GEOPHYSICAL SURVEY REPORT

OF THE

GOLDEN SHIELD RESOURCES PROPERTY

McELROY TOWNSHIP

LARDER LAKE MINING DIVISION

DISTRICT OF TIMISKAMING, ONTARIO

FOR

GOLDEN SHIELD RESOURCES LTD.

JUNE 20, 1986

MARY GREER
GEOPHYSICAL TECHNICIAN

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Scale: 1 inch to 200 feet

Date: June 1986

Golden Shield Resources Ltd.

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Ground Magnetometer Survey

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LARDER LAKE MINING DIVISION

DISTRICT OF TIMISKAMING, ONTARIO

INTRODUCTION

The Golden Shield claim was recorded on August 21, 1985, by E. Chartre.

Perrons performed two geophysical surveys, (Magnetic, electromagnetic) on June 12 and June 13, 1986.

The geophysical surveys and interpretation were completed by Mary Greer. All drafting and plotting was completed by Kate Calberry.

The purpose of this report is to briefly describe the results obtained in said surveys.

The anomalies detected, are shown on the accompanying plan maps, at a scale of one inch to 200 feet, that form an integral part of this report.

PROPERTY DESCRIPTION

The Gold Shield claim consists of one unpatented mining claim located in McElroy township, Larder Lake Mining Division, District of Timiskaming, Ontario, being claim number L-842560.

Ownership of the aforementioned unpatented mining claim has been attested to by Golden Shield Resources Ltd., of Suite 908, 111 Richmond Street West, Toronto, Ontario, M5H 2G4, and was not independently ascertained by the writer. (See Figure 1 a).

LOCATION AND ACCESS

The Golden Shield claim is located in McElroy township, north of the former Mirado Mine which is located in the centre along the McElroy-Catharine township line. The Mirado Mine is approximately 30 miles from the town of Kirkland Lake. It is easily accessable via Highway #66 and Highway #112 to secondary Highway #564 to the village of Boston Creek, and then along the mine road east to the Mine Site. (See Figure 1a and 1b).

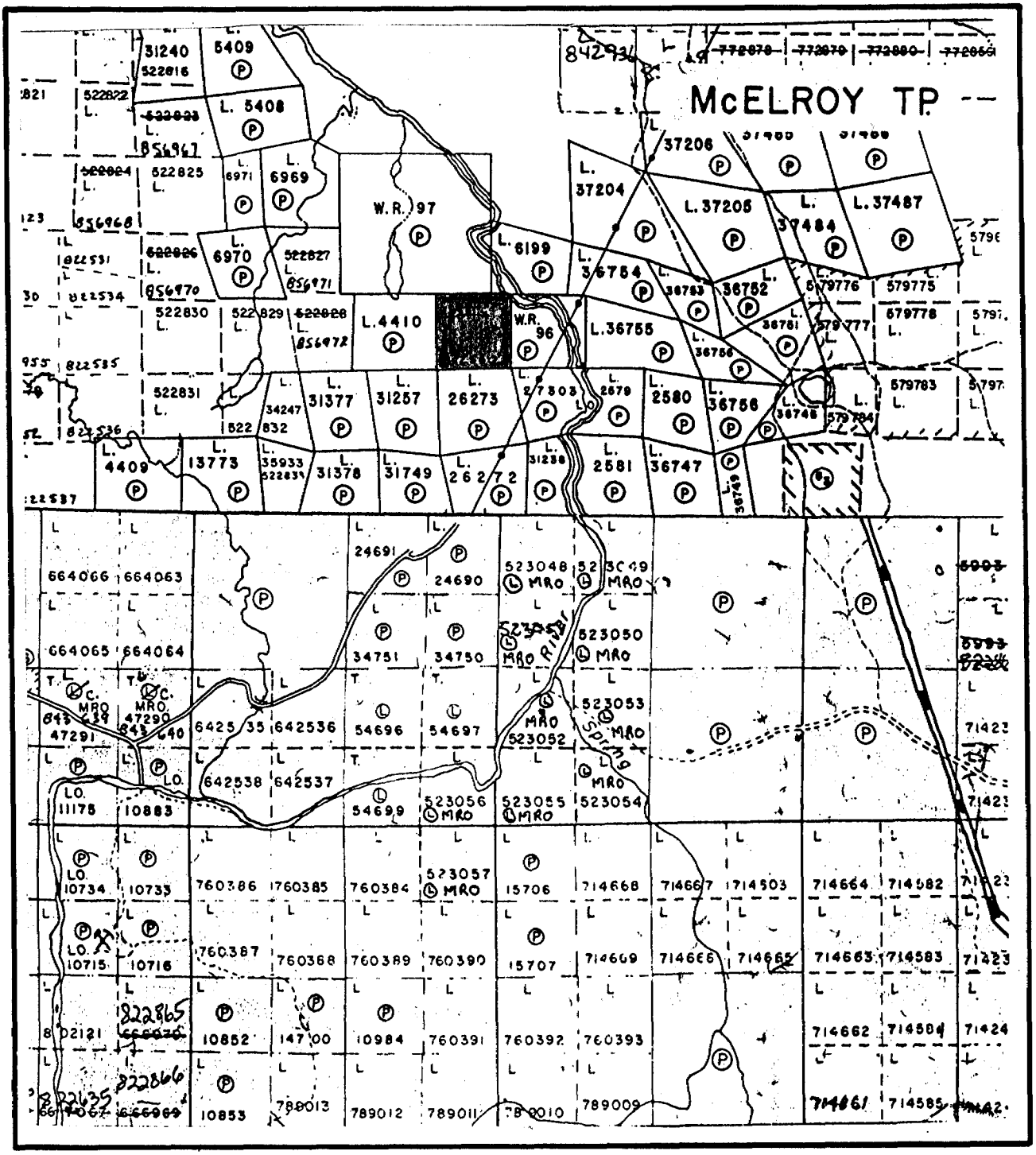
SURVEY PROCEDURE

A tieline was established northwest-southeast across the claim. A grid system of lines at 200 foot spacings with stations every 100 feet, was then established at right angles to the tieline.

