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VLf-ELECTROMAGNETIC & MAGNETOMETER SURVEYS

CYMBAL EXPLORATIONS INC.

YOUNG'S BAY GOLD PROPERTY

KAKAGI LAKE, KENORA MINING DIVISION

PHILLIPS TOWNSHIP

F.T.Archibald, B.Sc.Geologist
January 10, 1984.



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VLF-Electromagnetics Field Strength (I^o=200°)
Dip Angle
Magnetics (I^o=200°)

GEMINI EXPLORATIONS INC
YOUNGS BAY GOLD PROPERTY
KAKAGI LAKE, KENORA MINING DIVISION

INTRODUCTION & SUMMARY:

From 1932 to 1938, four quartz veins underlying claim 67I2I4 were trenched, sampled, and assayed with encouraging gold values. These veins were resampled in 1980 by the author and high gold values were reconfirmed.

A VLF electromagnetic survey and a magnetometer survey were run immediately over the veins in 1980. These surveys detected quartz veins associated with southeast to southwest trending shears at or close to the contact with diabase, gabbro and/or ultramafic units.

The purpose of the VLF electromagnetic survey is to try and delineate any mineralized zones or shears associated with the gold bearing quartz veins.

The purpose of the magnetometer survey is to delineate geological structure and to determine whether the gold bearing quartz vein systems are stratigraphically or structurally controlled.

The surveys were carried out on a line spacing of 400 feet at stations every 100 feet apart. The grid was carried out over claims: 67I2I4, 67I2I6-2I, and 7I6576-79.

The majority of the claim group is underlain by mafic metavolcanic rocks. These rocks are intercalated with bands of ultramafics and/or gabbro intrusive units.

The VLF electromagnetic survey outlined several southeast and southwest trending anomalies. Many of these are related to conductive overburden in swamp areas. The two strongest anomalies traverse the property in a northeasterly direction across the north and south portions of Youngs Bay. Two weak and discontinuous anomalies trending in a northwesterly direction in the vicinity of claim 67I2I4 parallel areas of quartz bearing shears.

The magnetics trace two paralleling southwest trending zones of high magnetic signature traversing the central portions of the surveyed grid. These correspond to narrow ultramafic or gabbro complexes. Another southeast trending structure, related to a diabase dyke, is traced to the west side of claim 67I2I4.

Many of the VLF electromagnetic anomalies correspond with zones of high magnetic signature.

PROPERTY & ACCESS:

The claim group consists of eleven unpatented mining claims numbered: 7I6576, 7I6577, 7I6578, 7I6579, K67I2I4, and K67I2I6 to 67I22I. The surveys were run over only one of these claims, numbered K 67I2I4.

This contiguous group is found in the Kenora mining district of northwestern Ontario.

The claim group is approximately five air miles north of the village of Nestor Falls, and approximately 57 air miles southeast of the town of Kenora. There are year-round float plane services in both places. Float plane service from Dryden and Fort Frances, at distances of 90 and 60 miles respectively, is also available. Provincial Highway # 7I cuts just to the southwest of the claim group.

The central portion of the claims can be reached by boat along the west arm of Kakagi Lake. Boat launching is available from a government dock which is located along the Kenora-Fort Frances highway and is approximately 1.5 miles to the south of the property.

An old road from the Kenora-Fort Frances highway reaches the southwest end of Youngs Bay, but is in need of major repairs.

The northern section of the claim group was timbered between 1980 and 1981, and can be accessed by four-wheel drive vehicles.

A power transmission line bisects the western portion of the claim group, approximately 1/2 mile to the west of the main showing.

Geology:

The claim is underlain by highly altered and tightly folded mafic volcanic flows which are comprised mainly of pillow basalts. These are overlain by a mixed sequence of intermediate and felsic volcanic units consisting of andesites, tuffs, agglomerates, and pyroclastics. The felsic units are in evidence 1/2 mile to the east of the claim.

The west portion of the claim group has been intruded by a quartz diorite stock. In close vicinity with the mafic

volcanics are found masses of northeasterly trending quartz diorite dykes. Some of these have segregated into siliceous and felsic rich units.

Numerous quartz veins and quartz porphyry dykes, trending northeast and northwest, cut the mafic and felsic volcanic units.

All of the units are cut by northwest trending diabase dykes. One of these, which cuts through the central portion of the claim group, can be traced for over 30 miles. It cuts just to the west of the surveyed claim.

