EXPLORATION REPORT

for

HARLEY - 2 CLAIMS

Harker Township, Larder Lake Mining Division

Ontario

R. A. Bennett, MSc., PEng

October 7, 1985

2.1594
2nd

EXPLORATION REPORT - HARLEY - 2 CLAIMS

INTRODUCTION

Preliminary exploration work that included gridding, magnetometer and radiometric surveys was completed over the "HARLEY-2 CLAIMS" in Harker Township to help characterize the underlying formations and locate potential gold target areas.

The property consists of 2 contiguous staked mining claims numbered:

L. 803440
L. 803441

and are registered in the name of Nelson Harley, Box 456, Matheson, Ontario, P0K 1N0.

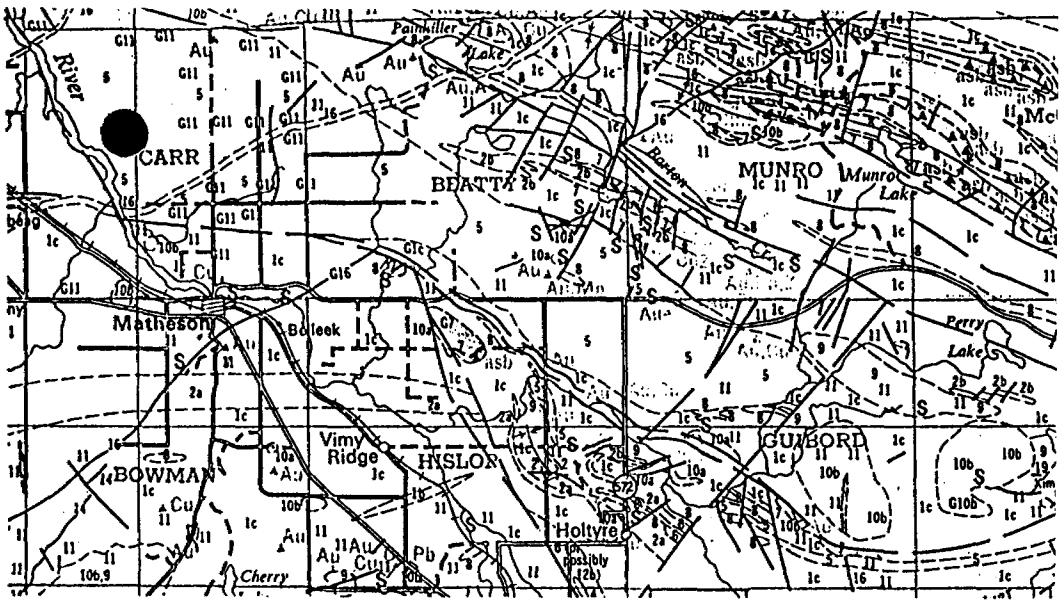
The claims are located in west-central Harker Township, Larder Lake Mining Division, approximately 28 miles east of the Town of Matheson. Access to the claims is by Highway 101 east from Matheson to the second gravel road past the Ghost River and then south for 3 miles to the number 1 claim post of L. 803441.

A property and general location plan is provided overleaf.

