OPAP FINAL REPORT
FILE # OP93-713

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5789 TAYSIDE CRESCENT
MISSISSAUGA

PROPERTY LOCATION, DESCRIPTION AND ACCESS

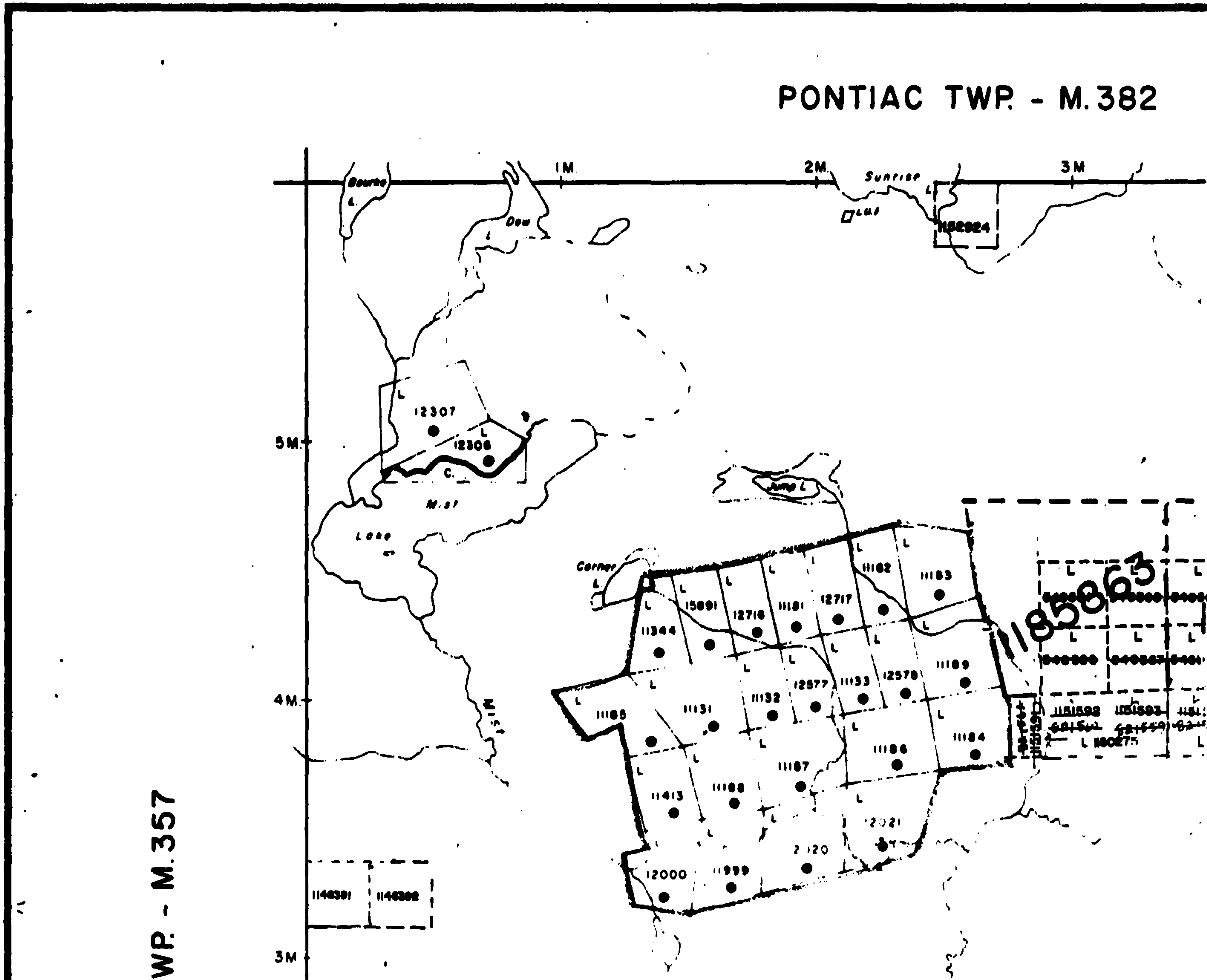
The Ossian property is located in north-central Ossian Township, Timiskaming District, 13 km north of Virginiatown, Ontario. The property lies within the Larder Lake Mining Division at latitude 48° 13' N and longitude 79° 33' W on NTS sheet 32D/4 and is outlined on claim map sheet M-378, Ossian Township.

The property consists of twenty-three (23) contiguous patented mining claims and covers a total area of approximately 451.5 hectares. The claims are listed below and outlined on Figure 1.

L 11131 to 11133 inclusive
L 11181 to 11189 inclusive
L 11344
L 11413
L 11999 and 12000
L 12020 and 12021
L 12577 and 12578
L 12716 and 12717
L 15891

A gravel road extends north from Kearns on Highway 66 to Mist Lake and provides access to the southwest corner of the property. Road distance from Kearns to the property is approximately 13 km. This road is not passable within 7 km of the southwest corner of the property. Access from the Labrynth Lake Road 3 km east of the property is difficult because of low, swampy ground conditions. Access from the Larder Lake Station Road to the west is also difficult. This unexpected difficulty is accessing the property caused numerous delays in starting the program and increased the cost of the program. Four independant local (Kirkland Lake) contractors were contacted to provide line cutting services. Each contractor caused delays and declined the job because of the difficult access and small size of the job. Because of these delays work did not begin until after freeze-up in December.

