Report on Magnetic Survey, Cripple Creek Gold Property

by

William O. Karvinen, Ph.D.

December 4, 1987

W.O.Karvinen & Associates Ltd.

Summary

A detailed proton magnetometer survey of TME Resource's gold property at Cripple Creek, Denton Township, near Timmins, Ontario, clearly reveals the distribution of various rock types and mineralized zones on the claims. The No. 2 zone, which is a short section exposed on surface is 100 ft. wide, appears to have a potential length of at least 4000 feet, while potential for gold-bearing veins similar to the No. 1 showing exists in a zone over 3000 feet long.

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Introduction

In Nov. of 1987, W.O. KARVINEN & Associates Ltd. conducted a total field magnetic survey on the eleven claim Cripple Creek Gold Property under option to TME Resources Inc. Purpose of the survey was to produce a detailed magnetic map which would assist in bedrock geologic interpretations and to determine the extent of known mineralized zones.

Location and Access

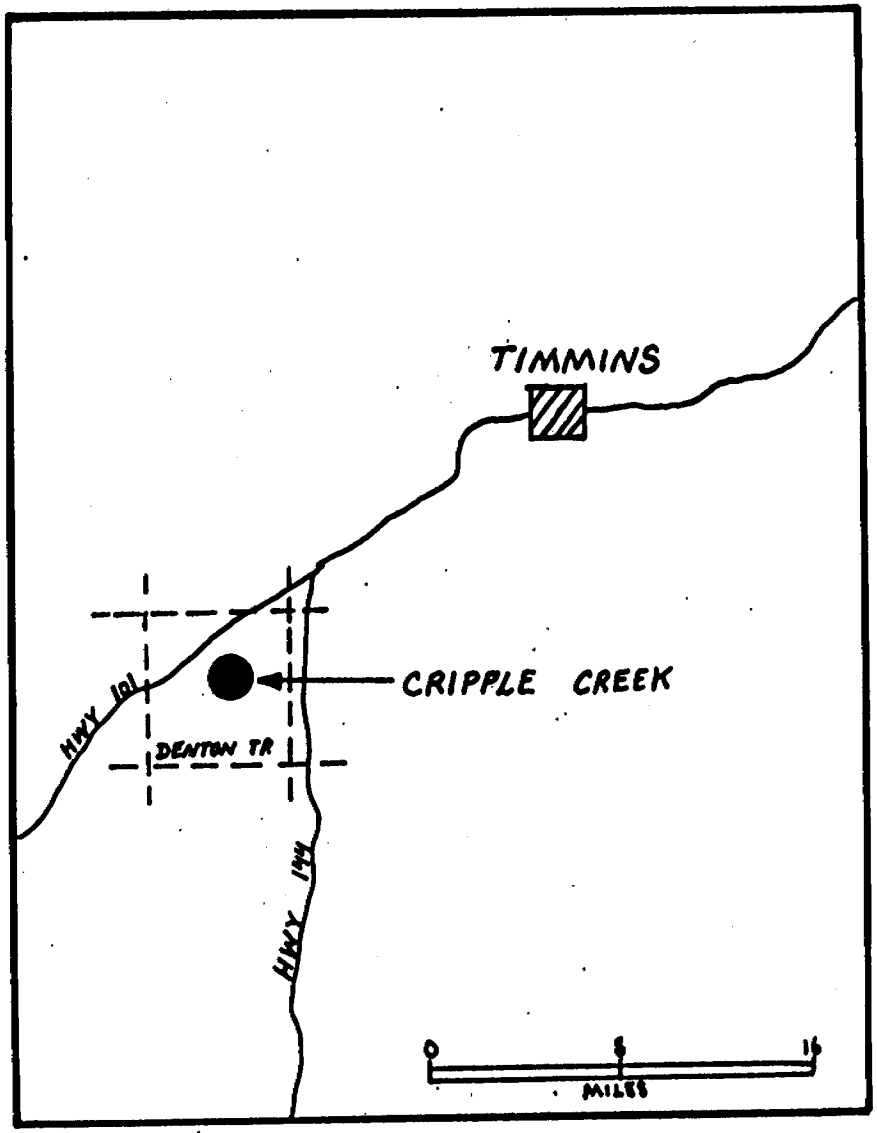
The Cripple Creek property is located in central Denton Township approximatley 20 miles southwest of Timmins, Ontario, (Fig. 1). The claim group is accessible via a seasonal logging road about 2 miles south of highway 101 (Fig. 2).

Property Description

The property comprises 11 contiguous unpatented claims numbered P865396 to P865403 inclusive and P930957 to P930959 inclusive. The claims are in the name of William O. Karvinen and under option to TME Resources Inc., 410-675 West Hastings St., Vancouver, B.C.

Previous Exploration Work

Although a considerable amount of exploration work has been done by various companies in the vicinity of the Cripple Creek claims, the only previous work reported on this ground was by Hollinger Consolidated Gold Mines Ltd. in the early 1960's. This company conducted a horizontal loop electromagnetic survey, a flaxgate magnetometer survey and mapped the property. Also, four diamond drill holes were completed.



Location Map

Fig. 1: Location Map of Cripple Creek Gold Property.

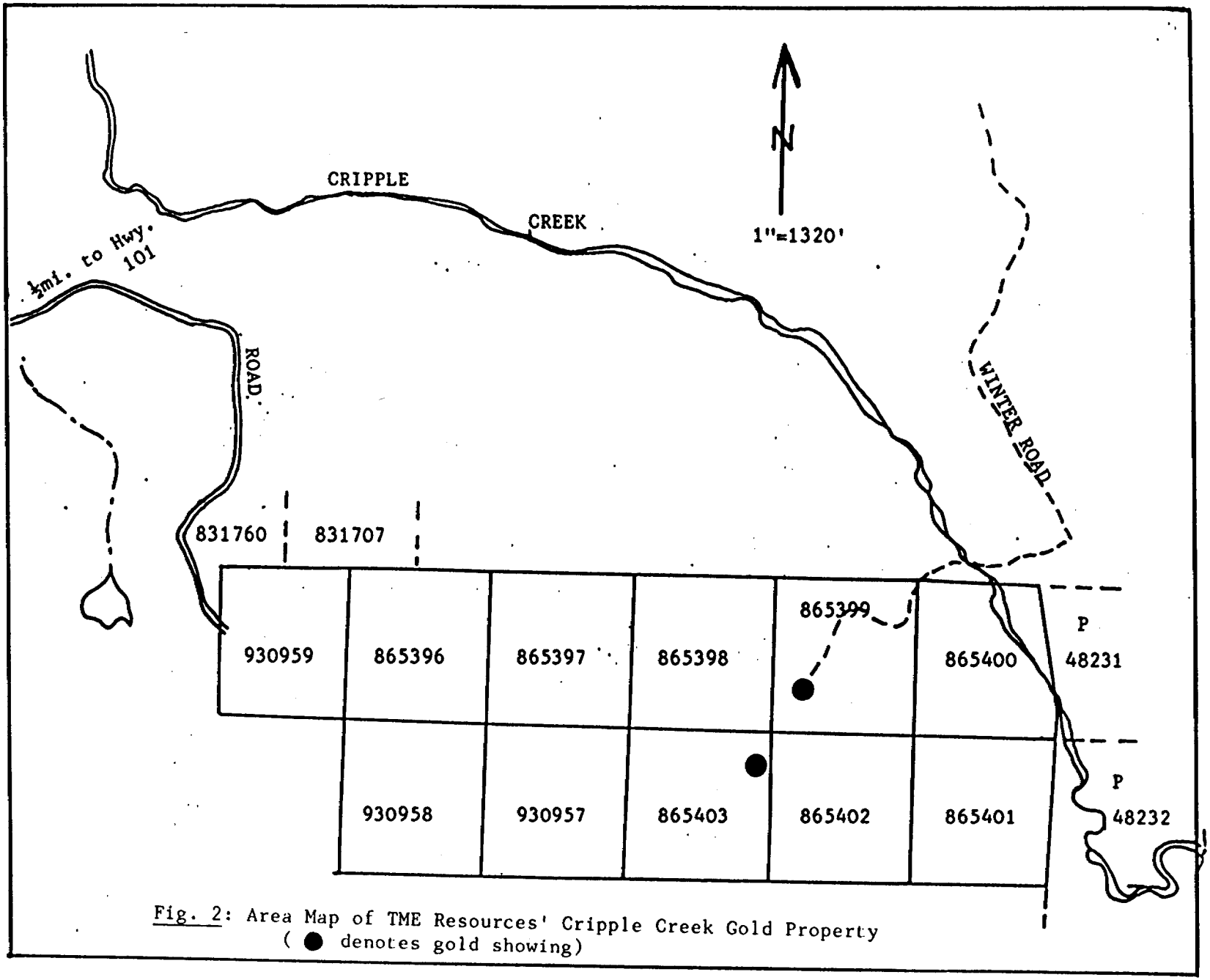


Fig. 2: Area Map of TME Resources' Cripple Creek Gold Property
(● denotes gold showing)

Because of the lack of sensitivity of the instrument, the Hollinger magnetometer survey shows few of the details of the current survey. The EM survey picked up an east-west weak conductor in the No. 2 zone area. This no doubt guided some of the Hollinger drilling.