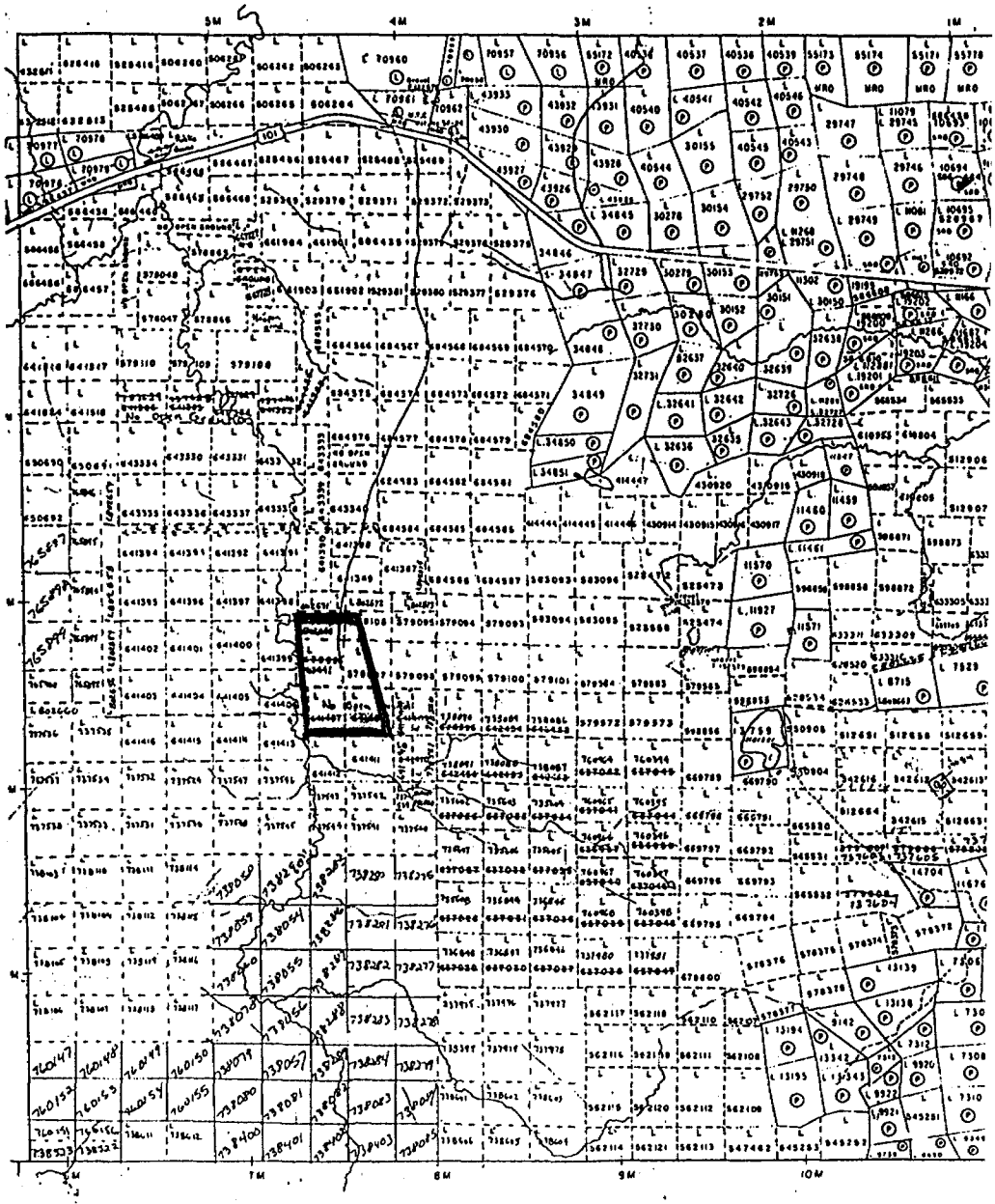
GENERAL GEOLOGY & HISTORY

The general geology of Harker Township is described by J. Satterly (ODM Volume LX, Part VII, 1951) and illustrated on Map 1951-4. The property falls in an area of no bedrock exposure but is interpreted to be underlain mostly by basaltic pillow lavas and minor interflow sedimentary beds of the Kinojevis Group. A thick, westerly-striking greywacke unit trends across the central portions of the property. This horizon may inpart, host or be associated with the major gold occurences approximately 4 miles to the east that are presently being explored and developed by Barrick Resources and Canamax.

The only previous exploration work known for the "Harley-2 Claims" was magnetometer and EM-16 surveys completed in 1981 for Independent Mining Corp., and a geological survey by Cortez Exploration Ltd.



LAMPLUGH TWP. M-358



ELLIOTT TWP. M-347

GRIDDING

A grid of picket lines totalling 3.8 miles and .3 miles of baseline were cut over the claims in September 1985. The baseline strikes east-west and follows the boundary between the two claims. The cross-lines are perpendicular to the baseline and spaced at 400 foot intervals. Pickets were chained and set at 100 ft intervals along all the cut lines. In addition, stations were also established and read along the gravel road that parallels the claims' eastern boundary.

A base station was established at 2+00 E on the baseline for geophysical survey tie-in purposes.

MAGNETOMETER SURVEY

The magnetometer survey was completed over the claims between September 9th and 13th, 1985 using a Sharpe instruments MF-1 Fluxgate Magnetometer. Readings were taken every 100 feet along all the cut lines and the road for a total of 239. Daily magnetic readings were tied to the base station and corrected for diurnal drift. In addition, secondary base stations along the baseline at each line were re-read as each loop was completed.

The results of the magnetometer survey are plotted on the 1 inch = 400 ft scale plan that accompanies this report. Diurnal variations were a maximum of 210 gammas for the entire survey but only 80 gammas for any loop. A summary of the MF-1 specifications and operation procedures is appended.

