RONKA EM16

Electromagnetic Survey

DARWIN MINES LIMITED

Chester Township Property, Ontario

by

William Russell Miller

Summary

A Ronka EM16 Electromagnetic survey has been completed on Darwin's Chester Township, Ontario ten unpatented mining claims numbered 5220896 to 5220905 inclusive.

Several ESE trending vertical conductors, with their effective centres of conductivity about 100 feet deep are located on the southern portion of the property.

In the northern part of the property in Bagsverd Lake several strong vertical conductors have been located which may trend ENE, although on the N.E. claim an ESE trend is possible. A prospect showing is recorded in this area by Laird (O D M annual report 1932).

Check I. P. surveying and diamond drilling is warranted in light of the strength on geological locations of the resultant conductors.

Introduction

Property:

The property consists of 10 contiguous mining claims located in Chester Township, Ontario and more particularly described as mining claims numbered S220896 to S220905 inclusive.

Location:

The claim group is situated in the north west quarter of Chester Township, Sudbury Mining Division, Ontario, on part of the south arm of Bagsverd Lake, and immediately south and south-west thereof.

Access:

The property lies about 70 miles south-west of Timmins and about 100 miles north of Sudbury, 3 miles west of the new highway No. 144. The flagstop of Makwa on the main Toronto-Vancouver C N R line, is 12 miles to the east. The property is easily accessible by a bush road from No. 144 highway.

Resources:

Water The area has an abundant water supply with Bagsverd Lake to the north and Clam Lake to the southwest of the property.

Electricity The local powerline to supply the town of Gogama is 3 miles to the east and the main E.H.V. is 35 miles to the east.

Manpower The main mining centres of Timmins and Sudbury supply the local labour pool. Mining supplies have the same facilities.

Timber Wood supplies are abundant on the property and several major lumber companies operate within a 50 mile radius.

History:

A prospect showing is recorded on Ontario Department of Mines Map No 41 d to accompany report by H. C. Laird in Vol. XLI, Part 3, Department of Mines Annual Report 1932 and is believed to be included on this property just south and east of the south arm of Bagsverd Lake. Prospecting Geophysics Limited performed a standard EM Survey for previous owners of this property in 1965, the anomalous zones of which have been recorded by the writer on the accompanying Ronka survey maps. At the present time, there are neither surface nor underground plant or equipment on the property.

General Geology:

The long known greenstone belt which runs from Oswy Township about 20 miles to the west to Connaught Township about 20 miles to the east, is now recognized to be ancient island arc, related to the Kenoran orogeny which extended from about 2300 to 2700 million years ago. The widening out at Chester Township appears to be a centre of volcanic activity. The younger granite described by

Laird would now be described as a late or post tectonic granite. Laird noted a quartz porphyritic phase. Island arcs mark mantle downflow areas and have been described in the recent literature (Isacks, Oliver and Sykes 1968). The late tectonic granites under appropriate conditions are host to the major low grade copper-molybdenum deposits. Early NNW faults have controlled dyke emplacement and are known to be mineralized at Weeduck Lake a mile or so to the south east and at Mill Pond and Arethusa Lake again, two to three miles to the south east.

Equipment and Technique:

Any electromagnetic equipment is based on measuring how much conductors in the ground effect an electromagnetic signal. A transmitter and receiver are therefore required. The penetration, or depth to which conductors can be detected, is a function of the distance between the transmitter and receiver. The Ronka EM16 utilizes the U. S. Navy's very low frequency (VLF) transmitters, in the present case NAA, Cutler Maine and NBA Balboa, Canal Zone and so does away with the need for a transmitter on the property; it can also penetrate to a greater depth and gives readings in all four quadrants of the compass, rather than the two as is usual. Thus an anomaly can be detected by completing the survey in this manner in a 360 degree circumference. Two maps were prepared on the present Ronka EM survey, one for the E-W survey using NBA Balboa, Canal Zone, the other N-S survey map using NAA Cutler, Maine transmitter. As can be seen from these maps, the N-S survey picks up E-W conductors and the E-W survey picks up N-S conductors, and with only one of these maps on the survey area, only half the information would be available.

The distance between the maximum positive and negative readings is about the same as the distance from the ground surface to a point somewhat above the centre of the effective area of the conductive area. In general, in phase readings are related to the bedrock conductors in bedrock, whereas from quadrature one may interpret some idea of conductive overburden.

Survey Results:

A characteristic of the EM16 is that it readily detects conductors. Identification of these conductors is a prime concern of anyone understanding geology.

