GEOLOGICAL	SUR	VEY	BRANCH	
ASSESSM	ENT	REP	ORTS	

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Report of

Gold Commissioner's Office Magnetometer Survey, Geological Reconnaissance VAROOUVER B.C. and Thin Section Study

Contact, Anna and Grace 3 - 6 Claims

Harrison Lake Area, New Westminster M.D., British Columbia

NTS 92H/5E

JUL 16 1996

Latitude:	49 degrees 17' North
Longitude:	121 degrees 44' West

For

Estate of Les Demczuk (owner) and Cedar Capital Corporation (optionor).

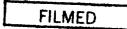
Work and Report by

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Date of Work: May, 1996. Date of Report: July 15, 1996.

Fich A. Ostensoe

GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT



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0.0 SUMMARY

The Contact, et al. mineral claims, located 3 km southeast of Harrison Hot Springs, B.C., host a contact metasomatic mineral deposit with reported values in copper, silver and gold. Garnetite and marble occurrences may have potential as industrial mineral deposits.

Montgomery Consultants Ltd. of Vancouver, B. C. were contracted by Cedar Capital Corporation during May 1996 to carry out an evaluation of the Contact, et al. claims, to perform field examinations and preliminary surveys, and to record sufficient assessment work to maintain the property in good standing during the current year.

A program of field work comprising a magnetometer survey and geological reconnaissance was completed during May, 1996. Thin section studies requiring use of a polarizing microscope equipped with a point-counting stage also were undertaken.

1.0 INTRODUCTION

1.1 Introduction

The author of this report on April 30, 1996 was engaged by Montgomery Consultants Ltd. of Vancouver, B. C., on behalf of their client, Cedar Capital Corporation, to carry out a limited program of field work on the Harrison Garnet property, located near Agassiz, B. C. The proposed work was to include general prospecting and geological reconnaissance, a magnetometer survey, and collection of rock materials for thin section study and possibly for technical testing for beneficiation and industrial application purposes.

Field work was done in the period May 1 - 10, 1996 by the author, assisted by Ed Montgomery, prospector and geophysical operator. J. H. Montgomery, PhD., P. Eng. supervised the program and contributed to the thin section study. This report is prepared for submission to the owners and in support of a Statement of Work.