The range of magnetic susceptibilities for the property fall between +110 and +2760 gammas. The sharp west-trending magnetic high in central L.803441 likely represents the strike of a more magnetite-rich basaltic flow [iron thoeliite]. The other, but much weaker westerly trending magnetic high in central L.803440 likely represents another magnetic flow but in an area of deeper overburden. The broad magnetic low through the central portions of the property corresponds well with the interpreted location of the greywake unit. Similar magnetic lows appear to be associated with the gold occurences to the east.

RADIOMETRIC SURVEY

A radiometric survey was completed over the claims on September 12th and 13th, 1985 to test for potassium-rich intrusions and/or alteration zones that can be associated with gold mineralization events. A McPhar TV-1A Radiation Spectrometer was used and the total field readings were taken every 100 feet along the grid for a total of 239 readings. All the readings were tied to the base station and corrected for diurnal drift using the time-linear method. The general topography and outcrop areas were also charted. A summary of the TV-1A's specifications is appended and a 1"=400 ft plan map attached.

The total field readings ranged from 4 to 15 counts per minute with the background being 10 cpm. Most of the lowest readings occur along the road and likely reflect the composition of the gravels. The rather homogeneous nature of the rest of the property reflects more the nature of the overburden than the underlying geology. The only bedrock outcrop that was found lay just east of the claims and returned a value of 6 cpm [hematized basalt]. No radiometric anomalies were found.

CONCLUSIONS AND RECOMMENDATIONS

Preliminary exploration work that included gridding, magnetometer and radiometric surveys was completed over the "Harley-2 Claims" in Harker Township. The results have outlined a broad magnetic low area that likely represents a greywacke unit. This sedimentary band is known to host gold mineralization to the east and represents an important exploration target.

It is recommended that an Induced Polarization-Resistivity survey be completed over the claims to further define the contact areas of the sediments and to outline buried disseminated sulphide targets. Diamond drilling of these targets could located gold mineralization.

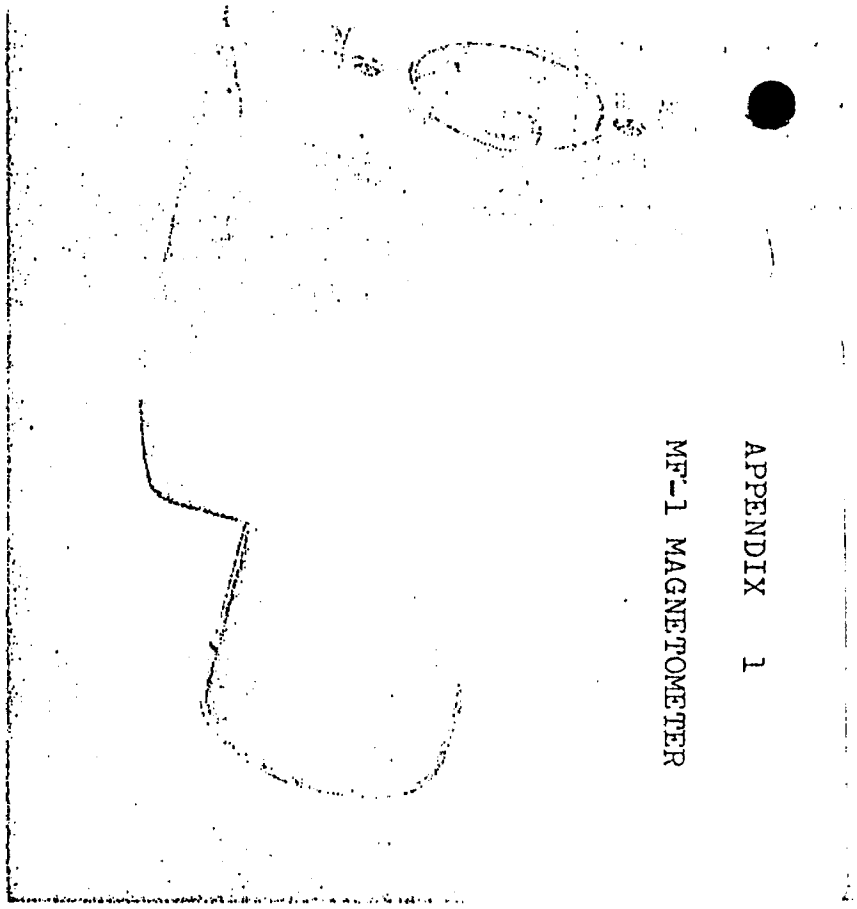
Matheson, Ontario
2 maps, 2 appendices

R. A. Bennett, MSc., PEng.
October 7, 1985.

MF-1 FLUXGATE MAGNETOMETER

A first order fluxgate type vertical component magnetometer. Advanced transistorized circuitry and extensive temperature compensation is the core of its accuracy comparable to precision tripod mounted Schmidt type magnetometers.