The Ronka EM16 survey on this property is plotted on two sheets one giving N-S reading and the other giving E-W readings.

On the N-S sheet there are several ESE trending vertical conductors in the south portion of the property, with their effective centres of conductivity about 100 feet deep. In Bagsverd Lake are several strong conductors, all may trend ENE, though on the NE claim an ESE trend is possible. A prospect showing is recorded in this area by Laird on Map 41d which accompanies Vol.XLI, Part 3, ODM Annual Report 1932. A comparison between the data from the two sheets shows a coincidence of conductors. All conductors appear to be vertical having symmetrical profiles.

Conclusions and Recommendations:

Since several conductors appear to follow a pattern of importance, a further check by I. P. survey method should precede drilling which is also warranted.

Respectfully submitted,

William Russell Miller

William Russell Miller

PERFORMANCE &

900

ASSESSMENT WORK DETAILS

Township or Area CHESTER TWP.

Type of Survey RONKA E.M. 16 SURVEY
A separate form is required for each type of survey

Chief Line Cutter or Contractor A. GUERTIN
Name
KIRKLAND LAKE, ONT
Address

Party Chief WILLIAM RUSSELL MILLER
Name
9 ELGIN CR. E. TOBICOKE, ONT
Address

Consultant D.W. SULLIVAN, P.ENG.
Name
RR1, GEORGETOWN, ONT
Address

COVERING DATES

Line Cutting APRIL 15 TO MAY 15, 1970

Field MAY 15 TO JUNE 10, 1970
Instrument work, geological mapping, sampling etc.

Office JUNE 15 TO JUNE 22, 1970

INSTRUMENT DATA

Make, Model and Type RONKA E.M. 16 UNIT

Scale Constant or Sensitivity INFO ACCOMPANIES REPORT
Or provide copy of instrument data from Manufacturer's brochure.

Radiometric Background Count —

Number of Stations Within Claim Group 1083

Number of Readings Within Claim Group 4332

Number of Miles of Line cut Within Claim Group 22 miles

Number of Samples Collected Within Claim Group —

CREDITS REQUESTED	20 DAYS per claim	40 DAYS per claim	Includes (Line cutting)
Geological Survey	☐	☐	
Geophysical Survey	☐	☑	Show Check ✓
Geochemical Survey	☐	☐	

DATE Feb 21/71

SIGNED William Russell Miller

S220896	
S220897	
S220898	
S220899	
S220900	
S220901	4 not covered
S220902	
S220903	
S220905	
TOTAL	9 claims

If space insufficient, attach list

Send in duplicate to:

FRED W. MATTHEWS
SUPERVISOR-PROJECTS SECTION
DEPARTMENT OF MINES &
NORTHERN AFFAIRS
WHITNEY BLOCK
QUEEN'S PARK
TORONTO, ONTARIO

Performance and coverage credits do not apply to airborne surveys

SUBMISSION OF GEOLOGICAL, GEOPHYSICAL AND GEOCHEMICAL SURVEYS

AS ASSESSMENT WORK

In order to simplify the filing of geological, geochemical and ground geophysical surveys for assessment work, the Minister has approved the following procedure under Section 84 (8a) of the Ontario Mining Act. This special provision does not apply to airborne geophysical surveys.

If, in the opinion of the Minister, a ground geophysical survey meets the requirements prescribed for such a survey, including:

(a) substantial and systematic coverage of each claim
(b) line spacing not exceeding 400 foot intervals
(c) stations not exceeding 100 foot intervals or
(d) the average number of readings per claim not less than 40 readings

it will qualify for a credit of 40 assessment work days for each claim so covered. It will not be necessary for the applicant to furnish any data or breakdown concerning the persons employed in the survey except for the names and addresses of those in charge of the various phases (linecutting contractor, etc.). It will be assumed that the required number of man days were spent in producing the survey to qualify for the specified credit.

Each additional ground geophysical survey using the same grid system and otherwise meeting these requirements will qualify for an assessment work credit of 20 days.

A geological survey using the same grid system, and meeting the requirements for submission of geological surveys for maximum credits will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geological survey a credit of 40 days per claim will be allowed for the survey.

Similarly, a geochemical survey using the same grid system with the average number of collected samples per claim being not less than 40 samples, and meeting the requirements for the submission of geochemical surveys for maximum credits, will qualify for an assessment work credit of 20 days. If line cutting has not previously been reported with any other survey and is reported in conjunction with the geochemical survey a credit of 40 days per claim will be allowed for the survey.

Credits for partial coverage or for surveys not meeting requirements for full credit will be granted on a pro-rata basis.