Although the logs from the four holes reveal wide sections of sulfide-rich altered rocks, only a very limited number of quartz veins cut in the drilling were assayed. No significant values were obtained.

Methodology

Readings of the total magnetic field were taken at 100 ft. stations along a survey grid with cross lines spaced at 400 feet (see maps). The instrument used was a GSM-8 Proton Magnetometer which has a resolution of 1 gamma (see Appendix for details). Corrections for diurnal variations were made by the use of reference base stations. Final corrected values along with a contoured plan are displayed on the two enclosed maps. The field work was carried out by Terry Kirwan of Wahnapitae, Ontario and the writer.

Results

The contoured results show a general east-west trend of magnetic anomalies which corresponds to the trend of the volcanic rocks on the property. The are of magnetics greater than 59,000 gammas is underlain by altered ultramafic (komatiitic) volcanics; these are intruded by felsic porphyries along three lows about 400 to 900 ft. north of the base line on lines 32E, 40E and 56E. The gold-bearing No. 2 zone, which is exposed on surface near the base line between lines 40E and 52E coincides with a long, east-northeast trending low which stretches from line 32E to nearly 72E. The extreme lows in this zone appear to be intensely altered (sericitized

and carbonatized) tuffs. Lower magnetic values in the southeast part of the property reflect the proximity of a granitic intrusion to the south.

The trend of the above anomalies are disrupted in the northeast part of the claim group along a line from 60E 18N southeast to 76E 5N. This is probably a fault zone which parallels Cripple Creek.

Conclusions

The careful measurement of magnetic values using a sensitive instrument has presented valuable information on the distribution of the various rock types which are very poorly exposed on surface on the property. The results show several felsic porphyry bodies and indicate that the No. 2 gold-bearing zone has a potential strike length of at least 4000 feet. Based on this data gold-bearing quartz veins associated with felsic porphyry at showing No. 1, may also be found over a zone exceeding 3000 feet.

W O Karvinen

December 4, 1987

Dr. William O. Karvinen

References

Choudry, A.G., 1982: Precambrian Geology of Denton Township, Cochrane District. OGS Map P 2501.

Pyke, D.R., 1980: Geology of the Timmins Area, District of Cochrane, OGS Geol. Rept. 219.

C E R T I F I C A T E

I, William Oliver Karvinen of 32 Lakeland Point Drive, Kingston, Ont., Geologist and President of W.O. KARVINEN & Associates Ltd., do hereby certify that:

The information contained in this report is based on personal field observations and government publications and assessment files;

Through an option agreement, I have a 2.5% NSR interest in the property and own shares of TME Resources Inc.

I hold a Doctorate of Philosophy and an Honours B.Sc. in geology from Queen's University (1974 and 1968) and a Master of Science in geology from the University of British Columbia (1970);

I am a fellow of the Geological Association of Canada;

I have been actively carrying out mineral exploration and consultative services in Canada for nine years.

W.O. Karvinen

Kingston, Ontario
December 10, 1987

Dr. William O. Karvinen

1. GENERAL INFORMATION

1.1 INTRODUCTION

The GSM-8 is a portable one gamma* proton precession magnetometer designed primarily for hand held and base station operations, but adaptable for other Earth's magnetic field measurements like airborne/marine surveys, pipeline and cable detection and tracking, treasure hunting and ground vehicle-borne surveys. It measures a total (scalar) value of ambient magnetic field displaying it in gammas (nanoteslas) on a five digit 1 cm high liquid crystal display(LCD), within only 1.85 sec. from the start of the measurement initiated by a pushbutton.

As the direction of magnetic field vector is disregarded, no leveling of a sensor is needed and fast surveys are possible.

Automatic cycling feature, pushbutton controlled enables direct application in base station and vehicle borne surveys on land and water. As cycling speeds faster than one reading per sec. are available optionally, airborne surveys are feasible too.

In hand held operation the sensor is either staff mounted or carried in a back pack for hands free operation. For back pack operation nonmagnetic batteries are recommended.

The standard complete consists of:

1 Console with NiCd batteries
1 Sensor with cable
1 Staff, collapsible, or sectional
1 Shoulder harness, belt harness
1 Charger, input 110/220V 50/60Hz, output 75mA constant current
1 Manual
1 Carrying case

There are many options available, including custom modifications.For full details cosult GEM Systems. Major options are:**

1. Analog output 0-99 or 0-999 gammas
2. Nonmagnetic rechargeable or disposable batteries
3. Shorter or longer cycling period, from 0.9 sec. to 24 hr
4. External battery package for full day of operating in cycling mode
5. Back-pack for freer movement of an operator during surveys.

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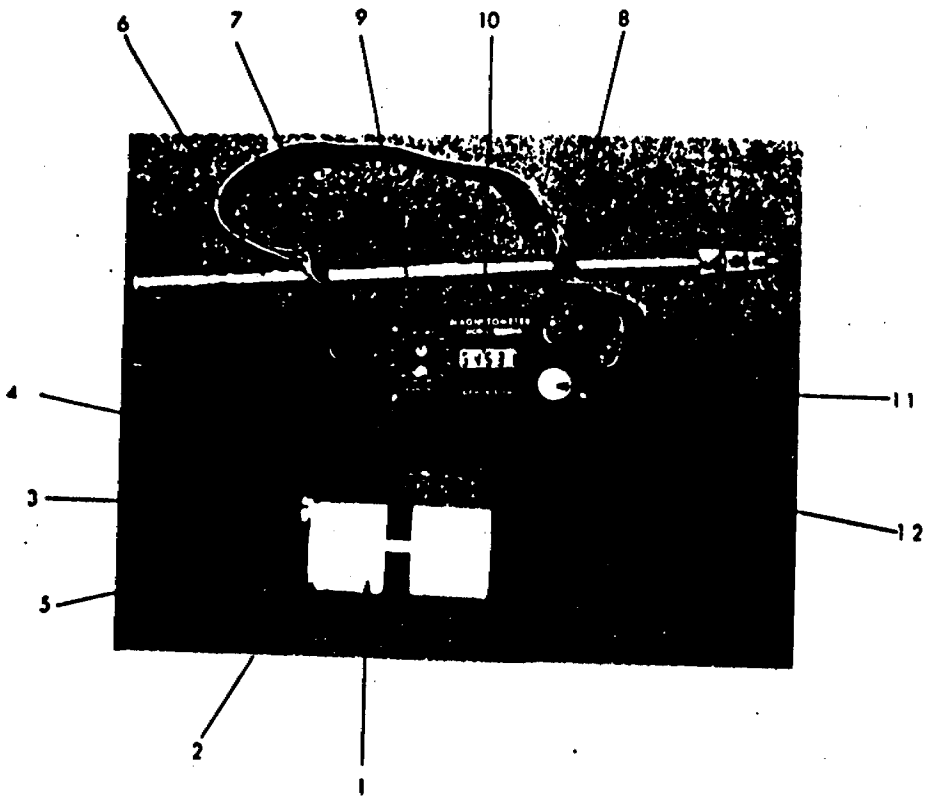
* One gamma is 10^{-5} Gauss or 10^{-9} Tesla
**Standard features are listed in Chapter 2. Specifications