EXPLORATION HISTORY


PONTIAC TWP. - M.382
WP. - M.357
1M
2M
3M
4M
5M
3M
Bourke L.
Dow L.
Sunrise L.
1152924
12307
12306
Mist
Lake
Corner L.
Jump L.
11344
15891
12716
11181
12717
11182
11183
11185
11131
11132
12577
11133
12578
11189
11186
11184
11187
11188
11413
12021
12000
11999
1146391
1146392
118563

pre-1924

Quartz vein-hosted gold mineralization was originally discovered on the property in the early 1920's.

1924

Trench samples collected by Dome Mines included higher grade values ranging from 0.097 oz Au/ton over 36 inches to 1.1 oz Au/ton over 48 inches.

1925

Ossian Gold Mining Company acquired the property and undertook trenching and diamond drilling. A total of 19 diamond drill holes were completed. Assays ranged from trace to 1.64 oz Au/ton over core lengths of 5 feet or less. Two holes, #7 and #9 contained 0.81 and 0.66 oz Au/ton over core lengths of 11.0 and 11.5 feet respectively.

1925-1927

Ossian sunk a shaft to 210 ft. Approximately 600 ft and 450 ft of lateral drifting was conducted on the 90 ft and 200 ft levels respectively. Underground grab samples reportedly contained up to 0.126 oz Au/ton.

1928

The best underground values obtained by consultant P.E. Hopkins were 0.08 oz Au/ton over 4.6 feet and 0.125 oz Au/ton over 3.5 feet on the 90 ft and 200 ft levels respectively. Overall however most assays returned trace to 0.04 oz Au/ton. Hopkins data returned values which were approximately 25% of the earlier reported assays of the same workings. Hopkin's checks of the drill core were similarily lower.

1934

A sample of dump material was sent to Noranda with the following results:

Average material:0.03 oz Au/ton
0.02 oz Ag/ton
Selected material:0.125 oz Au/ton
0.12 oz Ag/ton

1935-1936

Five additional diamond drill holes were drilled. Four of the holes appear to have been check holes and were collared within 18 inches of the original holes. Only one hole returned similar grade mineralization. Hole 5a returned values of 1.04 and 0.12 oz Au/ton over adjacent intersections of 10 inches and 2 feet respectively. Original hole 5 had returned 1.10 oz Au/ton over 5 feet. The other holes generally returned much lower gold values.

_1947_

Minedel Mines acquired the property.

_1949_

Paymaster Consolidated Mines examined the property and resampled the trenches and the 1925 drill core. Trench samples values greater than 0.05 oz Au/ton ranged from 0.10 to 0.775 oz Au/ton over 36 inches and 48 inches respectively. Paymaster concluded that their sampling confirmed the results obtained by Dome Mines. Paymaster collected 13 grab samples from the quartz dump which was estimated to contain 1,055 tons. The average grade was 0.09 oz Au/ton. A selected grab sample returned 0.47 oz Au/ton. Paymaster resampled four 1925 diamond drill holes. Compareable intervals generally gave much lower values than those obtained by Ossian Gold Mining Company.

_1972_

L. G. Phelan, consulting geologist, reviewed historic data and recommended linecutting, magnetic and VLF electromagnetic ground surveys and followup trenching and drilling if warranted by the geophysical results. Phelan proposed that the exploration program test the property's massive sulphide potential.

_1973_

Derry, Michener and Booth Consultants reviewed the historic data and recommended additional claim staking, linecutting, magnetic and Turam electromagnetic surveys and followup diamond drilling if warranted by the geophysical results. Derry, Michener and Booth also recommended the exploration program focus on the property's massive sulphide potential.

_1975_

In April 1975, P.G. Lacombe and Associates, on behalf of Minedel Mines, contracted Barringer Research to conduct an airborne magnetometer survey of the patented claims and adjacent staked claims using a M-123 Magnetometer System mounted on a Cessna 180 and flown at a height of 500 feet above ground and a line spacing of generally 1/8th mile (not exceeding 1/4 mile). The survey showed a strongly magnetic background in the eastern part of the patented claim area.

In September 1975, Lacombe reported on the results of a magnetometer survey conducted on Minedel's contiguous unpatented claims east and west of the patented claim group. No surveys were conducted on the patented claims. In a separate geological report on the patented claims, Lacombe recommended a trenching program over the old Ossian Mines trenches and a bulk sampling of the old dump material to confirm the grade of known mineralization given the

apparent discrepencies between the historic sampling programs.

1977

Minedel Mines contracted Projex Limited to conduct 16 km of magnetometer and electromagnetic surveys over all of patented claims L11133, 11189 and 12578 and parts of L11182, 11183, 11184, 11186, 11187, 12577 and 12717. An additional 9.6 km of surveying was conducted on 10 contiguous unpatented claims east of the patented claim group. The magnetometer survey was conducted using a Sharpe MF 1 fluxgate magnetometer. A Sharpe SE horizontal-loop electromagnetic system was used on the eastern part of the unpatented claims but results were poor. A McPhar V.H.E.M. in the horizontal-loop configuration with 200 foot coil separation was then used to complete the electromagnetic suromagnetic survey failed to delineate any significant conductors.

1992

Crow Geological Services Inc. acquired the 23 patented claims in December 1992.

REGIONAL GEOLOGY

Ossian Township lies in the Abitibi greenstone belt between the Porcupine-Destor Fault to the north and the Larder Lake Fault to the south. The township is underlain by predominantly intermediate to mafic metavolcanics with minor felsic flows and tuffs. Strikes are generally east-west with steep dips. A felsic volcanic assemblage (dacite to rhyolite breccia, agglomerate and tuff) 350 to 750 m thick is present in the north-central part of the township. Pillow facing directions in the andesitic volcanics north and south of the felsic assemblage suggest that this felsic belt forms the axis of an anticlinal fold.

