

MINERAL TITLES BRANCH  
Rec.  
DEC 19 2000  
L.I.# \_\_\_\_\_  
File \_\_\_\_\_  
VANCOUVER, B.C.

**GEOPHYSICAL REPORT**

on the

**M 1 - 8 and GA 1 - 18 MINERAL CLAIMS**

Logan Lake Area  
Kamloops Mining Division

92I-7E, 8W, 9W, 10E  
(50° 30' 45" North Latitude, 120° 29' 45" West Longitude)

for

**WALLOPER GOLD RESOURCES CORPORATION**

6976 Laburnum Street  
Vancouver, BC  
V6P 5M9  
(Operator)

and

**GRANT F. CROOKER**

Box 404  
Keremeos, BC  
V0X 1N0  
(Owner)

by

**GRANT F. CROOKER, P.Geo.,  
CONSULTING GEOLOGIST**

**GEOLOGICAL SURVEY BRANCH**

November, 2000

**26,417**

## TABLE OF CONTENTS

	Page
<b>1.0 SUMMARY AND RECOMMENDATIONS</b>	<b>1</b>
<b>2.0 INTRODUCTION</b>	<b>4</b>
2.1 GENERAL	4
2.2 LOCATION AND ACCESS	4
2.3 PHYSIOGRAPHY	4
2.4 PROPERTY AND CLAIM STATUS	4
2.5 AREA AND PROPERTY HISTORY	5
<b>3.0 EXPLORATION PROCEDURE</b>	<b>9</b>
3.1 GRID PARAMETERS	9
3.2 GEOPHYSICAL SURVEY PARAMETERS	9
<b>4.0 GEOLOGY AND MINERALIZATION</b>	<b>10</b>
4.1 REGIONAL GEOLOGY	10
4.2 CLAIM GEOLOGY	10
4.3 MINERALIZATION	11
<b>5.0 GEOPHYSICS</b>	<b>12</b>
5.1 MAGNETIC SURVEY	12
5.2 VLF-EM SURVEY	12
<b>6.0 CONCLUSIONS</b>	<b>13</b>
<b>7.0 RECOMMENDATIONS</b>	<b>13</b>
<b>8.0 REFERENCES</b>	<b>14</b>
<b>9.0 CERTIFICATE OF QUALIFICATIONS</b>	<b>16</b>

## LIST OF FIGURES

FIGURE	PAGE
1.0 LOCATION MAP	<i>follows page 4</i>
2.0 CLAIM MAP	<i>follows page 5</i>
3.0 REGIONAL GEOLOGY	<i>follows page 10</i>
4.0 GROUND TOTAL FIELD MAGNETIC CONTOURS	<i>follows page 12</i>
5.0 GROUND VLF-EM PROFILES (NLK, SEATTLE WA)	<i>follows page 12</i>

## TABLES

TABLE	PAGE
1.0 CLAIM DATA	5

## APPENDICES

APPENDIX I	- MAGNETIC AND VLF-EM DATA
APPENDIX II	- GEOPHYSICAL EQUIPMENT SPECIFICATIONS
APPENDIX III	- COST STATEMENT

## 1.0 SUMMARY AND RECOMMENDATIONS

The Walloper Gold Resources Corporation property consists of eight four-post and eighteen two-post mineral claims located in the Kamloops Mining Division. It is located approximately 20 kilometres east of Logan Lake in southern British Columbia. The Coquihalla, Logan lake-Kamloops and Lac Le Jeune-Kamloops highways, as well as numerous logging roads provide excellent access to all areas of the property.

The general area of Kamloops-Ashcroft-Merritt has been the scene of intense exploration and mining activity for over 100 years. This exploration culminated with the discovery and development of the bulk tonnage porphyry copper-molybdenum deposits at Highland Valley, skarn copper deposits at Craigmont and porphyry copper-gold deposits at Iron Mask.

Previous work in the vicinity of the Walloper Gold Resources Corporation property has been directed to finding porphyry copper-gold deposits similar to the Afton mine. While this type of deposit remains a viable target, Walloper Gold Resources Corporation has chosen to initially explore the property for its precious metal potential.

Several precious metal camps are located in the general vicinity of the property including Stump Lake (20 kilometres south-east) and Swakum Mountain (25 kilometres southwest). A number of mercury showings also occur 30 kilometres north of the property around Kamloops Lake.

The Stump Lake camp has reported production from veins of 70,395 tonnes averaging 3.74 grams per ton gold, 111.75 grams per tonne silver, 0.03 per cent copper, 1.42 per cent lead and 0.24 per cent zinc. The veins consist of polymetallic quartz-sulphide and quartz-carbonate-sulphide assemblages that are mesothermal to epithermal in character. The most abundant metallic minerals are pyrite, chalcopyrite, galena, sphalerite and tetrahedrite with small amounts of arsenopyrite and native gold. Quartz is massive to weakly banded, milky white with metallic minerals distributed on partings and in crudely developed, sulphide rich bands or layers parallel to vein walls. The Swakum Mountain camp has yielded small but significant quantities of base and precious metals. There are two principal polymetallic deposit types: 1) Copper bearing skarns, and 2) lead-zinc-copper-silver-gold quartz-stockwork veins. Both camps occur within or in close proximity to Nicola Group volcanic and/or sedimentary rocks.

Myers and Hubner (Open File 1990-29) have tentatively classified the mineral occurrences in the Nicola Lake area into five main groups, three of which are applicable to the Walloper Gold Resources Corporation property. These are; 1) porphyry style copper-gold and copper-molybdenum deposits, 2) precious metal bearing quartz veins, and 3) stockwork quartz-carbonate veins hosting polymetallic gold-silver-copper-lead-zinc mineralization.

The porphyry copper-gold and copper-molybdenum deposits are associated with Triassic-Jurassic and younger plutons. This class is very important because all the major Highland Valley and Iron Mask deposits are of this type.

Precious metal bearing quartz veins consist of two subclasses; a) Quartz lode deposits in low-grade metavolcaniclastic rocks that lack associated intrusive bodies as exemplified by some veins in the Stump Lake camp. Sericite alteration zones bordering the veins are schistose, indicating that syntectonic metamorphism may have generated the mineralizing fluid. The event may be of Mesozoic age (related to accretion of the Nicola island arc?) or related to Late Cretaceous to Eocene extensional faulting. b) Epithermal gold-silver bearing quartz veins and alteration zones associated with Late Cretaceous to Tertiary extensional faults. An example of this is pyritic sericite-carbonate alteration zones in the Nicola group associated with the Clapperton fault system that exhibit gold anomalies. Another example is north of Stump Lake, where disseminated gold is found in silicified and altered, chalcedony and fluorite rich, shallow dipping quartz sheeting.

Stockwork quartz-carbonate veins, with open cavities hosting polymetallic gold-silver-copper-lead-zinc mineralization is the predominate type on Swakum Mountain, where it is associated with prominent carbonate alteration zones. The energy source for fluid generation and circulation may be related to arc accretion, Cretaceous regional heating accompanying Spences Bridge volcanism, or to Late Cretaceous to Eocene extensional tectonics.

Attention was first drawn to the Melba Creek-Walloper Creek area by two anomalous stream sediment samples (gold, mercury, antimony, copper) from the British Columbia Regional Geochemical Survey and the proximity to the Tertiary Clapperton fault system. These two factors made the area an attractive exploration target. Research of the area showed a number of major mining companies including Cominco Ltd and the Afton Operating Company had carried out significant exploration for porphyry copper type deposits. The decision was then made to stake the Melba Creek-Walloper Creek area.

Work programs carried out by previous operators have included induced polarization, electromagnetic and magnetic geophysical surveying, soil geochemical sampling, geological mapping and percussion and diamond drilling. Most of the work was directed to defining a poorly exposed alkaline stock some 12 kilometres in size. The induced polarization survey delineated eight chargeability anomalies of which five are covered. Two of these were determined to be of sufficient size and strength to be tested by drilling, but the drilling was not carried out. The percussion drilling has indicated thick accumulations of overburden (15 to 45 metres) overlying a diorite porphyry with propylitic alteration. No economic copper or gold mineralization was encountered in the drilling, however weakly anomalous gold values (25 to 109 ppb) have been returned from several drill holes, mainly from the overburden-till.

*Walloper Gold Resources Corporation carried out a significant exploration program on the property during 1996. The work program initially consisted of taking silt samples of the major drainages on the property. This program was very successful, giving strongly anomalous gold values of up to 1260 ppb. Two grids were then established, one in the south to cover the area of the highly anomalous silt samples, and the second in the north to cover pyritic monzodiorite with chargeability anomalies and copper soil geochemical anomalies. Magnetic and electromagnetic geophysical surveying, soil geochemical sampling and prospecting and geological mapping were carried out over the grids.*

*Geological mapping showed the property to be mainly underlain by Late Triassic Nicola Group volcanic rocks that have been intruded by Early Jurassic granitoid rocks of the Nicola Horst and an alkaline intrusive varying in composition from gabbro to monzonite.*

*Mesothermal and epithermal quartz vein and breccia float with anomalous gold values were found in the south grid area. These quartz veins and breccias contained anomalous gold values in the 20 to 270 ppb range, with one sample of mesothermal quartz vein float yielding 13.68 g/t gold. Anomalous gold and multi-element soil geochemical anomalies and magnetic and electromagnetic geophysical anomalies are associated with the gold mineralization. Thick accumulations of overburden cover many areas of the property and may be masking the soil geochemical response.*

The 1996 exploration program yielded positive results and further work was recommended on the property. The recommendations included establishing additional grid lines with soil geochemical sampling, VLF-EM and magnetic surveying, geological mapping and prospecting. Trenching and drilling were recommended over the geological, geochemical and geophysical targets developed in 1996.

The 1998 work program consisted of sampling a newly discovered showing, and establishing grid lines and carrying out a VLF-EM survey north of the showing. The mineralization at the showing consists of carbonate and quartz flooding within a fault zone. Pyrite occurs along fractures and as disseminations, with traces of a fine grained grey sulphide, possibly galena. The fault may be the Clapperton fault, or a splay off the Clapperton fault.