It is a hand held instrument and needs only coarse levelling and no orientation. Features such as direct reading of gamma values and the possibility of accurate zero setting at base stations ensure simplicity of operation and higher field economy.



APPENDIX 1
MF-1 MAGNETOMETER

The Model MF-1 Fluxgate Magnetometer is designed for accurate ground surveys in the mining industry as well as a basic component for air surveying by small aircraft. Technical data and comparison charts available on request.

SPECIFICATIONS

MAXIMUM SENSITIVITY:	20 gammas (per scale division) on 1000 gamma range.
READABILITY:	5 gammas (¼ scale division on 1000 gamma range.
RANGES: (FULL SCALE)	1,000 gammas 3,000 gammas 10,000 gammas 30,000 gammas 100,000 gammas
MAXIMUM RANGE:	± 100,000 gammas
LATITUDE ADJUSTMENT RANGES:	10,000 to 75,000 gammas, Northern hemisphere convertible to: 10,000 to 75,000 gammas, Southern hemisphere or ± 30,000 gammas equatorial.
DIMENSIONS: (INCLUDING BATTERY CASE)	7" x 4" x 16"
WEIGHT: (INCLUDING BATTERY CASE)	9 lbs.
BATTERIES:	12 Flashlight Batteries ("C" cell).

DESCRIPTION OF FLUXGATE MAGNETOMETER MODEL MF-1

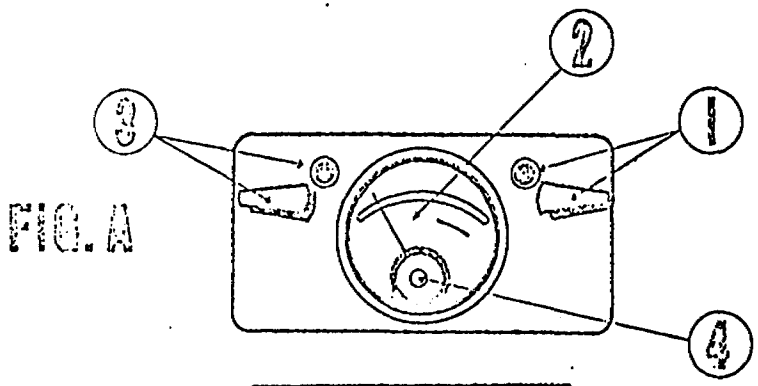


FIG. A

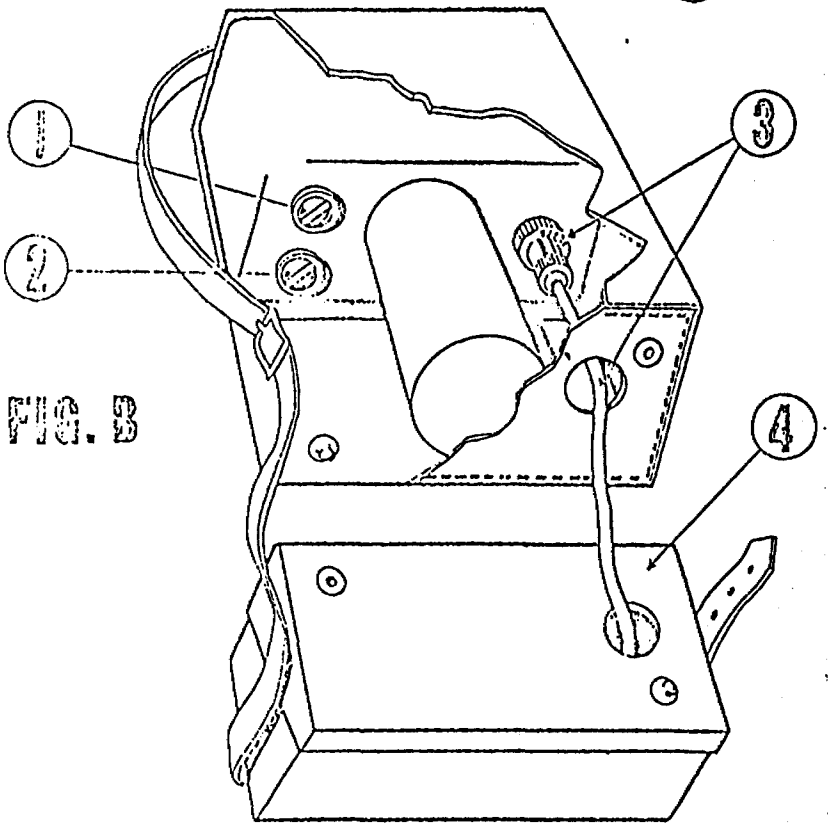


FIG. B

FIGURE A

1	RANGE SWITCH	— indicating gamma values in ranges of 100 K, 30 K, 10 K, 3000, 1000.
2	METER SCALE	— upper scale indicating 0-1000 (50 divisions) — lower scale indicating 0-3000 (60 divisions) red arc for battery check
3	MAIN SWITCH	— showing the following steps: OFF Battery check + —
4	CIRCULAR LEVEL	— for rough levelling the instrument

FIGURE B

1	LATITUDE ADJUSTMENT SWITCH	— in steps
2	LATITUDE ADJUSTMENT	— fine
3	BATTERY CABLE AND CONNECTOR	
4	BATTERY PACK	— For transportation — attachable to instrument

E. J. SHARPE INSTRUMENTS OF CANADA LTD.

P.O. Box 279, Willowdale, Ontario

MODEL MF-1 FLUXGATE MAGNETOMETER

Operation of the Meter

1.) Remove all magnetic objects from operator's person, e.g. keys, coins, buttons, etc. Zippers should be non-magnetic.

2.) Connect Battery Cable, Figure 6, to magnetometer receptacle on bottom of main housing. This connection must be secured by lock-ring.

3.) Attach battery pack (Fig. 5) either in back pocket or on belt behind operator.

4.) Switch on Main Switch (Fig. 3) to first position, which is the battery check. Indicating meter needle should rest within red arc. Replace batteries if reading below red arc.

5.) Latitude Adjustment - To adjust the latitude setting to read 0 gammas is a simple operation.

a. After indicating meter needle (fig.2) shows voltage okay, switch Main Switch (Fig.3) to next position which is the positive reading with the Range Switch (Fig. 1) set at the 100K step. (100,000 gamma range)

b. If needle goes full arc to left past 0, switch main switch (Fig. 3) to last position which is the negative reading range.