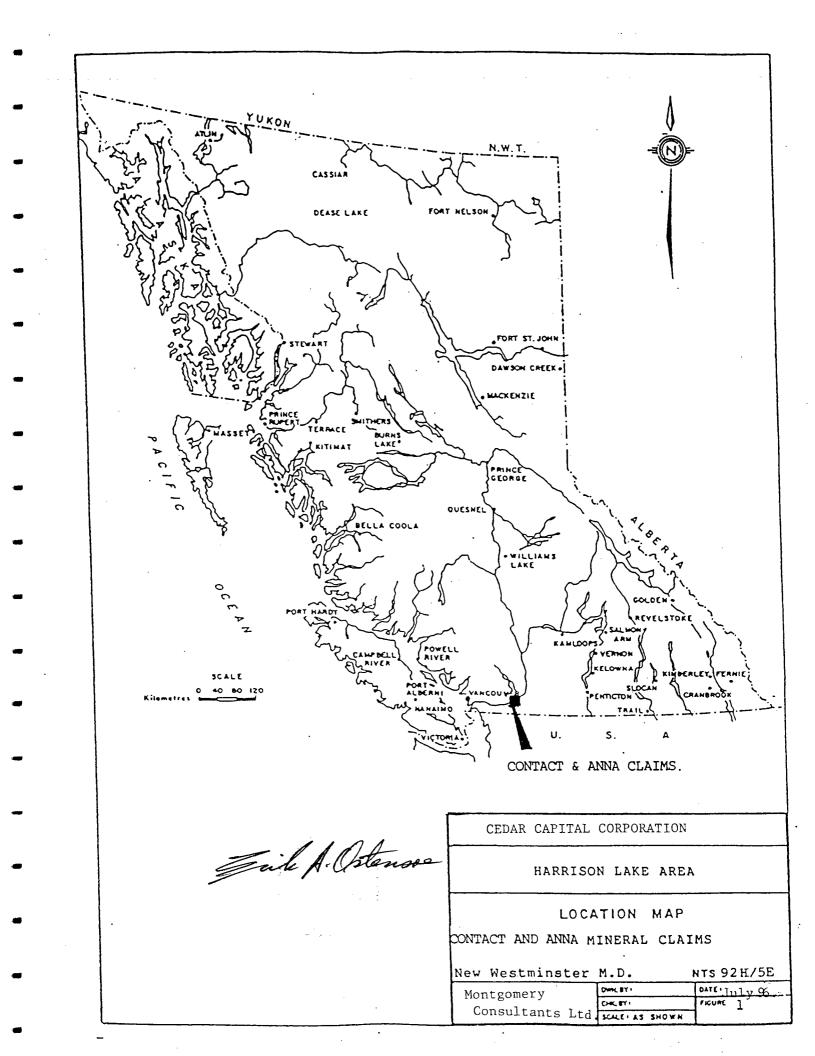
1.2 Property, Location and Access

The Harrison Garnet property comprises 33 claim units (Table 1) located on NTS map 92H/5E on the southwest side of Bear Mountain, immediately southeast of Harrison Hot Springs, B. C. (Figures 1 and 2). The topography of the claims is rugged, with elevations of 40 metres to about 800 metres. A primary coniferous forest on the lower slopes in part has been logged and replaced by a mixed conifer and deciduous growth. The climate is typically west coast marine, with moderate temperatures and high annual rainfall.

The claims are ideally situated with respect to access and other infrastructure. Access to the south side of the property is provided by hard surfaced farm roads that leave Highway 7 about two km east of Agassiz. Unimproved dirt roads are present on the claims but require clearing and repairs. Three power lines cross the south side of the claims and the two transcontinental railways pass within a few kilometres.

Geographical coordinates of the apparent center of the property are 49° 17' north, 121° 44' west.

Claim records were verified at the Office of the Mining Recorder in Vancouver, B.C. on May 7, 1996. A Statement of Work was filed at Vancouver, B. C. on May 14, 1996.



	Echo Island Harrison Lake Harrison Lake Grace 13.4.5.6 Contact Jointe Slough Anna Anna Slough Contact Jointe Slough Contact Jointe Slough Contact Cont
	Figure 2.
-	HARRISON LAKE GARNET PROJECT
	OFESSION.
-	CEDAR CAPITAL CORPORATION PROJECT # Claim Map
	Scale 1:50,000
	Montgomery Consultants Limited

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1.3 Acknowledgement

The writer, in preparing this report, has made extensive reference to information contained in various reports of the Geological Survey of Canada and the B.C. Ministry of Mines and, in particular, to Summary Report on the Copper-Precious Metal Skarn Mineralization of the Contact and Anna Mineral Claims, dated September 30, 1993, prepared for the owner by David L. Cooke, Ph.D., P.Eng. of Vancouver, B. C. That report, however, was not available to the writer when the field work was planned and executed.

TABLE 1. Claim Data

Name	Record No.	<u>No. of Units</u>	Current Expiry	Proposed Expiry	<u>Owner</u>	
Contact	300545	9	June 1, 1997	June 1, 1998	Les Der	mczuk
Anna	309496	20	May 21,1996	May 21,1997	**	**
Grace 3	311410	1	July 22, 1997	July 22, 1999	99	**
Grace 4	311411	1	July 22, 1997	July 22, 1998	**	**
Grace 5	311461	1	July 23, 1997	July 23, 1999	84	M
Grace 6	311462	1	July 23, 1997	July 23, 1998	**	**