PROPERTY GEOLOGY

The previously mentioned felsic volcanic assemblage strikes through the Minedel property. A section through the property would comprise a central belt of rhyolitic to dacitic breccias, agglomerates and tuffs flanked to the north and south by andesite to dacite flows and agglomerates.

A north-south trending sinistral fault is interpreted to cut the stratigraphy at the approximate centre of the property. Northeast trending faults have been mapped approximately 1 km north and south of the property.

MINERALIZATION

The Ossian Mines gold showing, located in claims L11131 and 11132, is a shear zone-hosted quartz vein which trends roughly east-west, oblique to the trend of the west-northwest-trending felsic volcanic host. The vein dips approximately 55° to the north. The vein has been traced on surface for 600 feet and underground for 400 feet. The vein is reported to vary from inches up to 25 feet in width with an average width of approximately 4 feet. The vein has sharp contacts with the rhyolite. It is reported that the mineralization changes from pyritic quartz to pyritic chlorite schist where the vein cuts the contact from rhyolite to andesite. Shearing and banding was not recognized within the quartz vein. The vein contains few wall rock inclusions. Pyrite is present but not in concentrations greater than 2%. Copper and lead sulphides have also been reported.

The sheared rhyolite host to the quartz vein is reported to contain abundant disseminated pyrite and lesser copper, zinc and lead sulphides. One trench is reported to have exposed a 100 foot section of rhyolite containing 2-3% disseminated pyrite and specks of chalcopyrite and bornite. Another trench was described as containing good massive and disseminated mineralization; predominantly pyrite with lesser amounts of chalcopyrite, bornite, sphalerite and galena. Drill holes commonly reported disseminated pyrite with minor chalcopyrite within felsic volcanic rocks.

EXPLORATION POTENTIAL

Two main episodes of exploration has occurred on the property. Exploration from the early 1920s to the late 1940's focussed on the quartz vein-hosted within the felsic volcanic assemblage. Work consisted of prospecting, mapping, trenching and underground drifting on two levels. In the 1970's the property was covered by an airborne survey and the eastern half of the property was partially covered by ground magnetic and electromagnetic surveys. These surveys were part of programs covering a larger exploration area. The focus of the geophysical exploration was the base-metal massive sulphide potential of the felsic volcanic assemblage. Additional work was also recommended on the Ossian Mines gold showing at this time however there is no data indicating that such work was conducted.

The sporadic and historic nature of exploration on the property requires that the gold and base metal potential be reassessed in light of the more advanced exploration techniques available today. Modern exploration methods that might be applied to the property include: proton-precision magnetometer surveys (eg. Scintrex MP2 proton magnetometer); multi-frequency horizontal-loop EM surveys (eg. Apex Max-Min II); rock, soil and till geochemistry and; field mapping using up-to-date mineral deposit models.

Given the size of the property, location of known mineralization and the geological environment of the property, the proposed exploration program will focus on the felsic volcanic assemblage and the immediately overlying andesites to the north and south. The Ossian gold showing quartz vein/shear appears to be approximately coincident with and subparallel to the interpreted anticlinal axis. If this quartz vein is indeed related to axial planar shearing, there is good potential for additional gold mineralization both along strike and in parallel shear structures. The felsic-intermediate volcanic contacts north and south of the showing are also prospective sites for gold mineralization. The change in style of mineralization from quartz vein to schist associated with the change in host from rhyolite to andesite requires followup to test for the potential of lower grade but larger tonnage gold mineralization.

The felsic fragmental assemblage and its contact with the overlying andesite flows represents a favourable base-metal massive sulphide target. Given the interpreted anticlinal structure, both the north and south contacts are prospective. The base metal sulphide potential of the felsic assemblage is supported by reports of pyrite and minor chalcopyrite, sphalerite and galena.

GEOPHYSICAL SURVEYS RESULTS

Line Cutting

A base line 1400 metres long was cut at 075°, with its origin at the shaft on claim L11132. Lines were cut at 100 metre intervals, for 250 metres north and south from the base line, and chained and picketed at 25 metre intervals. The grid provided effective coverage of claim L11131, L11132 and L12577. This covers the shaft area and east and west strike extentions.

Magnetic and VLF-EM Survey

These surveys were carried out using an EDA Omni Plus system. Two proton magnetometer sensors record the total magnetic field and vertical gradient. Readings are stored electronically in the instrument, and diurnal correction of the total field readings is effected automatically at the end of each day's survey by reference to a recording base station magnetometer. Readings were taken at 12.5 metre intervals throughout the survey area.

The VLF data are collected simultaneously with the magnetic survey. Three orthogonal coils and a tilt sensor combine to calculate readings of in-phase tilt- angle and quadrature (in percent), total field strength and horizontal field direction. As with the magnetic data, readings are stored electronically and dumped at the end of each day.

Horizontal Loop EM Survey

The horizontal loop survey was carried out using an Apex Maxmin II with a 100 metre coil separation. Readings of in-phase field strength and quadrature were taken at 25 metre intervals. The coils were tilted to allow for terrain variations. On commencement of the survey, it was found that the only frequencies operating were 444 Hz and 888 Hz, so these were used for the first day's survey, from line 100W to line 300E. After this the instrument broke down completely, and the survey was abandoned.

Interpretation of results

The magnetic survey shows a series of linear ENE-trending anomalies of low amplitude, generally less than 50 nT, which is typical of Archean volcanic terrains. The one strong anomaly of over 900 nT at 0+00 on the base line, is probably caused by steel pipe in the shaft at this location.