All of the samples were weakly anomalous in lead, with values up to 148 ppm. One sample gave a weakly anomalous gold value of 40 ppb, and two samples gave weakly anomalous silver values of 2.6 and 4.0 ppm respectively. The showing may be significant as pyritic sericite-carbonate alteration zones associated with the Clapperton fault system exhibit gold anomalies within the Nicola Group. The showing also occurs at the north end of a coincidental lead-zinc soil geochemical anomaly with a strike length of 400 metres.

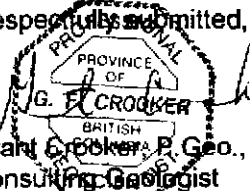
The VLF-EM survey delineated four, weak to moderate, north to north northeast trending conductor systems.

The 2000 work program consisted of expanding the grid established in 1998, and carrying out a VLF-EM survey over the expanded grid. A magnetic survey was carried out over the entire 1998 and 2000 grid. The following conclusions can be drawn from the 2000 work program:

- 6.1 The magnetic response over the grid area was very quiet with a range of only 350 nanoteslas. One zone of slightly lower than background magnetism occurs in the south western portion of the grid. Two zones of slightly higher than background magnetism, very restricted in size, occur over other areas of the grid.
- 6.2 VLF-EM profiles show a weak to moderate response to conductivity. A number of weak to moderate, northerly to north northeasterly trending conductor systems were delineated by the survey.
- 6.3 Geological mapping has not been carried out over the 1998-2000 grid area. Therefore no causes are apparent for the magnetic and electromagnetic anomalies.

The 1996, 1998 and 2000 exploration programs conducted on the property yielded positive results and further work is recommended. The exploration program should be conducted as follows:

- establish additional grid lines on the property
- conduct soil geochemical sampling, VLF-EM and magnetic surveying, geological mapping and prospecting over the grid
- conduct trenching and drilling on the geological, geochemical and geophysical targets developed

Respectfully submitted,  
  
Grant Crocker, P. Geo.,  
Consulting Geologist

## 2.0 INTRODUCTION

### 2.1 GENERAL

Field work was carried out on the GA claims for Walloper Gold Resources Corporation on September 19 and 20, 2000 by Grant F. Crooker, P.Geo., and Leonard W. Saleken, P.Geo..

The work program consisted of establishing grid lines and conducting magnetic and electromagnetic surveying over them.

### 2.2 LOCATION AND ACCESS

The property (Figure 1.0) is located approximately 20 kilometres east of Logan Lake in southern British Columbia. It lies between 50°29'30" and 50°32'15" north latitude and 120°30'25" and 120°35' west longitude (NTS 92I-7E, 8W, 9W, 10E).

A network of paved, gravel and dirt roads (Figure 2.0) give excellent access to all areas of the claims. The Logan Lake-Kamloops Highway passes along the southern boundary of the property and the Coquihalla Highway along the eastern and southern boundaries. The Melba Creek Forest Access Road turns off the Logan Lake-Kamloops highway one kilometre west of the Lac Le Jeune interchange and provides access to the southwestern and central portions of the property.

The Chuwhels Mountain/Lodgepole Lake Forest Access Road turns off the Lac Le Jeune-Kamloops Highway three kilometres north of Lac Le Jeune and provides access to eastern and northern portions of the property. A new logging road turning off the Chuwhels Mountain road provides access to the area of the 1998 and 2000 work programs.

### 2.3 PHYSIOGRAPHY

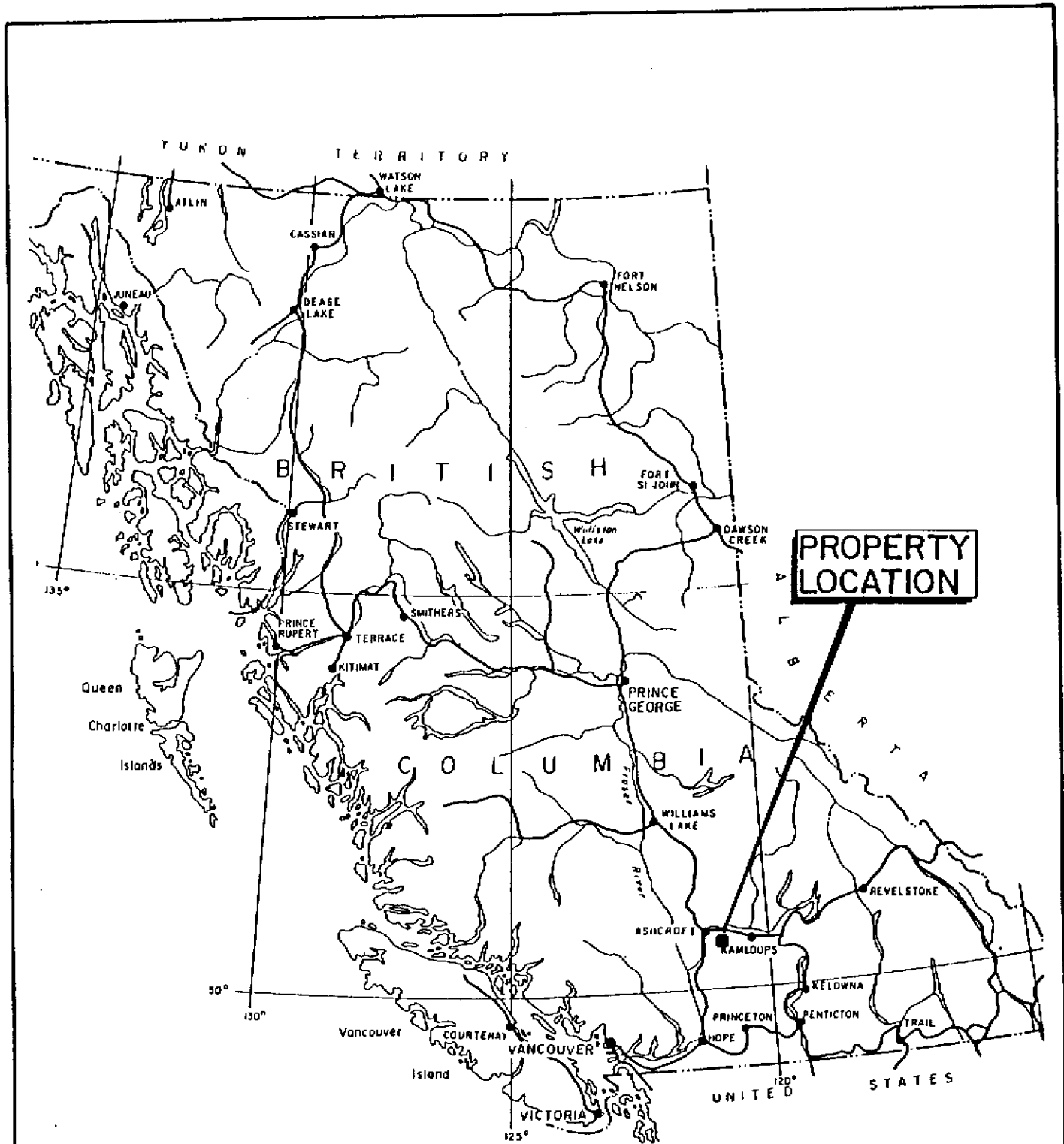
The property is located in the Interior Plateau of southern British Columbia. Topography is gentle to steep and elevation varies from 1330 to 1775 metres above sea level. Melba, East Melba and Walloper creeks drain through the claims and numerous swamps are found along the creeks. Snowfall is not excessive and water is usually available from the creek and swamps.

Vegetation consists of swamps and forest covered areas. The forest cover varies from aspen and spruce to jackpine and fir trees and much of the area has been logged by both clearcut and selective methods.

### 2.4 PROPERTY AND CLAIM STATUS

The M and GA mineral claims (Figure 2.0) are owned by Grant F. Crooker, Box 404 Keremeos BC, V0X 1N0 and under option to purchase by Walloper Gold Resources Corporation, 6976 Laburnum Street Vancouver BC, V6P 5M9.

The property consists of eight four-post claims and eighteen two-post mineral claims covering 130 units located in the Kamloops Mining Division.



GEOTEC CONSULTANTS LTD.		
WALLOPER GOLD RESOURCES CORPORATION		
<b>M and GA CLAIMS LOCATION MAP</b>		
N.T.S. 92I-7E,8W,9W,IOE KAMLOOPS MD.,B.C.		
DATE: OCT. 2000	DRAWN BY: G.F.C.	<b>FIGURE 1.0</b>
SCALE: AS SHOWN	REVISED:	

TABLE 1.0 - CLAIM DATA					
Claim	Units	Mining Division	Tenure No.	Record Date m/d/y	New Expiry Date
M-1	20	Kamloops	344860	03/28/96	03/28/02
M-2	20	Kamloops	345291	04/19/96	04/19/04
M-3	20	Kamloops	346148	05/23/96	05/23/01
M-4	20	Kamloops	346149	05/25/96	05/25/03
M-5	10	Kamloops	346150	05/26/96	05/26/05
M-6	5	Kamloops	346151	05/28/96	05/28/02
M-7	5	Kamloops	346152	05/28/96	05/28/03
M-8	12	Kamloops	359717	10/02/97	10/02/01*
GA-1	1	Kamloops	349821	08/16/96	08/16/06
GA-2	1	Kamloops	349825	08/16/96	08/16/06
GA-3	1	Kamloops	349826	08/16/96	08/16/06
GA-4	1	Kamloops	349827	08/16/96	08/16/06
GA-5	1	Kamloops	351645	09/30/96	09/30/06
GA-6	1	Kamloops	351646	09/30/96	09/30/06
GA-7	1	Kamloops	351647	09/30/96	09/30/06
GA-8	1	Kamloops	351648	09/30/96	09/30/06
GA-9	1	Kamloops	359718	10/03/97	10/03/01*
GA-10	1	Kamloops	359719	10/03/97	10/03/01*
GA-11	1	Kamloops	359720	10/03/97	10/03/01*
GA-12	1	Kamloops	359721	10/03/97	10/03/01*
GA-13	1	Kamloops	359722	10/03/97	10/03/01*
GA-14	1	Kamloops	359723	10/04/97	10/04/01*
GA-15	1	Kamloops	359724	10/04/97	10/04/01*
GA-16	1	Kamloops	359725	10/04/97	10/04/01*
GA-17	1	Kamloops	359726	10/04/97	10/04/01*
GA-18	1	Kamloops	359727	10/04/97	10/04/01*

\* Upon acceptance of this report.