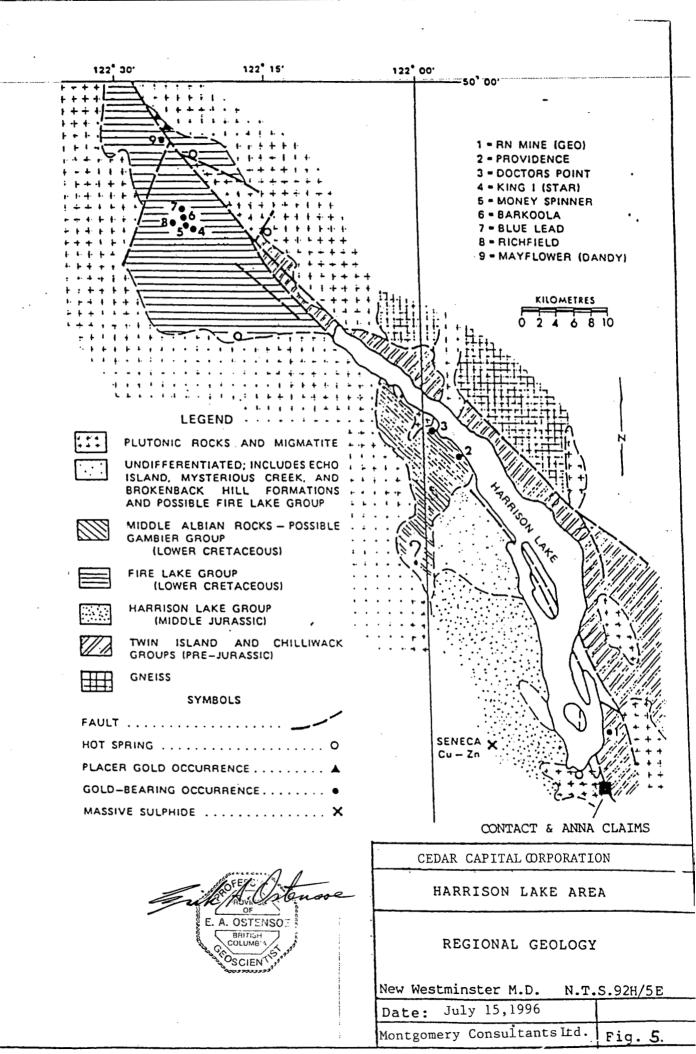
1.4 Work Program

A program of work was directed to the Contact, Anna and Grace 3-6 claims in order to obtain further information concerning the geological setting of the mineralized skarn zone and its magnetic signature. A 4.15 km grid of flagged lines with 25 metre stations was prepared by compass and belt-chain methods and surveyed using an EG & G proton magnetometer. Several samples of garnetite were taken for petrographic studies and for analysis as a potential source of industrial grade garnet. Specimens of marblized limestone were taken for analysis as a possible application as an industrial mineral product. Work Approval No. is NAN 96-0700293-31.

A search was undertaken in an attempt to locate any claim posts, in particular legal corner posts, but the only claim post found did not yield useful information. Its location approximates that of post one east of Contact claim.

A hand held GPS instrument was used in order to obtain approximate locations for grid points and sample sites. This data is imprecise due to dilution induced by the American military, operators of the satellite array, but is nonetheless useful in a general sense and can be used in the field to help relocate traverse and grid locations.

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Prospecting and geological reconnaissance were directed to areas of limestone/marble and their immediate vicinity. One traverse investigated the northeast part of the claims. No work was done on the flood plain nor in the eastern area where steep cliffs are developed.

One hundred and sixty-seven magnetic observations were recorded and subsequently plotted by a simple auto-cad procedure. Thin sections were prepared from eleven garnetite samples and were examined by standard petrographic techniques.

2.0 GEOLOGY

2.1 Local Geology

The Contact, et al. claims are located in proximity to the Harrison Lake fracture system, a major northwest trending fault zone that juxtaposes Chilliwack Group pelitic sediments with minor volcanic components of late Paleozoic age on its east side and Harrison Lake Group andesites and dacites of mid-Jurassic age on its west side. Oligocene-age hornblende-biotite granodiorite of the Chilliwack batholith intrudes the bedded rocks and has been responsible for extensive development of a thermal and metasomatic overprint of hornfelsing, recrystallization and skarn mineral assemblages and possibly for introduction of quartz veins and stockworks with precious metal values.