The VLF-EM survey shows a number of conductors, varying from moderately strong to extremely weak. They have been designated with letters A to M on the compilation map. The best defined is conductor A, which is 1000 metres long, shows moderate in-phase amplitude, up to 45%, with sympathetic to reverse quadrature. It coincides closely with a well-defined and more or less continuous magnetic anomaly. It is interpreted to be caused by a conductive stratigraphic unit, perhaps a schistose member carrying disseminated sulphides.

Conductor B shows similar characteristics to A, and may represent the north contact of a wide section of the conductive unit, on line 300E and possibly also on line 200E. Conductor E is of low amplitude, but shows a neutral quadrature response and coincides with a magnetic anomaly. It is probably caused by a unit similar to the source of conductors A and B. Conductor G on line 1000E only is of moderate amplitude and has neutral quadrature, but is non-magnetic. It is also likely to represent a bedrock unit of moderate conductivity.

Conductors C, F, G, I, L and M are all of low to moderate amplitude, show sympathetic quadrature, and coincide with magnetic anomalies. They are interpreted to be caused by weakly conductive units within the volcanic stratigraphy. Of these conductor L is sharply defined, and is probably under very shallow overburden.

Conductors G (except on line 1000E), J and K are poorly defined and of low amplitude, have no magnetic association, and have strong sympathetic quadrature responses. They are considered to be caused by overburden or topographic effects.

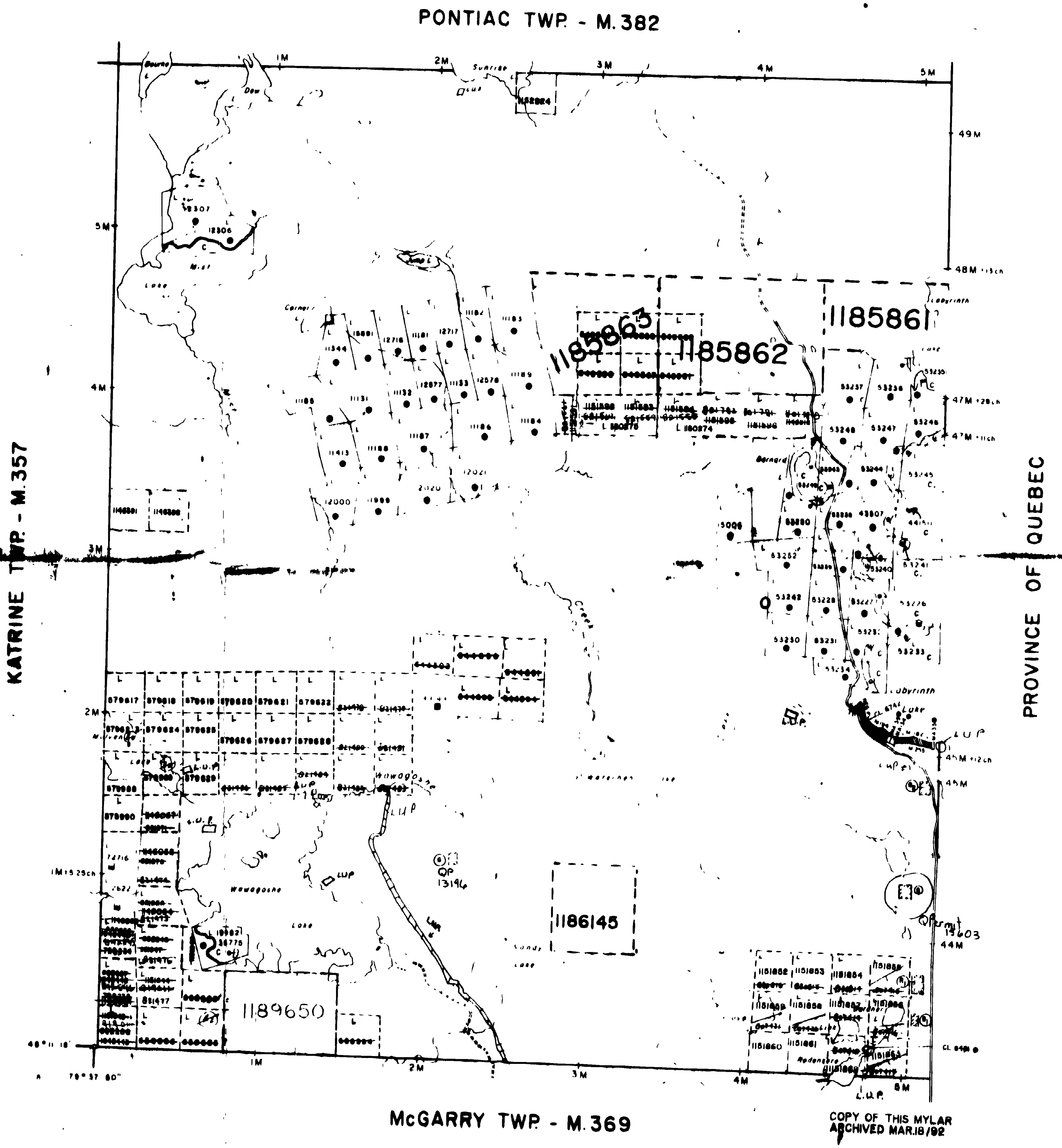
Conductors D and H are of low to moderate amplitude, have a generally sympathetic quadrature response, and trend east-west at a shallow angle to the magnetic texture. These conductors are interpreted to be caused by a cross-cutting shear zone, which is not seen on lines 100E to 300E because of its proximity to the stronger conductor A. An old trench on line 100W at 50S lies exactly on this conductor. Snow cover prevented the survey technician from examining any mineralization that the trench may have exposed.