2. SPECIFICATIONS

RESOLUTION:	1 gamma, 0.5 gamma optional
ACCURACY:	±1 gamma over operating range
RANGE:	20,000-100,000 gamma in 23 overlapping steps
GRADIENT TOLERANCE:	Up to 5000 gamma/metre
OPERATING MODES:	MANUAL PUSHBUTTON, new reading every 1.85 sec., display active between readings
	CYCLING, pushbutton initiated, 1.85 sec. period
	SELFTEST, pushbutton controlled, 7 sec. period
OUTPUT:	VISUAL: 5 digit 1 cm (0.4") high Liquid Crystal Display, visible in any ambient light
	DIGITAL: Multiplied precession frequency and gating pulse
	ANALOG: Optional 0-99 or 0-999 gamma
EXTERNAL TRIGGER:	Permits externally triggered operation with periods longer than 1.85 sec. (optional minimum period 0.9 sec.)
POWER REQUIREMENTS:	12V 0.7A peak, 5mA standby
POWER SOURCE:	INTERNAL: 12V 0.75Ah NiCd rechargeable battery 3,000 readings per full charge
	EXTERNAL: 12-18V
BATTERY CHARGER:	Input: 110/220V 50/60Hz; output: 14V 75mA DC
OPERATING TEMPERATURE:	-35 to +55C
DIMENSIONS:	CONSOLE: 15x8x15cm (6x3½x6")
	SENSOR: 14x7cm dia (5½x3" dia)
	STAFF: 175cm (70") extended, 53cm (21") collapsed, or 4 45cm (18") sections
WEIGHT:	2.7kg (6 lb) per standard complete with batteries

3. OPERATING INSTRUCTIONS

3.1 INSTRUMENT DESCRIPTION

Major parts of the magnetometer are shown in fig. 3.1

(1) SENSOR, optimized for high sensitivity and gradient tolerance

(2) FILLING PLUG, to fill the sensor with proton rich liquid (kerosene or similar)

(3) CABLE CONNECTOR

(4) CABLE

(5) ORIENTATION LINE

(6) STAFF

(7) SHOULDER STRAP

(8) SENSOR CABLE CONNECTOR/ON-OFF SWITCH

(9) RANGE SWITCH

(10) DISPLAY WINDOW

(11) PUSHBUTTON, to initiate a desired mode of operation

(12) CHARGER/INTERFACE CONNECTOR for digital/analog output and external trigger, charger or external batteries

3.2 SET-UP AND OPERATING PROCEDURES

GSM-8 is shipped with fully charged internal batteries, ready for field operation. To set-up the instrument, the sensor should be attached to the staff with correct direction of the orientation line and the staff extended. Connecting the cable to the front panel sets the instrument in standby state. The display may or may not light at this point.
The Range switch should now be switched to position closest to the local total magnetic field intensity as shown in fig. 1.1
Operation of the GSM-8 is internally monitored and incorrect readings (due to external interference, excessive gradient or internal breakdown) are marked by two decimal points appearing after third and fourth digit of the display. Readings marked by decimal points should be disregarded.
For best results the Range switch should always be set to the position closest to the first two digits of the displayed value of magnetic field. During surveys this may need occasional correction.

There are three modes of operation of GSM-8:

a) Short depressing of the pushbutton will initiate a SINGLE READING. Initiation is marked by a colon after second digit of the display. The colon stays lighted only during polarization interval. The value of measured magnetic field appears on the display in gammas after about 1.85 sec. and stays displayed until the next reading is taken or the instrument switched off. Incorrect readings are marke by decimal points, which stay displayed with the reading.

b) In SELFTEST MODE the pushbutton is pressed permanently. This mode consists of one normal reading of magnetic field, display test (displaying 88888) and battery test. Battery voltage is shown in m although accurate only about 5%. This cycle is being repeated as long as the pushbutton is depressed.

c) In CYCLING MODE the pushbutton is depressed during polarizing inter until a new reading appears on the display and then released. Afte display and battery tests, the instrument will start cycling automatically at the rate of one reading in about 1.85 sec. A short depression of the pushbutton at any time will stop cycling (after completing the cycle under way).
Cycling mode is very convenient for base station and vehicle borne operations or for a quick check-up of instruments consistency. However, as it results in a large number of readings and relatively fast draining of the batteries, the cycling mode can optionally be disabled to prevent accidental initiations in a field.

Before starting a survey the batteries and the display should be checke Battery voltage for fully charged batteries must be above 12,500 on the display. No survey should be started with battery voltage being below 11,000 mV as shown on the display.

3.3 EXTERNAL BATTERIES

While internal batteries satisfy any requirements for normal hand held (portable) operation even in cold weather, use of external batteries ma be necessary for base station or vehicle borne operation where automatic cycling is needed. For this purpose any 12V car battery will be satisfactory, although lightweight external battery packages with sufficient capacity for 6-8hr of cycling operation may be ordered from the manufacturer.
Leads of the car battery can be connected directly to pins D (positive) and E (negative) of the Charger/Interface connector at the side of the console. Use of higher voltage batteries (up to 18V) requires that internal NiCd batteries be disconnected by opening an internal two pin connector. Alternatively the batteries can be removed from the console by removing the instrument out of the case and then removing two screws at the range switch side of the larger PC board, pivoting the board for 90 degrees and undoing four screws holding the battery pack. Use of batteries of more than 18V may damage the instrument.
External battery packs for disposable C or D size batteries, special Alcaline or Mercury flat pack batteries are available from manufacturer

4. MAINTENANCE AND REPAIR

GSM-8 is generaly maintenance free except for occasional cleaning and visual inspection of mechanical conditions of the cable, sensor and display window. Due to possibilities of gathering magnetic dust, the sensor, cable and staff should be periodicaly washed with soap or detergent and water. Beyond that a normal "common sense care" should ensure lasting use in rough field conditions.

When not used for longer periods the instrument should be returned to the carrying case, with sensor disconnected from the console.

Batteries should be kept charged when storing the instrument. As NiCd batteries have a memory , cycles of partial charging and discharging may result in reduced capacity. This can be cured by few cycles of full discharging and charging. Relatively fast discharge can be achieved by setting the instrument into cycling. Normal charging will take 14-16hr, while fast charging using special charger (available from the manufacturer) can be completed within 3-4hr Spare NiCd batteries are readily available from the manufacturer.

Sensor cable might occasionaly get damaged or broken in heavy use. When repairing be careful to connect centre wire to positive terminal of the sensor and pin A of input connector. All other wires and a shield are connected to negative terminal of the sensor and pin B of input connector. Pins C and D of the input connector must be shorted; the short acts as the main switch.

Use of improper external battery or short circuit in the sensor-cable assembly may blow a fuse (instrument appears completely dead). Spare fuses are found on the smaller of the two boards. The fuse must be soldered in, but it is highly recommended that the cause of malfunction be previously determined and removed. If sensor short is suspected, an ohm-meter can be used to measure a resistance between pins A and B of the input connector. It must be within 15-20 Ohm.

5. WARRANTY

The GSM-8 is warranted against defects in materials and workmanship for a period of 15 months from the date of shipping.

Any defects resulting from normal use in this warranty period will be repaired free of charge by GEM Systems or its authorized representatives.

Instruments will be accepted for repair only if shipped prepaid, and will be returned to the customer C.O.D.

This warranty does not cover damage due to misuse or accident and will be void if the instrument is opened or tempered with by any person not authorized by GEM Systems.

Report on Bedrock Geology of the Cripple Creek Gold Property Denton Township, Ontario

by

William O. Karvinen

December 7, 1987

W.O.Karvinen & Associates Ltd.

Summary

Bedrock on the TME Resources gold property in Denton Township, Ontario, near Timmins, consists of a package of altered volcanic rocks and felsic intrusive porphyries similar to that found in the major gold deposits at Timmins. Several alteration mineral assemblages typical of gold deposits elsewhere, along with stockworks of quartz veins are poorly exposed over an area at least 4000 feet long and over 400 feet wide. To date two gold showings have been found on the few outcrops of bedrock. Grab samples yield gold up to 0.14 oz/ton.

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Introduction

During the months of October and November of 1987, the writer conducted detailed bedrock mapping and prospecting of TME Resources' Cripple Creek property near Timmins, Ontario. The purpose of the survey was to delineate the various rock types and mineralized zones, to exmine locally-derived boulders and to also map out alterations related to gold mineralization.

Location and Access

The Cripple Creek property is located in central Denton Township approximately 20 miles southwest of Timmins, Ontario (Fig. 1). The claim group is accessible via a seasonal logging road about 2 miles south of highway 101 (Fig. 2).

Property Description

The property comprises 11 contiguous unpatented claims numbered P865396 to P865403 inclusive and P930957 to P930959 inclusive. The claims are in the name of William O. Karvinen and under option to TME Resources Inc., 410-675 West Hastings St., Vancouver, B.C.