## 2.5 AREA AND PROPERTY HISTORY

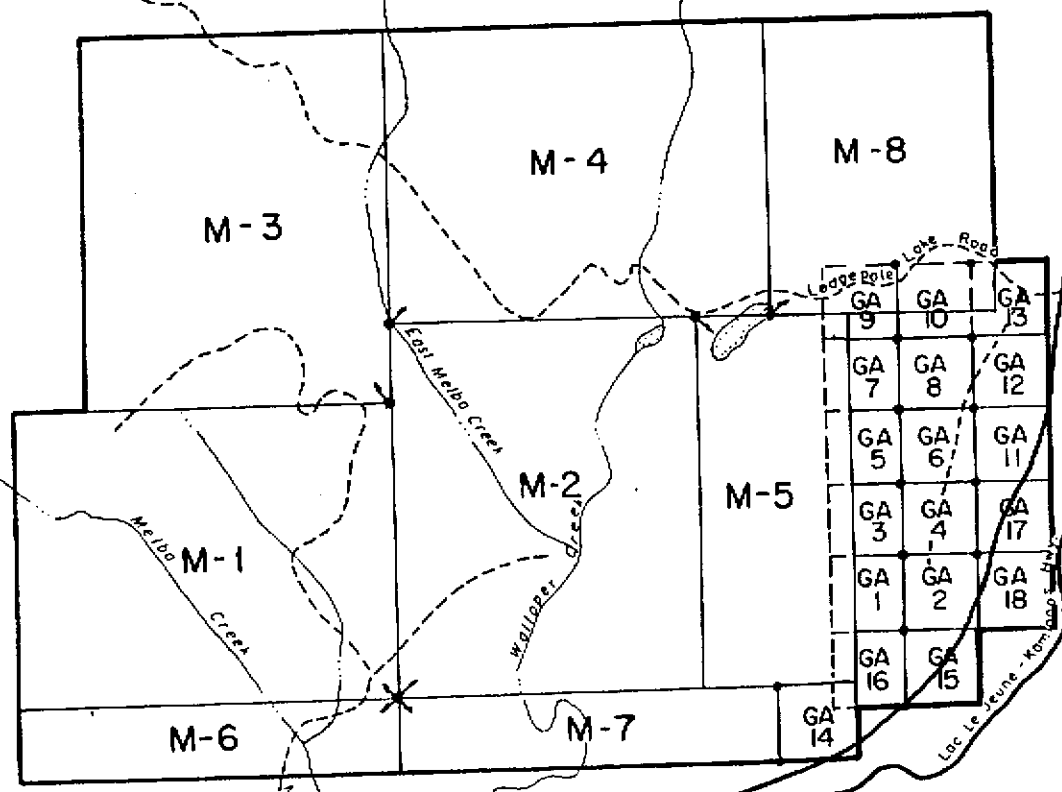
Intense mineral exploration has been carried out in the Kamloops-Ashcroft-Merritt area over the past 100 years. During the 1960's this activity led to the discovery and development of the porphyry copper-molybdenum deposits in the Highland Valley, the skarn copper deposits at Craigmont near Merritt, and the porphyry copper-gold deposits at Iron Mask near Kamloops.

The first documented record of exploration in the vicinity of the M and GA claims is from the early 1970's. However, several old hand dug pits have been found on the property indicating prospecting in earlier years. Induced polarization, electromagnetic and magnetic geophysical surveying, soil geochemical sampling, geological mapping and diamond and percussion drilling have been carried out on or adjacent to the property. These work programs were all directed towards porphyry copper exploration targets. A brief summary of the previous work programs is given below.



CHUMHELS  
MTN  
△

TO KAMLOOPS



Logan Lake Hwy  
TO MERRITT



- Legal corner post
- 1 Legal post: 1 = initial post
- 2 2 = final post



GEOTEC CONSULTANTS LTD.		
WALLOPER GOLD RESOURCES CORPORATION		
<b>M and GA CLAIMS CLAIM MAP</b>		
N.T.S. 921-7E, 8W, 9W, 10E KAMLOOPS MD., B.C.		
0 1 2 3 KM.		
DATE: OCT. 2000	DRAWN BY: G.F.C.	<b>FIGURE 2.0</b>
SCALE: 1:50000	REVISED:	

During late 1970 and 1971 Canadian Johns-Manville Company, Limited carried out an extensive exploration program east of the property (Pine, Fir and Hill claims) including the eastern half of the GA claims. This work program consisted of grid preparation, electromagnetic and magnetic geophysical surveying, eight line miles of induced polarization surveying, collecting of 1,084 soil (Cu, Mo, Pb, Zn, Ag, W, U) and 98 twig (Cu, Mo, Ag, Pb, Zn) samples and four diamond drill holes.

The Johns-Manville work program delineated four small, moderate induced polarization anomalies on the M-8 claim and a number of small, weak soil and twig geochemical anomalies (Ag, Pb, Zn) on the GA claims. One of the induced polarization anomalies was tested by a diamond drill hole (DDH BJ 4) but no economic mineralization was intersected. A second diamond drill hole (DDH BJ 2) was drilled on the GA-15 claim but no information is available on this drill hole except that it encountered 128 feet of overburden. The soil and twig geochemical anomalies are not believed to have been investigated.

Texal Developments Ltd carried out a soil geochemical survey over the WT claims during September of 1972. Approximately 20 line miles of grid was established with 400 foot line spacing and 100 foot station spacing. Two hundred and forty-nine soil samples were collected at 400 foot intervals along the lines and analysed for copper. Two small copper soil geochemical anomalies in the central portion of the M-1 claim were outlined by the survey but the anomalies were not investigated.

During 1977 and 1978 Cominco Ltd carried out extensive work programs on the Chum claims that are now covered by the M 2 to 5 and GA 7 and 8 claims. The area was staked to explore a previously unrecognized alkaline stock (similar to the Afton porphyry copper-gold deposit) with a pyrite zone and traces of chalcopyrite in an area of extensive overburden. The work programs consisted of establishing 71 kilometres of grid, 65 kilometres of magnetic surveying, geological mapping and prospecting and 25 kilometres of induced polarization surveying. Grid lines were established with 200 metre line spacing and 50 and 100 metre station spacing.

Geological mapping and ground magnetics defined a poorly exposed alkaline stock some 12 kilometres in size. The 400 gamma contour was considered to be the edge of the alkaline complex for interpretive purposes. Pyroxenite, gabbro, diorite, monzonite and monzodiorite breccia cut Nicola volcanic rocks. A pyritic zone containing 1-5% pyrite and traces of chalcopyrite was found in the monzodiorite exposed in the northern portion of the property.

The induced polarization survey delineated eight chargeability anomalies of which five are covered and three adjacent to diorite and monzodiorite with up to 5% pyrite. Two of the anomalies were considered to be of sufficient size and strength to warrant further work. The recommendation was made to do an additional five kilometres of induced polarization surveying to further define the anomalies and then test the anomalies with a minimum of seven percussion drill holes. The recommendations were not followed up on by Cominco Ltd.

Afton Operating Company staked the M & R claims in August of 1987 to cover the ground previously held by Cominco Ltd. Afton's target was again the Triassic alkaline intrusive. Soil geochemical sampling and percussion drilling were carried out in 1988 and percussion drilling in 1991.

The 1988 soil geochemical program was reconnaissance in nature with only the perimeter and three lines crossing the property sampled. A total of 21 kilometres of grid was established with samples collected at 100 metre spacings along the lines. Samples were analysed for copper and gold. Gold values were low with only one sample definitely anomalous (180 ppb). Two weak, broad copper soil geochemical anomalies were outlined in the northern portion of the property (1996 "north" grid) and two smaller anomalies in the southern portion of the property (1996 "south" grid).

A three hole percussion drilling program (88-1 to 88-3) was also carried out to test the 400 gamma magnetic anomaly believed to outline the alkaline intrusive in the overburden covered area. The drilling did not test

any of the induced polarization anomalies. These drill holes were located in the northern portion of the M-2 claim and mainly encountered intrusive rock. Samples were collected from the drill holes at 3.05 metre intervals in the overburden and bedrock and analysed for copper and gold. All gold and copper values were sub-economic but several sections of drill holes 88-2 and 88-3 showed weakly anomalous gold values up to 109 ppb over 3.05 metres.

Drill hole 88-1 was in overburden to 15.2 metres and drilled to a depth of 50.3 metres before being stopped in a fault. The bedrock is described as follows: medium green porphyritic rock with plagioclase phenocrysts; andesitic composition, possible intrusive or volcanic origin; minor epidote-chlorite alteration; no visible mineralization. Assaying did not reveal anomalous copper or gold values.

Drill hole 88-2 was in overburden to 39.6 metres and drilled to a depth of 91.4 metres. The bedrock is described as follows; alternating equigranular diorite and porphyritic rock; propylitic alteration with significant epidote present; magnetite noted throughout; pyrite present from 61-73 metres and 85.3-91.4 metres. Two sections showed weakly anomalous gold values, from 24.4-27.4 metres in the overburden assayed 62 ppb and from 73.2-76.2 metres in the bedrock assayed 50 ppb.