Several narrow but continuous gold bearing veins, trending in a northeast and northwest direction, are found on the property. These veins have little associated mineralization; generally less than 1-2% disseminated sulphides consisting of pyrite, chalcopyrite, and sphalerite. Most of the veins are associated with quartz diorite, quartz porphyry, diabase, or ultramafic flow units. A quartz carbonate zone with associated chalcopyrite and sphalerite mineralization lies along the felsic-mafic volcanic contact to the east of the surveyed claim.

The major structural feature of the area is evident as a broad arc of volcanic-sedimentary interbedded units. The property appears to be at the western nose of an anticlinal fold, with the northern limb cutting through the south part of Dogpaw-Flint Lakes and the southern limb cutting through Cameron-Rowan Lakes. Major northwest trending faults, the Kakagi and Cameron Faults, cut to the east of the nose of the fold.

Many of the gold bearing showings in the area are associated with felsic tuff and carbonatized mafic volcanic units close to the contacts with gabbro intrusives, granite intrusives, ultramafics, and quartz porphyry units. Gold is also erratically distributed in sheared, carbonatized and silicified zones within the volcanic (mafic and felsic) units.

Gold bearing quartz veins, from 6 to 60 inches in width, have been located on the property. Visible gold has been observed in these veins.

Discussion of the Magnetometer Equipment:

The survey was completed with the use of the Exploranium -Geometrics 'Unimag' proton magnetometer. It has a digital readout with a sensitivity of plus or minus 10 gammas.

The accuracy of the readings is increased by averaging two or three readings, or until the readings settle out to a normalized reading. The range selector is changed up or down in areas where there is high magnetic noise; until a station with a normalized reading is found.

The 'world gamma range' setting on the instrument was brought down to a scale relative to the regional magnetics of the area when plotting the final resultant readings. The instrument requires no calibration once the proper range setting is found. Every few hours the readings are checked at a base station. Results are plotted at 500 gamma intervals, after plotting corrections for daily diurnal drift. Base plans are plotted at a scale of one inch to two hundred feet.

Station readings were taken at 100 foot intervals on lines spaced at four hundred feet apart.

Actual field work was carried out during December and January of 1983 and 1984 respectively.

Discussion of VLF Electromagnetic Equipment:

The Crone VLF electromagnetic unit utilizes higher than normal electromagnetic frequencies and is capable of detecting small sulphide bodies and disseminated sulphide deposits. It accurately isolates banded conductors and operates through areas of high noise and interference levels.

This method is capable of deep penetration but due to the high frequency used, its penetration is limited in areas of clay and conductive overburden. The components of dip angle in degrees of the magnetic field component, field strength of the magnetic component of the VLF field, and the out of phase component of the magnetic field are measured at each station.

There are several different channels or stations available; each with a different frequency. A channel to be used should be parallel to the general strike of the area. If this cannot be

determined, then two orthogonal stations are used to define any possible conductors.

The dip angle measurement measures the angle of inclination from horizontal of the direction of the resultant VLF or the amplitude of the major axis of the polarization ellipse. It is detected by a minimum on the field strength meter and is read from an inclinometer with a range of plus or minus 90° . A conductor is designated by a true crossover pattern of the readings. The measurement is taken from an audio null when the instrument is held in a vertical position; after turning perpendicular to the direction in alignment with the VLF field. The VLF field is found by an audio null or minimum field strength measurement when the instrument is held in a horizontal position. The accuracy of the dip angle measurement is plus or minus $\frac{1}{2}$ degree.

The field strength measurement defines the shape and attitude of the conductor by the strength of the field in the horizontal plane or the amplitude of the major axis of the polarization ellipse. It is the maximum reading obtained from the field strength meter when the instrument is rotated in the horizontal plane, and is measured as a percent of normal field strength established at a base station. The field strength of the VLF stations drifts with time, and must be adjusted with the base station every few hours. The field strength measurement has an accuracy of plus or minus 2%.

The out of phase component of the magnetic field, as a percent of the normal primary field, is sensitive to a low order of conductivity; lower than the dip angle. It is used to locate conductors of a low order of magnitude. It is the measurement of the secondary field produced by a ground conductor which is in a different phase than the primary field. This is the minimum reading of the field strength meter obtained when measuring the dip angle. The measurement has an accuracy of plus or minus 2%.

The survey was carried out at 100 foot centres on lines spaced at 400 feet apart, during the months of December, 1983 and January, 1984.