c. Figures 10 and 9 indicate the latitude adjustment controls - Coarse control is Fig. 10 and Fine control is Fig. 9. If scale reading is more than ± 7,000 gammas rotate coarse control (Fig. 10) in steps of 7,000 and switch range down to more sensitive range until scale is reading less than ± 7,000 gammas. Remove protection cap on fine control (Fig. 8) by pulling straight off. Then rotate fine control switch (Fig. 9) until scale reading is 0 gammas. Check reading by switching main switch from positive to negative (or vice versa) to ensure 0 reading both polarities. Replace fine control protection cap.

6.) Calibration - This meter is calibrated at the factory prior to delivery. Field tests show that only by severe misuse (i.e. constant dropping, rough handling, improper shipping) can the calibration of this instrument be effected. It is therefore not necessary to recalibrate in the field and if through misuse calibration becomes necessary, the meter should be returned to the factory. *All parts are guaranteed against defect for a period of one year and will be replaced free of charge.

* This guarantee does not apply to batteries or the connecting cable.

7.) Trouble Shooting - Under normal conditions the only field problem will be batteries or the connecting cable. If after completion of step (4) under "Operation of the Meter" the meter still does not indicate voltage, check cable for faulty connection or broken cable. If after this procedure, meter still does not indicate current, return unit immediately to your supplier or directly to the factory.

Regional Latitude Settings

Normally each unit is pre-set at the factory for the Northern Hemisphere. However, if the unit is required for Equatorial or Southern Hemispheric regions, the unit will be pre-set at the factory for these areas. If a unit is going from one of the above regions to another, reset instructions will be supplied on request.

Field Procedure

1.) Select Base Control station. This station should be selected in relation to one or both of two things.
   1. General magnetic background (i.e. not anomalous) if possible.
   2. Accessibility in relation to area being surveyed.

2.) Set magnetometer to read between 0 and 200 gammas. (For contouring and to avoid small negative readings, an arbitrary value of 1000-800 gammas should be added to all readings.

3.) For effective diurnal control, control stations should be permanently marked and readings should be taken at the same height and location each time; a simple method is to have the control stations' pickets hammered into the ground with the top about waist height. Rest the probe end of the magnetometer on the top of the picket. In barren country, a mound or large piece of rock or some other material should be used.

4.) Continue survey the same as any other method of magnetic surveying.