Readings were taken at 50 foot intervals on the lines. The primary magnetic base station was established at TL 14 + 00 W. The time interval between each magnetic diurnal check was approximately every 1/2 hour.

TOPOGRAPHY

The general terrain of the Golden Shield claim is high dry ground with the Misema River running south across the north-east corner. A rocky ridge occurs on either side of a low swampy bog crossing diagonally through the centre of the claim. The primary vegetation is poplar and jackpine on the dry areas,

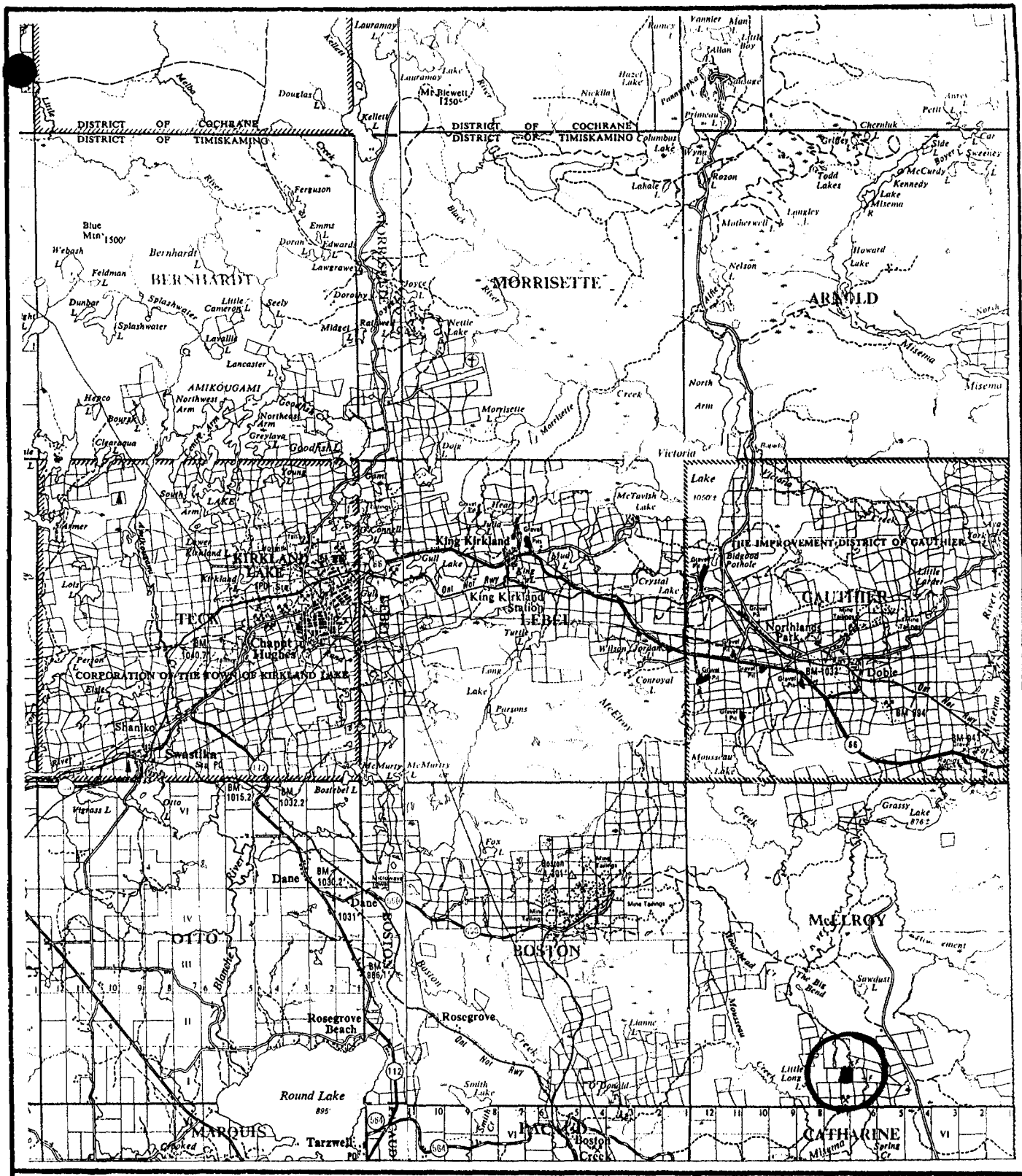


Claim Location Map

Scale: 1 inch to 1/2 mile

Taken from a June 1986

Figure 1a



Location Map

Figure 1b

with alder and spruce and bog occurring in the low valley.