If the credits are reduced for any reason, a fifteen day Notice of Intent will be issued. During this period, the applicant may apply to the Mining Commissioner for relief if his claims are jeopardized for lack of work or, if he wishes, may file with the Department, normal assessment work breakdowns listing the names of the employees and the dates of work. The survey would then be re-assessed to determine if higher credits may be allowed under the provisions of subsections 8 and 9 of section 84 of the Mining Act.

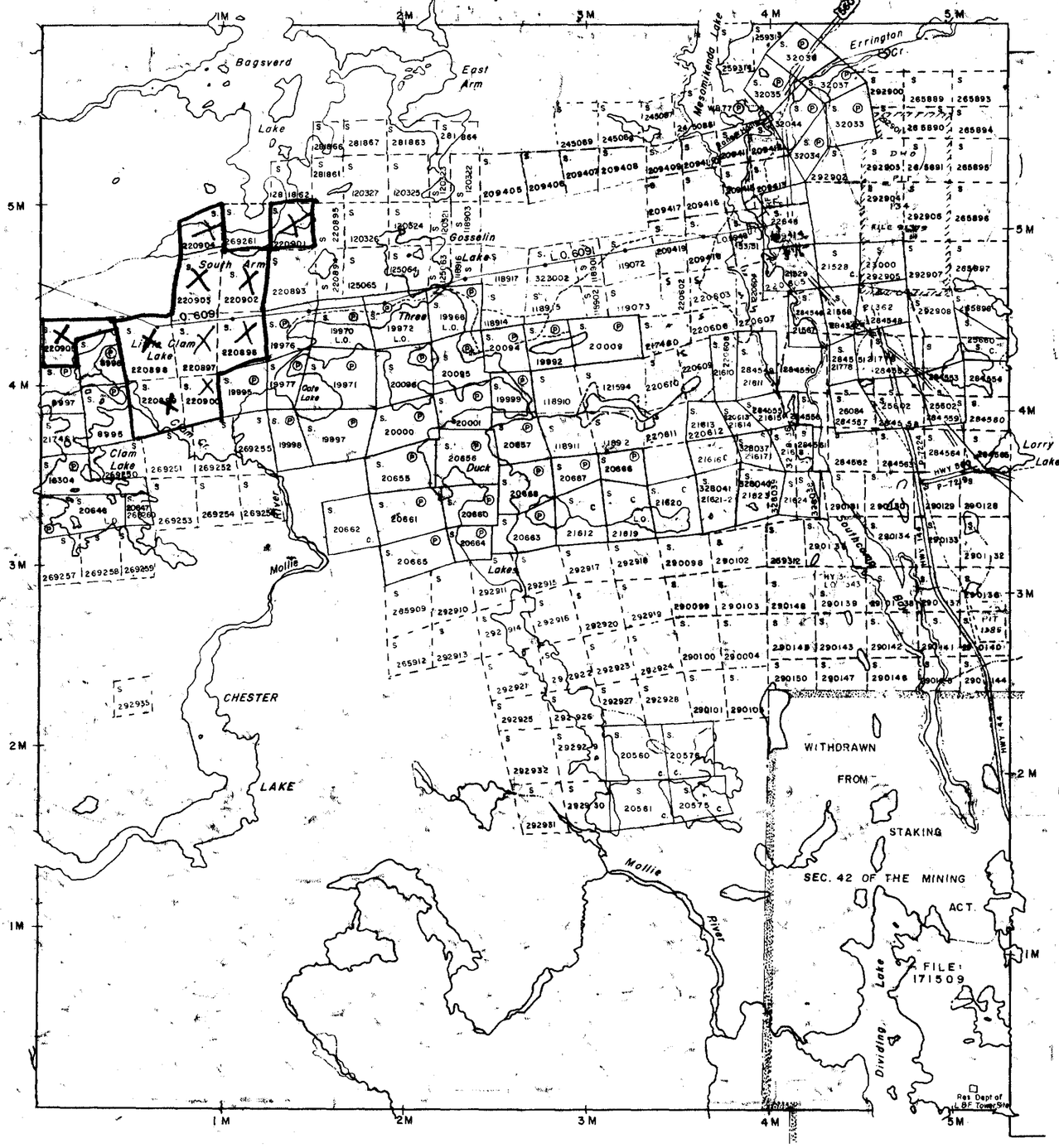
If new breakdowns are not submitted, the Performance and Coverage credits are confirmed to the Mining Recorder at the end of the fifteen days.