Results:

VLF Electromagnetics:

Anomaly A is a weak-discontinuous conductive anomaly which trends in asouth to southeast direction. It follows and parallels a gold-bearing quartz vein shear. This anomaly is followed for 800 feet to the south where the effects of conductive overburden in Youngs Bay probably mask the anomaly so that it cannot be followed any further by the survey method used.

Anomaly B is a weak-discontinuous conductive anomaly which parallels the contact between ultramafics/gabbro intrusives and mafic metavolcanics. It is a south to southeast trending anomaly which is followed for 200 feet before it continues off the survey grid to the north. It parallels immediately to the east of a gold-bearing quartz filled shear.

Anomaly C is a strong northeast trending anomaly which coincides with the north side of Youngs Bay. It probably outlines conductive overburden in this section, as it cuts all of the rock units; including diabase dykes.

Anomaly D is a moderate to moderately strong anomaly which trends in an east-west direction across the survey grid. It probably coincides with conductive lake bottom sediments in the south part of Youngs Bay.

Anomaly E is a moderately strong but discontinuous anomaly which continues in a northeast direction across the central portions of claims 67I2I6 and 67I2I7, and across the top of claim 67I22I. It follows an area of low swampy ground and probably traces conductive overburden. It traces close to the contact between ultramafics/gabbro and the mafic metavolcanic units.

Anomaly E is a weak to moderately strong anomaly which trends in a northeasterly direction across the central portions of claims 67I220 and 67I22I. It follows an area of low swampy ground which has probably influenced this anomaly; although it parallels another ultramafic/gabbro- mafic metavolcanic contact.

Anomaly F is a weak anomaly which was traced in a northeasterly direction for 800 feet before it continues off the property on both sides. Located at the boundary between claims 7I6576 and 7I6577, it coincides with a low lying swampy area which has probably influenced this anomaly.

Magnetics

There is a high degree of magnetic variation underlying the grid surveyed which is caused by the presence of rocks such as diabase, ultramafics and/or gabbro intrusives which have a high magnetic signature. These units cross one another in the area underlying Youngs Bay. Readings of up to 9000 gammas above the normal background have been observed during the survey. Much of the survey grid is underlain by mafic metavolcanic units which give a low constant magnetic signature.

Anomalous Trend A is traced in a southeasterly direction across the west side of claim 67I2I4 and across the boundary between claims 39I0 and 39II. This zone of high magnetic signature, of approximately 300 feet in width, corresponds to a diabase dyke structure.

Anomalous Trend B is traced in a southwesterly direction across the eastern sections of claims 7I6579 and 67I2I8. It is a zone of discontinuous high magnetic susceptibility of approximately 300 feet in width which traces a zone of ultramafics or gabbro intrusives.

Anomalous Trend C is paralleling approximately 500 feet to the south of Trend B, and is traced in a southeasterly direction. It traces an ultramafic or gabbro complex which is between 100 and 400 feet in width.

Conclusions:

The VLF electromagnetic anomaly was successful in tracing two gold bearing quartz-shear zones on claim 67I2I4; although continuations of these zones were masked by conductive overburdens underlying Youngs Bay.


The magnetometer survey was successful in outlining the ultramafic/gabbro complexes and the diabase dyke structures.

It is known that gold is associated with quartz rich shears which lie at or close to the contacts between the mafic metavolcanics and the gabbro/ultramafic complexes.

These surveys have been successful in tracing some of the gold bearing zones as well as indicating areas which should be further prospected or investigated.

High variations in signature from both the VLF electromagnetics and the magnetics indicates that surveys with greater detail, such as a grid spacing of 200 feet between lines, should be carried out to outline the zones with more accuracy.

Toronto, Ontario.
January 10, 1984.



F.T. Archibald, B.Sc. Geologist.



Ministry of
Natural
Resources
Ontario

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

54-84

Instructions: - Print type or print.
- If number of mining claims traversed

Apr. 28th

The Mir



52F04NW0010 2.6403 PHILLIPS

900

Type of Survey(s)
MAGNETOMETER & VLF ELECTROMAGNETICS

Claim Holder(s)
Cymbal Explorations Inc.

Prospector's Licence No.
1-924

Address
806-88 University Ave. Toronto, Ontario M5J 1T6

Survey Company
F.T. Archibald Consulting Ltd.