GENERAL GEOLOGY

O.D.M. Geological Map No. 1950-3, covering McElroy township and part of Pacaud, at a scale of one inch to 1,000 feet, indicates that the bedrock is predominantly basic and intermidiate volcanics, which are classified as dioritic, diabasic and gabbroic lavas. These lavas have been intruded by acid volcanics which are acid tuffs and cherty tuffs, and/or acid fragmental volcanics, and/or tuffs and sediments interbedded with volcanic rocks. The claim is crossed by a shear zone on the diagonal in the northeast corner, some partially carbonated rock can be associated in this area. There is also a north south fault.

ECONOMIC GEOLOGY

Situated to the immediate south of the claim, along the McElroy-Catharine township line, lies the Cathroy-Larder Mine property.

Cathory-Larder Mines was incorporated in 1943 to succeed Yama Gold Mines. Yama Gold Mines produced 22,250 tons grading 0.14 oz. Au/ton between 1938 to 1942. A new gold zone was discovered by Cathroy-Larder about 1,000 feet south of the shaft. After considerable underground development, including surface and underground diamond drilling, ore reserves were calculated at 280,000 tons grading 0.20 oz. Au/ton.

Mirado Nickel optioned the property in 1960 conducting additional surface and underground drilling. In 1980 the property was optioned by Canamax (Amax) and further surface diamond drilling was performed as well as surface stripping over the south ore body.

The rocks within the mine area belong to the Skead-Group which are mainly dacites, andesites, rhyolite flows and pyroclastics. These rocks are cut by small dikes of syenite, lamprophyre and diorite.

The ore is stratabound within pyroclastic units. The shaft ore body is at or near the upper contact of the Skead pyroclastics. The south ore bodies are approximately 1,500 feet from the top of the Skead group.

The upper contact of the Skead group within the mine area strike about S 70° E and dip steeply north to vertical. The ore zones consist of many narrow quartz-calcite-sulphide and massive sulphide seams. The sulphides are pyrite, chalcopyrite and sphalerite, gold is found in fractures in the pyrite.

Presently the property has been optioned by Golden Shield Resources Ltd., who are presently involved with an underground exploration after dewatering the underground workings.

INSTRUMENTATION

i) Electromagnetic Survey:

The VLF-EM method uses as a source, one of the main submarine communications transmitters in the 15 to 25 kHz band found throughout the world. These submarine communication radio waves travel in a single mode parallel to the surface of the earth along the earth-air interface.

Without vertical conductors and travelling over flat ground, the magnetic field component of this radio or surface wave is horizontal and perpendicular to it's direction of travel.

VLF instruments are capable of picking up these structures that change the direction of the waves by measuring the tilt angle of the major axis of the polarization ellipse. This is illustrated by the tilt angle being zero on flat ground, but when a conductor is present the tilt angle will acquire a finite value. The direction of the tilt indicates the direction of the conductor. Calculations of such parameters as depth, depth extent, dip and width of the conductor is very minimal.

The VLF easily illustrates the location of the upper limit of dipping structures which can be seen or plotted as VLF profiles as areas of greatest change in tilt angle per unit of distance.

The instrument used was a Geonics VLF-EM16 Unit. The sensivity of this unit is $\pm$ 1% for the inphase and $\pm$ 1% for the quadrature. The operation frequency for the EM16 is from 15-25 kHz and the station selection is made by plug-in units.

For the purpose of this survey the station used was Cutler, Maine, which has a frequency of 24.0 kHz.

All readings were taken perpendicular to the station and the topography was noted for further use in the interpretation of the EM results.

ii) Magnetic Survey:

This system uses a backward motion of spinning protons of a hydrogen atom within a fluid of hydrogen and carbon. These spinning magnetic protons are caused to have two opposite poles by applying a magnetic field using a current within a coil of wire. When the current is stopped, the protons precess about the earth's magnetic field and in turn generate a small current in the wire. This frequency of precession is proportional to the earth's total magnetic field.

This instrument is read directly in gammas which is the absolute value of the earth's total field for that station.

The instrument used for this survey was a McPhar GP-8 Proton Magnetometer, this instrument has a one gamma sensitivity.

The diurnal variation was monitored by closing each loop at any secondary check station, at a gridline-tieline intersection.

Diurnal corrections were applied by linear distribution of any observed variation over the time between base stations. The corrections were calculated by using a time vs drift graph.

PRESENTATION AND DISCUSSION OF RESULTS

i) Electromagnetic Survey:

The field data is presented on a map at a horizontal scale of one inch to 200 feet, Map No. 86-GS-1, found in the back pocket of this report.

The VLF-EM data is illustrated as profiled data along the survey lines and is plotted at a vertical scale of 1 inch = $\pm$ 20° with the positive and in-phase to the left and negative and quadrature to the right.

One VLF-EM conductor was found by the survey. There was a very dramatic change in the in-phase EM response. The quadrature response indicates a conductor at depth and does not appear to be associated with topographic features.

ii) Magnetic Survey:

The field data is presented on a map at a horizontal scale of one inch to 200 feet, Map No. 86-GS-2, found in the back pocket of this report.

The magnetic data is illustrated as isomagnetic contours (contour interval 100 gammas) on a map of corrected magnetic values recorded at each station.

Two areas of high magnetic susceptability were noted on the property. One occurring to the north of the claim and one occurring to the south of the claim. A low occurs between the two highs which is quite

distinct. The magnetic trend appears to be east southeast.