Drill hole 88-3 was in overburden to 15.2 metres and drilled to a depth of 91.4 metres. The bedrock is described as follows; porphyritic intrusive rock; biotite, hornblende and pyroxene phenocrysts noted; pervasive saussuritization; strong propylitic alteration with epidote throughout; biotite and muscovite present from 15.2-48.8 metres; trace of chalcopyrite from 48.8-67 metres and rarely to 91.5 metres; magnetite present throughout; pyrite from 42.66-91.4 metres. Two sections showed weakly anomalous gold values in the bedrock. The section from 15.2-21.3 metres assayed 60 ppb and the section from 57.9-67.1 metres assayed 84 ppb including 109 ppb in the section from 57.9-61.0 metres.

During 1991 Afton Operating Corporation drilled six reverse circulation (250 metres total) drill holes to test the southern portion of the overburden covered intrusive. The holes were drilled in two fences at 300 to 400 metre centres and samples were collected at 3.05 metre intervals in the overburden-till and bedrock. All samples were analysed for copper and gold. Overburden-till depths ranged from 21.3 to 42.7 metres and the holes were drilled from 6.1 to 12.2 metres into the bedrock.

The bedrock in all drill holes was a fine to medium grained diorite porphyry with amphibole and pyroxene phenocrysts. Weak propylitic alteration consisting of epidote and chlorite as well as saussuritization of feldspars were noted. Minor pyrite was noted in the cuttings and hematite was observed on some fractures.

Copper and gold assay values were not anomalous in the bedrock (copper <0.02%, gold <0.001 opst) and were generally not anomalous in the overburden-till (copper <100 ppm, gold 5 ppb). However drill holes 91-1 and 91-2 do show weakly anomalous gold values in the overburden-till. Drill hole 91-1 gave weakly anomalous gold values in the 10 to 15 ppb range from 0-21.3 metres. Drill hole 91-2 gave slightly higher gold values ranging from 25 to 55 ppb from 0-15.2 metres and 180 ppb from 27.4-30.5 metres. The area up-ice from these two drill holes was thought to warrant further testing.

In addition to the work programs in the area, two stream sediment samples (3235 and 3237) from the British Columbia Regional Geochemical Survey were anomalous in a number of elements. Sample 3235 was taken from Melba Creek and was moderately anomalous in gold (14 ppb) and copper (73 ppm), and weakly anomalous in antimony (1.6 ppm). Sample 3237 was taken from Walloper Creek and was strongly anomalous in mercury (130 ppb), and weakly anomalous in gold (8 ppb) and antimony (1.4 ppm).

The 1996 work program conducted by Walloper Gold Resources Corporation consisted of establishing 94 kilometres of flagged lines (50, 100 and 200 metre spacing), 90.3 kilometres of total field magnetic survey, 85.5 kilometres of VLF-EM survey, analysing 19 silt samples (32 element ICP, Au), 1281 soil samples (32 element ICP, Hg, Au) and 115 rock samples (32 element ICP, Au), geological mapping and prospecting.

The stream sediment sampling was very successful with twelve of nineteen samples giving a moderate to strong (up to 1260 ppb) gold response. Gold shows weak to moderate correlation with arsenic, copper, mercury and antimony. This sampling indicated several areas that warranted detailed examination.

The soil geochemical response was variable over the property and this may be explained in part by the thick accumulations of overburden that cover much of the property. One strong, gold soil geochemical anomaly was outlined on the south grid. This anomaly gave gold values to 590 ppb. Arsenic, mercury, copper, lead and zinc were also anomalous over various areas of the property.

The geophysical surveys indicated a number of significant magnetic and electromagnetic features. The magnetic survey indicated a number of north trending interpreted faults over the south grid. One structure is coincidental with a chalcedonic breccia zone and another with the strong gold soil geochemical anomaly. The structures may be Tertiary in age and provide conduits for mineralizing fluids. The electromagnetic conductors occur coincidentally with some magnetic features.

The prospecting located epithermal and mesothermal quartz vein and breccia float on the south grid area. The mesothermal quartz vein float has been found over a 400 square metre area and contains up to 3% galena with traces of pyrite and sphalerite. Analysis of the float has given gold values ranging from < 5 to 185 ppb, silver from 0.6 to 94.2 ppm and lead from 136 to >10000 ppm. One sample of quartz float containing rusty boxworks and traces of fine grained galena and native on gold on fractures was found north of the main area of float. This sample gave 13.68 g/t gold, 10.8 ppm silver, 121 ppm copper and 1350 ppm lead.

Epithermal chalcedonic breccia float has been found over a strike length of 250 metres, and is open in both directions. While gold (270 ppb) and silver (36 ppm) values have been only weakly anomalous, fluid inclusion studies indicate the epithermal quartz was formed at low temperature. Thus the mineralization is high in the system and there is a good possibility of finding economic gold mineralization lower in the system.

The 1998 work program conducted by Walloper Gold Resources Corporation consisted of sampling a newly discovered showing, and establishing grid lines and carrying out a VLF-EM survey north of the showing. The mineralization at the showing consists of carbonate and quartz flooding within a fault zone. Pyrite occurs along fractures and as disseminations, with traces of a fine grained grey sulphide, possibly galena. The fault may be the Clapperton fault, or a splay off the Clapperton fault.

All of the samples were weakly anomalous in lead, with values up to 148 ppm (sample 011). One sample (011) gave a weakly anomalous gold value of 40 ppb, and two samples (011 and 012) gave weakly anomalous silver values of 2.6 and 4.0 ppm respectively. The showing may be significant as pyritic sericite-carbonate alteration zones associated with the Clapperton fault system exhibit gold anomalies within the Nicola Group. The showing also occurs at the north end of a coincidental lead-zinc soil geochemical anomaly with a strike length of 400 metres.

The VLF-EM survey delineated four, weak to moderate, north to north northeast trending conductor systems. One conductor is located north of the showing and may represent an extension of the fault exposed at the showing. The conductors probably represent the contacts of rock units or fault zones.

The 1996 and 1998 exploration programs yielded encouraging results and detailed evaluation is warranted on a number of areas.

### 3.0 EXPLORATION PROCEDURE

This 2000 work program consisted of establishing grid lines and carrying out magnetic and electromagnetic geophysical surveying over them. Magnetic geophysical surveying was also carried out over the grid lines established in 1998.

#### 3.1 GRID PARAMETERS

- baseline direction north-south
- survey lines perpendicular to baseline
- survey line separation 100 metres
- survey station spacing 25 metres
- survey total - 2.5 kilometres
- line 598,700N from 677,700E to 678,000E
- lines 598,800N, 598,900N from 677,000E TO 678,000E
- baseline 677 000E from 598,700N to 598,900N
- declination 19°

#### 3.2 GEOPHYSICAL SURVEY PARAMETERS

##### GROUND TOTAL FIELD MAGNETIC SURVEY

- survey line separation 100 metres
- survey station spacing 25 metres
- survey total - 6.8 kilometres
- lines 598,300N to 598,800N from 677,000E to 678,000E
- baseline 677,000E from 598,200N to 599,000N
- measured total magnetic field in nanoteslas
- instrument - Scintrex MP-2 magnetometer
- instrument accuracy  $\pm 1$  nanotesla
- operator faced north for all readings

Readings were taken along the baseline to obtain standard readings for all baseline stations. All loops ran off the baseline were then corrected to these standard values by the straight line method.

The total field magnetic contours are illustrated on Figure 4.0 and the data listed in Appendix I.

##### GROUND VLF-EM SURVEY

- survey line separation 100 metres
- survey station spacing 25 metres
- survey total - 2.3 kilometres
- line 598,700N from 677,700E to 678,000E
- lines 598,800N, 598,900N from 677,000E TO 678,000E
- transmitting station - Seattle - 24.8 KHz
- direction faced - southeasterly
- instrument - Geonics EM-16
- in-phase (dip angle) and out-of-phase (quadrature) components measured in percent at each station

The VLF-EM profiles are illustrated on Figure 5.0 and the data listed in Appendix I.

## 4.0 GEOLOGY AND MINERALIZATION

### 4.1 REGIONAL GEOLOGY

Walloper Gold Resources Corporation claims lie within the Intermontane Belt of the Canadian Cordillera and are part of Quesnellia. The Nicola Horst (Figure 3.0) is the most important feature in the area and underlies the extreme eastern section of the property. The horst is actually a complex of Nicola Group rocks, sedimentary rocks of unknown age, tonalite and tonalite porphyry, all strongly deformed, metamorphosed to low amphibolite facies and intruded by granitoid rocks ranging in age from at least Early Jurassic to Paleocene.

Fault systems limit the horst on the east (Clapperton) and west (Quilchena-Moore Creek). These boundary faults cut the penetrative structural trends, as well as the Paleocene Rocky Gulch granodiorite and are probably Eocene as they are at least partly overlapped by Miocene Chilcotin basalt. The boundary faults are part of a regional extensional system that in part divides facies of the Nicola Group and has localized Eocene sedimentation.

Late Triassic arc-volcanic rocks of the Nicola Group underlie the northern and western portions of the property, while Early Jurassic, metamorphosed coarse biotite granitoid rocks of the Nicola Horst underlie the extreme eastern portion. An alkaline intrusive body intrudes Nicola Group rocks in the central portion. Thick accumulations of overburden and glacial till cover much of the southern sections.

There are two sets of major faults in the region. Northwesterly striking, at least partly contractional features that are probably Mesozoic in age, and northerly striking Tertiary extensional faults. The Clapperton fault appears to be the most important as it may provide a conduit for mineralizing solutions in the Melba Creek-Walloper Creek area.