Date of Survey (from & to)
28 12 83 07 1 84

Total Miles of line Cut
9.0

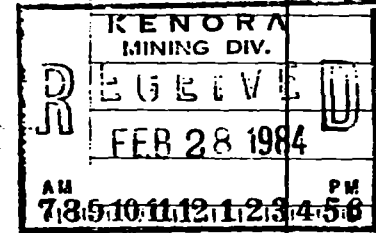
Name and Address of Author (of Geo. Technical reports)
F.T. Archibald 702-100 Adelaide St. W Toronto, Ont. M5H 1S3

Credits Requested per Each Claim in Columns at right

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim			Mining Claim		
Prefix	Number	Expend. Days Cr.	Prefix	Number	Expend. Days Cr.
K	671216	60			
	671217	60			
	671218	60			
	671219	60			
	671220	60			
	671221	60			
	716576	60			
	716577	60			
	716578	60			
	716579	60			



Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claims(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.

671214

Total number of mining claims covered by this report of work. **10**

For Office Use Only

Year Days Credits recorded
600

Date recorded
Feb. 28/84

Mining Recorder
[Signature]

Date approved as recorded
84 28 07

Date
Jan. 9, 1984

Recorded Holder or Agent (Signature)
[Signature]

Certification Verifying Report of Work

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

Name and Postal Address of Person Certifying
F.T. Archibald



Mining Lands Comments

To: Geophysics *Mr. Barlow.*

Comments

<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date <i>Oct 18/84</i>	Signature <i>R.R.H.</i>
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To: Geology - Expenditures

Comments

<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature
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To: Geochemistry

Comments

[Handwritten mark]

<input type="checkbox"/> Approved	<input type="checkbox"/> Wish to see again with corrections	Date	Signature
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Our File: 2.6488

1984 02 29

Mr. Wade Mathew
Mining Recorder
Ministry of Natural Resources
808 Robertson Street
Box 5160
Kenora, Ontario
P9N 3X9

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic and Magnetometer) survey submitted under Special Provisions (credit for Performance and Coverage) on mining claims K 671216 et al in the Township of Phillips.

This material will be examined and assessed and a statement of assessment work credits will be issued.

We do not have a copy of the report of work which is normally filed with you prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours very truly,

