



41P15NE8334 2.4699 CAIRO

010

VLF - EM Survey

on

Webb Lake Claim Group

for

Mining Claims L.537322

L.568014

L.568019

L.568006

Cairo Township

Larder Lake Mining Division

Ontario

RECEIVED

APR 15 1982

MINING LANDS SECTION

By

Pamour Porcupine Mines Limited

Exploration Department

March 26, 1982



41P15NE8334 2.4699 CAIRO

010C

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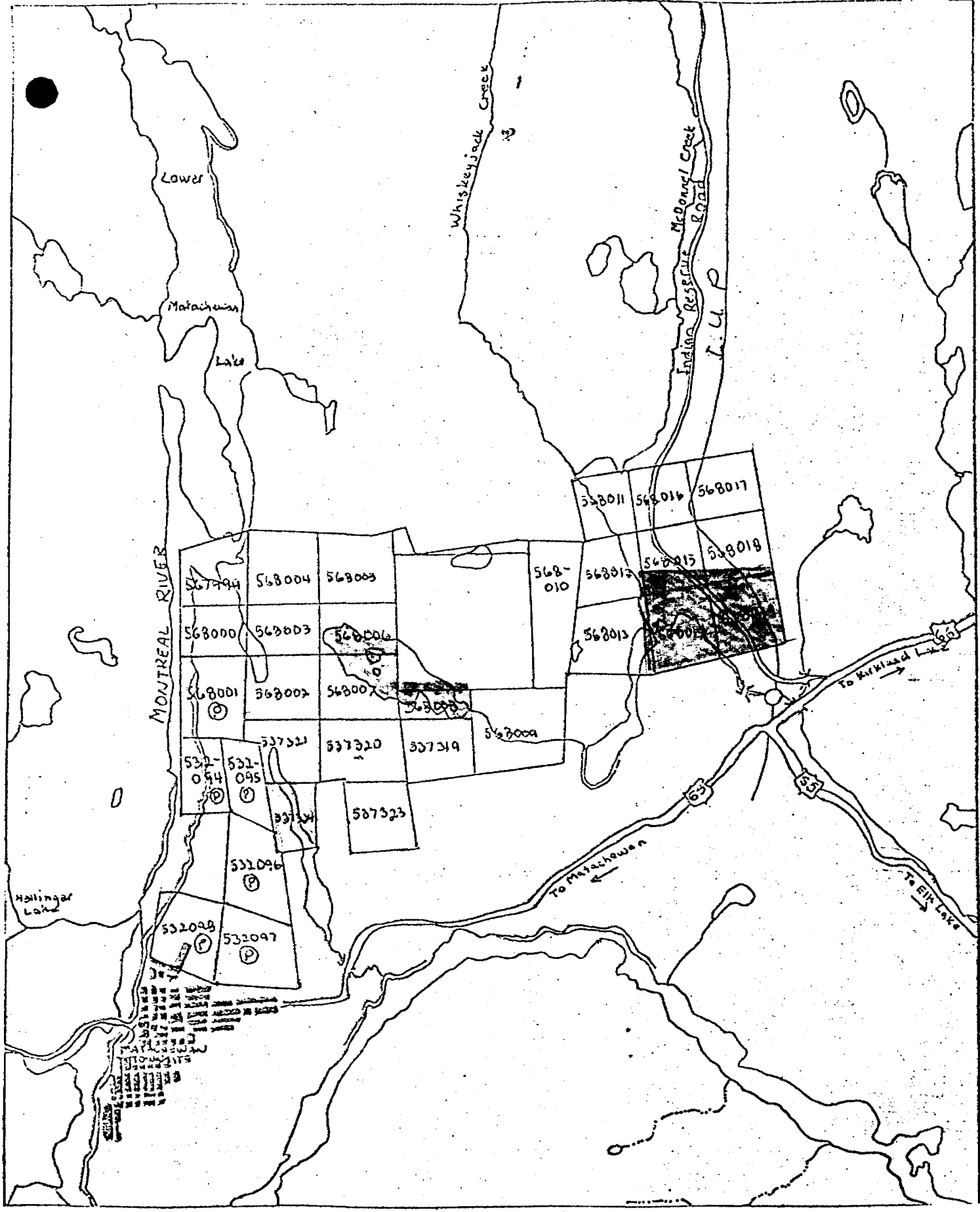


FIGURE 1
CLAIM MAP

INTRODUCTION

A VLF-EM survey using Cutler, Maine (17.8 KHz) as a transmitter source was conducted in three areas of the Webb Lake claim group which is located north and northeast of the town of Matachewan, Cairo Township.

The purpose of the survey was to complete the lake areas missed during the previous VLF-EM survey. In doing so, extensions of some of the previous anomalies related to the faults and gold bearing shear zones may be located.

The field work was conducted during March 22 to 24, 1982 by Ed van Hees, Byron Cooper, D'Arcy Ryan and Kian Jensen, employees of Pamour Exploration. The interpretation and report writing was done on March 25 and 26, 1982, by Kian Jensen.

LOCATION AND ACCESS

The Webb Lake claim group is located north and northeast of the town of Matachewan, Cairo Township in northeastern Ontario.