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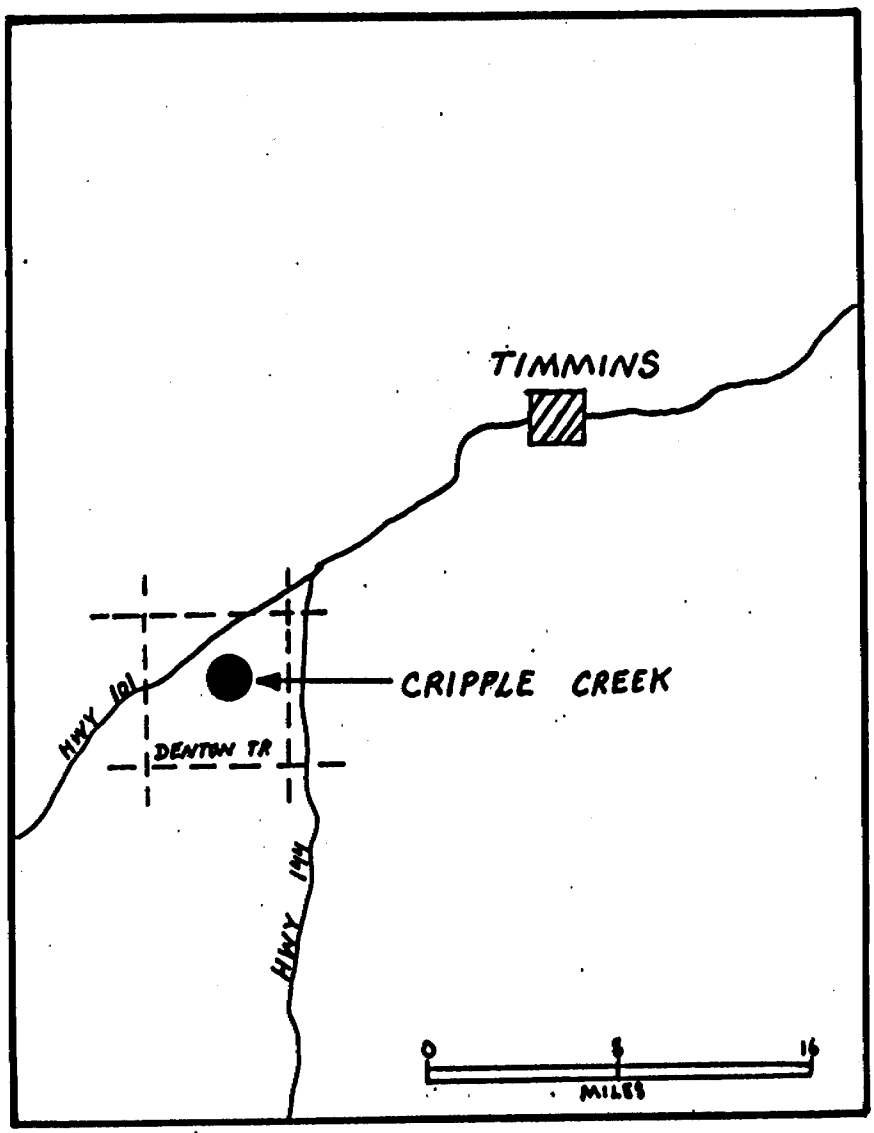
Although a considerable amount of exploration work has been done by various companies in the vicinity of the Cripple Creek claims, the only previous work reported on this ground was by Hollinger Consolidated Gold Mines Ltd. in the early 1960's. This company conducted a horizontal loop electromagnetic survey, a flaxgate magnetometer survey and mapped the property. Also, four diamond drill holes wre completed.



Location Map

Fig. 1: Location Map of Cripple Creek Gold Property.

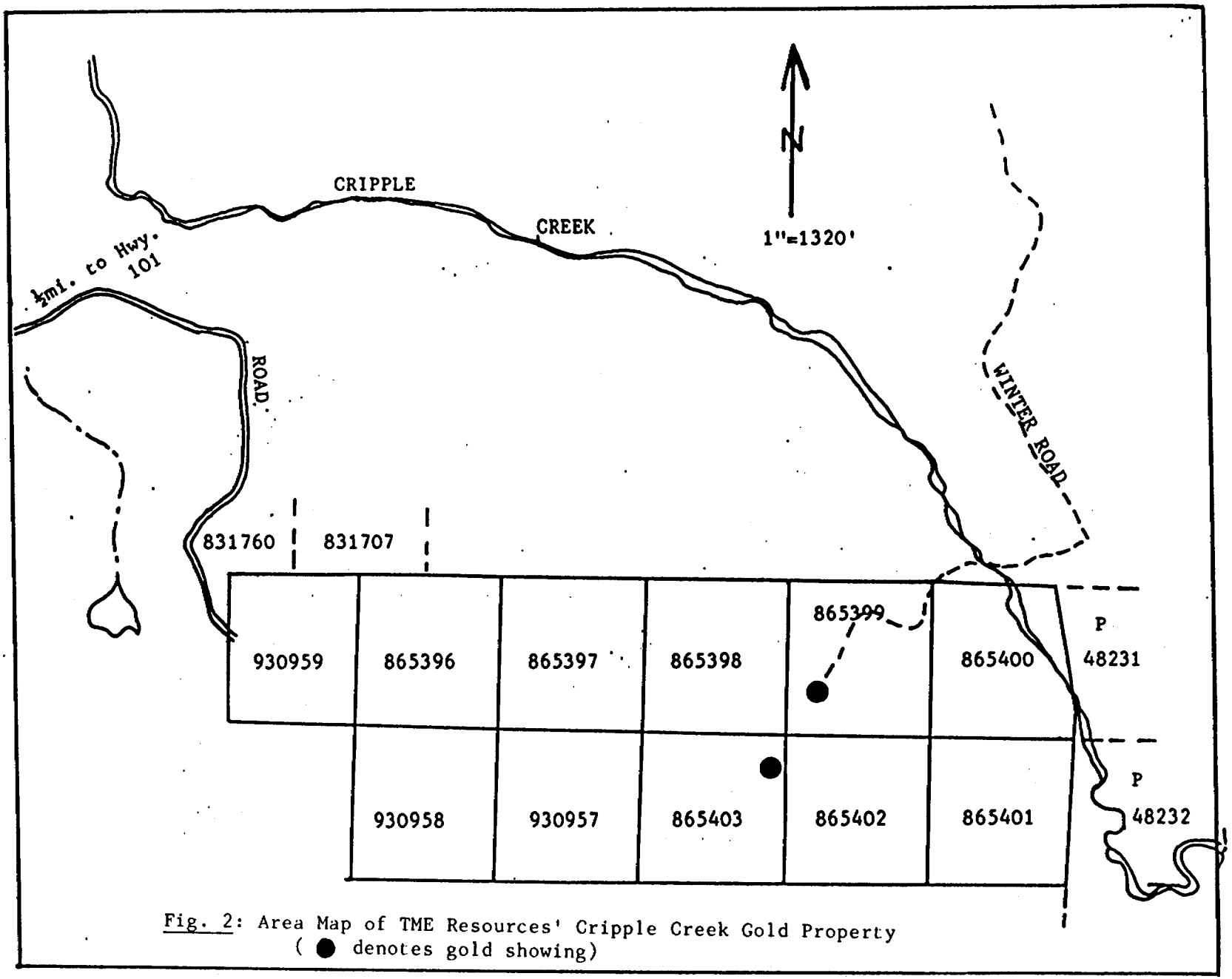


Fig. 2: Area Map of TME Resources' Cripple Creek Gold Property
(● denotes gold showing)

Table 1: Pertinent Information from Hollinger Logs.

Hole No	Footage	Comments
C-1	711-713	considerable pyrite
	772-791	pale gray porphyry dike highly silicified and containing considerable pyrite.
	800-791	3 foot quartz section containing considerable pyrite.
	870-879	quartz stringers containing considerably pyrite.
C-3	267-300	a fair amount of pyrite
	330-336	Fine, diss. cubical pyrite throughout
	369-371	70% quarta with py, po and tr. cpy
	465-467	contains heavy pyrite, some po and tr. cpy
	500-503	10% pyrite and little po
	523-525	15% po and tr. cpy.