CONCLUSIONS AND RECOMMENDATIONS

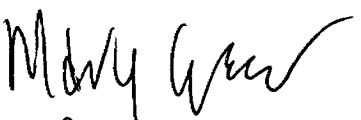
The VLF-EM occurs in the same area as the magnetic low. The magnetic low illustrates a difference between two rock types. The high response may indicate a mafic volcanic whereas the low probably indicates a felsic intrusive. This is verified by the ODM Geological Map of McElroy township.

The EM response also indicates an anomaly occurring in the same area, and due to the fair amount of positive quadrature we may conclude this is caused by the presence of a fault or shear zone.

It should be observed that the EM response is associated with a topographical boundary between exposed outcrop and a low swamp. This occurs across L 12 + 00 W to L 16 + 00 W approximately 36 + 00 N to 38 + 00 N. It is possible that this anomaly is not related due to it's strong association with the magnetic low.

Recommendations would be further exploration, involving a detailed geological survey to corelate any exposed outcrop to the magnetic and electromagnetic response. A geochemical survey would also help detect any auriferous zones which would lead to possibld targets for further geophysical work or a diamond drill program.

Respectfully submitted,



June 20, 1986

Mary Green
Geophysical Technician

BIBLIOGRAPHY

Map No. 1950-3 - Ontario Department of Mines
Township of McElroy and
portion of Township of Boston

Scale 1 inch to 1,000 feet

C E R T I F I C A T E

I, Mary Greer, of Kirkland Lake, Ontario, do hereby certify:

1) That I am a Geophysical Technician and reside at:
49 McKelvie Avenue, Kirkland Lake, Ontario, P2N 2K6

2) That I graduated from Sir Sandford Fleming College at Lindsay, Ontario, in 1978, with a diploma as a Geological Technician.

3) That I have been continuously engaged in my profession for the past six (6) years and I am qualified to write this report.

4) That I supervised and participated in this survey.

June 20/86
Date

Mary Greer
Mary Greer
Geophysical Technician

900

N. 308

Mining Lands Section

File No 2.9342

Control Sheet

TYPE OF SURVEY

✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

A. Hurst

Signature of Assessor

Aug 20/86

Date

Ontario Natural Resources

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

308/86 2.9342

your file 2.9342

308/86

The Mining Act

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

Type of Survey(s)	Township or Area
MAGNETIC GEOPHYSICAL - ELECTROMAGNETIC	McELROY TOWNSHIP

Claim Holder(s)	Prospector's Licence No.
GOLDEN SHIELD RESOURCES LTD.	T-1402

Address: SUITE 908, 111 RICHMOND ST. WEST, TORONTO, ONT. M5H 2G4

Survey Company	Date of Survey (from & to)	Total Miles of line Cut
PERRONS	12 06 86 (Day Mo. Yr.) – 13 06 86 (Day Mo. Yr.)	APPROX. 2 MILES

Name and Address of Author (of Geo-Technical report): MARY GREER, 103 GOVERNMENT ROAD EAST, KIRKLAND LAKE, ONTARIO P2N 1A9

Credits Requested per Each Claim in Columns at right

Special Provisions		Days per Claim
For first survey: Enter 40 days. (This includes line cutting)	Geophysical	
	- Electromagnetic	40
	- Magnetometer	20
For each additional survey: using the same grid: Enter 20 days (for each)	- Radiometric	
	- Other	
	Geological	
	Geochemical	

Man Days		Days per Claim
Complete reverse side and enter total(s) here	Geophysical	
	- Electromagnetic	
	- Magnetometer	
	- Radiometric	
	- Other	
	Geological	
	Geochemical	

RECEIVED
KIRKLAND LAKE MINING DIVISION
AUG 11 1986

Airborne Credits		Days per Claim
Note: Special provisions credits do not apply to Airborne Surveys.	Electromagnetic	
	Magnetometer	
	Radiometric	

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	Recorded Holder or Agent (Signature)
AUGUST 11/86	Mary Greer

Mining Claims Traversed (List in numerical sequence)

Prefix	Number	Expend. Days Cr.
L	842560	

RECEIVED
AUG 11 1986
MINING LANDS SECTION

Total number of mining claims covered by this report of work: 1

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
60	AUG 11 1986	Acting J. Betting
	Date Approved as Recorded: 86-08-26	Branch Director: [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: MARY GREER, 103 GOVERNMENT ROAD EAST, KIRKLAND LAKE, ONTARIO P2N IA9

Date Certified	Certified by (Signature)
AUGUST 11/86	Mary Greer

1362 (81/9)

PERRONS

103 GOVERNMENT ROAD EAST - KIRKLAND LAKE, ONTARIO - P2N 1A9 - (705) 567-7057

June 20, 1986

Mr. Arthur Barr,
Lands Administration Branch,
Mining Lands Section,
Ministry of Natural Resources,
Room 6450, Whitney Block,
Queen's Park,
Toronto, Ontario
M7A IW3

Dear Mr. Barr:

RE: Geophysical Survey Report
McElroy Township
Larder Lake Mining Division

Enclosed herewith please find a duplicate copy of the following:

- Report dated June 20, 1986, by Mary Greer entitled:

  Geophysical Survey Report on the
  Golden Shield Resources Property
  McElroy Rownship
  Larder Lake Mining Division
  District of Timiskaming, Ontario

I trust this is the information required to correspond with the Report of Work filed concerning the above noted township.