The eastern part of the claim group was accessed by the gravel road which leads to the Indian Reservation No. 72, from Highway 66. The western portion of the claim group was accessed by a bush road north of Highway 66, about 2 miles east of Matachewan. Good skidoo trails lead to Knott Lake and Webb Lake.

Figure 1 indicates the Webb Lake claim group and the shaded areas are the location of the VLF-EM surveys.

PROPERTY

The Webb Lake claim group comprises of 31 contiguous mining claims as follows: MR-532094 to 532098 inclusively, L-537319 to 537323 inclusively and staked during July, 1979, also L-567999 to 568019 inclusively staked during April, 1980.

Pamour Porcupine Mines Limited holds a 100% interest in the Webb Lake Claim Group.

Of the above claims, the VLF-EM survey was conducted on the following:

L 537322	40 days
L 568006	40 days
L 568007	40 days
L 568008	40 days
L 568014	20 days
L 568019	20 days

PREVIOUS WORK

The regional geology of the Matachewan area has been studied and described in several government reports (Burrows, 1918, Lovell, 1967). The detail geology of the claim group was mapped and filed by Mr. Tony Van Weichen, 1981, of Pamour Exploration.

During 1980, a VLF-EM survey using Cutler, Maine (17.8 KHz) was completed with the exceptions of the swampy and lake areas, being Knott Lake, Webb Lake and Moyneau Lake.

Previous work conducted in various parts of the Webb Lake claim group by other mining and exploration companies are as follows:

Canadian Rand Mining - 1920-33
- geology, trenching

Dominion Gulf Company - 1951-52
- geology, diamond drilling, mag survey

DeMarco "Central Group" - 1954
- diamond drilling

M. Ferguson - 1957
- geology, mag survey, HLEM survey.

Midrium Mining Company Limited - 1965-66
- geology, diamond drilling, mag survey, JEM

Welsh, G.S. - 1971

Newman, Roy - 1974
- diamond drilling

GENERAL GEOLOGY

"The Webb Lake Claim Group consist predominantly of Timiskaming sedimentary rocks from conglomerates to arkose and greywacke. In the east, syenitic rocks of the Cairo stock predominates, while in the west several cupolas of syenite are also exposed. The relationship between the Cairo stock and syenite cupolas is uncertain. To the southwest, massive to tuffaceous volcanic flows and fragmentals rocks are present with a composition ranging from andesitic to basaltic. North trending Matachewan diabase dikes outcrop in the western portion of the claim group. Underlying the extreme southern portion of the property are conglomerates of the Cobalt Group which unconformably overlies the Archean stratigraphy. Pleistocene lodgement tills and recent swamps and stream deposits overlie much of the bedrock." (Van Weichen, 1981).

GEOPHYSICAL SURVEYS

The two fold purpose of the VLF-EM survey was to complete the previous VLF-EM survey, (Famour, 1980) and to extend already detected anomalies which may be due to faults or mineralized gold bearing shear zones.

During the previous survey, 18.85 line miles were cut and surveyed. During the 1982 survey the following are the totals for grid layouts, line cutting, and surveying for the various claims:

CLAIM	LINECUTTING	GRID	VLF-EM SURVEY
L 537322	1800'	1875'	5700'
L 568006	-----	2500'	2500'
L 568007	-----	1400'	1400'
L 568008	1000'	3550'	3550'
L 568014	1000'	1400'	5700'
L 568019	1200'	-----	6200'

SURVEY SPECIFICATIONS

The instrument specifications for the Phoenix VLF-2 EM instrument is found in Appendix B.

PROCEDURES

A calibration station was located on the east side of Knott Lake on Line 88+00W at 23+00S. Both VLF-EM instruments were calibrated to a Horizontal Field Strength (HFS) of 100% using Cutler, Maine, (17.8 KH2) as a radio transmitting source. Once the calibration was completed, north-south traverse lines were surveyed. The data was collected using the Crone conversion. At each 100 foot station the operator faced southwards (90° to the right from the direction of Cutler), this reading is the HFS. While the operator faced in the direction of Cutler, the dip of the EM field was recorded with the bottom of the instrument indicating the direction of dip.

At several stations, duplicate readings were observed with both instruments and the accuracy and correlations were $\pm 5\%$ HFS and $\pm 2^\circ$ Dip.

DATE PRESENTATION

The profiles for the dip values are plotted on the 1 inch to 200 feet maps, and both the dip and HFS values are recorded at each station. The VLF-EM survey for claim L-537322

is on map 0506-82/1, claims L-568006 to 568008 are on map 0506-82/2 and claims L-568014 and 568019 are on map 0506-82/3.

DATA INTERPRETATION.

The VLF-EM anomalies are lettered A to P. The interpretation was assisted by the Fraser Filtering of the dip values using the Crone Convension.

1) Claim L-537322 - Knott Lake - Map 0506-82/1

The following anomalies were identified and are marked from A to D.

Anomaly A & B - these are possibly an extention of anomaly E from the 1980 survey. It appears that this is a good bedrock conductor and A and B have been displaced by a shear zone or a fault probably the zone indicated by Lovell, 1967.

Anomaly C - this is probably due to the Knott Lake Fault, the northern portion is amplified due to the conjunction of anomaly B.

Anomaly D p this is probably related to a NNE shear zone indicated by Lovell, 1967. This may be the western extension of G from the previous Pamour survey.