The horizontal loop EM survey only provides coverage in the central part of the grid. The only anomaly that it shows is a quadrature-only response on lines 0 to 200E. This is of low amplitude (up to 5% on 888 Hz and up to 3% on 444Hz. It coincides with the strongest part of VLF conductor A.

CONCLUSIONS

VLF conductors A, B and E have geophysical characteristics consistent with weakly sulphide-bearing units, and should be carefully prospected and/or trenched or stripped to search for any associated gold mineralization.

The low-angle cross-cutting shear inferred from VLF conductors D and H may have been important in localizing gold mineralization, and should be very carefully investigated by prospecting, trenching, stripping or, if necessary, drilling.



THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON

THE TOWNSHIP OF OSSIAN

DISTRICT OF TIMISKAMING

LARDER LAKE MINING DIVISION

SCALE 1-INCH — 40 CHAINS

DISPOSITION OF CROWN LANDS

PATENT, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LEASE, SURFACE AND MINING RIGHTS
" , SURFACE RIGHTS ONLY
" , MINING RIGHTS ONLY
LICENCE OF OCCUPATION

ROADS
IMPROVED ROADS
KING'S HIGHWAYS
RAILWAYS
POWER LINES
MARSH OR MUSKEG
MINES
CANCELLED C.

NOTES

400' surface rights reservation along the shores of all lakes and rivers

Areas withdrawn from staking under Section 43 of the Mining Act (R.S.O. 1970).

Order No	File	Date	Disposition
W 64/74	96371	4/12/74	S.R.
W 9/86, Sec 36/80		24/01/86	M+S
O-78/87 PARTIALLY OPENS W9/86		14/08/87	
O-L27-90 NR OPENS PART OF W9/86 NOV 21/90			