5.) Remove and replace Silica-Gel (Fig.7) when deteriorated. The silica gel is located in the removable probe housing.
The Silica bag should not be placed on the bottom of the probe housing.

6.) Do not pass powerful magnet closer than 1 foot to instrument.

7.) During winter operation, batteries should be kept in pocket or under parka.

***Warning: - Do not leave batteries in battery case when unit is being stored. Always be be sure meter is turned off after use. Disconnect battery cable when meter not in use.

McPHAR

TV-1A Radiation Spectrometer

A 3-channel instrument for reconnaisance use

Both meter and audio reading

Four count scales

Trigger on-off switch

Functional pistol design

Lightweight

Model TV-1A is a three channel, integral type radiation spectrometer. Measurements are based on the spectral characteristics of gamma radiation from radioactive elements. Selection of the operating threshold is made by means of the threshold selector switch.

The instrument is designed primarily for reconnaissance. The total count position provides for maximum sensitivity. Additional thresholds however, provide the capability to differentiate between gamma radiations emanating from daughter elements of uranium and thorium and provide quantitative information relating to each.

The meter is calibrated to display zero to 100 counts per minute. A four position scale multiplier switch provides four full scale ranges of 100, 1,000, 10,000 and 100,000 counts per minute. A fifth position on this switch is employed to test the condition of the batteries.

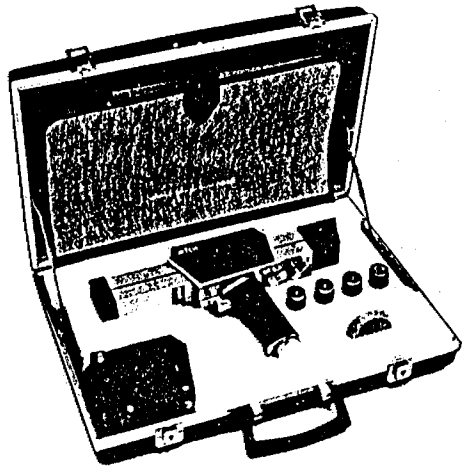
The variable time constants are tied in with the threshold selector switch. In the total count (maximum sensitivity) position, a fast or slow time constant may be selected. In the upper thresholds (lower net count), the long time constant only, is in effect.

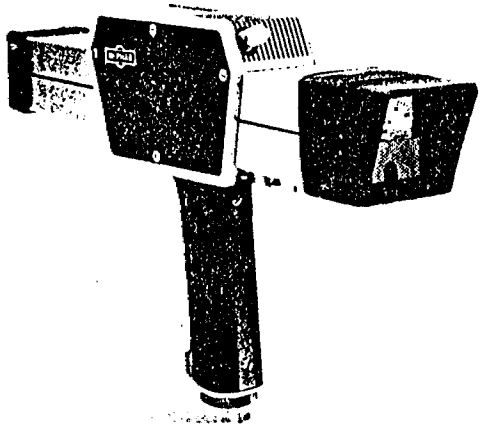
The detecting element is a 1½ by 1½ inch sodium iodide crystal coupled to a photomultiplier tube. These are hermet-

Field use is convenient with leather holster

ically sealed, magnetically shielded and mounted in the forward end of the scintillometer housing.
A speaker provides a variable pitch output with changing radiation levels. A speaker control, mounted on the top of the instrument, can be used to adjust the pitch for any given level of radiation.

TV-1A spectrometer comes complete with a leather holster, thorium calibrating source and a foam fitted attache case.





Specifications

Measurement Ranges: Four switch positions provide full scale counts per minute of 100, 1,000, 10,000 and 100,000.

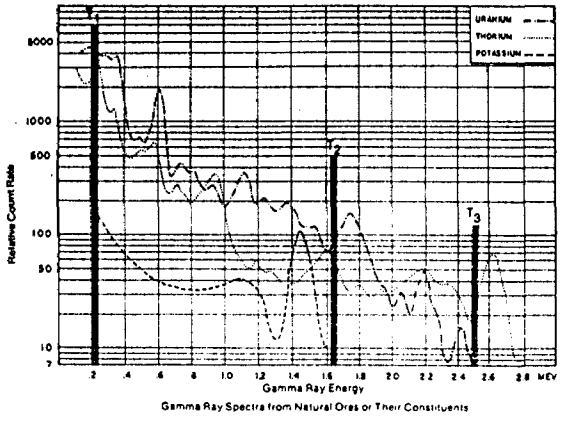
Time Constant: Threshold T_1: 1 and 10 seconds. Thresholds T_2 and T_3: 10 seconds.