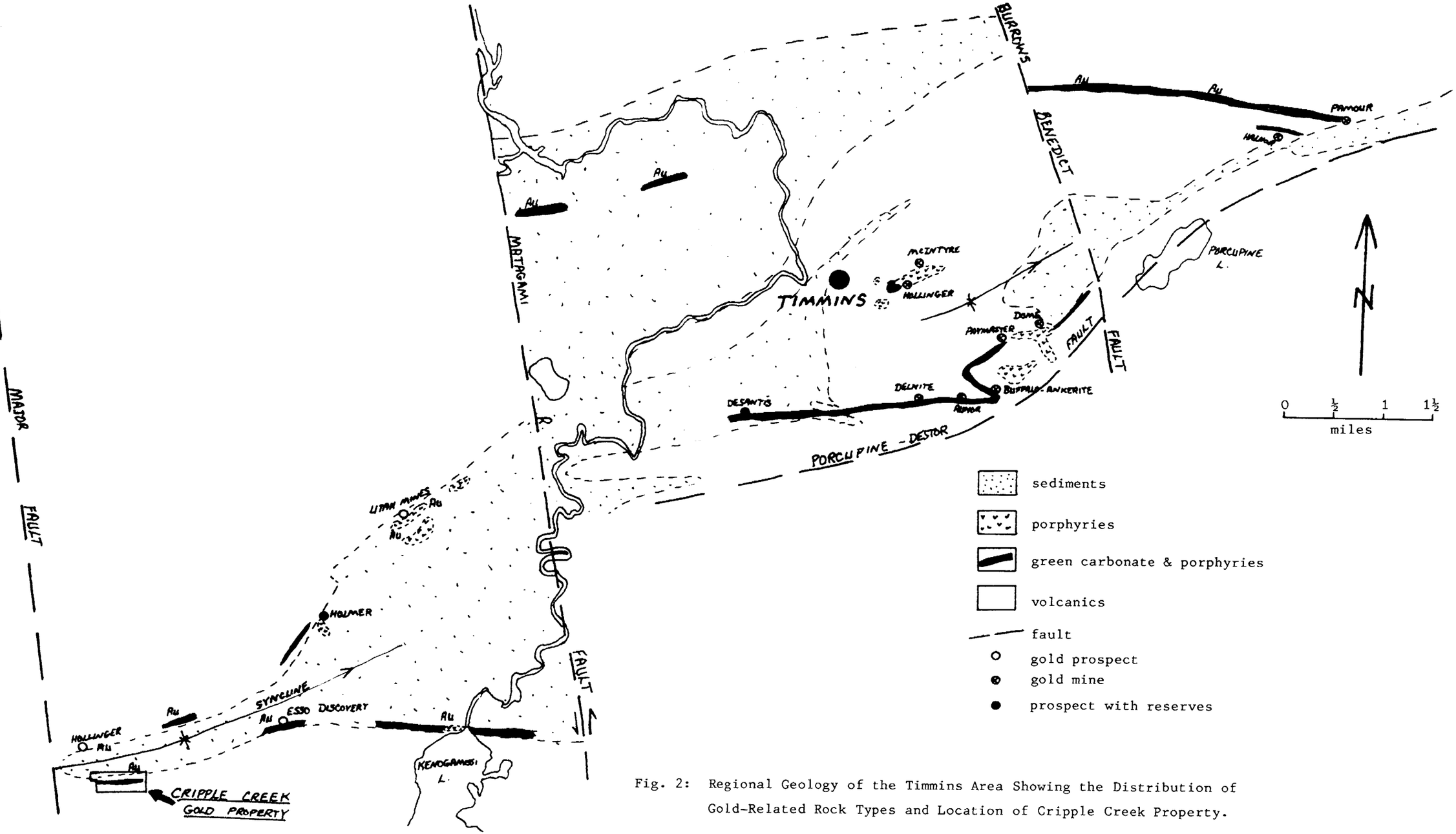


Fig. 2: Regional Geology of the Timmins Area Showing the Distribution of Gold-Related Rock Types and Location of Cripple Creek Property.

W.O. KARVINEN JUNE 1986

Because of the lack of sensitivity of the instrument, the Hollinger magnetometer survey shows few of the details of the current survey. The EM survey picked up an east-west weak conductor in the No. 2 zone area.

In Dec. 1961, Hollinger drilled four holes (C-1, C-2, C-3, C-4) totalling 2827 feet; two were intended to test the EM conductor while the other two (C-1 and C-2) formed part of a geological section north and south of No. 1 showing. In the logs submitted for assessment, only three assays for gold from the four holes are documented. It is not known if more of the core was analyzed. Summaries of important sections of these holes are presented in Table I.

Methodology

The mapping and prospecting were carried out by walking the grid cross lines (spaced at 400 ft.) and by chaining to outcrops found between the lines. In the area of outcrop between 48E and 56E north and south of the base line, cross lines were chained and flagged at 50E and 54E.

Regional Geology

The Cripple Creek claim group covers a portion of ultramafic and mafic volcanics which form part of the same package of altered rocks that host the large Timmins gold deposits about 20 miles to the east. These rocks which are the lower portion of the Tisdale Group (Pyke, 1980) have been traced westward by the writer from the de Santis Mine, across the Matagami River fault to the Cripple Creek area.

As illustrated on the enclosed map, several gold prospects west of the Matagami River occur on or near the carbonates and felsic porphyries found

in the lower Tisdale Group, but only the Holmer deposit has any proven reserves.

Local Geology

Reconnaissance mapping in Denton Township by the writer indicates the property to be located on the south limb of an easterly plunging syncline. The komatiitic volcanics and altered equivalents trace out this fold which has a core of meta-sediments. This is similar to structures shown by Choudry (1982).

On the property, seven different rock types have been identified (see map): mafic volcanics (1), mineralized zone (2), altered tuff (3), carbonatized ultramafics (4), felsic porphyry (5), gray granite (6) and diabase (7).

The mafic volcanics comprise massive flows and tuffs which have been altered and locally metamorphosed to amphibolite. They are believed to underlie the southern third of the property. These rocks show primary flow structures such as ropey lava, rubbly flow tops and flow banding. Because of the intense alteration, primary textures are less obvious. The altered equivalents are discussed in detail under "Alteration".

The Mineralized Zone (labelled No. 2 Zone on the map) consists of basically two types of rocks: a southern portion of sericite-carbonate schists cut by numerous quartz veins, a few inches to several feet wide. The former rock type contains from 1 to 20% disseminated pyrite and traces of chalcopyrite and is cut by irregular white, barren quartz-carbonate veins. The former rock type weathers rusty due to the presence of ankerite and is very sericitic. Pyrite content is generally low (1%) and the bullish white quartz veins in this rock are usually devoid of sulfides.

Altered tuff, comprising thin layers of fine-grained material, is found in various states of alteration on the few scattered outcrops. The least altered is a light-weathering gray rock which contains few sulfides or visible sericite. The commonly altered variety, however, is bleached buff to white in color on a fresh surface and is enriched in dolomitic carbonate and sericite.

Carbonatized ultramafic rocks are poorly exposed near showing No. 1 and in the northeast part of the property near Cripple Creek. The carbonatized variety comprises green (fuchsitic) and brown ankerite and magnesite, whereas the talc-bearing type is rich in chlorite and magnesite. From Hollinger's drill sections and from magnetic interpretations, these rocks appear to form a thick (900 ft.+) band across the property.

"Felsic porphyry", a term commonly used to describe felsic rocks found in alteration zones related to gold deposits in Timmins, is intrusive into the altered ultramafics. This rock is best exposed in the area of No. 1 showing, however from magnetic intepretations, appears to form two other bodies to the west as well (see map). The porphyry is light pink to orange in color and consists of fine to medium-grained granules of feldspars and quartz with disseminated rusty-weathering ankerite. Sericite content varies from nil to a few percent. Invariably the porphyry is cut by numerous veins and veinlets of white quartz and the wall rocks contain disseminated pyrite up to 2%. The rock can be very massive to well foliated.

Gray granite is poorly exposed on the south side of two outcrops near line 56E. This rock is medium-grained and gray in color. It appear to form a narrow dyke or a sill and is probably related to the granitic intrusion to the south.

Diabase is exposed in one outcrop on line 24E. It is medium-grained, equigranular and massive. Contacts trend about 165 azm. Its extent along strike is not evident from the magnetic data.

Alteration is common in most of the outcrops found in the vicinity of the showings. It appears to be related to vein formation and sulfide mineralization. The most obvious and widespread alteration in the mafic volcanics is the formation of actinolite-rich rocks which also caontain varying amounts of chlorite and talc. In places the altered rock consists of more than 90% oriented actinolite crystals while elsewhere the rock is quite "soapy" due to the presence of talc.