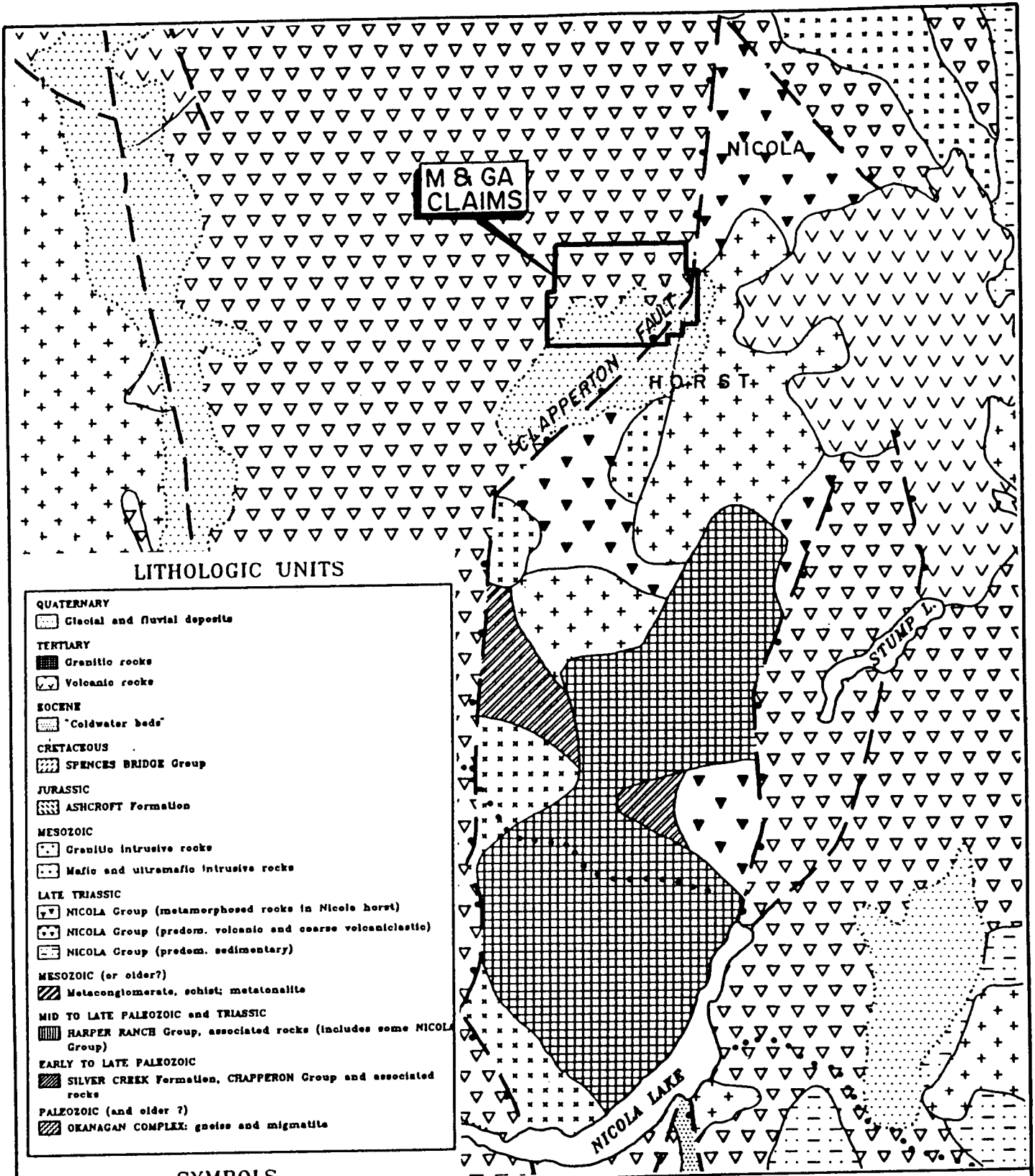
### 4.2 CLAIM GEOLOGY

Geological mapping was carried over two areas of the property during 1996. Outcrop is generally sparse over the property with the southern portion mainly covered with accumulations of overburden and glacial till up to 40 metres in thickness. However the eastern portion of the south grid does have reasonable exposures of outcrop. A brief description of the rock units mapped during 1996 follows.

The oldest rocks are altered tuffs, tuffaceous sediments and possibly mafic volcanic rocks of the Late Triassic Nicola Group. They are generally grey to green in colour and vary from blocky to schistose in nature. Thin section studies indicate the rock to be made up of a very fine-grained, foliated mixture of biotite, quartz carbonate, muscovite (sericite) and probably alkali feldspar. Narrow quartz veinlets up to 0.15 mm thick and carbonate veinlets up to 0.5 mm thick cut the rock, and in places, layers rich in coarse-grained carbonate and muscovite are parallel to the foliation. These narrow quartz and carbonate veinlets occur in a number of outcrops. The metatuff unit is approximately 700 to 800 metres wide with the foliation predominately north-south.

A coarse-grained, grey, metamorphosed intrusive varying from granite to quartz diorite in composition intrudes the Nicola metatuff along the eastern boundary of the property. Along the contact it contains siliceous feldspathic stringers and broken one to two centimetre feldspar phenocrysts. It has been approximately dated as earliest Jurassic by Rb-Sr whole rock isochron. This unit is poorly exposed and intrudes the Nicola metatuff along the eastern portion of the grid.

An intrusive, varying in composition from gabbro to diorite to monzonite to monzonite-diorite breccia intrudes the Nicola Group. From geological mapping and magnetic interpretation it appears to be some 12 square kilometres in size in the central portion of the claims.



**LITHOLOGIC UNITS**

<b>QUATERNARY</b>	
	Glacial and fluvial deposits
<b>TERTIARY</b>	
	Granitic rocks
	Volcanic rocks
<b>Eocene</b>	
	"Coldwater beds"
<b>CRETACEOUS</b>	
	SPENCES BRIDGE Group
<b>JURASSIC</b>	
	ASHCROFT Formation
<b>MESOZOIC</b>	
	Granitic intrusive rocks
	Mafic and ultramafic intrusive rocks
<b>LATE TRIASSIC</b>	
	NICOLA Group (metamorphosed rocks in Nicola horst)
	NICOLA Group (predom. volcanic and coarse volcanoclastic)
	NICOLA Group (predom. sedimentary)
<b>MESOZOIC (or older?)</b>	
	Metaconglomerate, schist, metatonillite
<b>MID TO LATE PALEOZOIC and TRIASSIC</b>	
	HARPER RANCH Group, associated rocks (includes some NICOLA Group)
<b>EARLY TO LATE PALEOZOIC</b>	
	SILVER CREEK Formation, CHAPPERON Group and associated rocks
<b>PALEOZOIC (and older?)</b>	
	OKANAGAN COMPLEX: gneiss and migmatite

**SYMBOLS**

	UNIT CONTACT
	UNIT CONTACT (INFERRED UNDER QUATERNARY)
	QUATERNARY BOUNDARY
	LAKE BOUNDARY
	FAULT
	DIP-SLIP FAULT (DOTS ON DOWN-THROW SIDE)
	THRUST FAULT
	LITHOPROBE TRANSECT LINE



GEOTEC CONSULTANTS LTD.  
**WALLOPER GOLD RESOURCES CORPORATION**  
**M and GA CLAIMS**  
**REGIONAL GEOLOGY**  
 N.T.S. 92I-7E,8W,9W,10E KAMLOOPS MD., B.C.  
 0 5 10 15 KM.  
 DATE: OCT. 2000 DRAWN BY: G.F.C. FIGURE 3.0  
 SCALE: 1:250,000 REVISED:

### **4.3 MINERALIZATION**

Five types of mineralization have been found on the Walloper Gold Resources Corporation property. These are; 1) porphyry copper-gold, 2) precious metal bearing mesothermal quartz veins, 3) precious metal bearing epithermal quartz veins with associated pyritic sericite-carbonate alteration zones, 4) mesothermal quartz veins hosting polymetallic gold-silver-copper-lead-zinc mineralization, and 5) pyrite and galena bearing carbonate and quartz flooding within a fault zone.



## 5.0 GEOPHYSICS

### 5.1 MAGNETIC SURVEY

A total of 6.8 line kilometres of total field magnetic survey was carried out on the property with 100 metre line spacing and 25 metre station spacing. Total field magnetic values ranged from 56561 to 56911 nanoteslas and the magnetic contours are illustrated on Figure 4.0.