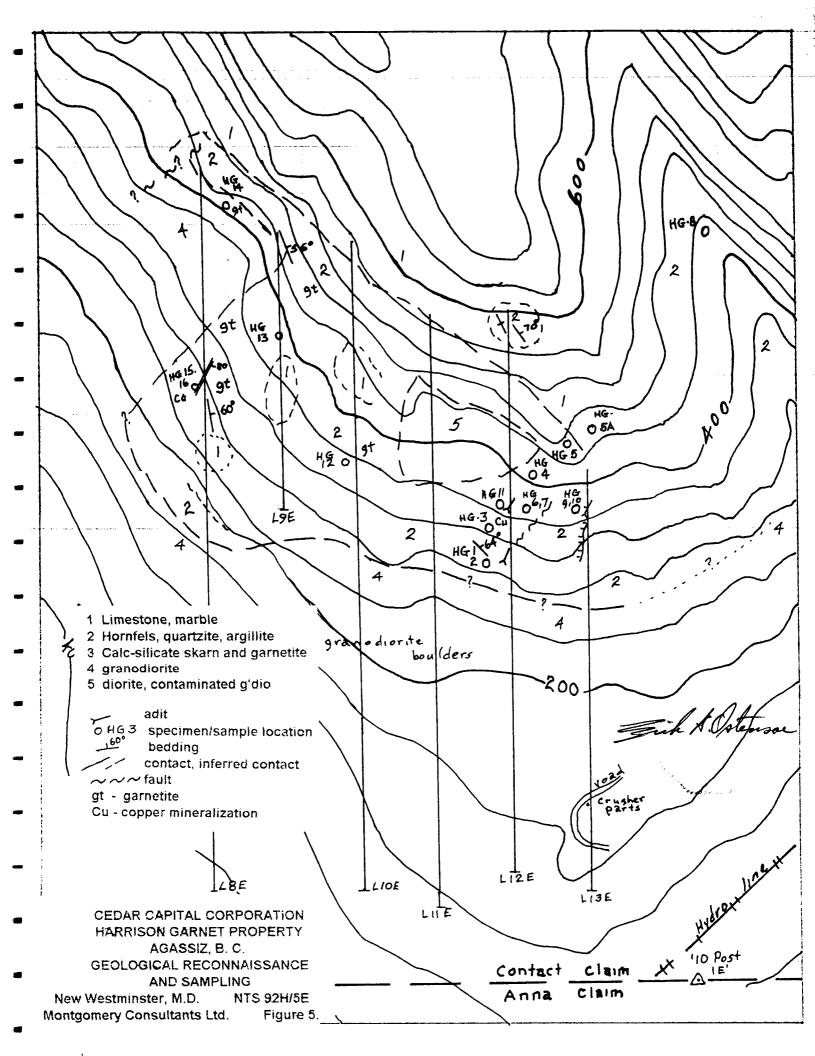
Principal geological features are illustrated in Figures 3 (Regional Geology) and 5 (Property Geology).

2.2 Property Geology

Geological observations were recorded as part of the program of grid preparation and magnetometer surveys. The grid of flagged lines was oriented in a north-south pattern with lines at 100 metre spacing. Grid lines extend from the vicinity of major hydro lines near the base of Bear Mountain to the start of steep slopes. Further geological information was taken from a 1993 Summary Report by David L. Cooke, Ph.D., P.Eng. and the locations of several stations from a grid related to his work were recorded so that that grid could be related to the 1996 work.

The principal geological unit comprises carbonates, sandstones, and minor volcanics of the Chilliwack Group of Pennsylvanian or Permian age. These are intruded by a medium-grained hornblende-biotite granodiorite pluton of the Oligocene-aged Chilliwack Batholith. Figure 5 illustrates data obtained by reconnaissance field work.

The bedded rocks are strongly metamorphosed to hornfels, quartzite and amphibolite schist. Carbonate members have been altered to marble and to skarn mineral assemblages of garnet, tremolite, diopside and, reportedly, wollastonite (Cooke, p. 6). The formation trends generally southeasterly and dips steeply northeasterly. Folding was recognized in a few outcrops but no conclusions were possible concerning either its scale or importance. The contact between the Chilliwack Group sedimentary rocks and the younger Harrison Lake Group volcanic rocks was not located and may pass west of the property.



Garnet zones have been investigated by open cuts and shallow pits and shafts excavated by early prospectors in search of concentrations of copper mineralization. The principal garnet is brown andradite, (Ca3Fe2(SiO4)3, that occurs as massive to granular concentrations in association with other calc-silicate minerals but grossularite is also present. Individual garnet crystals with maximum dimensions 1 cm. were found but most of the material is anhedral. Thin sections have been made from a number of specimens that were taken from different parts of the skarn and these were examined in order to determine the abundance and other characteristics of the garnet and its possible application as an industrial commodity.