SAND and GRAVEL

Pit 967
Pit 968
QUARRY PERMIT

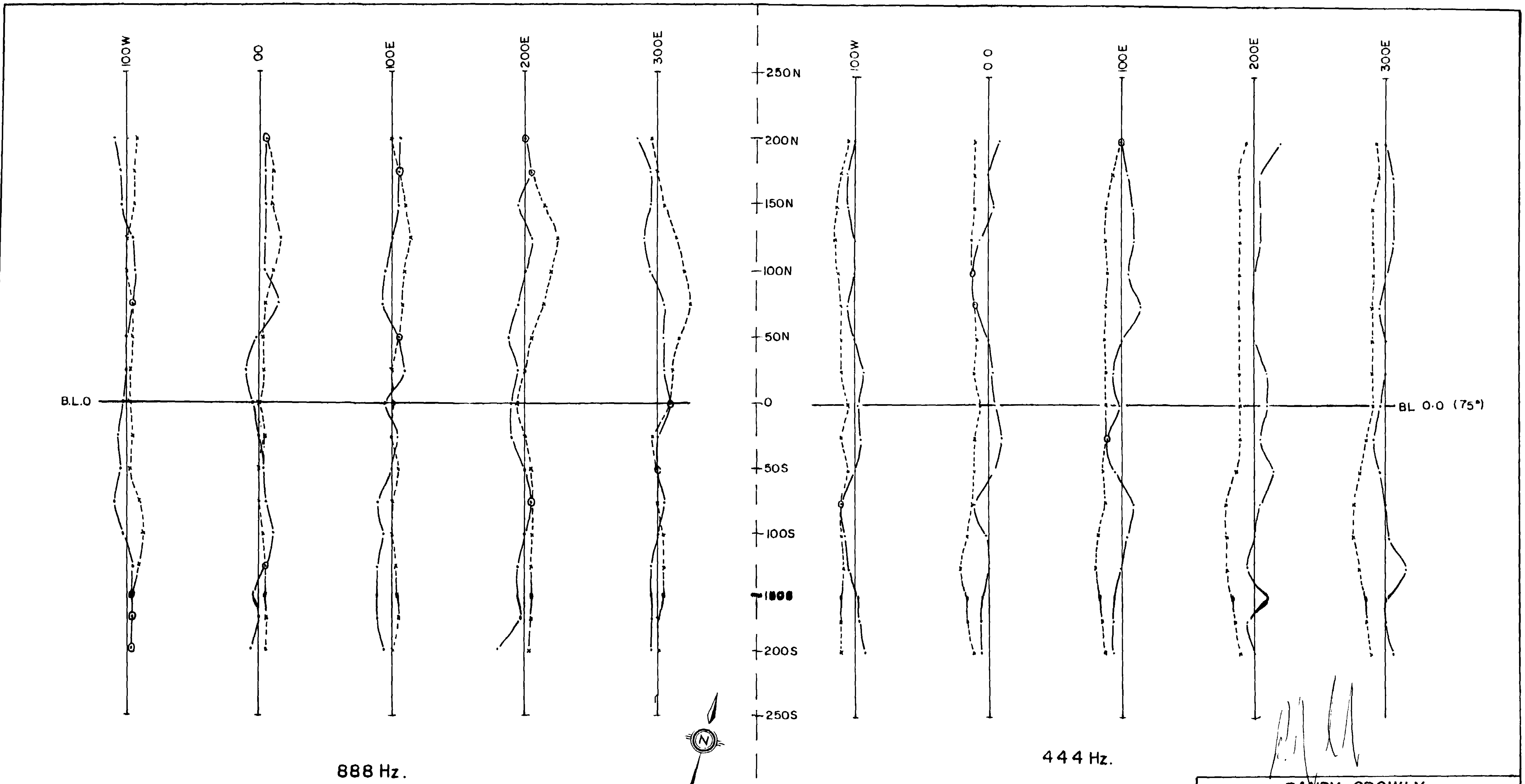
MAR 9 1993

PLAN NO. M.378

ONTARIO
MINISTRY OF NATURAL RESOURCES
SURVEYS AND MAPPING BRANCH

TRIM LINE

200



Legend

Profile scale 1 Cm = 5%

W − +E

in-phase Q

INSTRUMENT· MAXMIN II.
SURVEYED BY D. DMITROVIC
DATE JANUARY 1994

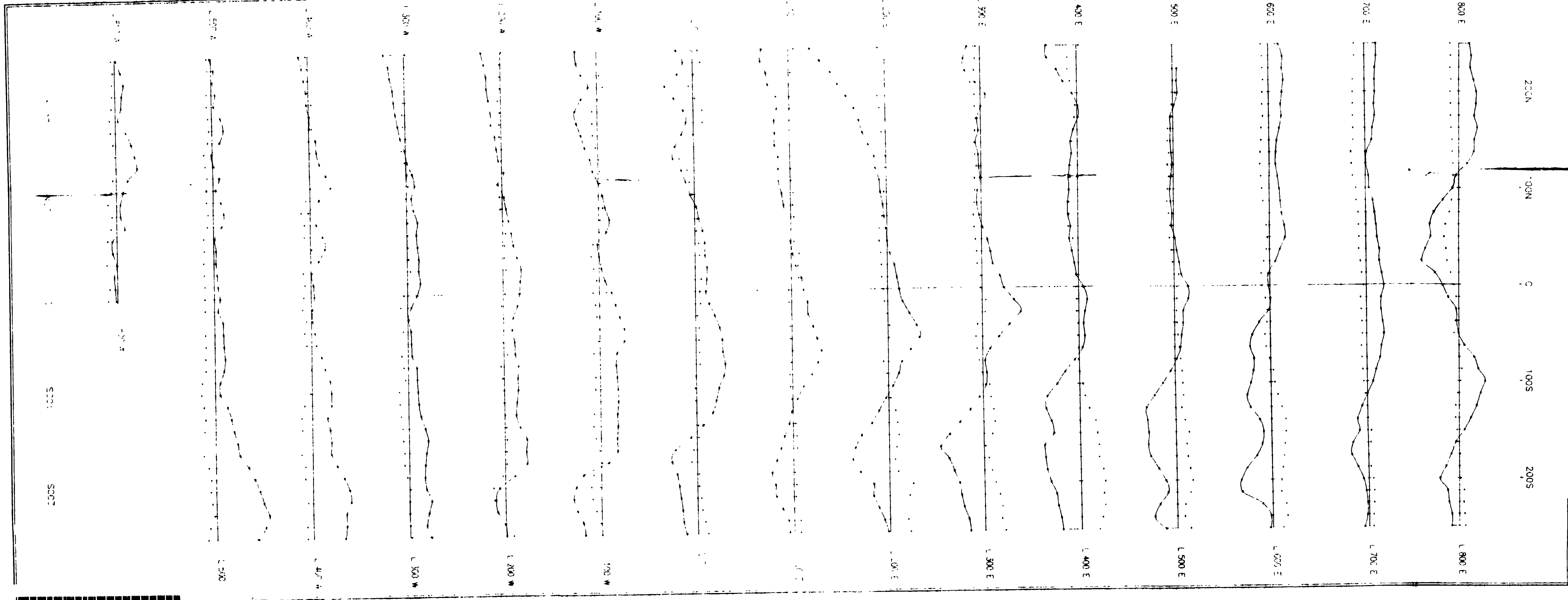
RANDY CROWLY

OSSIAN GOLD PROSPECT

OSSIAN TOWNSHIP, LARDER LAKE, ONT

HORIZONTAL LOOP E.M. SURVEY

SCALE 1 2,500



LEGEND

Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Transmitter: NLK (24.8 KHz)
In-Phase: Solid Line
Quadrature: Dotted Line
Positive Direction: Left
Facing Direction: North

Scale 1 2500

(meters)