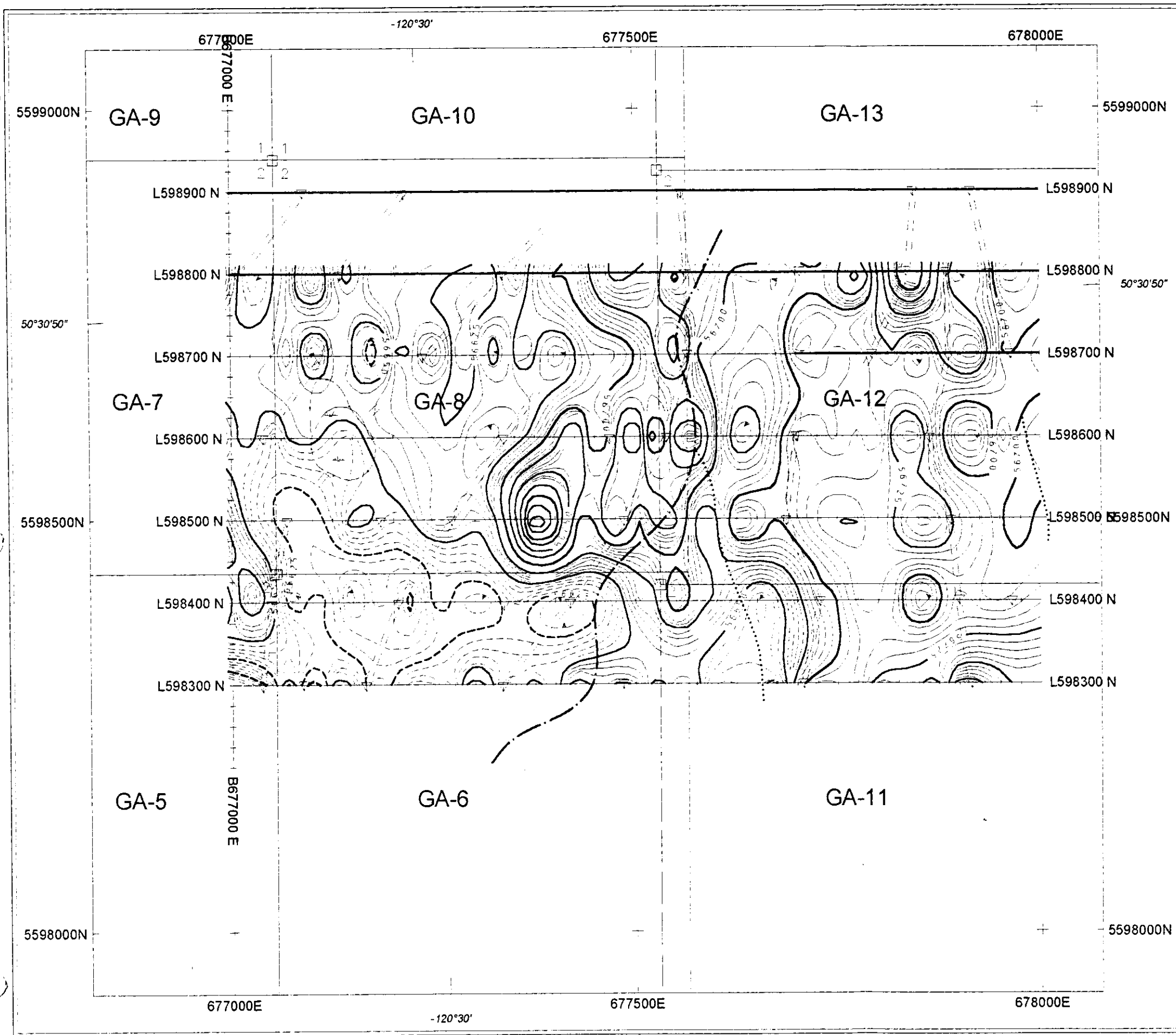
The magnetic data is quiet with a range of only 350 nanoteslas over the grid. The lowest magnetic values occur in the southwestern portion of the grid, extending from line 598,300N between 677,000E and 677,400E to line 598,600N between 677,000E and 677,150E. Two small, weak magnetic highs also occur on the grid. The first is centred on line 598,500N at 677,375E with a maximum value of 56911 nanoteslas, and the second is centred on line 598,800N at 677,800E with a maximum value of 56825 nanoteslas.

No causes are apparent for the magnetic low and the two magnetic highs at this time.

### 5.2 VLF-EM SURVEY

A total of 2.3 line kilometres of VLF-EM survey was carried out over the property. The 1998 and 2000 data are both illustrated on Figure 5.0 to give a better interpretation of the 2000 data. VLF-EM profiles show a weak to moderate response to conductivity. Topographic bias, due to up and down-slope VLF instrument orientation is minimal on the survey. Topographic bias in rugged terrain can produce profile characteristics that resemble real conductors, although they are usually broad and follow topographic contours.

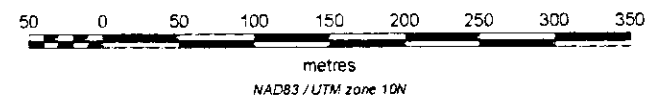
VLF-EM profiles show a weak to moderate response to conductivity. A number of weak to moderate, northerly to north northeasterly trending conductor systems were delineated by the survey. No causes are apparent for the conductor systems, although some of them are believed to be caused by contacts of rock units or fault zones.



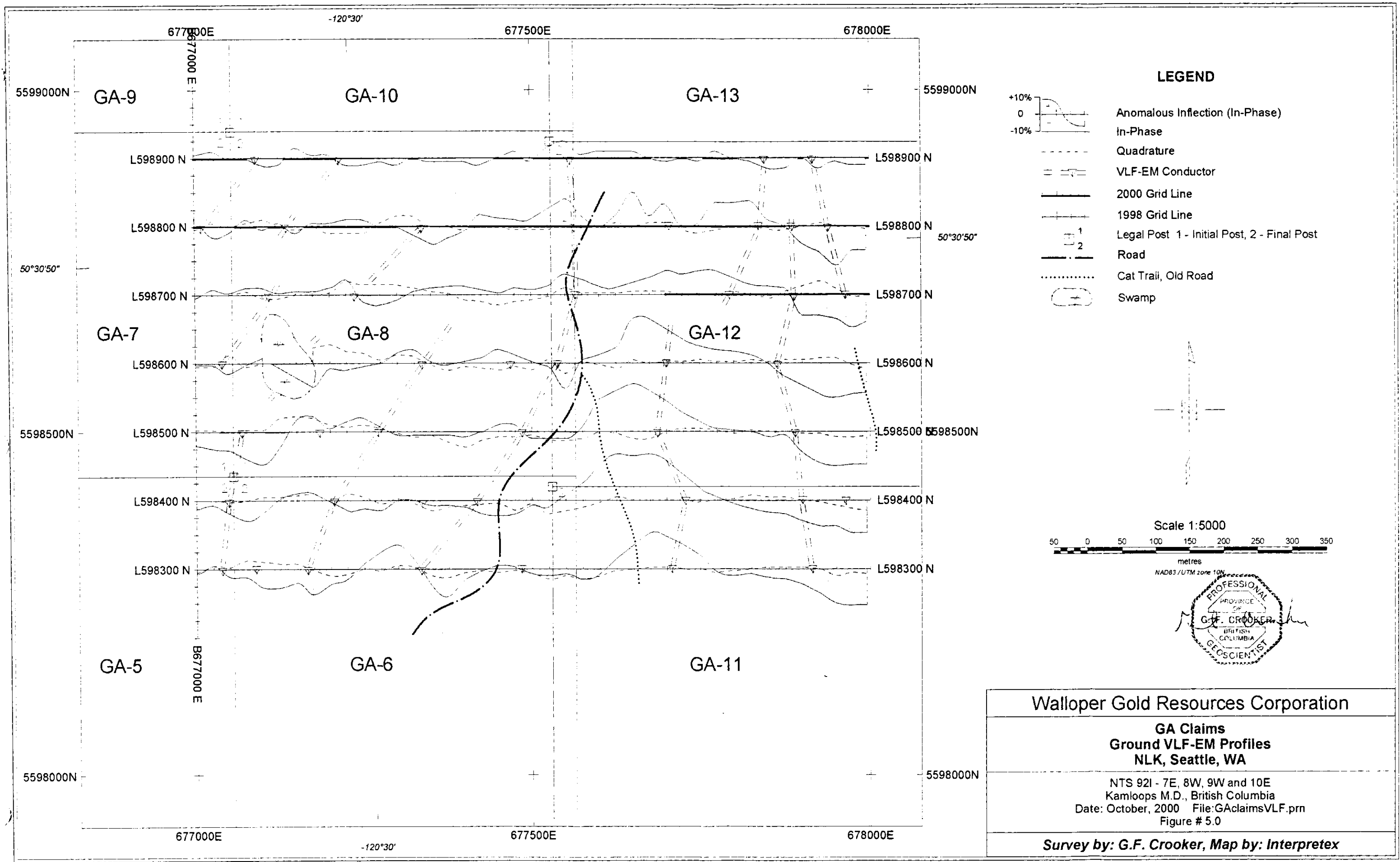
**LEGEND**

- Total Field Magnetic High Contours nT
- Total Field Magnetic Low Contours nT
- VLF-EM Conductor
- 2000 Grid Line
- 1998 Grid Line
- Legal Post 1 - Initial Post, 2 - Final Post
- Road
- Cat Trail, Old Road
- Swamp

Scale 1:5000



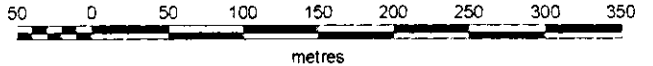
<p><b>Walloper Gold Resources Corporation</b></p>
<p><b>GA Claims</b>  <b>Ground Total Field Magnetic Contours</b>  <b>nT</b></p>
<p>NTS 92I - 7E, 8W, 9W and 10E          Kamloops M.D., British Columbia          Date: October, 2000 File:GAclaimsMAG.prn          Figure # 4.0</p>
<p><b>Survey by: G.F. Crooker, Map by: Interpretex</b></p>



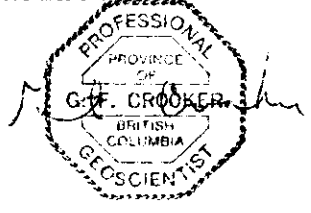
**LEGEND**

- Anomalous Inflection (In-Phase)
- In-Phase
- Quadrature
- VLF-EM Conductor
- 2000 Grid Line
- 1998 Grid Line
- Legal Post 1 - Initial Post, 2 - Final Post
- Road
- Cat Trail, Old Road
- Swamp

Scale 1:5000



NAD83 / UTM zone 10N



**Walloper Gold Resources Corporation**

**GA Claims  
Ground VLF-EM Profiles  
NLK, Seattle, WA**

NTS 92I - 7E, 8W, 9W and 10E  
Kamloops M.D., British Columbia  
Date: October, 2000 File: GAclaimsVLF.prn  
Figure # 5.0

**Survey by: G.F. Crooker, Map by: Interpretex**

## 6.0 CONCLUSIONS


- 6.1 The magnetic response over the grid area was very quiet with a range of only 350 nanoteslas. One zone of slightly lower than background magnetism occurs in the south western portion of the grid. Two zones of slightly higher than background magnetism, very restricted in size, occur over other areas of the grid.
- 6.2 VLF-EM profiles show a weak to moderate response to conductivity. A number of weak to moderate, northerly to north northeasterly trending conductor systems were delineated by the survey.
- 6.3 Geological mapping has not been carried out over the 1998-2000 grid area. Therefore no causes are apparent for the magnetic and electromagnetic anomalies.