Neville Twp. (M.-888)

Yeo Twp. (M-1188)

Bennewies Twp. (M-658)

Invergarry Twp. (M.-948)



THE TOWNSHIP OF
Claim Map,
CHESTER

DISTRICT OF SUDBURY

SUDBURY MINING DIVISION

SCALE: 1-INCH=40 CHAINS

LEGEND

PATENTED LAND	P
CROWN LAND SALE	C.S.
LEASES	L.
LOCATED LAND	LOC.
LICENSE OF OCCUPATION	L.O.
MINING RIGHTS ONLY	M.R.O.
SURFACE RIGHTS ONLY	S.R.O.
ROADS	
IMPROVED ROADS	
KING'S HIGHWAYS	
RAILWAYS	
POWER LINES	
MARSH OR MUSKEG	
MINES	
CANCELLED	

NOTES

400' Surface Rights Reservation around all Lakes and Rivers.

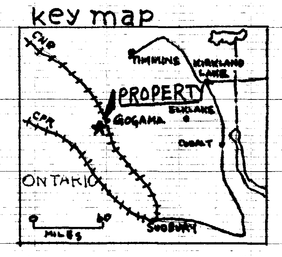
Flooding Rights To 1200' Contour Reserved To H.E.P.C. File: 10621.

DATE OF ISSUE
AUG 11 1971
ONT. DEPT. OF MINES AND NORTHERN AFFAIRS

PLAN NO.- M. 717

ONTARIO
DEPARTMENT OF MINES
AND NORTHERN AFFAIRS

key map



CHESTER TOWNSHIP

YEO TOWNSHIP

N

S220904

SOUTH ARM OF BAGSVERD LAKE

S220902

S220901

S220903

S220905

S220898

S220897

S220896

S220899

S220900

SPRUCE BIRCH BALSAM POPLAR PINE

SPRUCE BIRCH BALSAM PINE

SPRUCE BIRCH BALSAM

SPRUCE BIRCH BALSAM PINE

SPRUCE BIRCH BALSAM POPLAR PINE

SPRUCE BIRCH BALSAM

RED PINE

HYDRO

P&A

P&A

P&A

POND

OLD HYDRO LINE (STEEL CABLE) NOT IN USE AND BROKEN IN PLACES

OLD HYDRO LINE (STEEL CABLE) NOT IN USE AND BROKEN IN PLACES

OLD BUSH ROAD → TO HIGHWAY 144

OLD BUSH ROAD ← TO MOORE LAKE

LITTLE CLAM LAKE

CLAM LAKE

5000N 4900N 4800N 4700N 4600N 4500N 4400N 4300N 4200N 4100N 4000N 3900N 3800N 3700N 3600N 3500N 3400N 3300N 3200N 3100N 3000N 2900N 2800N 2700N 2600N 2500N 2400N 2300N 2200N 2100N 2000N 1900N 1800N 1700N 1600N 1500N 1400N 1300N 1200N 1100N 1000N 900N 800N 700N 600N 500N 400N 300N 200N 100N BASELINE

100S 200S 300S 400S 500S 600S 700S 800S 900S 1000S 1100S 1200S 1300S 1400S 1500S 1600S

L2 L4 L6 L8 L10 L12 L14 L16 L18 L20 L22 L24 L26 L28 L30 L32 L34 L36 L38 L40 L42 L44 L46 L48 L50 L52 L54 L56 L58 L60 L62 L64 L66 L68 L70 L72 L74 L76 L78 L80 L82

LEGEND

EAST - WEST READINGS ON STATION NBA, 8ABOA, C.Z. 09°04'N, 79°39'W
KHZ - 24.00
KW - 150
1" = 100 ft.
~ IN PHASE READING
..... QUADRATURE READING
READING WEST
P&A - PROSPECTING GEOPHYSICS LIMITED ANOMALY 1965
No OF STATIONS THIS MAP - 1083
SHEET 2 OF 2

DARWIN MINES LIMITED

CHESTER TOWNSHIP ONTARIO

RONKA E.M.16 SURVEY

SCALE: 1" = 200'

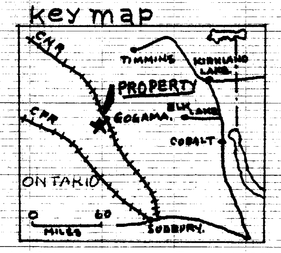
20½ MILES OF LINE

June 22nd 1970.