Speaker: Variable pitch output governed by radiation intensity.

Temperature Range: --35 degrees to +55 degrees C.

Detector Crystal: NaI (T) 1½" x 1½" (43 cu. cm.) and matched photomultiplier hermetically sealed.

Battery Supply: Two "C" size flashlight cells located in handle. On-off control by either trigger or slide switch.



Gamma Ray Spectra from Natural Ores or Their Constituents

Voltage Regulation: Internally generated high and low voltages are highly regulated down to ½ initial battery voltage.

Accessories: Leather belt holster, thorium calibrating source, spare batteries, instruction manual, foam fitted attache case.

Weight: 3 pounds.

McPhar Instrument Corporation

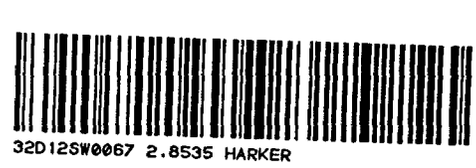
Head Office:

55 Tempo Avenue
Willowdale, Ontario, Canada M2H 2R9
Tel: (416) 497-1700 Telex: 0623541
Cable: McPHAR TOR

Sales agents in:

Africa, Asia, Australia, Europe,
North & South America

Contact McPhar Instrument Corp. head office for the agent in your area.



900

Mining Lands Section

File No 2.8535

Control Sheet

TYPE OF SURVEY ✓ GEOPHYSICAL

____ GEOLOGICAL

____ GEOCHEMICAL

____ EXPENDITURE

MINING LANDS COMMENTS:

<Harker>

Lgd.

L.D.

Signature of Assessor

Date

Ministry of Natural Resources
Ontario

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

The Mining Act

2.8535
W8508.353
(Recd 803440)

Nov. 14. #353

Instructions: – Please type or print.
– If number of mining claims traversed exceeds space on this form, attach a list.
Note: – 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): MAGNETOMETER, RADIOMETRIC	Township or Area: HARKER TWP
Claim Holder(s): Nelson Harley	Prospector's Licence No.: K.19565
Address: Box 456 MATHESON ONTARIO P0K 1N0	
Survey Company: R.A. Bennett, Consulting Geologist	Date of Survey (from & to): 09 09 85 (Day Mo. Yr.) 13 09 85 (Day Mo. Yr.)
	Total Miles of line Cut: 4.1 miles
Name and Address of Author (of Geo-Technical report): R.A. Bennett, RR4, SITE 37, Box 1 SUDBURY ONT. P3E 4M9	

Credits Requested per Each Claim in Columns at right

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

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.	Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
L	803440				
	803441				

LARDER LAKE MINING DIV.
RECEIVED
SEP 24 1985
AM 7 8 9 10 11 12 1 2 3 4 5 6 PM

Total number of mining claims covered by this report of work: 2

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: SEPT 23/85 Recorded Holder or Agent (Signature): R. Bennett

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
120	SEP 24 1985	
	Date Approved as Recorded: 85.10.24	Branch Director: D.K.

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: R.A. Bennett, PENG RR4, SITE 37, BOX 1 SUDBURY, ONT

Date Certified: Sept 23/85 Certified by (Signature): R. Bennett

1362 (81/91)

1985 10 23 File: 2.8535

Mining Recorder
Ministry of Northern Affairs and Mines
4 Government Road East
Kirkland Lake, Ontario
P2N 1A2

Dear Sir:

We received reports and maps on September 16, 1985 for Geophysical (Magnetometer and Radiometric) Surveys submitted under Special Provisions (credit for Performance and Coverage) on Mining Claims L 803440 and L 803441 in Harker Township.

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 your office prior to the submission of this technical data. Please forward a copy as soon as possible.

Yours sincerely,

S.E. Yundt
Director
Land Management Branch

Whitney Block, Room 6643
Queen's Park
Toronto, Ontario
M7A 1W3
Phone:(416)965-4888