Yours truly,

PERRONS

Mary Greer

Mary Greer
Geophysical Technician
MG/p
Encls.

Ontario

Ministry of Natural Resources

File

R.O.W. 308-86.

GEOPHYSICAL – GEOLOGICAL – GEOCHEMICAL TECHNICAL DATA STATEMENT

TO BE ATTACHED AS AN APPENDIX TO TECHNICAL REPORT
FACTS SHOWN HERE NEED NOT BE REPEATED IN REPORT
TECHNICAL REPORT MUST CONTAIN INTERPRETATION, CONCLUSIONS ETC.

Type of Survey(s) GEOPHYSICAL - MAGNETIC - ELECTROMAGNETIC

Township or Area McELROY TOWNSHIP

Claim Holder(s) GOLDEN SHIELD RESOURCES LTD.
SUITE 908, 111 RICHMOND ST.W. TORONTO, ONTARIO M5H 2G4

Survey Company PERRONS

Author of Report MARY GREER

Address of Author 103 GOV'T RD.E. KIRKLAND LAKE, ONT P2N 1A9

Covering Dates of Survey JUNE 12/86 & JUNE 13/86 (linecutting to office)

Total Miles of Line Cut 2 MILES APPROXIMATELY

SPECIAL PROVISIONS CREDITS REQUESTED

ENTER 40 days (includes line cutting) for first survey.

ENTER 20 days for each additional survey using same grid.

	DAYS per claim
Geophysical	
–Electromagnetic	40
–Magnetometer	20
–Radiometric	
–Other	
Geological	
Geochemical	

AIRBORNE CREDITS (Special provision credits do not apply to airborne surveys)

Magnetometer _____ Electromagnetic _____ Radiometric _____
(enter days per claim)

DATE: June 20 86 SIGNATURE: Mary Greer
Author of Report or Agent

Res. Geol. _____ Qualifications 2.4529.

Previous Surveys

File No.	Type	Date	Claim Holder

MINING CLAIMS TRAVERSED
List numerically

(prefix)	(number)
L	842560

If space insufficient, attach list

TOTAL CLAIMS 1

OFFICE USE ONLY

837 (5/79)

GEOPHYSICAL TECHNICAL DATA

GROUND SURVEYS – If more than one survey, specify data for each type of survey

Number of Stations 98 Number of Readings MAG = 197 VLF-EM = 171

Station interval 100 FEET Line spacing 400 FEET

Profile scale 1" = ± 20°

Contour interval 100 GAMMAS

MAGNETIC

Instrument MCPHAR PROTON MAGNETOMETER

Accuracy – Scale constant ± 1% GAMMA

Diurnal correction method CLOSED LOOPS

Base Station check-in interval (hours) ONE HALF LOW

Base Station location and value TL 14 + 00 E 58594 GAMMAS

ELECTROMAGNETIC

Instrument

Coil configuration

Coil separation

Accuracy

Method: ☐ Fixed transmitter ☐ Shoot back ☐ In line ☐ Parallel line

Frequency (specify V.L.F. station)

Parameters measured

GRAVITY

Instrument

Scale constant

Corrections made

Base station value and location

Elevation accuracy

INDUCED POLARIZATION RESISTIVITY

Instrument

Method ☐ Time Domain ☐ Frequency Domain

Parameters – On time Frequency

– Off time Range

– Delay time

– Integration time

Power

Electrode array

Electrode spacing

Type of electrode

SELF POTENTIAL

Instrument _____ Range _____

Survey Method _____

_____

Corrections made _____

_____

RADIOMETRIC

Instrument _____

Values measured _____

Energy windows (levels) _____

Height of instrument _____ Background Count _____

Size of detector _____

Overburden _____

(type, depth – include outcrop map)

OTHERS (SEISMIC, DRILL WELL LOGGING ETC.)

Type of survey _____

Instrument _____

Accuracy _____

Parameters measured _____

_____

Additional information (for understanding results) _____

_____

_____

AIRBORNE SURVEYS

Type of survey(s) _____

Instrument(s) _____

(specify for each type of survey)

Accuracy _____

(specify for each type of survey)

Aircraft used _____

Sensor altitude _____

Navigation and flight path recovery method _____

_____

Aircraft altitude _____ Line Spacing _____

Miles flown over total area _____ Over claims only _____

GEOCHEMICAL SURVEY – PROCEDURE RECORD

Numbers of claims from which samples taken _____

Total Number of Samples _____

Type of Sample _____
(Nature of Material)

Average Sample Weight _____

Method of Collection _____

Soil Horizon Sampled _____

Horizon Development _____

Sample Depth _____

Terrain _____

Drainage Development _____

Estimated Range of Overburden Thickness _____

SAMPLE PREPARATION
(Includes drying, screening, crushing, ashing)

Mesh size of fraction used for analysis _____

General _____

ANALYTICAL METHODS

Values expressed in: per cent ☐
p. p. m. ☐
p. p. b. ☐

Cu, Pb, Zn, Ni, Co, Ag, Mo, As,-(circle)

Others _____

Field Analysis (_____ tests)
Extraction Method _____
Analytical Method _____
Reagents Used _____

Field Laboratory Analysis
No. (_____ tests)
Extraction Method _____
Analytical Method _____
Reagents Used _____

Commercial Laboratory (_____ tests)
Name of Laboratory _____
Extraction Method _____
Analytical Method _____
Reagents Used _____