JAN 94

RANDY CROWLEY

OSSIAN GOLD PROSPECT
OSSIAN TOWNSHIP
LARDER LAKE AREA ONTARIO

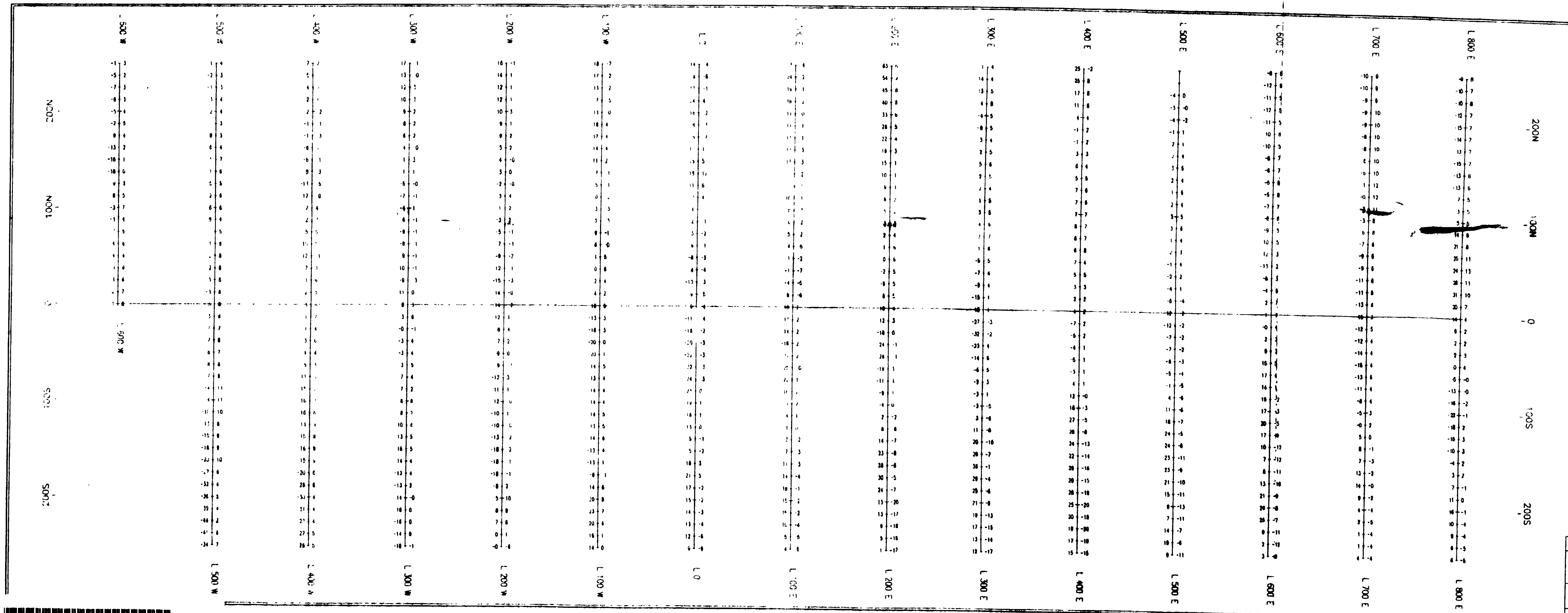
VLF-EM SURVEY
IN-PHASE AND QUADRATURE PROFILES

January 1994

220

32D05SE0091 OP93-713 BRISTOL

230



LEGEND

Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Transmitter: NLK (24.8 KHz)
In-Phase: Left of Line
Quadrature: Right of Line
Facing Direction: North

Scale 1:2500

50 0 50 100 150
(meters)

Jan 94

RANDY CROWLEY

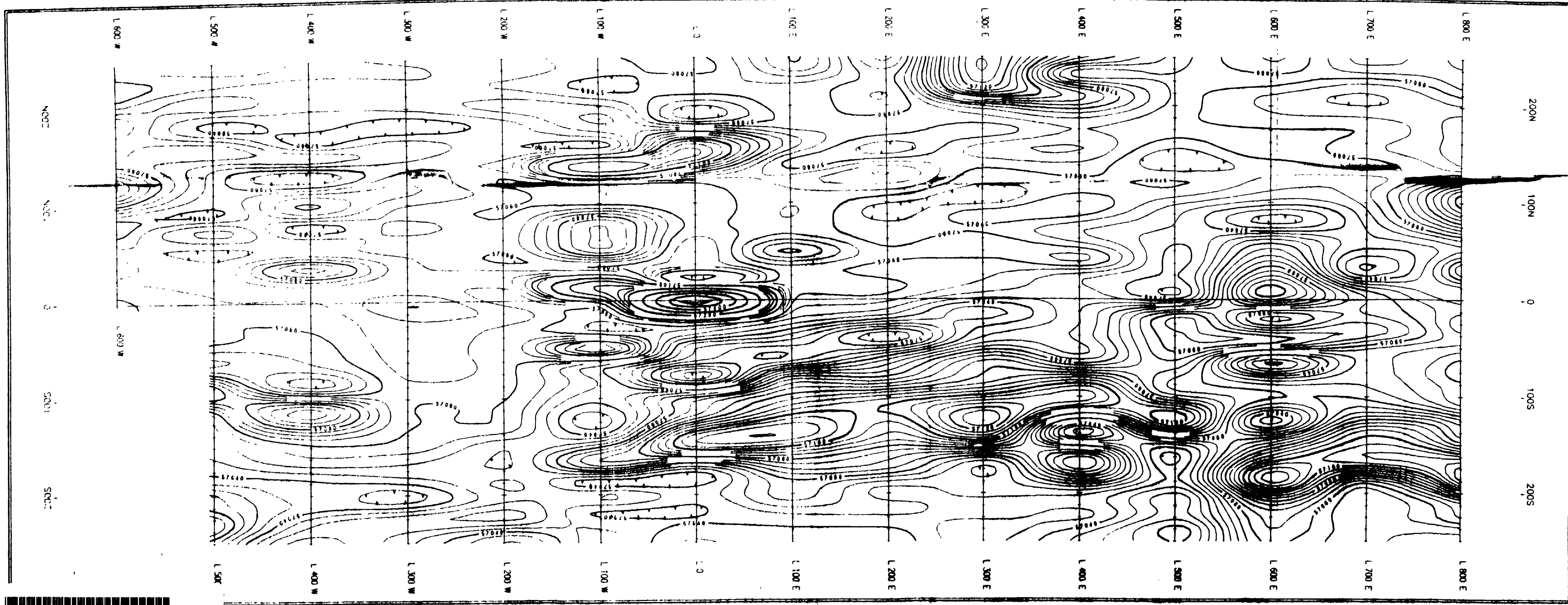
OSSIAN GOLD PROSPECT
OSSIAN TOWNSHIP
LARDER LAKE AREA, ONTARIO

VLF-EM SURVEY
IN-PHASE AND QUADRATURE POSTINGS
January 1994

240

32D05SE0091 OP93-713 BRISTOL

250



LEGEND

Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Contour Intervals: 5, 20, 100, 500 nT
Diurnal Correction: Base Station