In the No. 2 zone, biotite and sericite with lesser amounts of ankerite are the main alteration minerals, while sericite and dolomite are the main constituents in the bleached, altered tuff. Fuchsite, ankerite and magnesite with lesser amounts of talc and chlorite is the alteration asemblage in the ultramafic rocks and in the felsic porphyry, sericite and ankerite alteration predominate.

The extent of these important alteration assemblages which are related to gold minealization cannot be ascertained due to poor bedrock exposure, however, it appears that at least 60% of the rocks on the claim group are intensely altered.

Mineralization: of the few outcrops on the property (1% exposure), gold has been found in four of them. The No. 1 showing is a 150 ft. long outcrop into which Hollinger (?) sunk a trench in the 1960's. A map from their report reveals grab samples ranging from .04 to .08 to 0.14 oz. Au/ton.

Three outcrops along 600 feet of strike on the No. 2 showing have old trenches on them. These are all in pyrite-rich biotitic quartz-ankerite

vein zones. Hollinger reports no values, but of three grab samples collected by the writer, the best value was 0.01 oz. Au/ton.

Systematic sampling of these zones has not been done by the writer due to poor exposures.

Structure and Metamorphism: The primary layering in the rocks trend about east-west and dip steeply north. Drag folding is evident on some outcrops and all rocks except for the gray granite possess a penetrative foliation. Detailed magnetic data suggest a northwest-trending fault near Cripple Creek and a northerly-trending fault near line 36E.

The rocks have been regionally metamorphosed under greenschist facies conditions and to the south the grade increases towards a large granite intrusive.

Discussion

Choudry's (1982) detailed map of Denton Township shows the Cripple Creek property to be underlain by sediments, tuffs and two lenses of chemical sediments (iron formation). His sediments are what the writer has mapped as felsic porphyries and presumably Choudry interprets the No. 2 zone to be a chemical sediment. No metion is made of the numerous and widespread quartz veining on the property.

The types of alteration described earlier are similar to alteration assemblages found in major gold camps in the Abitibi greenstone belt of Ontario and Quebec. The carbonates and sericite with porphyries are typical of Timmins whereas the actinolite is similar to that found in deposits around Val d'Or (e.g. Siscoe Mine). Biotite is generally not common, but is an alteration found in gold deposits associated with komatiites in Finnish Lappland.

The alterations and vein formations along with the deposition of sulfides and gold appear to be related to the same hydrothermal system. The felsic porphyries are probably also related spatially and genetically to this system. The system is similar to that which gave rise to the large gold deposits in Timmins.

Conclusions

Bedrock of the Cripple Creek gold property consists of a sequence of mafic and ultramafic volcanic rocks which have been intensely altered by a hydrothermal/porphyry intrusive system. This has resulted in the formation of stockworks of auriferous veins and sulfide zones over a large area. The intensity and type of alteration found on the property indicates a good potential for the discovery of economic deposits of gold.

December 7, 1987

William O. Karvinen, Ph.D.

References

Choudry, A.G., 1982: Precambrian Geology of Denton Township, Cochrane District. OGS Map P 2501.

Pyke, D.R., 1980: Geology of the Timmins Area, District of Cochrane, OGS Geol. Rept. 219.

C E R T I F I C A T E

I, William Oliver Karvinen of 32 Lakeland Point Drive, Kingston, Ont., Geologist and President of W.O. KARVINEN & Associates Ltd., do hereby certify that:

The information contained in this report is based on personal field observations and government publications and assessment files;

Through an option agreement, I have a 2.5% NSR interest in the property and own shares of TME Resources Inc.

I hold a Doctorate of Philosophy and an Honours B.Sc. in geology from Queen's University (1974 and 1968) and a Master of Science in geology from the University of British Columbia (1970);

I am a fellow of the Geological Association of Canada;

I have been actively carrying out mineral exploration and consultative services in Canada for nine years.

W O Karvinen

Kingston, Ontario
December 10, 1987

Dr. William O. Karvinen

Lucol
2.3962

Ministry of Natural Resources
Ontario

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

#342/87

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 will be entered in the columns.

42A05SE0125 2.10714 DENTON

900

Type of Survey(s)
GEOLOGICAL & GEOPHYSICAL

Claim Holder(s)
William O. Karvinen

Address
32 Lakeland Pt. Dr., Kingston, Ontario K7M 4E7

Survey Company	Date of Survey (from & to) Day / Mo. / Yr.	Total Miles of line Cut
W. O. Karvinen & Associates Ltd.	10 10 87 / 24 11 87	11 miles

Name and Address of Author (of Geo-Technical report)
Dr. William O. Karvinen, 32 Lakeland Pt. Dr., Kingston, Ont. K7M 4E7

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	
	Geophysical - Magnetometer	40
For each additional survey: using the same grid: Enter 20 days (for each)	Geophysical - Radiometric	
	Geophysical - Other	
	Geological	20
	Geochemical	

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

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

RECEIVED
JAN 29 1988
MINING LANDS SECTION

Mining Claims Traversed (List in numerical sequence)

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.
P	865396	60
	865397	60
	865398	60
	865399	60
	865400	60
	865401	60
	865402	60
	865403	60
	930957	60
	930958	60
	930959	60

Mining Claim Prefix	Mining Claim Number	Expend. Days Cr.

ONTARIO GEOLOGICAL SURVEY
ASSESSMENT FILES
RESEARCH OFFICE
FEB 10 1988
RECEIVED

RECORDED
DEC 16 1987

Total number of mining claims covered by this report of work. 11

Expenditures (excludes power stripping)

Type of Work Performed

Performed on Claim(s)

RECEIVED
PORCUPINE MINING DIVISION
DEC 16 1987

Calculation of Expenditure Days Credits

Total Expenditures			=	Total Days Credits
$	÷	15	=	

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.

For Office Use Only

Total Days Cr. Recorded	Date Recorded	Mining Recorder
660	Dec. 16/87	
	Date Approved as Recorded	Branch Director
	29 Jan 88	

Date	Recorded Holder or Agent (Signature)
Dec. 10/87	W O Karvinen

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
William O. Karvinen, 32 Lakeland Pt. Dr., Kingston, Ont. K7M 4E7

Date Certified	Certified by (Signature)
Dec. 10/87	W O Karvinen

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	SEC. 43/70			M.+S.	171508
R2	DANA AND ~~Jewsey~~ Jowsey PARK RESERVE SEC. 36/80 W.64/83			S.R.O. M.R.O.	
R3	~~[illegible]~~				~~43003~~
R4	RESERVED FOR PUBLIC USE			S.R.O.	
R5		K.R.W. 94/84		c.p.o.	

APPLICATION FOR CROWN LAND.

SAND AND GRAVEL

G1	M.T.C.	PIT 1417	FILE 126351
G2	M.T.C.	PIT 1236	FILE 126351
G3	M.T.C.	PIT 1470	
G4	M.T.C.	PIT 1531	

NOTES

THIS TOWNSHIP LIES WITHIN THE MUNICIPALITY OF THE CITY OF TIMMINS.

IMPORTANT NOTICE

THIS TOWNSHIP FORMS PART OF THE WAFERBOARD FOREST MANAGEMENT AGREEMENT.