General _____

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

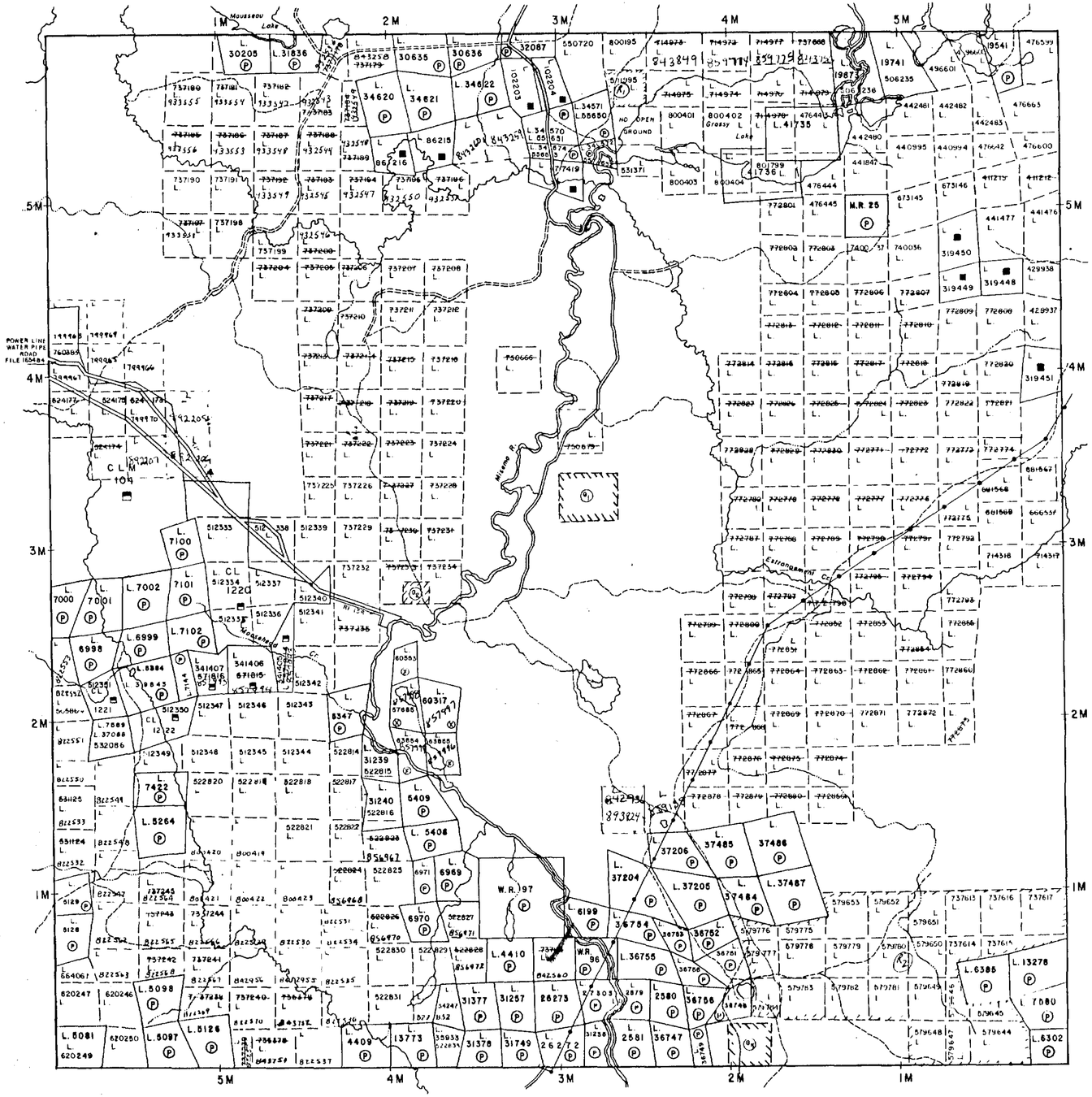
M.R.O. – MINING RIGHTS ONLY
S.R.O. – SURFACE RIGHTS ONLY
M.+ S. – MINING AND SURFACE RIGHTS

	Description	Order No.	Date	Disposition	File
R1	See 36/80	W.13/86	30/01/86	M+S.	
R2	See 36/80	W.19/86	14/02/86	M+S.	

SAND AND GRAVEL

S1	M.N.R. Gravel	File 179165
S2	Gravel Pit	File 113703
S3	M.N.R. Gravel	File 160982

GAUTHIER Tp.



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 MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT, SURFACE & MINING RIGHTS	P or ●
" , SURFACE RIGHTS ONLY	◓
" , MINING RIGHTS ONLY	◒
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	▬
" , MINING RIGHTS ONLY	▬
LICENCE OF OCCUPATION	L.O. or ▼
ORDER-IN-COUNCIL	OC
RESERVATION	R
CANCELLED	⊗
SAND & GRAVEL	S

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.