Copper mineralization is intimately mixed with the calc-silicate minerals. Chalcopyrite and malachite were recognized in outcrops; bornite and other copper minerals are believed to be present. Copper assays in excess of 10% have been reported; precious metal values are present but are not obviously important. Early mining work in the area, about 1915-16, produced shipments of 200 tons of ore. Insufficient details were obtained from the 1996 work to determine if the copper mineralization has economic potential.

Marble is present on lower slopes where it is intermingled with garnet skarn and on upper slopes where it forms prominent, very steep cliffs. Colour is variably grey, ivory, beige and white and weathered surfaces are uniformly dark grey. Banding is commonly present and appears to retain original limestone bedding and compositional features, in part emphasized by recrystallization. Several specimens of marble were collected for future analyses to aid in determining if industrial grade material is present.

3.0 GEOPHYSICS

3.1 Introduction

Work on the Harrison Garnet property during 1992 included an IGS-2 magnetometer and VLF-EM survey (Cooke, p. 6). Cooke discussed data obtained.

The VLF survey identified three linear conductors: one, located in the western part of the claims, appears related to a contact between granodiorite and metasediments; a second approximates a probable northeasterly fault that separates marble-garnetite from dioritic phase intrusive rocks; and a third parallels an inferred contact, possibly faulted, between granodiorite and Chilliwack Group metasediments.

The magnetometer survey data was not presented in Cooke's report but he describes (p. 7) a northwest-trending relative magnetic low feature that corresponds to the impure marble unit. Relative magnetic highs correspond to known positions of granodiorite and diorite.

Cooke recommended electromagnetic surveys as a means of evaluating at depth marblegranodiorite contacts.

The 1996 work program in part comprised a magnetometer survey of a 4.15 km grid of north south lines with observations being recorded at 25 metre intervals.

3.2 Magnetometer Survey

A magnetometer survey was undertaken on the Harrison Garnet property as a means of supplementing geological information. The existence of a similar survey, completed during 1992, was not known to the writer when the 1996 program was planned. Details of the 1992 magnetic survey are not known and may not have been plotted.

An EG & G proton magnetometer (Appendix 1) was employed in completing a 4.15 km magnetic survey over the central portion of the known garnet skarn zone. Readings were recorded at 25 metre intervals along north-south lines spaced at 100 metre intervals. Characterisitics of the instrument are included as Appendix I of this report. The instrument includes a memory that records data that is downloaded for production of computer-generated maps. Mr. Ed Montgomery was operator.

Figure 4 illustrates the 1996 magnetometer survey with values reported as relative gammas and contoured in 100 gamma intervals. The extreme readings are 55784.7 at 6+75 N, Line 800E and 57123.5 at 4+25N, Line 1000E. The survey is approximately centered on the area of known calc-silicate (skarn) alteration which appears as two apparently circular anomalies along a northeasterly axis and separated by an east-west band of lower magnetic intensity. Grid lines extend north to precipitous exposures of marblized limestone that exhibit readings of 56300 or

less. Granodiorite and diorite in the southern and southwestern parts of the grid feature rather uniform patterns of magnetic responses in the 56200 to 56600 range. Higher readings, in the 56700 to 56900 range, in the southeast part of the grid may reflect the presence of schistose rocks of the Chilliwack Group.

The survey serves as confirmation that simple magnetic patterns are present that can be employed as aids in the projection of geological features. Useful refinements of patterns would be achieved by adding lines at 50 metre spacing.

4.0 THIN SECTION STUDIES

4.1 Introduction

Thin sections were prepared from eleven specimens of garnetite from the Contact claim. Locations are shown on Figure 5. The writer carried out simple studies of the thin sections sections in order to determine the minerals present and their textures and abundances. Table 2 summarizes information obtained by point-count estimations of minerals.