2) Claims L-568006 - 568008 - Webb Lake - Map 0506-82/2

The anomalies are indicated and lettered from E to I as follows.

Anomalu E and F - these anomalies appear to be weak and may be due to a deeply buried conductor, or the shoreline effects. Also anomaly E could be a faulted portion of the previous survey anomaly D.

Anomaly G - this small weak conductor could be due to the lake bottom topography.

Anomaly H - this weak to moderate conductor could be due to the shoreline effects or a NW trending fault.

Anomaly I - this conductor is probably due to the swampy pond in the vacinity of Line 60W.

3) Claims L-568014 and 568019 - Moyneau Lake - Map 0506-82/3

The anomalies detected are lettered from J to P.

Anomaly J - the anomaly may be due to the contact between the syenite and the conglomerate.

Anomaly K - the hydro line is probably amplified the response received from the Montreal River-Wiskeyjack Fault.

Anomaly L - this could be a east-west shear zone in the syenite.

Anomaly M and N - these anomalies are probably due to the faulted contact between the syenite and conglomerate. Also, the data has been affected by the swampy conditions and the creek.

Anomalies O and P - these anomalies are probably at the conglomerate - syenite contact.

CONCLUSIONS AND RECOMMENDATIONS

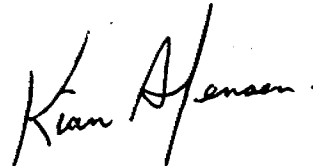
The majority of the anomalies are geologically explained due to the effects of the faults, shear zones and conglomerate-syenite contacts.

Of the anomalies detected it is recommended that the following should have additional work done:

Anomalies A, B, D, and L.

Before commencing with the detailed work in the vicinity of the recommended anomalies, a magnetic survey should be conducted. Also, a soil geochemical survey should be done to indicate any gold and/or copper anomalies related to the VLF-EM conductors.

I hereby submit that this report and accompanying maps are accurate and true to the best of my knowledge and that they were completed by myself this 26th day of March, 1982.



KAJ/kg

Kian A. Jensen, B.Sc.,
Exploration Geophysicist-
Geologist.

CURRICULUM VITAE

NAME: JENSEN, Kian A.
ADDRESS: 374 Patricia Boulevard, Timmins, Ontario P4N 6Y6
TELEPHONE: (705) 264-5748
BIRTHDATE: September 24, 1951
SEX: Male
STATUS: Married
EDUCATION: University of Waterloo, 1971 - 1975, B.Sc. Honour Earth
Science, Geology Major

RELATED EXPERIENCE

March 2 to Present PAMOUR PORCUPINE MINES LIMITED, PAMOUR NO. 1
Employed as a geologist/geophysicist in the Exploration Department, Pamour No. 1. Responsible for conducting ground geophysical surveys, interpretation and reports. Other duties include geological mapping, drill core logging, ore calculations, and property evaluation.

September 1978 to February 1981 GEOTERREX LIMITED, 2060 Walkley Road, Ottawa
Employed as a geophysicist/party chief conducting various types of ground geophysical surveys. Other responsibilities included training personnel, logistic reports, job proposals, billings, data reduction and interpretation. Clients and types of surveys involved in are as follows:

- Amoco Oil Limited - gravity survey
- Ontario Hydro - seismic survey
- Urangesellschaft Canada Limited - Max-Min and horizontal PEM surveys
- Energy, Mines and Resources, Earth Physics Branch - inertial gravity survey
- Geoterrex Limited, Calibogie test site - CEM, Max-Min, Proton magnetic and horizontal PEM surveys
- Newmont Exploration of Canada Limited - drillhole PEM survey
- Newmont Exploration of Canada Limited - EMP survey
- E & B Exploration of Canada Limited - gravity survey

Energy, Mines and Resources, Earth Physics Branch -
inertial gravity survey

Geoterrex Limited, Calibogie test site - Elfast turam,
IP and DEEPEM surveys

Abitibi-Price Inc. - interpretation of drillhole PEM
survey

May to
September 1978

RAYROCK RESOURCES LIMITED (MINES), 1011-2200 Yonge Street,
Toronto

Employed as a field geologist conducting a reconnaissance
geochemical survey for uranium in central North West
Territories. Other responsibilities included rock sampling,
reconnaissance mapping, claim work, and assisted in
compiling airborne radiometric results.

September 1974
to
April 1975

B.Sc. Thesis, "A Geophysical Investigation for Buried
Bedrock Valleys in the Belwood Lake Area".

This involved data acquisition, computer modelling, and
interpretation of gravity and resistivity surveys.

September 1974
to
April 1975

UNIVERSITY OF WATERLOO, Waterloo, Ontario

Employed to sort and catalogue rock suites and set up
museum displays of ore suites from Canadian mines.

May to
September 1974

CANADIAN OCCIDENTAL PETROLEUM LIMITED, 311-215 Carlingview
Drive, Rexdale, Ontario

Employed as a field geologist conducting reconnaissance
and detail geochemical surveys for base metals in south-
central British Columbia. Other responsibilities included
claim work, rock sampling, and the preparation of geochemical
anomaly maps.

October to
December 1973

UNIVERSITY OF WATERLOO, Waterloo, Ontario

Employed as a geophysical assistant conducting gravity,
resistivity, and seismic surveys.