William Russell Mills

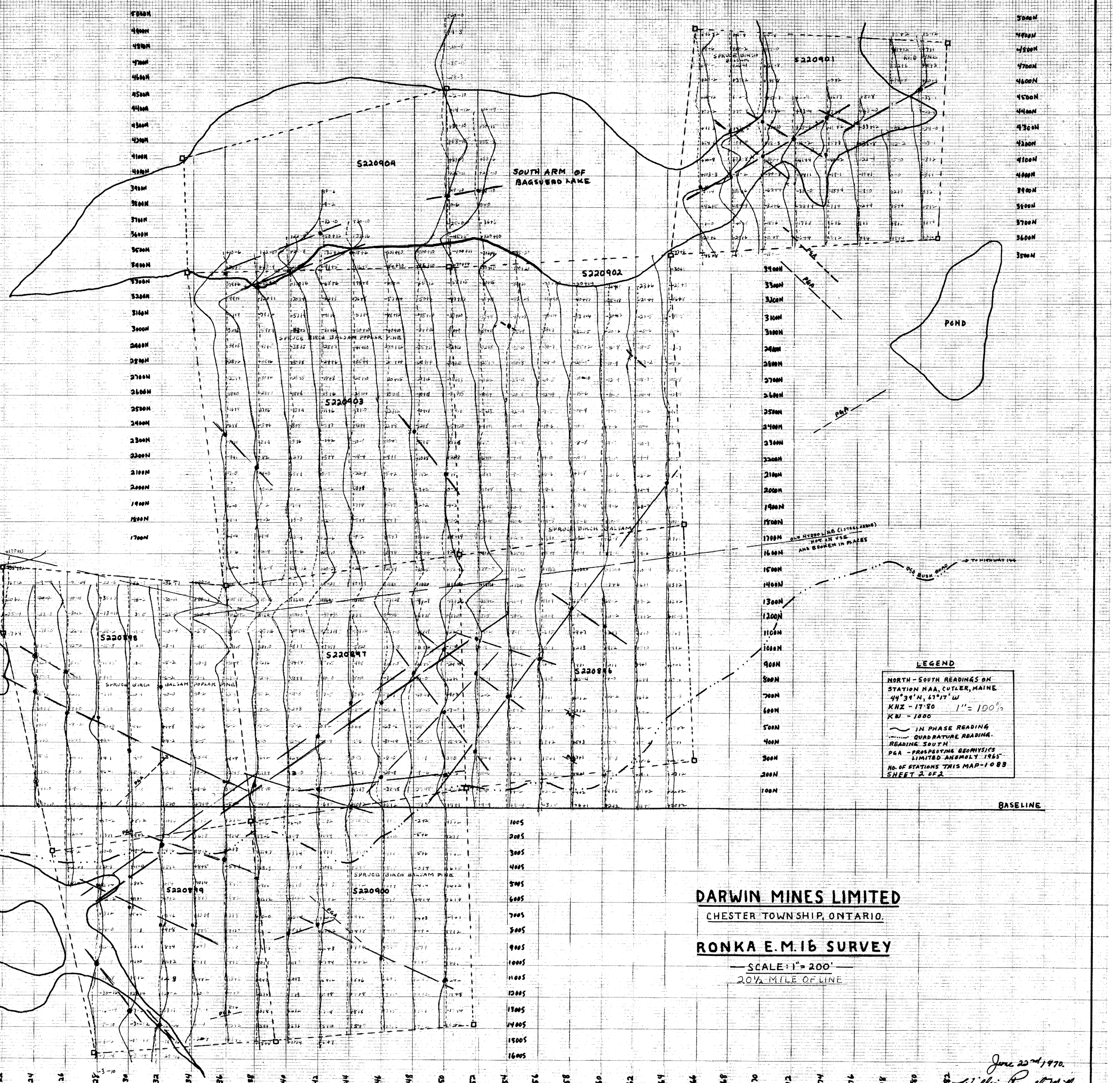
210

key map



CHESTER TOWNSHIP

N



LEGEND

NORTH - SOUTH READINGS ON STATION NAA, CUTLER, MAINE. 44°39'N, 67°17'W
KHZ - 17.80 1" = 100'
KW - 1800
~ IN PHASE READING
--- QUADRATURE READING. READING SOUTH.
PGA - PROSPECTING GEOPHYSICS LIMITED ANOMOLY 1965
No. OF STATIONS THIS MAP - 1089
SHEET 2 OF 2

DARWIN MINES LIMITED

CHESTER TOWNSHIP, ONTARIO.

RONKA E.M.16 SURVEY

SCALE: 1" = 200'

20½ MILE OF LINE

June 22nd, 1970.

William Russell Miller