J.R. Morton
Acting Director
Land Management Branch

Whitney Block
Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

cc: F.J. Archibald

702-100 Adelaide St.
Toronto, Ontario
M5H 1S3

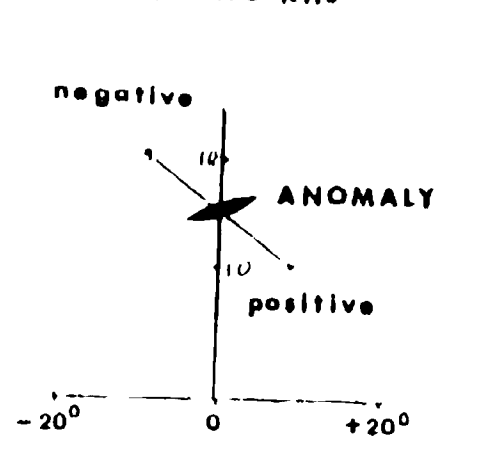
A. Barr:dg

cc: Cymbal Explorations Inc.
806 - 88 University Ave.
Toronto, Ontario
M5J 1T6



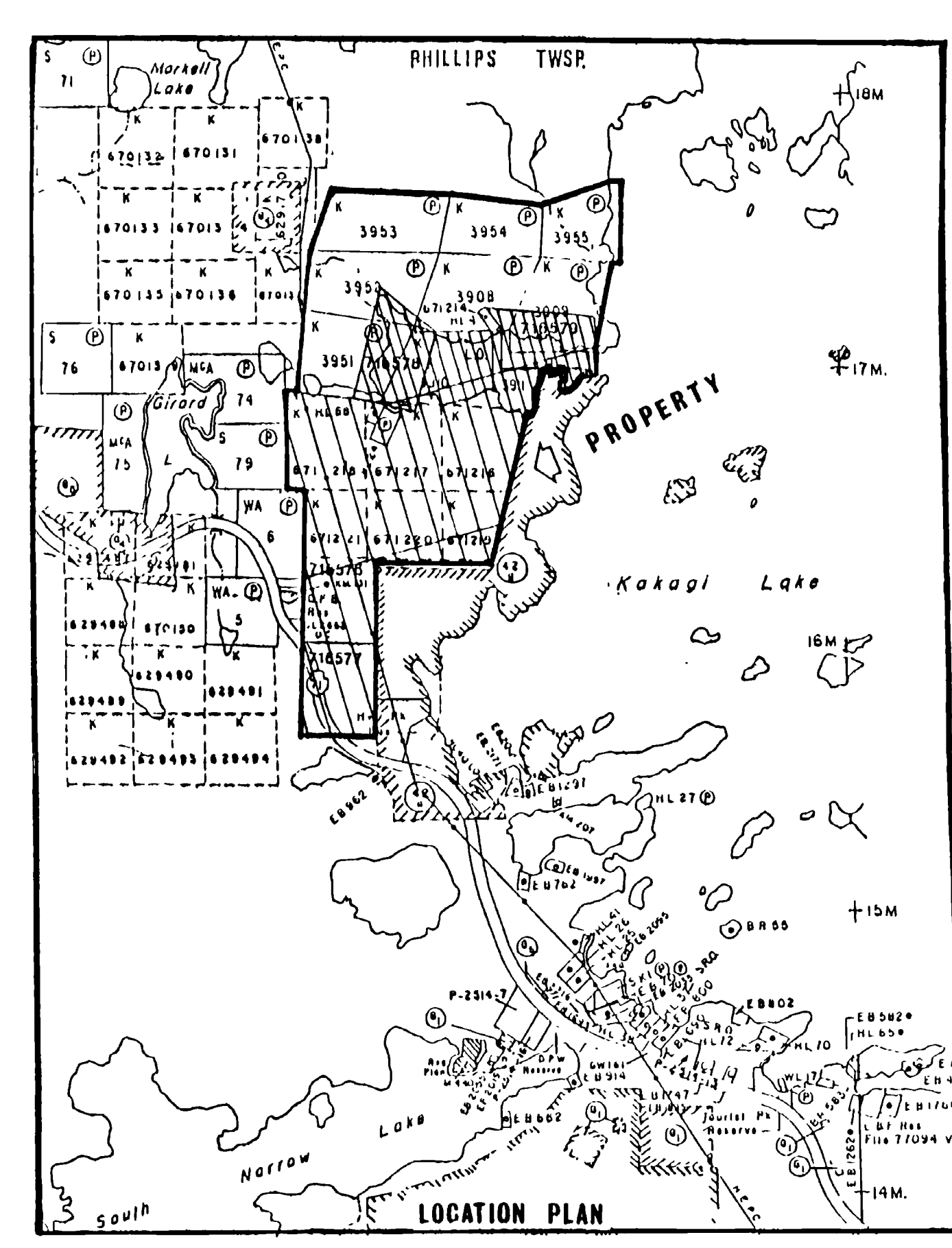
LEGEND

STATION: SEATTLE, WASHINGTON
FREQUENCY: 178 KHz



2% OF RESULTANT (FIELD STRENGTH)

- > 190
- 180 - 190
- 170 - 180
- 160 - 170
- 150 - 160
- 140 - 150
- 130 - 140
- 120 - 130
- 110 - 120
- < 110