OTHER EMPLOYMENT

October 1977 to May 1978 GOLDEN TRIANGLE SECURITIES AND INVESTIGATIONS, 52A Francis Street, Kitchener, Ontario

Employed as a security guard at Pirelli Cables in Guelph, Ontario.

June 1975 to September 1977 TOWERS DEPARTMENT STORES, 1013 Ontario Street, Stratford, Ontario

Employed as a department manager responsible for staff schedules, ordering, inventory, and sales.

MEMBERSHIPS

Society of Exploration Geophysicists (1981) - Associate Member

Prospector's Licence (Individual) - A44525

REFERENCES

Lovell, H.L. 1967

Geology of the Matachewan Area; Ontario
Department of Mines, GR 51, 52p. Accompanied by Maps
2109 and 2110, scale 1 inch to 1/2 mile.

MAPS

Geological Survey of Canada

Aeromagnetic Map 287G (Rev) Matachewan, sheet 41 P/15.
Scale 1 inch to 1 mile. GSC; published 1970.

Ontario Geological Survey

No. P.273 (preliminary map) - Cairo Township. District
of Timiskaming, Ontario. Scale, 1 inch to 1/4 mile.
Geology by Lovell and assistants 1964, Published 1965.

No. P.1038 (preliminary map) - Cairo Township, District
of Timiskaming, Ontario. Kirkland Lake Data Series.
Scale 1 inch to 1/4 mile or 1:15,840. Data compiled
1972, 1973, 1975. Published 1975.

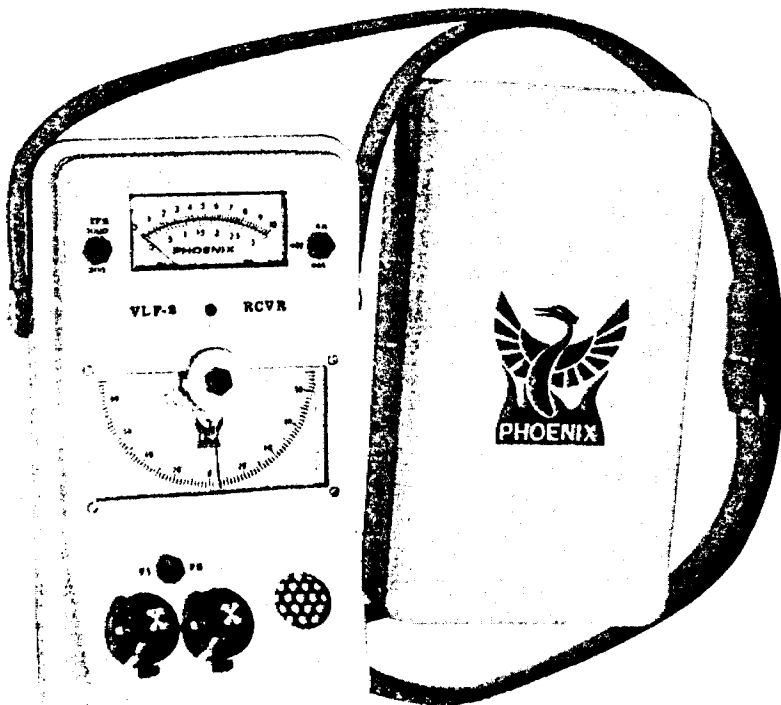
APPENDIX "A"

DATE	CLAIM	PERSONNEL	FUNCTION
March 22, 1982	L-537322	Ed van Hees D'Arcy Ryan	Grid and Linecutting
	L-568006-008	Ed van Hees D'Arcy Ryan	Grid and Linecutting
March 23, 1982	L-537322	Ed van Hees Kian Jensen	VLF survey Supervision
	L-568006-008	D'Arcy Ryan	VLF survey
	L-568014 & 19	Byron Cooper	Linecutting
March 24, 1982	L-568014 & 19	Ed van Hees	VLF survey
March 25, 1982	All claims	Kian Jensen	Report and Interpretation
March 29 & 30, 1982			
	All claims	Kian Jensen	Drafting

VLF-2

Electromagnetic Unit

- Lightweight, low battery drain, rugged, simple to operate
- Two independent channels
- Each channel may select any station between 14.0 and 29.9 kHz
- Single crystal used for all frequencies
- Locking clinometer provides tilt-angle memory
- Superheterodyne detection and digital filtering provide extremely high selectivity and noise rejection



Military and time standard VLF transmitters are distributed over the world. These stations are used for geophysical EM surveying thus eliminating the need for a local transmitter and permitting one-man operation.

To ensure that a station excites the prospective conductor, two stations at approximately right angles are used during a survey (see data on back).

The choice of 160 frequencies in the range 14.0 to 29.9 kHz permits the use of a local EM transmitter when no suitable regular VLF station is available.



PHOENIX GEOPHYSICS LIMITED

Geophysical Consulting and Contracting, Instrument Manufacture, Sale and Lease.