Sample	Count	Calcite	Wollastonite	Diopside	Garnet	Opaques	Notes
HG - 1	700	0.2		92.4	7.2		Tr. tremolite
HG - 2	1000	8.3		7.0	81.6		Chalcopyrite
HG - 3	1000		4.8	5.0	90.1		Molybdenite
HG - 4	600	1.5		9.1	89.3		
HG - 9	1800	14.1		16.4	69.1		tr. sulphides
HG - 10	2100			19.8	76.9	0.9	Cpyr., born., mal.
HG - 11	2100	6.6	11.1	13.6	67.5		
HG - 12	1900	0.1	10.0	20.8	68.9		
HG - 13	1400	0.4		20.7	78.8		Mosaic texture
HG - 15	700		5.8	21.1	73.0		Grossularite, mal.
HG - 16	700	6.1	1.5	9.5	82.7		

Table 2. Point Count Studies of Thin Sections

4.2 Thin Section Observations

(a) Sample HG - 1

Hand Specimen: greenish rock with very patachy distribution of reddish brown garnet.

(b) Sample HG - 2:

Hand specimen: medium grained, reddish brown garnet (andradite) with smaller amounts of white calcite and very pale green diopside. Chalcopyrite present.

(c) Sample HG - 3:

Hand specimen: mottled, vitreous reddish garnet intergrown with greenish anhedral diopside. Few molydenite grains up to 1 mm diameter.

-9-

(d) Sample HG - 4

Hand specimen: reddish, massive, vitreous garnet with minor amount of very pale green diopside.

(e) Sample HG - 9

Hand specimen: pale brown rock with white patches, trace of sulphides.

(f) Sample HG - 10

Hand specimen: banded, reddish brown and green, medium to coarse grained with several percent chalcopyrite, bornite? Malachite on weathered surface.

(g) Sample HG - 11

Hand specimen: massive reddish brown garnet with included patches of white to brownish wollastonite and intermixed green diopside.

(h) Sample HG - 12

Hand specimen: colourful, bright dark red crystalline garnet and strong green coloured diopside and interstitial wollastonite

(i) Sample HG - 13

Hand specimen: dull brown mass of 1 cm diameter garnet clusters with greenish diopside

(j) Sample HG - 15

Hand specimen: much whitish material - grossularite, weathered surface has malachite

(k) Sample HG - 16

Hand specimen: vitreous mass of reddish brown andradite with waxy, pale green diopside and white calcite

5.0 CONCLUSIONS AND RECOMMENDATIONS

The Harrison Garnet occurrence, near Agassiz, B. C., hosts a potentially important deposit of andradite garnet. It has been explored in a very superficial way by preliminary geological and geophysical survey methods.

Thin section studies indicate that specimens contain more than 60 per cent garnet and field observations reveal that widths in excess of several metres are present. A deposit with these parameters may support an economically viable industrial mineral operation. The occurrence was explored many years ago for its copper content. A large volume of limestone of apparent high purity is also present on the property.

Additional field studies are recommended. Data obtained by surveys conducted during 1992 should be integrated with the 1996 work. Additional studies of the garnet material should be directed to determining if a clean, sized product suitable for use as an abrasive can be produced efficiently. Abrasive blast testing followed by seive analysis to determine the degree of impact breakdown will help determine marketability of the garnet.

Road improvement and trenching using light equipment, such as an excavator, will be required to expose the full widths of outcropping occurrences. Drilling will to be required to investigate the shape and vertical persistence of garnetite.

Further exploration of the Harrison Garnet deposit is recommended.

Jak A. Ostensoe

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APPENDIX I.

EG & G Proton Magnetometer

Magnetometers

A magnetometer is an instrument for measuring the intensity of the earth's magnetic field. Most rocks contain some magnetite, the most common magnetic mineral, and therefore produce some disturbances in the magnetic field. Soils and even some man made objects such as pottery can have magnetic properties.

Through interpretation of magnetometer readings, assumptions can be made about what exists beneath the surface, whether it is a pipeline, an ancient urn, a particular mineral, or geologic structure. The interpretation of magnetic data received from a magnetometer is sometimes a difficult task, made even more complex by constant changes in the earth's overall magnetic field, the size and distance of objects from the magnetometer, the amount of magnetic material the object contains, and the susceptibility of the object to absorb magnetism from other sources. On the other hand, many applications may require only simple interpretations of anomalies.

The proton precession magnetometer has become the principal instrument for magnetic studies because it combines high accuracy and ease of use. The <u>Applicatons Manual for Portable Magnetometers</u>, supplied with this instrument, includes general information on the use of magnetometers. It should be studied as a companion to this volume, which deals specifically with the G-856 Memory Mag^{*} magnetometer.