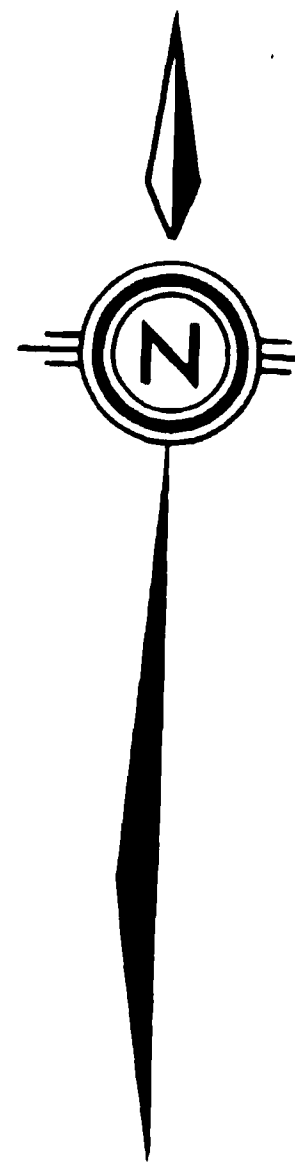
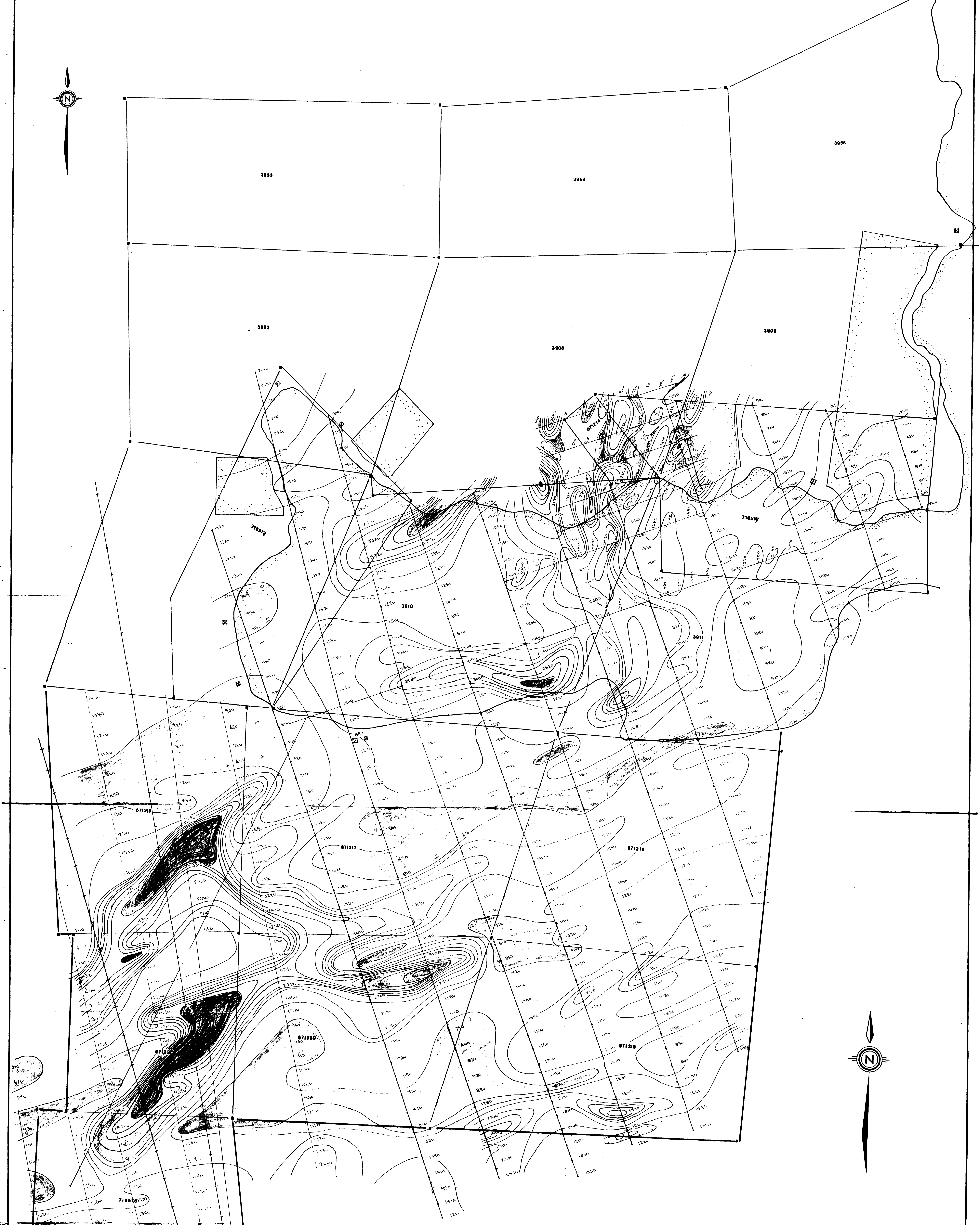
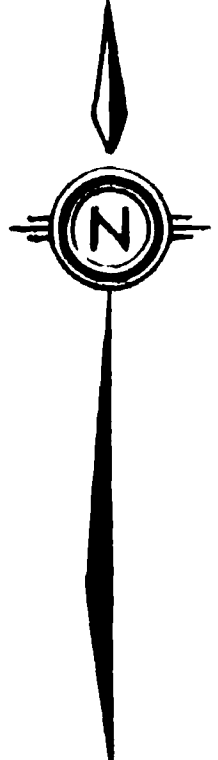