Head Office: 200 Yorkland Blvd. Willowdale, Ont., Canada M2J 1R5. Tel: (416) 493-6350
310 - 885 Dunsmuir St. Vancouver, B.C., Canada V6C 1N5. Tel: (604) 684-2285
4690 Ironton St. Denver, Colorado, U.S.A. 80239. Tel: (303) 373-0332

Specifications

- Parameters Measured** : Orientation and magnitude of the major and minor axes of the ellipse of polarization.
- Frequency Selection, Front Panel** : Dual channel, front panel selectable (F1 or F2) each with independent precision 10-turn dial gain control.
- Frequency Selection, Internal** : F1 and F2 can be selected by internal switches within the range 14.0 to 29.9 kHz in 100 Hz increments.
- Detection And Filtering** : Superheterodyne detection and digital filtering provide a much narrower bandwidth and thus greater rejection of interfering stations and 60 cycle noise than conventional receivers.
- Meter Display** : 2 ranges: 0 to 300 or 0 to 1000. Background is typically set at 100. Meter is also used as dip angle null indicator and battery test.
- Audio** : Crystal speaker. 2500 Hz used as null indicator.
- Clinometer** : $\pm 90^\circ$, $+0.5^\circ$ resolution. Normal locking, push button release.
- Battery** : One standard 9v transistor radio battery. Average life expectancy - 1 to 3 months (battery drain is 3 mA)
- Temperature Range** : -40° to $+60^\circ$ C.
- Dimensions** : 8 x 22 x 14 cm (3 x 9 x 6 inches).
- Weight** : 850 grams (1.9 pounds).

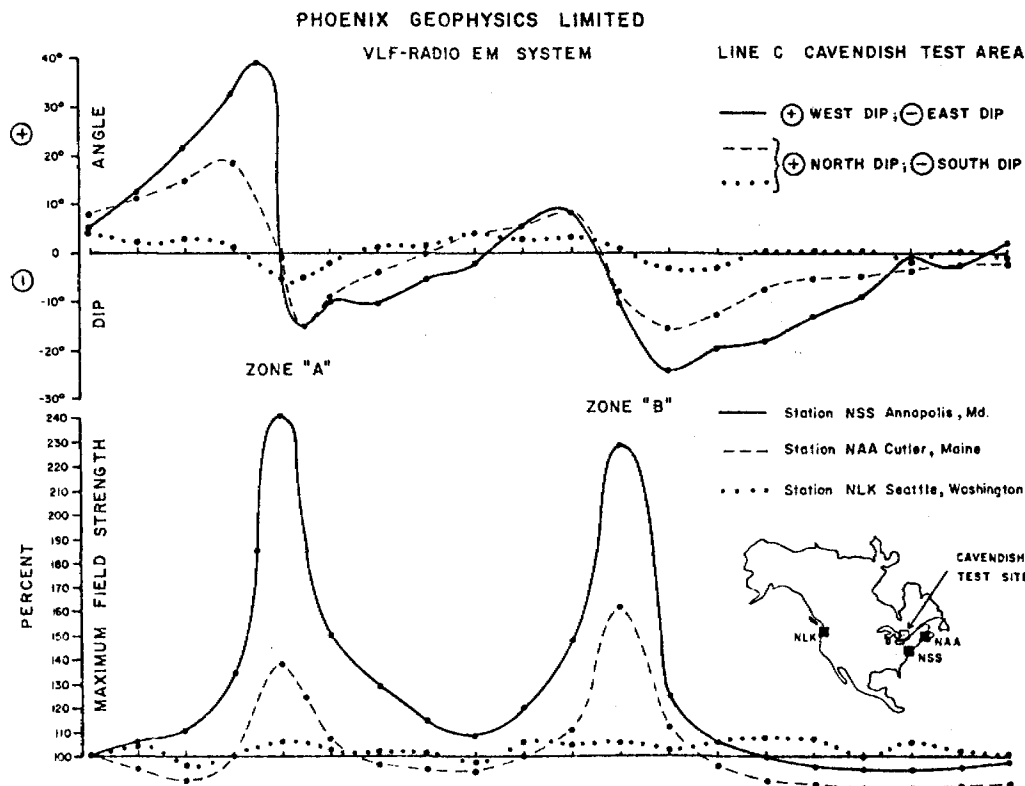
All of the established stations may be selected, or alternatively, a local VLF transmitter may be used which transmits at any frequency in the range 14.0 to 29.9 kHz.

VLF Station	Frequency (kHz)
Bordeaux, France	15.1
Odessa (Black Sea)	15.6
Rugby, U.K.	16.0
Moscow, U.S.S.R.	17.1
Yosama, Japan	17.4
Hegaland, Norway	17.6
Cutler, Maine	17.8
Seattle, Washington	18.6
Malabar, Java	19.0
Oxford, U.K.	19.6
Paris, France	20.7
Annapolis, Maryland	21.4
Northwest Cape, Australia	22.3
Laulualei, Hawaii	23.4
Buenos Aires, Argentina	23.6
Rome, Italy	27.2

Field Data

Results below illustrate the need for using two orthogonal stations when the strike of the prospective conductor is not well-known. The dip angle and amplitude data measured using station NLK in Seattle, Washington, show only a very weak anomaly associated with the two conductive sulphide zones at Cavendish, Ontario.

The results obtained using Cutler, Maine reveal a more prominent anomaly, but the best response was obtained using Annapolis, Maryland since the station lies almost due south and the transmitted electromagnetic field is thus maximum-coupled with the North-South trending conductors.