Scale 1:2500

50 0 50 100 150 (meters)

Jan 94

RANDY CROWLEY

OSSIAN GOLD PROSPECT
OSSIAN TOWNSHIP
LARDER LAKE AREA, ONTARIO

MAGNETOMETER SURVEY
TOTAL FIELD CONTOURS

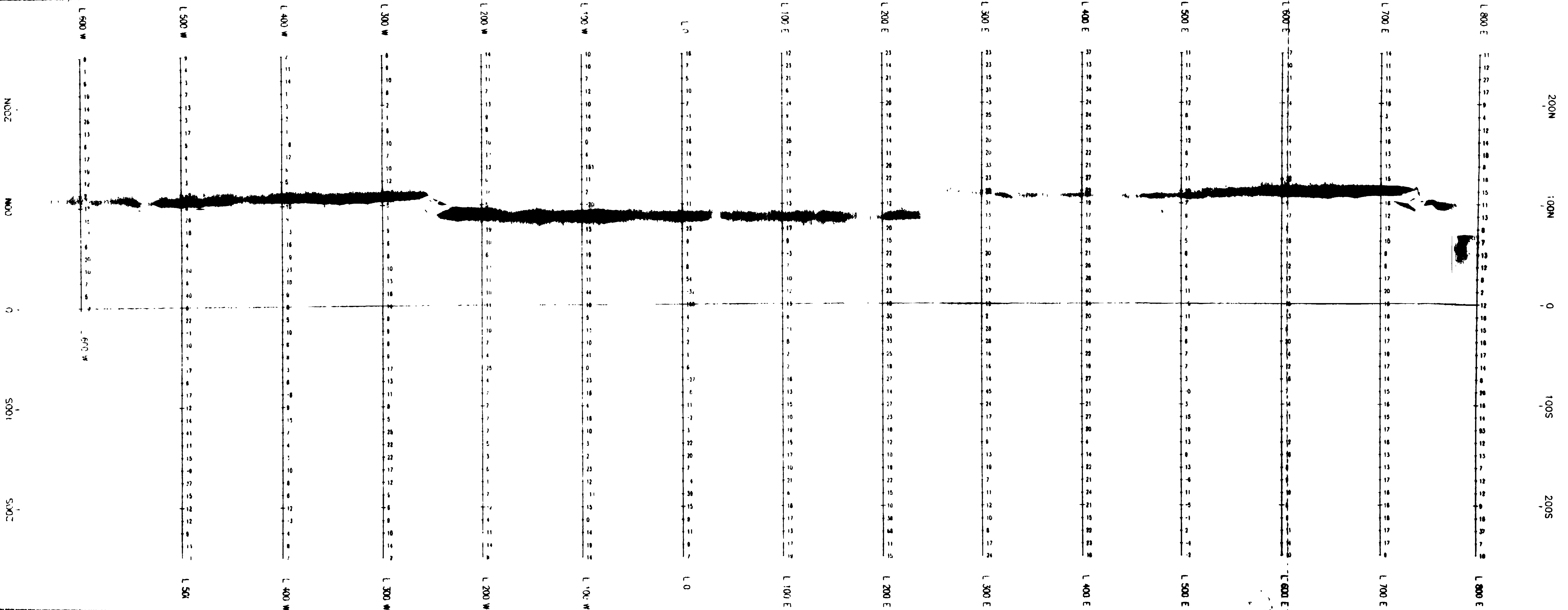
January 1994


LEGEND
Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Profile Scale: 1 cm = 100 nT
Profile Base: 57,000 nT
Diurnal Correction: Base Station
Scale 1:2500
50 0 50 100 150
(meters)
L 600 W
L 500 W
L 400 W
L 300 W
L 200 W
L 100 W
L 0
L 100 E
L 200 E
L 300 E
L 400 E
L 500 E
L 600 E
L 700 E
L 800 E
200N
0
100S
200S
RANDY CROWLEY
OSSIAN GOLD PROSPECT
LARDER LAKE AREA, ONTARIO
MAGNETOMETER SURVEY
TOTAL FIELD PROFILES
1994

270

32D05SE0091 OP93-713 BRISTOL

280



LEGEND

Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Postings: Vertical Gradient in nT/m
Base Level: 0 nT/m

Scale 1:2500
50 0 50 100 150
(meters)

Jan 94

RANDY CROWLEY

OSSIAN GOLD PROSPECT
OSSIAN TOWNSHIP
LARDER LAKE AREA, ONTARIO

MAGNETOMETER SURVEY
VERTICAL GRADIENT POSTINGS

January 1994

32D05SE0081 OP93-713 BRISTOL

290

L 600 W
L 500 W
L 400 W
L 300 W
L 200 W
L 100 W
L 0
L 100 E
L 200 E
L 300 E
L 400 E
L 500 E
L 600 E
L 700 E
L 800 E
200N
100N
0
100S
200S
LEGEND
Instrument: EDA Omni Plus
Operator: D. Dmitrovic
Profile Scale: 1 cm = 50 nT/m
Profile Base: 0 nT/m
Scale 1:2500
50 0 50 100 150
(meters)
RANDY CROWLEY
OSSIAN GOLD PROSPECT
OSSIAN TOWNSHIP
LARDER LAKE AREA, ONTARIO
MAGNETOMETER SURVEY
VERTICAL GRADIENT PROFILES
January 1994