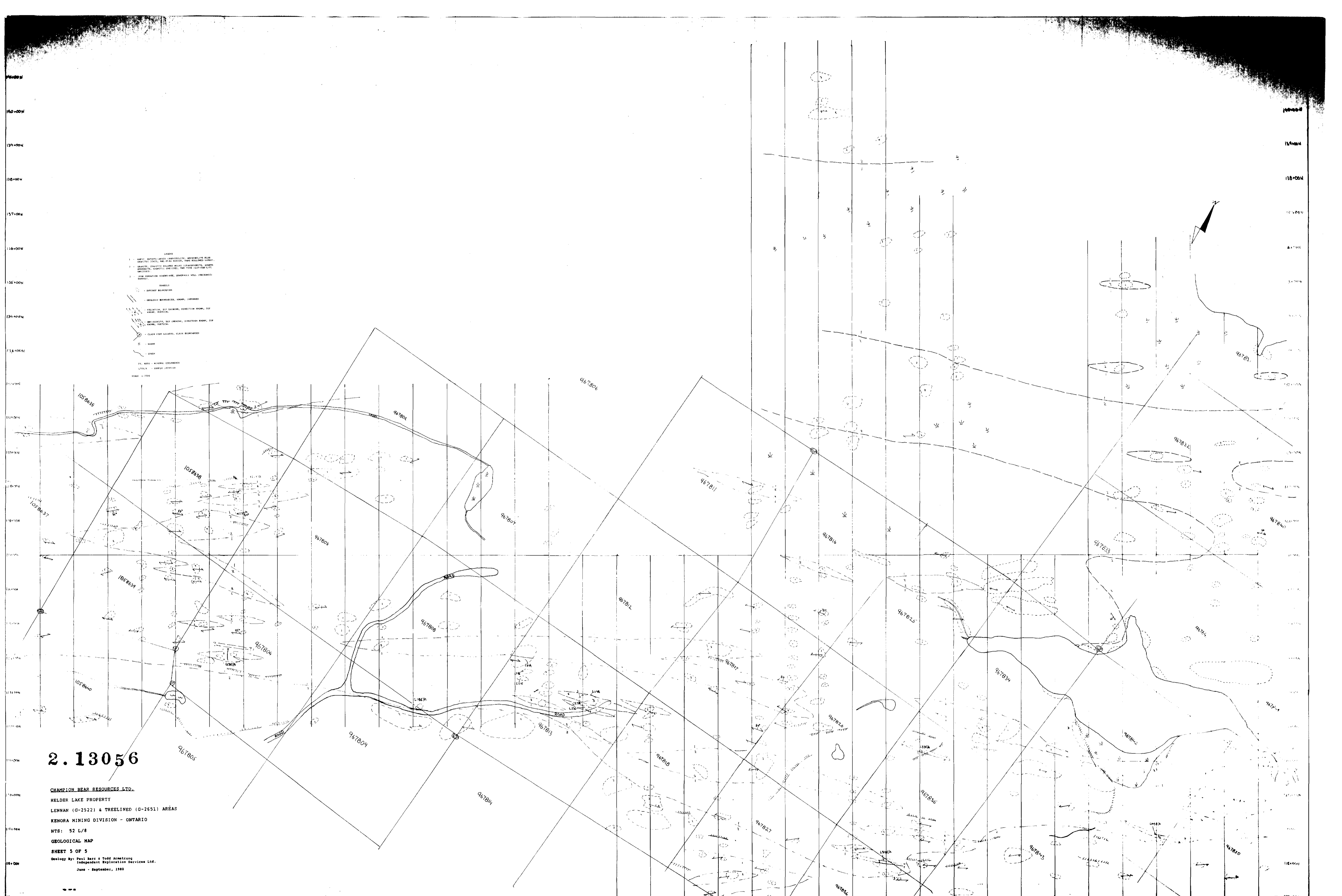


2.13056

CHAMPION BEAR RESOURCES LTD.  
HELDER LAKE PROPERTY  
LENNAN (G-2522) & TREELINED (G-2651) AREAS  
KENDRA MINING DIVISION - ONTARIO  
NTS: 52 L/8  
GEOLOGICAL MAP  
SHEET 4 OF 5  
Drawing by: Paul Burt & Todd Armstrong  
Independent Exploration Services Ltd.  
June - September, 1988

- LEGEND
- 1. MAPS: METEOROLOGICAL, AMPLITUDE, DIRECTION, WIND, VELOCITY, RELATIVE HUMIDITY, SOLAR RADIATION, AND PRECIPITATION.
  - 2. QUANTITATIVE DATA: GRAVIMETRIC, MAGNETIC, GRAVITY, GEOPHYSICAL, AND OTHER DATA.
  - 3. DATA SOURCES: FIELD NOTES, LITERATURE, AND OTHER SOURCES.
- SYMBOLS
- SECTION BOUNDARIES
  - GEOLOGICAL BOUNDARIES, STRATA, STRATIFIED
  - FOLIATION, DIP, UNIFORM, DIRECTION, STRIKE, SLIP, NORMAL, REVERSE
  - UNDEVELOPED, SEE UNIFORM, DIRECTION, STRIKE, SLIP, NORMAL, REVERSE
  - CLAIM FOOT PRINTS, CLAIM BOUNDARIES
  - ROAD
  - RIVER
  - WELL
  - WATER OCCURRENCE
  - WATER LOCATION
- SCALE 1:2500





LEGEND  
 1. METRIC MEASUREMENTS (METERS)  
 2. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
 3. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
 4. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
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 7. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
 8. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
 9. QUANTITIES OF METRIC MEASUREMENTS (METERS)  
 10. QUANTITIES OF METRIC MEASUREMENTS (METERS)

2.13056

CHAMPION BEAR RESOURCES LTD.  
 HELDER LAKE PROPERTY  
 LENNAN (G-2522) & TRELINED (G-2651) AREAS  
 KENORA MINING DIVISION - ONTARIO  
 NTS: 52 L/8  
 GEOLOGICAL MAP  
 SHEET 5 OF 5  
 Geology By: Paul Barr & Todd Armstrong  
 Independent Geological Services Ltd.  
 June - September, 1988