Mining Lands Comments

Empty lined area for Mining Lands Comments.

To: Geophysics

Comments
W/R Barlow

Approved Wish to see again with corrections

Date: *Jan 3/83* Signature: *Ryan Rhu*

To: Geology - Expenditures

Comments

Approved Wish to see again with corrections

Date: Signature:

To: Geochemistry

Comments
LD

Approved Wish to see again with corrections

Date: Signature:

November 17, 1982

2.4699

Pamour Porcupine Mines
Administration Building
P.O. Bag 2010
Timmins, Ontario
P4N 7X7

Attention: Kian A. Jensen

Dear Sir:

This is to acknowledge receipt of your letter dated November 5, 1982 in respect to Mining Claims L 568006 at A1 in the Township of Cairo. We have located the file in question, which will now be assessed. Thank you for bringing it to our attention.

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6050
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1380

Diana Wice

cc: Mining Recorder
Larder Lake, Ontario

Pamour Porcupine Mines, Limited
Administration Building
P.O. Bag 2010
Timmins, Ontario, Canada P4N 7X7

pamour

November 5, 1982

Mr. F. W. Mathews
Land Management Branch
Whitney Block,
Queen's Park,
TORONTO, Ontario.
M7A 1W3

Your file: 2.4699

RE: Assessment Reports filed for L.568006, L.568014, and
L.568019, Cairo Township.

Dear Mr. Mathews:

Following our telephone conversation yeasterday pretaining to the reports for the above claims, I would like a confirmation, for our claim files, that the report was found.

As I explained, the survey considred of four claims covered by lakes in a large block of claims. All four claims, the above mentioned claims and L.537322, were covered in one report.

Trusting to receive your confirmation letter at your earliest convenience.

Yours truly,



Kian A. Jensen.
Geophysicist/Geologist
Exploration Department.

KAJ/kg

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NOV 15 1982

MINING LANDS SECTION

1982 04 21

2.4699

Mining Recorder
Ministry of Natural Resources
4 Government Road East
P.O. Box 984
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We have received reports and maps for a Geophysical (Electromagnetic) Survey submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims L 537322 et al, in the Township of Cairo.

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

Yours very truly,

E.F. Anderson
Director
Land Management Branch

Whitney Block, Room 6450
Queen's Park
Toronto, Ontario
M7A 1W3
Phone: 416/965-1316

J. Skura/amc

cc: Pamour Porcupine Mines Limited
Timmins, Ontario

cc: Kian A. Jensen
Timmins, Ontario

Pamour Porcupine Mines, Limited
Administration Building
P.O. Bag 2010
Timmins, Ontario, Canada P4N 7X7

pamour

April 8, 1982

Your File 2.3969

Mr. E. F. Anderson,
Director,
Lands Administration Branch,
Whitney Bloc, Room 6450,
Queen's Park,
TORONTO, Ontario
M7A 1W3

RECEIVED

APR 15 1982

MINING LANDS SECTION

Re: Technical Assessment of Work Credits for L.567999 to
568018, L.537319 to 323 and L.532094 to 98.

Dear Sir:

Due to the reduction in work credits for mining claims L.567999, L.568006, L.568019 and L.537322, we have re-surveyed these claims and extended all the lines to cover areas missed in the previous VLF-EM survey.

Of the above mentioned claims, L.567999 could not be completed due to the open water below the rapids on the Montreal River.

If any problems arise, pertaining to the report, maps or survey, please contact myself or Ed van Hees at (705) 235-3311, Ext. 14.

Yours truly,



Kian A. Jensen, B.Sc.,
Exploration Geophysicist-
Geologist.

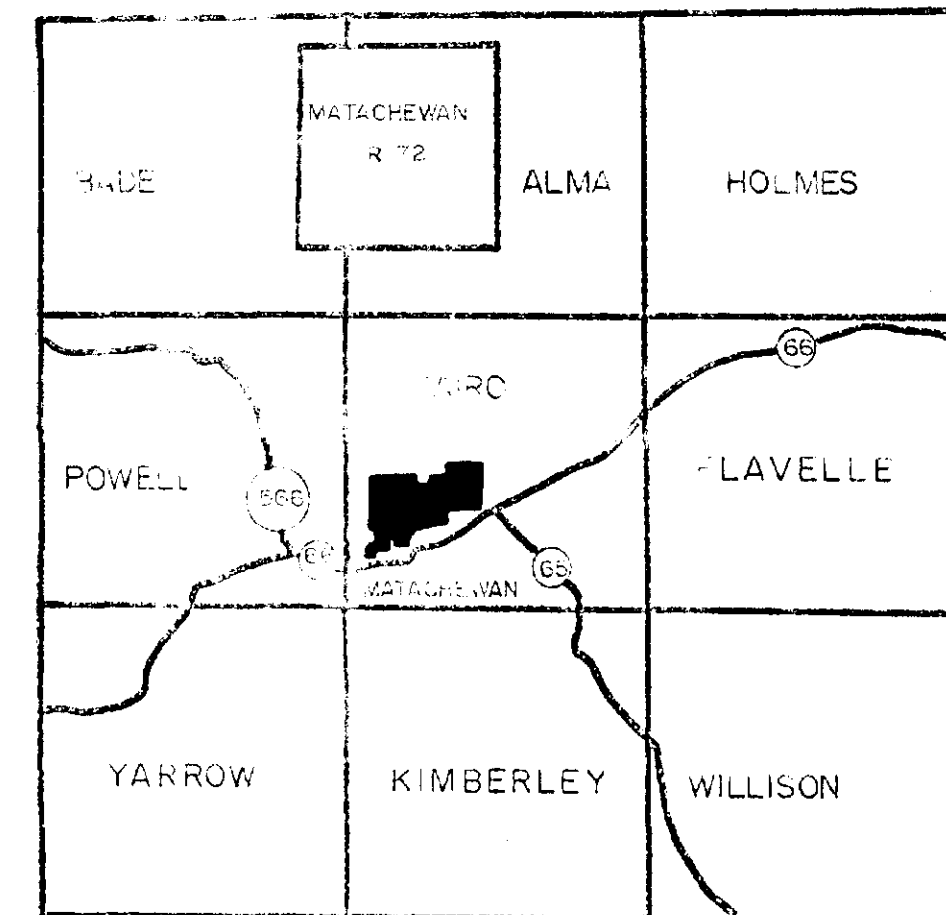
Enclosure:

KAJ/kg

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APR 15 1982

MINING LANDS SECTION



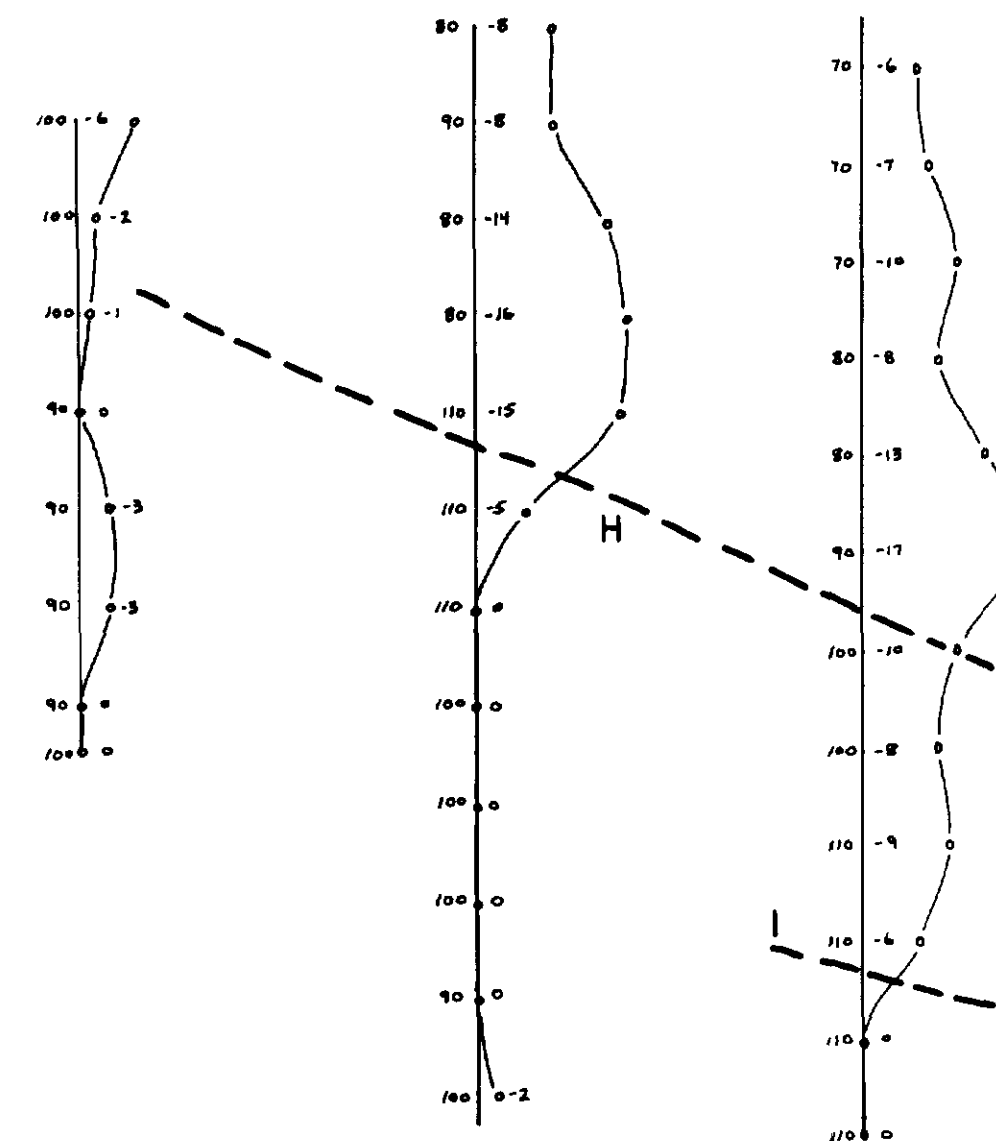
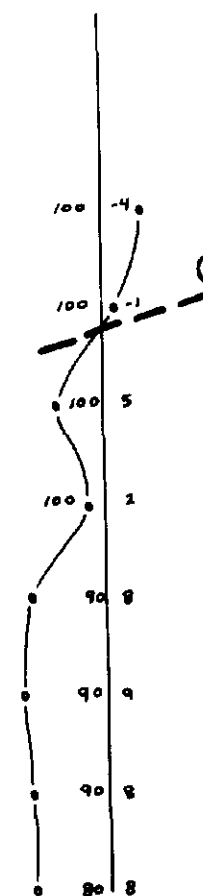
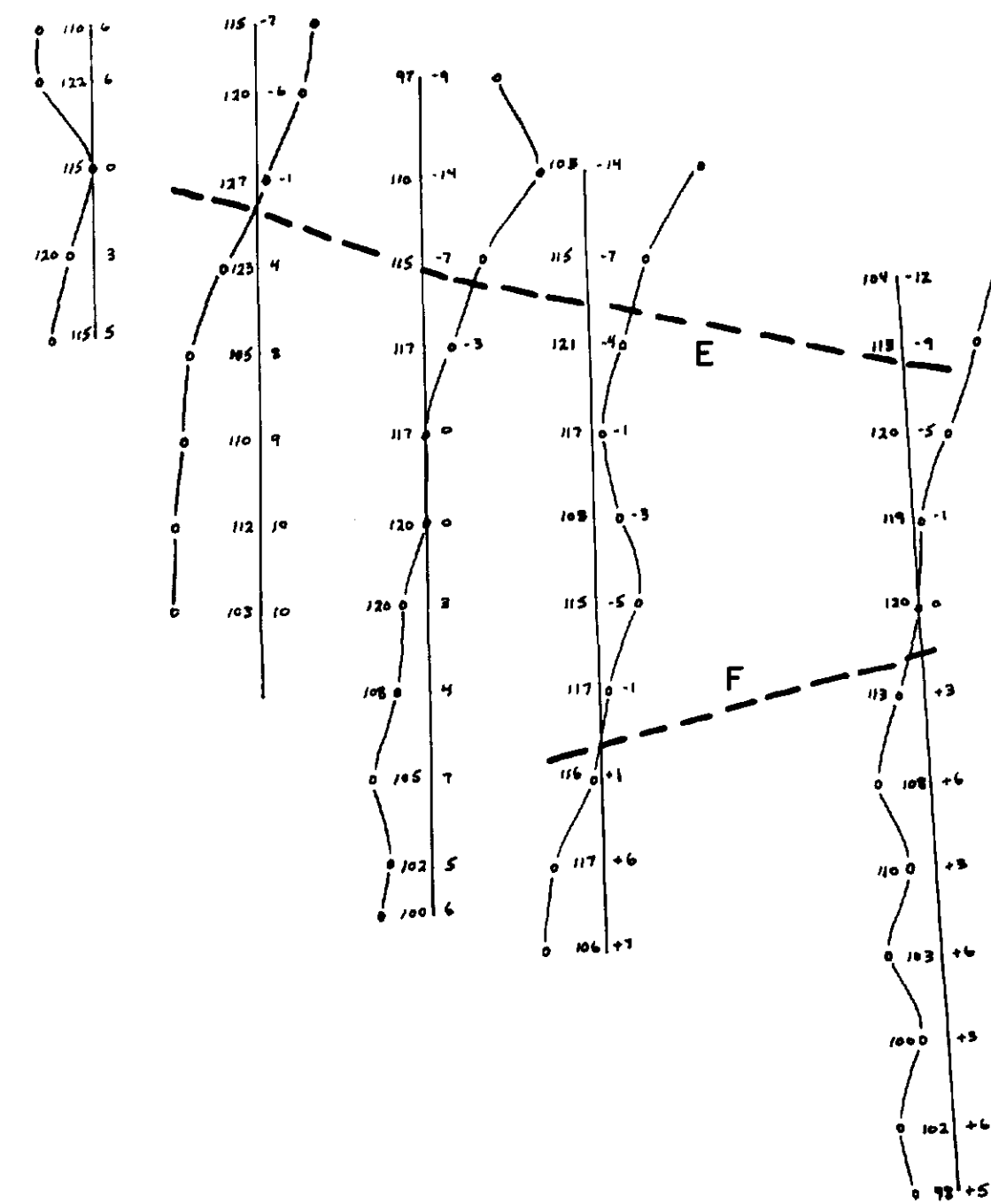
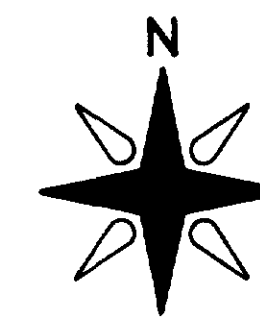
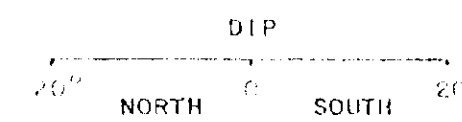
LOCATION MAP

SCALE: 1" = 4 miles

INSTRUMENT: PHOENIX VLF-2
 CUTLER, MAINE
 FREQUENCY: 17.8 kHz

—○—○— DIP
 - - - - - H.F.S.
 //2 -4 H.F.S./DIP

SCALES: DIP 1" = 20°
 H.F.S. 1" = 100%



Kian Hansen

VLF SURVEY

0506-82/2

2.4699