THE 1985/86 ANNUAL PLAN, ON FILE IN THE MINING RECORDER'S OFFICE, SHOWS THE AREAS TO BE AFFECTED IN THE NEXT YEAR.
IF THIS PLAN AFFECTS YOU, FURTHER INFORMATION MAY BE OBTAINED FROM:

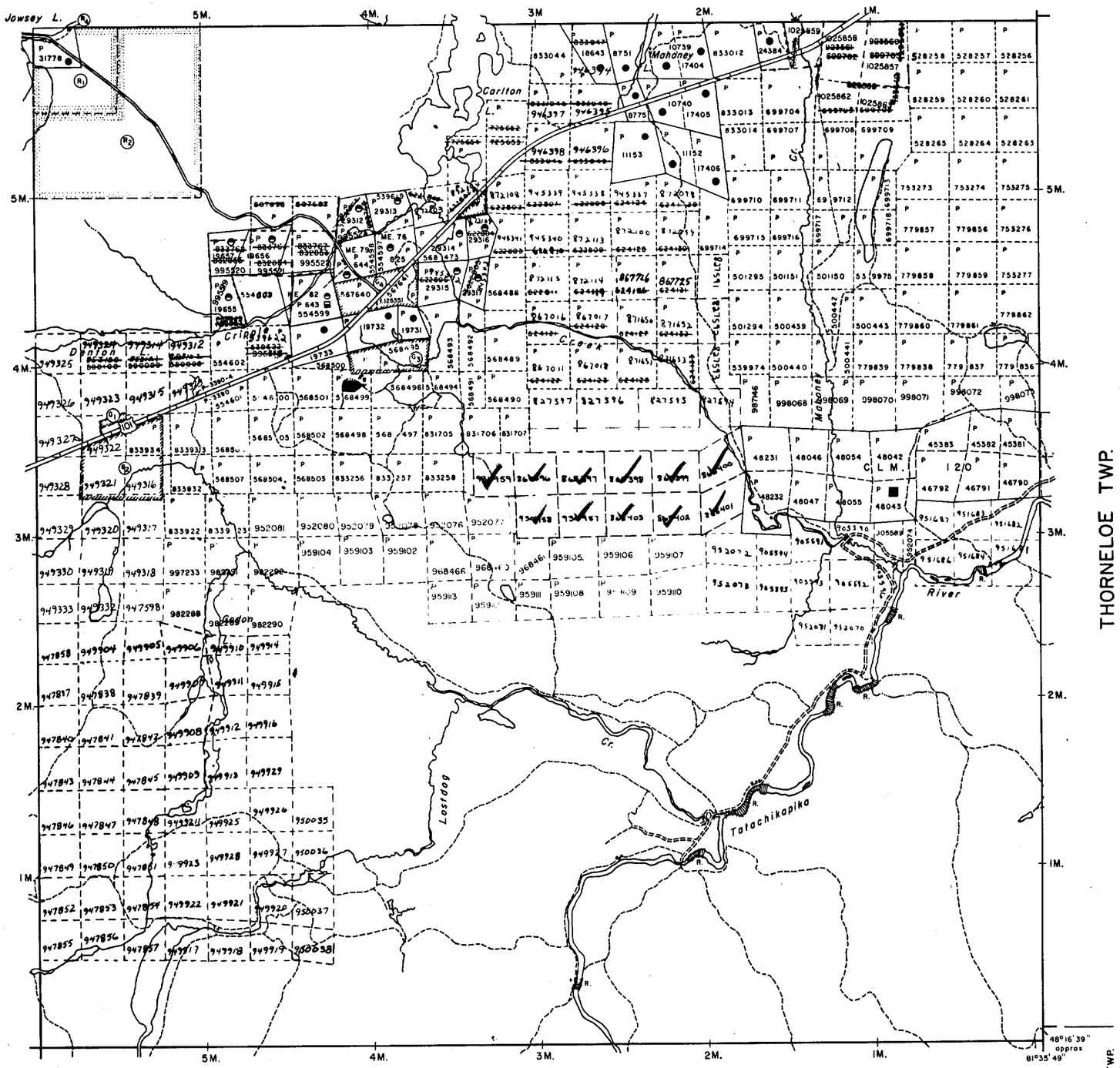
MR. MALCOM KILGOUR,
UNIT FORESTER,
MINISTRY OF NATURAL RESOURCES,
896 Riverside Drive,
Timmins ,ontario

Tel: 705-267-7951

or

Mr. Pierre Corbeil,
Waferboard Group
Tel: 705-268-1462

CARSCALLEN TWP.



KEEFER TWP.

THORNELOE TWP.

McKEOWN TWP.

REYNOLDS TWP.

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	●
" , SURFACE RIGHTS ONLY	⊖
" , MINING RIGHTS ONLY	⊖
LEASE, SURFACE & MINING RIGHTS	■
" , SURFACE RIGHTS ONLY	▭
" , MINING RIGHTS ONLY	▭
LICENCE OF OCCUPATION	▼
ORDER-IN-COUNCIL	OC
RESERVATION	Ⓡ
CANCELLED	⊗
SAND & GRAVEL	Ⓖ

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)

TOWNSHIP

DENTON

M.N.R. ADMINISTRATIVE DISTRICT

TIMMINS

MINING DIVISION

PORCUPINE

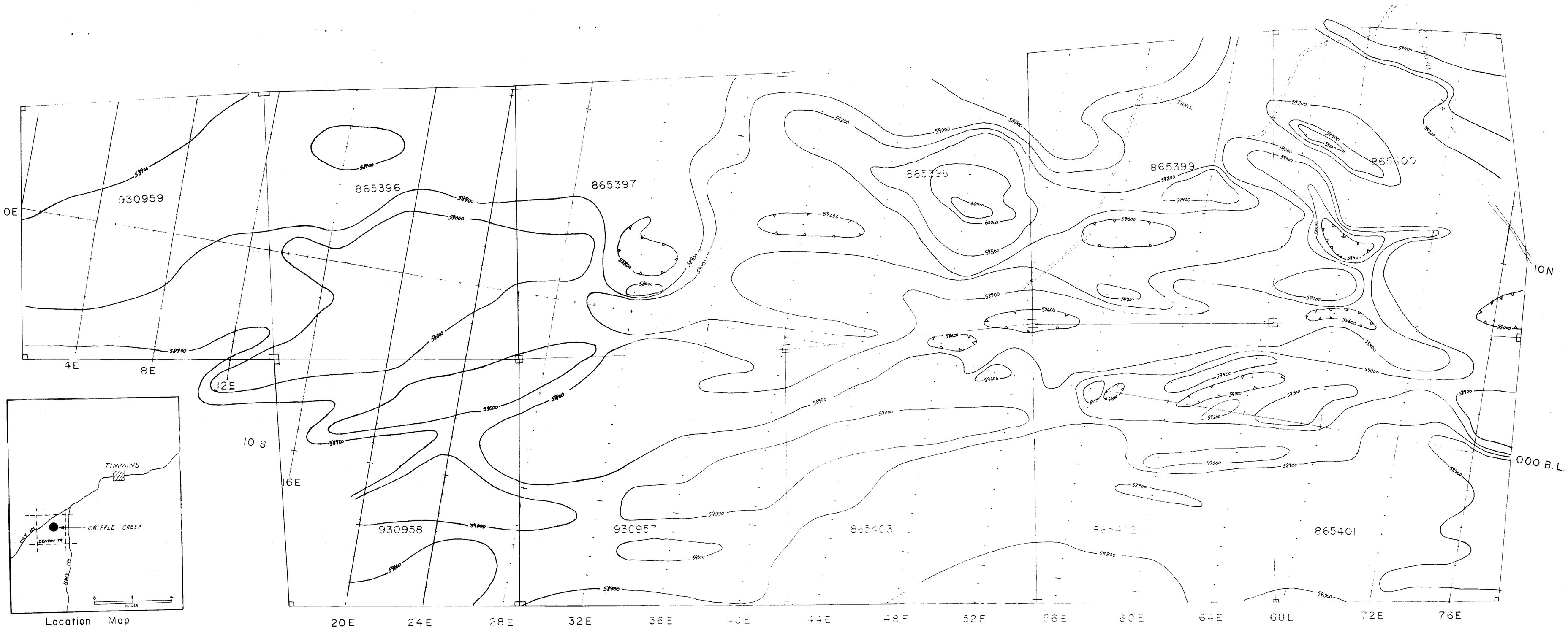
LAND TITLES / REGISTRY DIVISION

COCHRANE

Ontario Ministry of Natural Resources — Land Management Branch

Date MARCH, 1985

Number G-3224



Total Field Contour Map

(In Gammas)

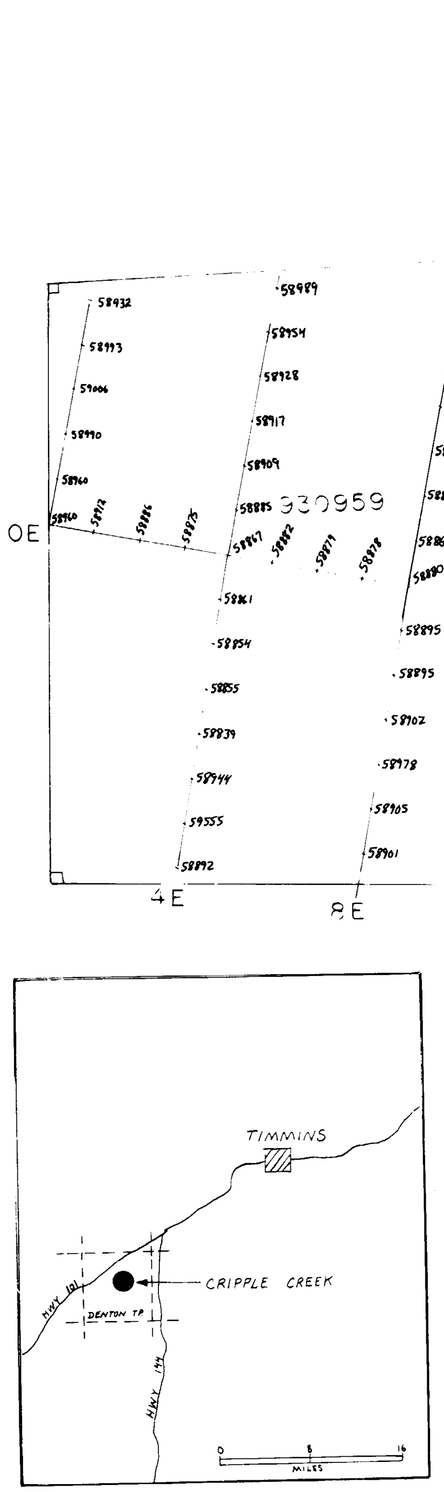
CRIPPLE CREEK GOLD PROPERTY

TME RESOURCES INC.