SCALE: 1 INCH = 40 CHAINS

FEET 0 1000 2000 4000 6000 8000
METRES 0 200 1000 (1 KM) 2000 (2 KM)

JUL 28 1986

TOWNSHIP

McELROY

M.N.R. ADMINISTRATIVE DISTRICT
KIRKLAND LAKE
MINING DIVISION
LARDER LAKE
LAND TITLES / REGISTRY DIVISION
TIMISKAMING

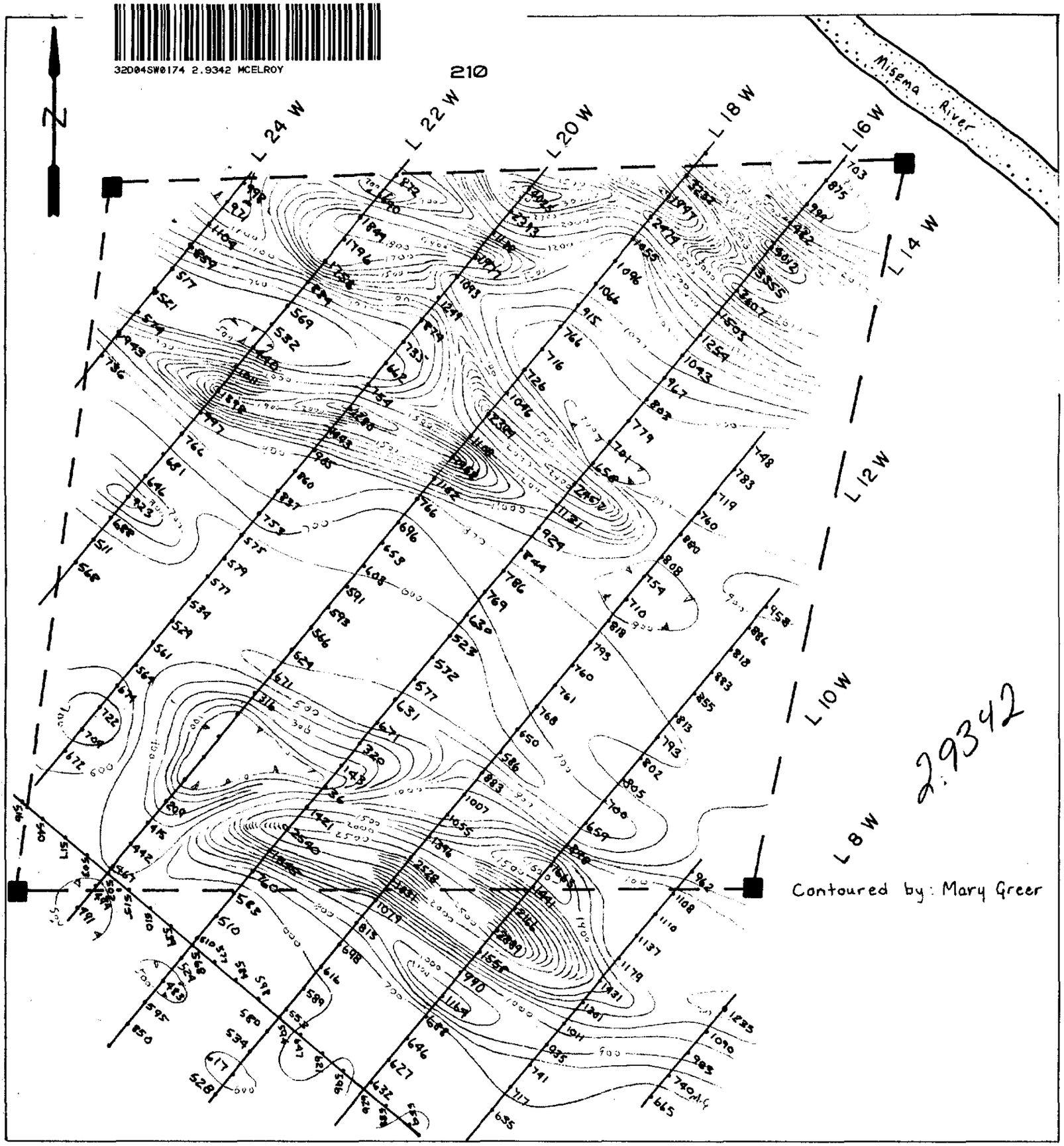
Ontario Ministry of Natural Resources — Land Management Branch

Date JANUARY, 1985

Number G-3214

32D04SW0174 2.9342 MCELROY

200



SYMBOLS

Isomagnetic contours

Base station

Claim post

Claim line

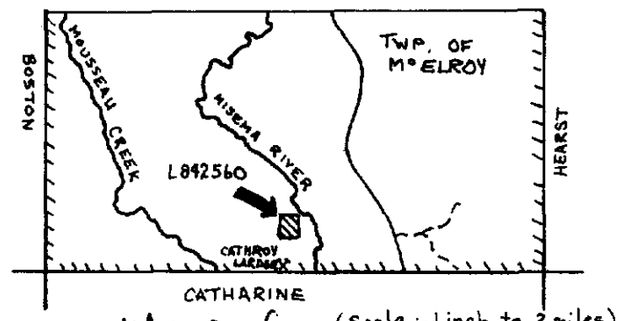
INSTRUMENTATION

McPHAR GP-8

PROTON MAGNETOMETER

Contour interval 100 γ

KEY MAP



Mary Greer (Scale: 1 inch to 2 miles)