## 7.0 RECOMMENDATIONS

The 1996, 1998 and 2000 exploration programs conducted on the property yielded positive results and further work is recommended. The exploration program should be conducted as follows:

- establish additional grid lines on the property
- conduct soil geochemical sampling, VLF-EM and magnetic surveying, geological mapping and prospecting over the grid
- conduct trenching and drilling on the geological, geochemical and geophysical targets developed

Respectfully Submitted,



Grant F. Crooker, P. Geo.,  
Consulting Geologist

## 8.0 REFERENCES

BC MEMPR: Mineral Inventory Map 92I (Ashcroft).

BC MEMPR: Nicola Lake Region, Geology (J.M. Moore and A.R. Pettipas) and Mineral Deposits (R.E. Myers and T.B. Hubner), Open File 1990-29.

Bond, L.A., (November 1988): Percussion Drilling and Soil Geochemistry Report on the M & R 1-4 Mineral Claims, Kamloops Mining Division for Afton Operating Corporation. AR#18082

Bond, L.A., (October 1991): Reverse Circulation Drilling Report on the M & R 3 and 4 Mineral Claims, Kamloops Mining Division for Afton Operating Corporation. AR# 21795

Canquest Resource Corporation (1995): Corporate Profile.

Choi, C.I., (March 1972): Geochemical Report on the Pine and Fir Groups of Claims, Kamloops Mining Division British Columbia for Canadian Johns-Manville Company Limited. AR# 3893

Cockfield, W.E., (1948): Geology and Mineral Deposits of Nicola Map Area, Memoir 249.

Crooker, G.F. and Rockel, E.R., (December 1988): Geological, Geochemical and Geophysical Report on the WRT 1 to 6 and 9 to 15 Claims, for Western Resource Technologies Inc. AR# 18048

Crooker, G.F., (January 1997): Geological, Geochemical and Geophysical Report on the M 1-7 and GA 1-8 Minerals Claims for Walloper Gold Resources Corporation. AR# 25001

Crooker, G.F., (November 1998): Geological and Geochemical Report on the M 1-8 and GA 1-18 Mineral Claims for Walloper Gold Resources Corporation. AR# 25731

Elwell, J.P., (March 1973): Geochemical and Magnetometer Survey Ram Claim Group, Kamloops Mining Division for Rio Sierra Developments Ltd. AR# 4222

Geological Survey of Canada: Map 886A, Nicola (East Half) 1961.

Geological Survey of Canada: Bedrock Geology of Ashcroft (92I) Map Area, OF 980.

Grexton, P.L., (May 1994): Genesis Property, 1994 Soil Survey, Kamloops Mining Division for P.L. Grexton. AR# 23362.

Hemsworth, F.J., (October 1972): Report on the Magnetometer Survey of the MR Mineral Claims, Kamloops BC for Stellako Mining Company Ltd. (NPL). AR# 3897

Larson, H.A., (October 1972): Geochemical Report on a Soil Sampling Survey, WT Claim Group Kamloops Mining Division BC for Texal Development Ltd. (NPL). AR# 4059

Morgan, D.R., (June 20, 1973): A Geophysical and Geophysical Report on the 18 "Wes" Claim Property, Kamloops Mining Division on behalf of Bart Mines Ltd. AR# 4445

National Geochemical Reconnaissance Survey (19081): 92 I Ashcroft BC, BC Ministry of Energy Mines and Petroleum Resources and Geological Survey of Canada.

Noakes, S.B., (October 1992): Assessment Report, Geochemical Soil Sampling OPC Property Kamloops Mining Division for Cominco Ltd. AR# 22729

Nordin, G. and DeLean, J., (October 1972): Magnetometer and Geochemical Report on the Plug Claims, Kamloops Mining Division on behalf of Texada Mines Ltd. AR# 4041

Osatenko, M.J., ((April 1978): Assessment Report, Geological, Rock Geochemical and Ground Magnetic Work on the Chum Property (Claims 1-9) Chuwhels Mountain Area, Kamloops M.D. for Cominco Ltd. AR#6711

Osatenko, M.J., (January 1979): Assessment Report, IP, Geological and ground Magnetic Work on the Chum Property (Claims Chum 1-5, 7-9), Chuwhels Mountain Area, Kamloops M.D. for Cominco Ltd. AR# 7244

Robertshaw, P. and Klein, J., (March 1972): Report on an Induced Polarization Survey on Pine and Fir Groups of Claims, Lac Le Jeune Area, Kamloops Mining Division, British Columbia for Canadian Johns-Manville Company, Limited. AR# 3892

## 9.0 CERTIFICATE OF QUALIFICATIONS

I, Grant F. Crooker, of Upper Bench Road, PO Box 404, Keremeos, British Columbia, Canada, V0X 1N0 do certify that:

I am a Consulting Geologist registered with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (Registration No. 18961);

I am a Fellow of the Geological Association of Canada (Registration No. 3758) and I am a Member of the Canadian Institute of Mining and Metallurgy and Petroleum;

I am a graduate (1972) of the University of British Columbia with a Bachelor of Science degree (B.Sc.) from the Faculty of Science having completed the Major program in geology;

I have practised my profession as a geologist for over 20 years, and since 1980, I have been practising as a consulting geologist and, in this capacity, have examined and reported on numerous mineral properties in North and South America;

I have based this report on field examinations within the area of interest and on a review of the technical and geological data provided by Walloper Gold Resources Corporation;

I am the owner of the M and GA claims;

Respectfully submitted,

  
Grant F. Crooker, P. Eng., P. Geol.  
GFC Consultants Inc.

**APPENDIX I**

**MAGNETIC AND VLF-EM DATA**



Walloper Gold Resources Corporation

Line and Station

northing/easting +  
southing/westing 1  
WGGE2000

Area: GA claims

Grid: MGA

Date: Sep-00

Instrument Type:

Geonics EM-16

Station:

Scintrex MP2

Data Types: #1  
#2  
#3

Details:

In-phase and quadrature values

Seattle, facing easterly

Total field magnetic values

Total field magnetic values, nanoteslas

VLF-EM In-phase values percent

VLF-EM quadrature values percent

N/S	E/W	#1	#2	#3
line 598300				
598300	677000	56568	-3	-2
598300	677025	56586	2	2
598300	677050	56623	-5	1
598300	677075	56681	-5	5
598300	677100	56574	-11	4
598300	677125	56672	-11	3
598300	677150	56653	-8	3
598300	677175	56615	-15	-1
598300	677200	56632	-9	-4
598300	677225	56644	-6	-3
598300	677250	56640	3	0
598300	677275	56636	10	-1
598300	677300	56692	14	2
598300	677325	56644	5	1
598300	677350	56631	-10	-4
598300	677375	56662	-16	-5
598300	677400	56636	-6	-2
598300	677425	56699	-1	-1
598300	677450	56670	2	-2
598300	677475	56676	1	-1
598300	677500	56668	-3	-3
598300	677525	56648	-4	-6
598300	677550	56658	-3	-4
598300	677575	56650	-6	-6
598300	677600	56632	-3	-4
598300	677625	56630	6	-1
598300	677650	56632	14	0
598300	677675	56617	21	1
598300	677700	56687	19	1
598300	677725	56713	14	0
598300	677750	56711	8	0
598300	677775	56711	-2	-2
598300	677800	56734	-4	-1

598300	677825	56729	-3	0
598300	677850	56728	-5	1
598300	677875	56728	-6	1
598300	677900	56777	-9	1
598300	677925	56778	-14	0
598300	677950	56753	-20	-4
598300	677975	56748	-21	-2
598300	678000	56758	-21	-3
line 598400				
598400	677000	56633	-5	0
598400	677025	56700	-3	0
598400	677050	56653	-8	-1
598400	677075	56607	-12	0
598400	677100	56628	-7	2
598400	677125	56629	1	2
598400	677150	56588	4	3
598400	677175	56619	4	4
598400	677200	56620	-1	-5
598400	677225	56582	-6	4
598400	677250	56633	-5	2
598400	677275	56619	-6	-2
598400	677300	56619	0	1
598400	677325	56620	0	-2
598400	677350	56642	-3	-6
598400	677375	56620	-3	-4
598400	677400	56620	-4	-3
598400	677425	56616	-8	-2
598400	677450	56627	-9	-2
598400	677475	56637	-8	-6
598400	677500	56687	-3	-2
598400	677525	56648	-4	-8
598400	677550	56730	3	-6
598400	677575	56668	10	-4
598400	677600	56679	21	-1
598400	677625	56657	27	2
598400	677650	56625	26	0
598400	677675	56645	27	0
598400	677700	56670	23	0
598400	677725	56700	15	0
598400	677750	56694	7	-1
598400	677775	56719	2	0
598400	677800	56713	-2	1
598400	677825	56712	-5	3
598400	677850	56674	-7	2
598400	677875	56697	-8	2
598400	677900	56716	-12	0
598400	677925	56705	-15	-1
598400	677950	56702	-15	-3
598400	677975	56710	-19	-5
598400	678000	56713	-19	-6

line 598500

598500	677000	56674	-8	1
598500	677025	56642	-10	1
598500	677050	56625	-11	0
598500	677075	56621	-16	1
598500	677100	56621	-19	1
598500	677125	56624	-9	8
598500	677150	56662	7	9
598500	677175	56649	9	8
598500	677200	56634	2	4
598500	677225	56654	6	3
598500	677250	56666	8	4
598500	677275	56670	3	2
598500	677300	56651	-2	-1
598500	677325	56666	-2	-3
598500	677350	56713	-2	-2
598500	677375	56911	-2	-6
598500	677400	56825	-3	-9
598500	677425	56686	0	-5
598500	677450	56692	4	-3
598500	677475	56763	4	-3
598500	677500	56681	-4	-2
598500	677525	56743	-4	-5
598500	677550	56732	-4	-5
598500	677575	56661	3	-4
598500	677600	56660	19	0
598500	677625	56723	24	-1
598500	677650	56715	28	-4
598500	677675	56694	24	-4
598500	677700	56709	18	0
598500	677725	56723	11	2
598500	677750	56725	6	2
598500	677775	56725	2	1
598500	677800	56708	1	-1
598500	677825	56731	0	1
598500	677850	56743	-3	0
598500	677875	56739	-2	0
598500	677900	56720	-12	-1
598500	677925	56712	-18	-1
598500	677950	56702	-20	-3
598500	677975	56692	-19	-3
598500	678000	56704	-19	-2

line 598600

598600	677000	56638	-1	-2
598600	677025	56657	-1	-2
598600	677050	56630	-6	5
598600	677075	56650	-1	-2
598600	677100	56655	3	0
598600	677125			
598600	677150	56637		