The C-856

The G-856 is a portable, man-carried magnetometer and a "base station" magnetometer. As a hand-carried instrument, it features simple, push button operation and a built-in digital memory which stores over 1000 readings. This relieves you of the need to log data in the field, eliminates transcription errors and most important, lets you use computers to automatically record and process the data from the magnetic survey.

The G-856 Memory-Mag magnetometer will also record automatically at regular intervals, so it can be left unattended to monitor diurnal changes in the earth's magnetic field. These readings are used to correct simultaneous field measurements for high accuracy surveys. Here again, the data may be fed directly into a computer so that the field data taken with an identical G-856 may be automatically corrected. The time-of-day is recorded with each reading taken in either mode from a built-in digital clock.

All operations are controlled from a Weatherproof membrane switch front panel. The sequence of operations was carefully designed to be very simple to operate and yet flexible. Erasing the memory requires an intricate, fail-safe sequence to protect the data, except for the most recent rending which can be casily deleted and replaced if desired.

> A single connector is used for the sensor and data output. The output format is in the universal RS-232, understood by most small and large computers and some printers. The data may also be printed and graphed on the G-866 Recording Magnetometer, or stored for later analysis on digital tape recorders like Geometrics G-724M.

> Physically, the G-856 is compact and lightweight. It is weatherproof and operates over a wide temperature range. It is powered by eight D-Cell batteries, sufficient for about 3000 readings.

Above all, the G-856 is a high-precision magnetometer, the result of many years experience in the manufacture of similar instruments. An internal programming switch allows modification of the cycle times to ensure that the G-856 works properly near the magnetic equator and in high gradients where other models may operate only marginally or fail to obtain reliable data.

The operation of the instrument is controlled by a microprocessor and the control program may be changed at any time for product improvement or other considerations. In that event, you may find variations between this manual and the operation of your actual instrument operation. Such variations will have no adverse effect and should be recognizeable as you familiarize yourself with operation.

APPENDIX II.

STATEMENT OF EXPENDITURES

The following expenditures were incurred in a program of geological reconnaissance, magnetometer survey and thin section examination, Harrison Garnet property, Agassiz, B. C.

1.	Wages - field work including grid preparation	
	Erik Ostensoe, geologist, 7 days field work @ \$300/day	\$2100
	Ed Montgomery, geophysical operator, 7 days @ \$200/day	1400
2.	Wages - Supervision, Research, Thin Section Study and Report Prepa	ration
	Erik Ostensoe, geologist, 5 days @\$300/day	1500
	Ed Montgomery, operator, 1 day @ \$200/day	200
	J. H. Montgomery, PhD., P.Eng., 2 days @ \$600/day	1200
3.	Transportation	
	Use of four wheel drive vehicle - 7 days @ \$50/day	350
	Vehicle costs - 400 km @ \$0.25/km	100
4.	Living costs	
	Motel - Pathfinder Motel, Agassiz	207
	Glencoe Motel, Harrison	69
	Meals -	247
5.	Geophysical Instruments	
	Magnetometer rental - 7 days @ \$100/day	700
	GPS rental - 7 days @ \$10/day	7 0
6.	Consumables - batteries, flagging, hip-chain thread, et al., allowance	100
7.	Draughting, photocopying, auto-cad, allowance	200
8.	Preparation of 11 thin sections	129

Total Expenditures

<u>\$8572</u>

Eich A. Ostensoe

APPENDIX III.

STATEMENTS OF QUALIFICATION

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The following persons participated in the work described in the accompanying report:

- Erik A. Ostensoe, B.Sc., P. Geo.- geological mapping, grid preparation, thin section study and report preparation more than thirty years activity in mineral exploration, a consulting geologist since 1982, with residence in Vancouver, B. C., a member of the Association of Professional Engineers and Geoscientists of British Columbia
- J. H. Montgomery, PhD., P. Eng. supervision, research and thin section study a practicing consulting geologist since 1959, with residence in Vancouver, B.C., a member of the Association of Professional Engineers and Geoscientists of British Columbia and the Association of Professional Engineers of Yukon.
- 3. Ed Montgomery, prospector and geophysical operator a resident of Vancouver, B. C. with many years experience in field and laboratory work related to the mineral industry.

Til A. Ostensoe