**ELECTROMAGNETIC
VLF SURVEY
CYMBAL EXR INC**

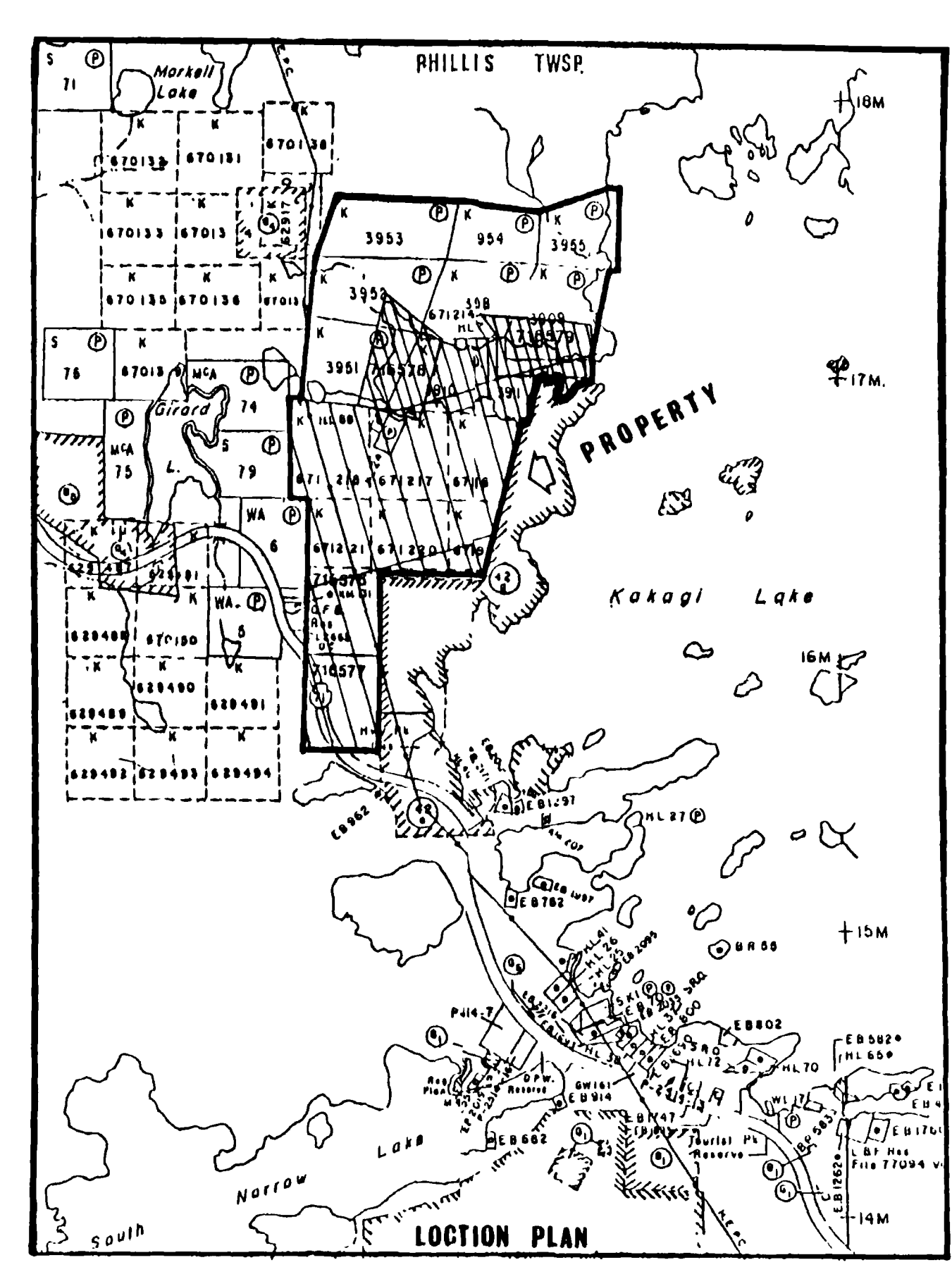
PHILLIPS TWP.



200



- LEGEND**
GAMMAS
- > 5000
 - 3000-5000
 - 2500-3000
 - 2000-2500
 - 1500-2000
 - 1000-1500
 - 500-1000
 - < 500
- CONTOUR INTERVAL 500 GAMMAS
- - - - - NEGATIVE



MAGNETOMETER
CYMBAL EXP. INC.
PHILLIPS TWP.
1" = 100'