598600	677175	56657	-14	9
598600	677200	56659	-3	11
598600	677225	56664	-4	7
598600	677250	56670	-2	6
598600	677275	56674	0	2
598600	677300	56680	6	5
598600	677325	56658	8	4
598600	677350	56668	1	-1
598600	677375	56679	-1	-4
598600	677400	56710	1	-2
598600	677425	56761	3	-3
598600	677450	56674	8	-4
598600	677475	56716	5	-2
598600	677500	56789	1	-4
598600	677525	56643	-2	2
598600	677550	56759	-15	-6
598600	677575	56770	2	1
598600	677600	56709	5	-1
598600	677625	56667	9	-3
598600	677650	56675	26	2
598600	677675	56692	26	0
598600	677700	56713	20	1
598600	677725	56708	14	1
598600	677750	56702	10	2
598600	677775	56713	8	1
598600	677800	56705	7	1
598600	677825	56732	5	2
598600	677850	56736	0	1
598600	677875	56700	-8	2
598600	677900	56684	-13	2
598600	677925	56677	-18	3
598600	677950	56718	-20	3
598600	677975	56699	-18	-1
598600	678000	56690	-17	-4

line 598700

598700	677000	56653	-2	0
598700	677025	56655	3	0
598700	677050	56641	1	0
598700	677075	56692	4	2
598700	677100	56624	4	-2
598700	677125	56656	1	-2
598700	677150	56667	2	0
598700	677175	56602	2	0
598700	677200	56677	4	1
598700	677225	56677	9	8
598700	677250	56643	-4	6
598700	677275	56678	-6	6
598700	677300	56699	-3	6
598700	677325	56630	2	4
598700	677350	56692	4	2

598700	677375	56680	5	1
598700	677400	56657	5	-3
598700	677425	56672	33	-4
598700	677450	56691	1	-6
598700	677475	56689	4	-4
598700	677500	56699	3	-3
598700	677525	56712	5	-1
598700	677550	56772	12	4
598700	677575	56687	9	1
598700	677600	56700	5	1
598700	677625	56693	4	1
598700	677650	56687	7	2
598700	677675	56684	10	2
598700	677700	56715	14	2
598700	677725	56713	12	0
598700	677750	56698	14	0
598700	677775	56707	14	0
598700	677800	56711	10	2
598700	677825	56729	6	0
598700	677850	56697	5	-2
598700	677875	56727	4	2
598700	677900	56742	-12	5
598700	677925	56748	-12	8
598700	677950	56693	-14	4
598700	677975	56704	-19	-1
598700	678000	56709	-15	0
line 598800				
598800	677000	56675	5	-2
598800	677025	56635	-8	2
598800	677050	56652	-4	0
598800	677075	56655	4	2
598800	677100	56706	-2	4
598800	677125	56661	2	0
598800	677150	56636	-4	-2
598800	677175	56671	2	0
598800	677200	56661	2	-4
598800	677225	56672	4	-4
598800	677250	56672	4	-4
598800	677275	56676	0	2
598800	677300	56676	0	6
598800	677325	56683	-5	6
598800	677350	56643	-10	0
598800	677375	56687	-7	0
598800	677400	56700	-3	-2
598800	677425	56694	7	0
598800	677450	56734	5	0
598800	677475	56755	4	-2
598800	677500	56742	4	-2
598800	677525	56758	10	-2
598800	677550	56689	16	3

598800	677575	56731	6	-1
598800	677600	56710	0	0
598800	677625	56693	6	2
598800	677650	56706	20	0
598800	677675	56685	6	2
598800	677700	56694	13	2
598800	677725	56698	0	-2
598800	677750	56689	2	-4
598800	677775	56629	14	-2
598800	677800	56713	14	0
598800	677825	56816	15	0
598800	677850	56825	4	-2
598800	677875	56747	0	-2
598800	677900	56704	-10	0
598800	677925	56729	-15	2
598800	677950	56680	-23	0
598800	677975	56684	-14	0
598800	678000	56695	-14	-2

line 598900

598900	677000		22	2
598900	677025		0	4
598900	677050		-6	0
598900	677075		-5	0
598900	677100		-10	-4
598900	677125		-5	-4
598900	677150		8	6
598900	677175		5	2
598900	677200		4	2
598900	677225		4	-4
598900	677250		10	-4
598900	677275		2	-2
598900	677300		5	-4
598900	677325		5	0
598900	677350		3	-2
598900	677375		-5	-2
598900	677400		-8	-2
598900	677425		-8	-4
598900	677450		-2	0
598900	677475		0	4
598900	677500		-5	-2
598900	677525		5	6
598900	677550		16	10
598900	677575		10	2
598900	677600		8	4
598900	677625		4	4
598900	677650		2	4
598900	677675		6	0
598900	677700		5	-2
598900	677725		10	0
598900	677750		12	-2

598900	677775	20	4
598900	677800	14	0
598900	677825	5	-2
598900	677850	-2	-6
598900	677875	-5	-6
598900	677900	-15	0
598900	677925	-22	-6
598900	677950	-15	-2
598900	677975	-6	-4
598900	678000	5	-4

baseline 677000

598200	677000	56740
598225	677000	56580
598250	677000	56581
598275	677000	56609
598300	677000	56563
598325	677000	56561
598350	677000	56664
598375	677000	56677
598400	677000	56633
598425	677000	56624
598450	677000	56599
598475	677000	56594
598500	677000	56674
598525	677000	56670
598550	677000	56638
598575	677000	56625
598600	677000	56638
598625	677000	56626
598650	677000	56632
598675	677000	56644
598700	677000	56653
598725	677000	56640
598750	677000	56623
598775	677000	56761
598800	677000	56675
598825	677000	56718
598850	677000	56678
598875	677000	56691
598900	677000	56717
598925	677000	56642
598950	677000	56636
598975	677000	56684
599000	677000	56714

**APPENDIX II**  
**GEOPHYSICAL EQUIPMENT SPECIFICATIONS**



## MP-2 PROTON PRECESSION MAGNETOMETER

**Resolution:** 1 gamma

**Total Field Accuracy:**  $\pm$  gamma over full operating range

**Range:** 20,000 to 100,000 gammas in 25 overlapping steps.

**Internal Measuring Program:** A reading appears 1.5 seconds after depression of Operate Switch & remains displayed for 2.2 secs. Recycling feature permits automatic repetitive readings at 3.7 sec. intervals.

**External Trigger:** External trigger input permits use of sampling intervals longer than 3.7 seconds.

**Display:** 5 digit LED readout displaying total magnetic field in gammas or normalized battery voltage.

**Data Output:** Multiplied precession frequency and gate time outputs for base station recording using interfacing optionally available from Scintrex.

**Gradient Tolerance:** Up to 5,000 gammas/meter.

**Power Source:** 8 size D cells  $\approx$ 25,000 readings at 25° C under reasonable conditions.

**Sensor:** Omnidirectional, shielded, noise-cancelling dual coil, optimized for high gradient tolerance.

**Harness:** Complete for operation with staff or back pack sensor.

**Operating Temperature Range:** -35 to +60° C.

**Size:** Console, 8 x 16 x 25 cm; Sensor, 8 x 15 cm; Staff 30 x 66 cm;

**Weights:** Console, 1.8 kg; Sensor, 1.3 kg; Staff, 0.6 kg;

**Manufacturer:** Scintrex  
222 Snidercroft Road  
Concord, Ontario

GEONICS LIMITED  
V EM 16

---

Source of Primary Field VLF transmitting stations

Transmitting Stations Used: Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.

Operating Frequency Range: About 15-25 Hz.

Parameters Measured: 1- The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid).  
2- The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis).

Method of Reading: In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone

Scale Range: In-phase  $\pm 150\%$ ; quadrature  $\pm 40\%$

Readability:  $\pm 1\%$

Operating Temperature Range:  $-40$  to  $50^{\circ}$  C.

Operating Controls: ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature dial  $\pm 40\%$ , inclinometer  $\pm 150\%$

Power Supply: 6 size AA alkaline cells  $\approx 200$  hrs.

Dimensions: 42 x 14 x 9 cm (16 x 5.5 x 3.5 in)

Weight: 1.6 kg. (3.5 lbs)

Instrument Supplied With: Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional) set of batteries.

Manufacturer: Geonics Limited  
1745 Meyerside Drive/Unit 8  
Mississauga, Ontario  
L5T 1C5

**APPENDIX III**  
**COST STATEMENT**

## COST STATEMENT

### SALARIES

Grant Crooker, Geologist September 18-24, 2000 5 days @ \$ 400.00/day	\$ 2,000.00
Leonard Saleken, Geologist September 19, 20, 2000 2 days @ \$ 400.00/day	800.00

### MEALS AND ACCOMMODATION

Grant Crooker - 2 days @ \$ 50.00/day	100.00
Leonard Saleken - 2 days @ \$ 50.00/day	100.00

### TRANSPORTATION

Vehicle Rental (1996 Chev 1/2 ton 4x4) September 19, 20, 2000 2 days @ \$ 60.00/day	120.00
Gasoline	89.65

### EQUIPMENT RENTAL

VLF-EM (Geonics EM-16) 2 days @ \$ 25.00/day	50.00
Magnetometer (Scintrex MP-3) 2 days @ 25.00/day	50.00

### DRAFTING

90.00

### PREPARATION OF REPORT

reproduction, copying, overhead

80.00

<b>TOTAL</b>	<b>\$ 3,479.65</b>
--------------	--------------------