Survey By:

W. O. Karvinen & Associates Ltd.

November 25, 1987 Scale: 1 in. = 200 ft.



Location Map

Total Field Magnetic Readings

(In Gammas)

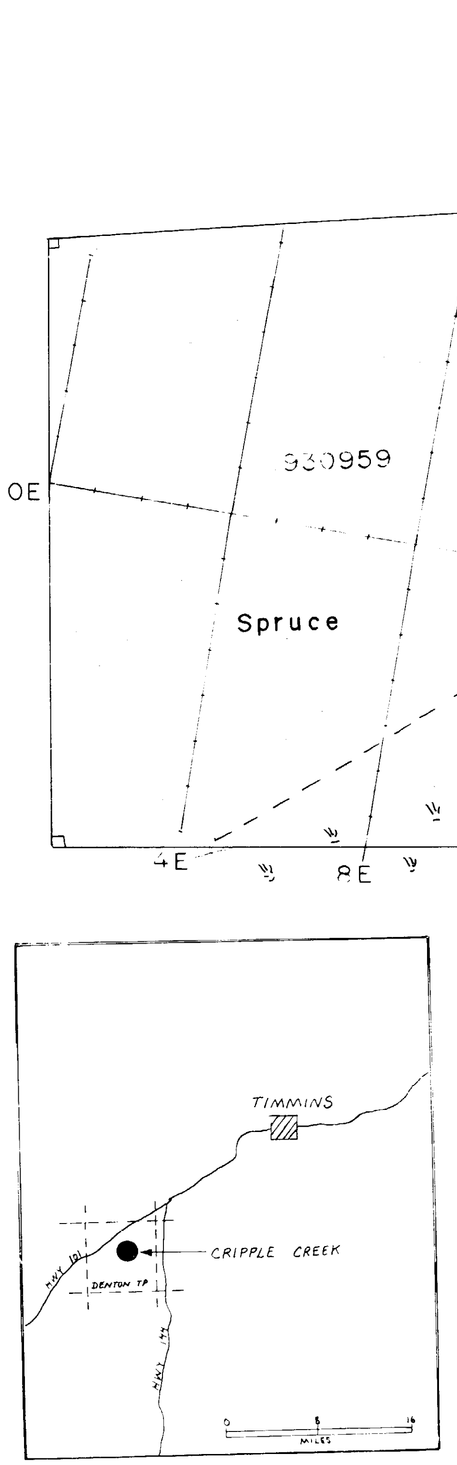
CRIPPLE CREEK GOLD PROPERTY

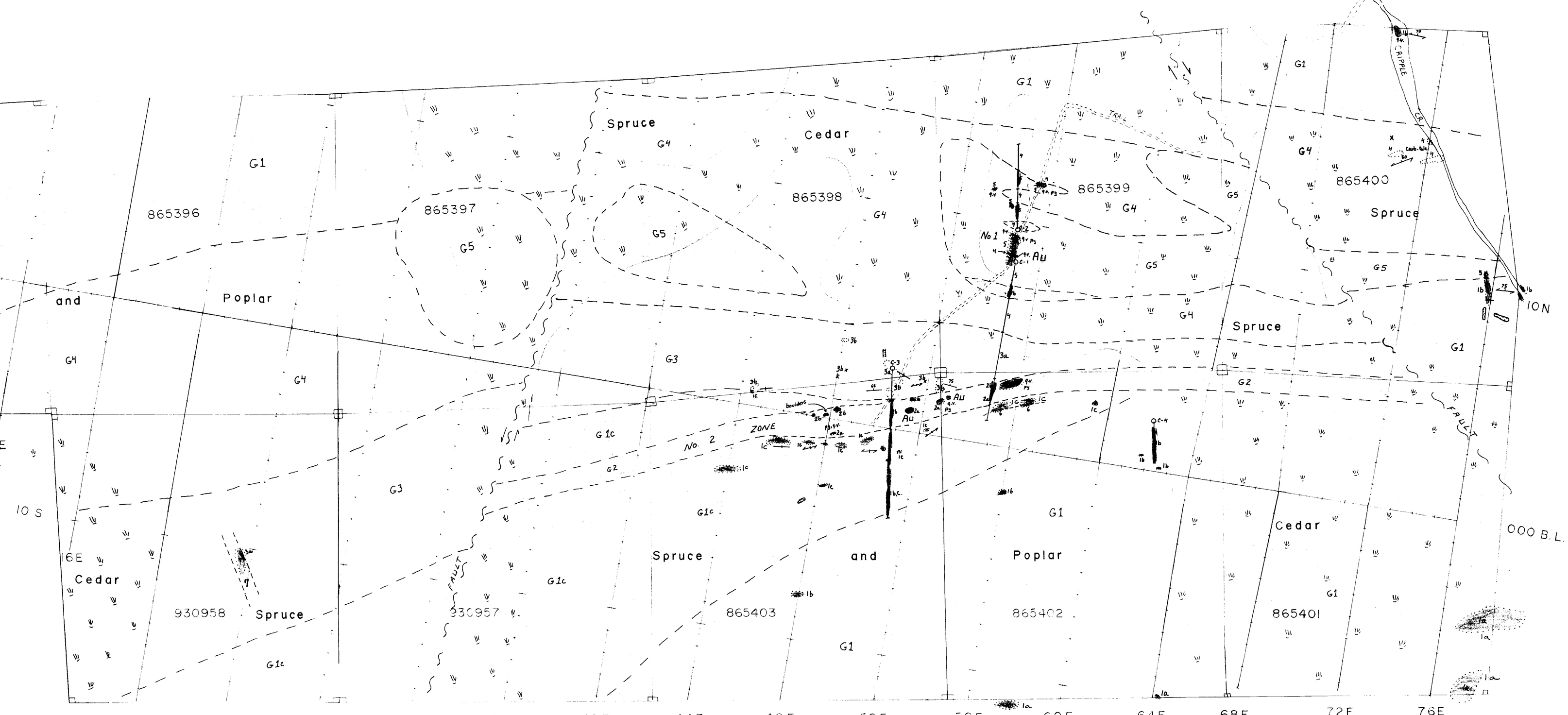
TME RESOURCES INC.

Survey By:

W. O. Karvinen & Associates Ltd.

November 25, 1987 Scale: 1 in. = 200 ft





LEGEND

- 4 — Carb. Ultramafics
- 3 — Altered Tuff
  - a. gray
  - b. bleached
- 2 — Mineralized Zone
  - a. pyrite & quartz veins
  - b. quartz veins
- 1 — Mafic Volcanics
  - a. amphibolite
  - b. chloritic
  - c. chlorite–actinolite–talc alteration
- 7 — Diabase
- 6 — Gray Granite
- 5 — Felsic Porphyry
- "G" Geophyisical Interpretation

- BEDDING
- FOLIATION
- OUTCROP
- TRENCH
- DRILL HOLE
- QUARTZ VEINS
- PYRITE
- GEOLOGIC CONTACT
- SWAMP

BEDROCK GEOLOGY

CRIPPLE CREEK GOLD PROPERTY

TME RESOURCES INC.

Survey By:
W. O. Karvinen & Associates Ltd.

November 25, 1987 Scale: 1in. = 200 ft