GOLDEN SHIELD RESOURCES

GROUND MAGNETOMETER SURVEY

McELROY TOWNSHIP

LARDER LAKE MINING DIVISION

DISTRICT OF TIMISKAMING, ONTARIO

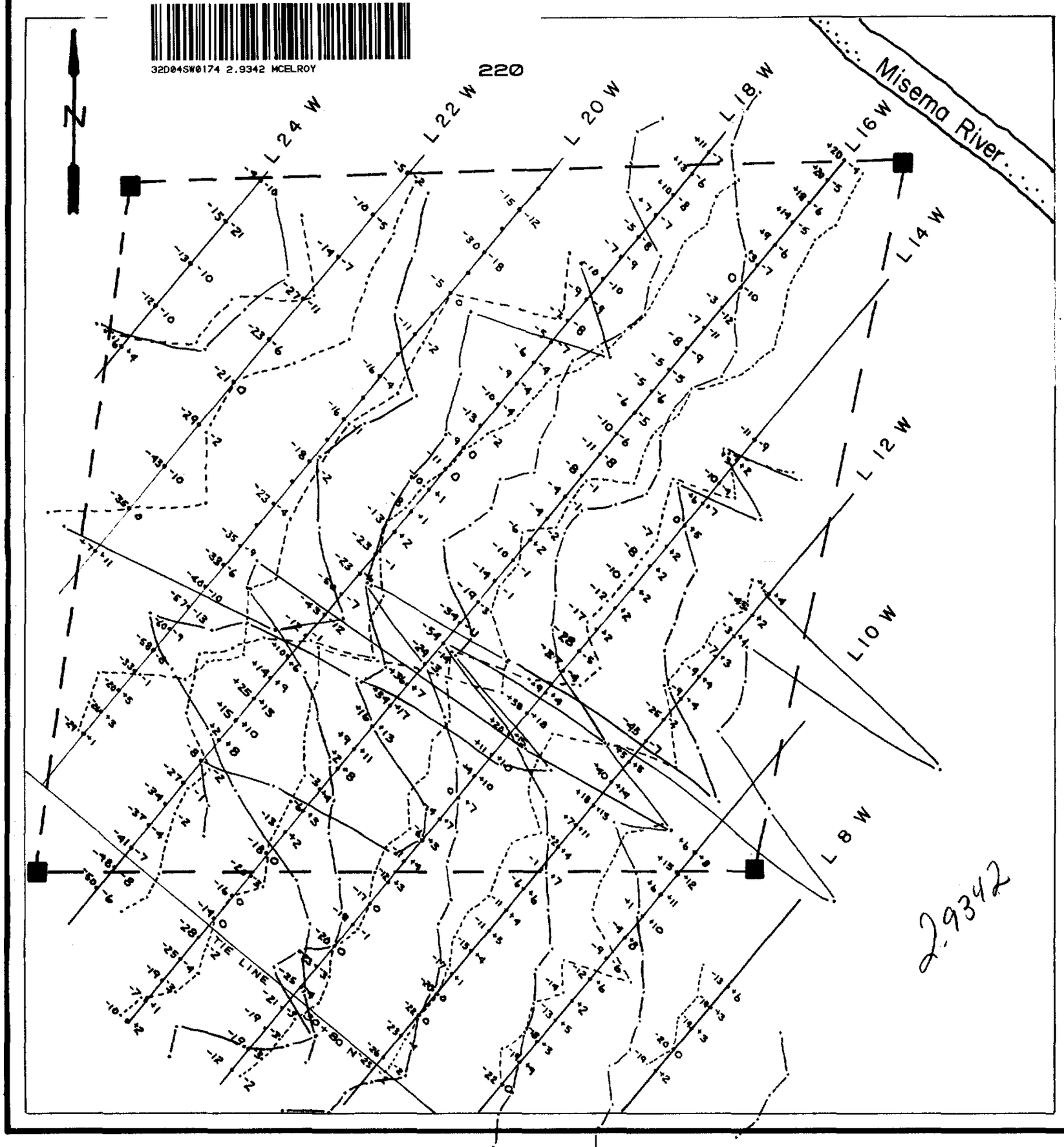
200 0 200 400

Scale: 1 inch to 200 feet

PERRONS

Kirkland Lake Canada

Drawn by: K.Calberry	Map No. 86-GS-2	Date: June 1986



SYMBOLS

In-phase

Quadrature

Claim Line

Claim Post

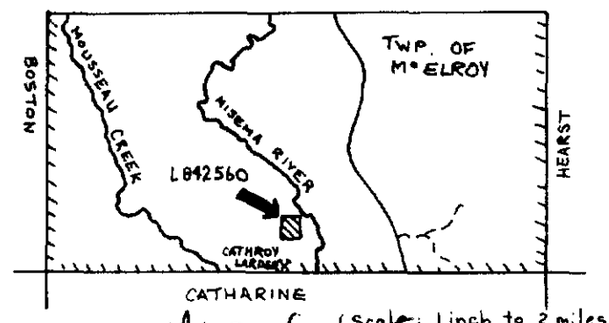
INSTRUMENTATION

GEONICS VLF-EM16

Station used : NAA Cutler, Maine

Vertical scale : 1 inch to ± 20%

KEY MAP



(Scale: 1 inch to 2 miles)

Mary Lee

GOLDEN SHIELD RESOURCES

GROUND VLF-EM SURVEY

McELROY TOWNSHIP

LARDER LAKE MINING DIVISION

DISTRICT OF TIMISKAMING, ONTARIO

200 0 200 400

Scale: 1 inch to 200 feet

PERRONS

Kirkland Lake Canada

Drawn by: K.Calberry | Map No. 86-GS-1 | Date: June 1986