AB/mc

cc: Nelson Harley
Box 456
Matheson, Ontario
P0K 1N0

R.A. Bennett
R.R.#4
Site 37
Box 1
Sudbury, Ontario
P3E 4M9

16 W 12 W 8 W 4 W 0

16 N

8 N

8 S

16 S

24 S

Post

poplar bush

L. 803440

Road

poplar

Basalt outcrop trench

Baseline

drainage

L. 803441

spruce

poplar

Road

poplar

Creek

HARLEY - 2 CLAIMS

HARKER TOWNSHIP

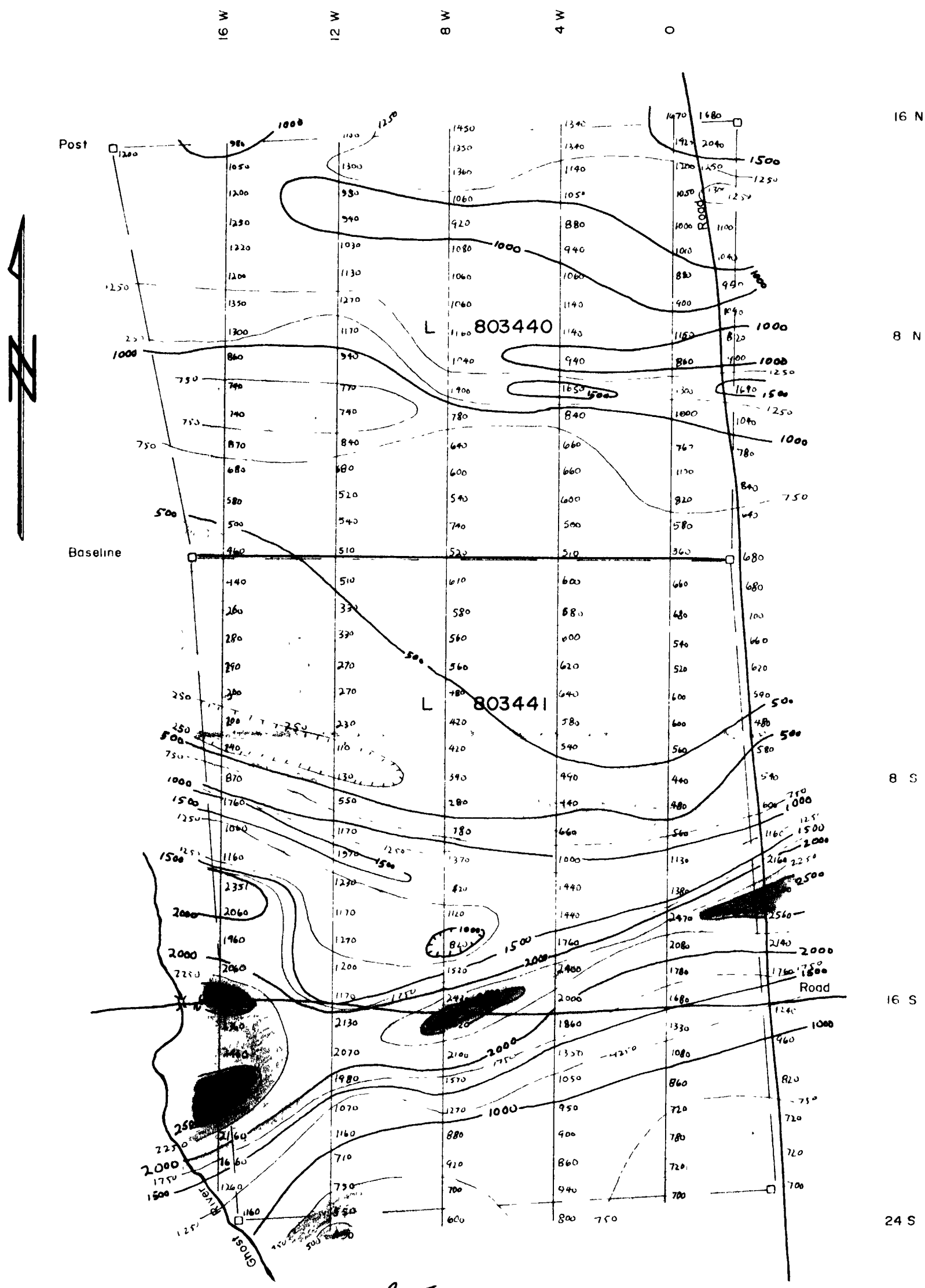
RADIOMETRIC SURVEY

Scale: 1"= 400'

INSTRUMENT: McPHAR TV-1A
RADIATION SPECTROMETER

READINGS: Total counts per minute

September 1985



32D12SW0067 2.8535 HARKER

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INSTRUMENT

MF-1 FLUXGATE MAGNETOMETER

CONTOUR INTERVAL 250 gammas

REGISTERED PROFESSIONAL ENGINEER
R. A. BENNETT
PROVINCE OF ONTARIO

HARLEY - 2 CLAIMS

HARKER TOWNSHIP

MAGNETOMETER SURVEY

Scale 1"= 400'

September 1985