

GEOPHYSICAL
ASSESSMENT REPORT

LOG NO: 272 K
ACTION:
FILE NO:

on the

KEY CLAIM GROUP

ASHCROFT AREA

KAMLOOPS MINING DIVISION

by

MURRAY MORRISON, B.Sc.

Claims:

Key 1-18 (18 units)

Location:

The Key Claim Group is situated on the south side of the Thompson River, 9 km northeast of Ashcroft, B.C.
Lat. 50°45'; Long. 121°09';
N.T.S. 92-I-11&14E.

Owner:

Murray Morrison

Operator:

Murray Morrison

Date Started:

April 17, 1991

Date Completed:

April 21, 1991

Kelowna, B.C.

GEOLOGICAL BRANCH, 1991
ASSESSMENT REPORT

21,498

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SUMMARY

The Key Claim Group, comprised of 18, 2-post, mineral claims, covers a spectacular gossan on the southern side of the Thompson River Valley, 9 km northeast of Ashcroft, B.C. The property is owned by the writer, M. Morrison, of Kelowna, B.C., who staked the mineral claims in May, 1990.

The gossan zone is coincident with a regional fault, the Barnes Creek fault, which crosses the northern portion of the Guichon Creek batholith (McMillan, 1976).

The central portion of the Guichon Creek batholith hosts several very large porphyry copper-molybdenum deposits (Lornex, Bethlehem, Valley Copper) 32 km to the southeast of the Key property. The "Maggie" copper-molybdenum porphyry deposit at Bonaparte River lies 32 km to the northwest of the Key property. It is considered, therefore, that there is potential for copper-molybdenum mineralization at the Key property.

A quartz diorite hybrid phase of the Early Jurassic Guichon Creek batholith intrudes andesites of the Upper Triassic Nicola Group coincident with the Barnes Creek Fault on the northern portion of the Key property, but the trace of the fault and associated pyrite mineralization across the southern portion of the property is concealed by a thin cover of till or flows of andesite and basalt of the Tertiary Kamloops Group.

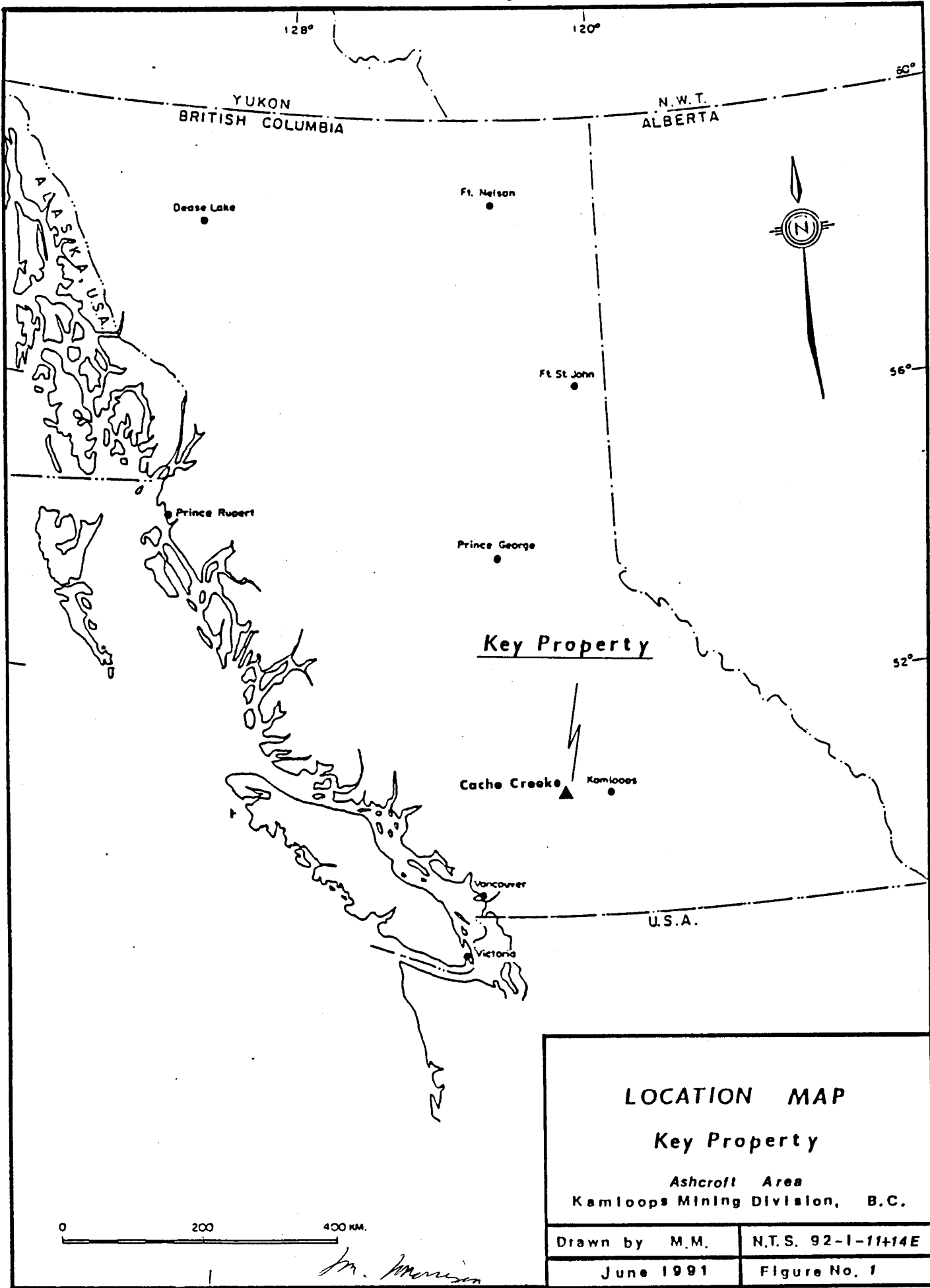
This year's (1991) ground magnetometer survey was designed to trace the fault zone across the southern portions of the property below the cover of till and Kamloops Group volcanics. The survey was moderately successful over portions of the property covered by shallow till, but unsuccessful over those portions overlain with Kamloops Group volcanics.

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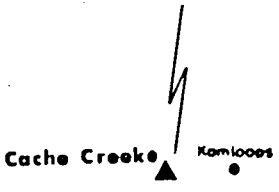
SUMMARY - Continued

An Induced Polarization survey is recommended over the southeastern projection of the Barnes Creek fault in the areas of till cover and thin volcanic cover. It is believed that an I.P. survey would be able to detect sulphide mineralization below the till or volcanics.

It is suggested that I.P. anomalies could be easily checked with Reverse Circulation Drilling to test for either porphyry copper-molybdenum mineralization or supergene copper mineralization lying below the thin cover of Tertiary volcanic rocks.



Key Property



LOCATION MAP

Key Property

Ashcroft Area
Kamloops Mining Division, B.C.

Drawn by M.M.	N.T.S. 92-1-11+14E
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June 1991	Figure No. 1
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0 200 400 KM.

M. Morrison

INTRODUCTION

This report, written for government assessment work requirements, discusses the results of a ground magnetometer survey conducted over the central portion of the Key Claim Group by the writer during April, 1991.

The Key Claim Group, comprised of 18, 2-post, mineral claims, was staked by the writer in May 1990 to cover a spectacular gossan on the south side of the Thompson River, 9 km northeast of Ashcroft, B.C.

The gossan zone overlies a faulted contact between Upper Triassic Nicola Group rocks on the west and a quartz diorite plug on the east. The quartz diorite is believed to be a phase of the Jurassic Guichon Creek Batholith.

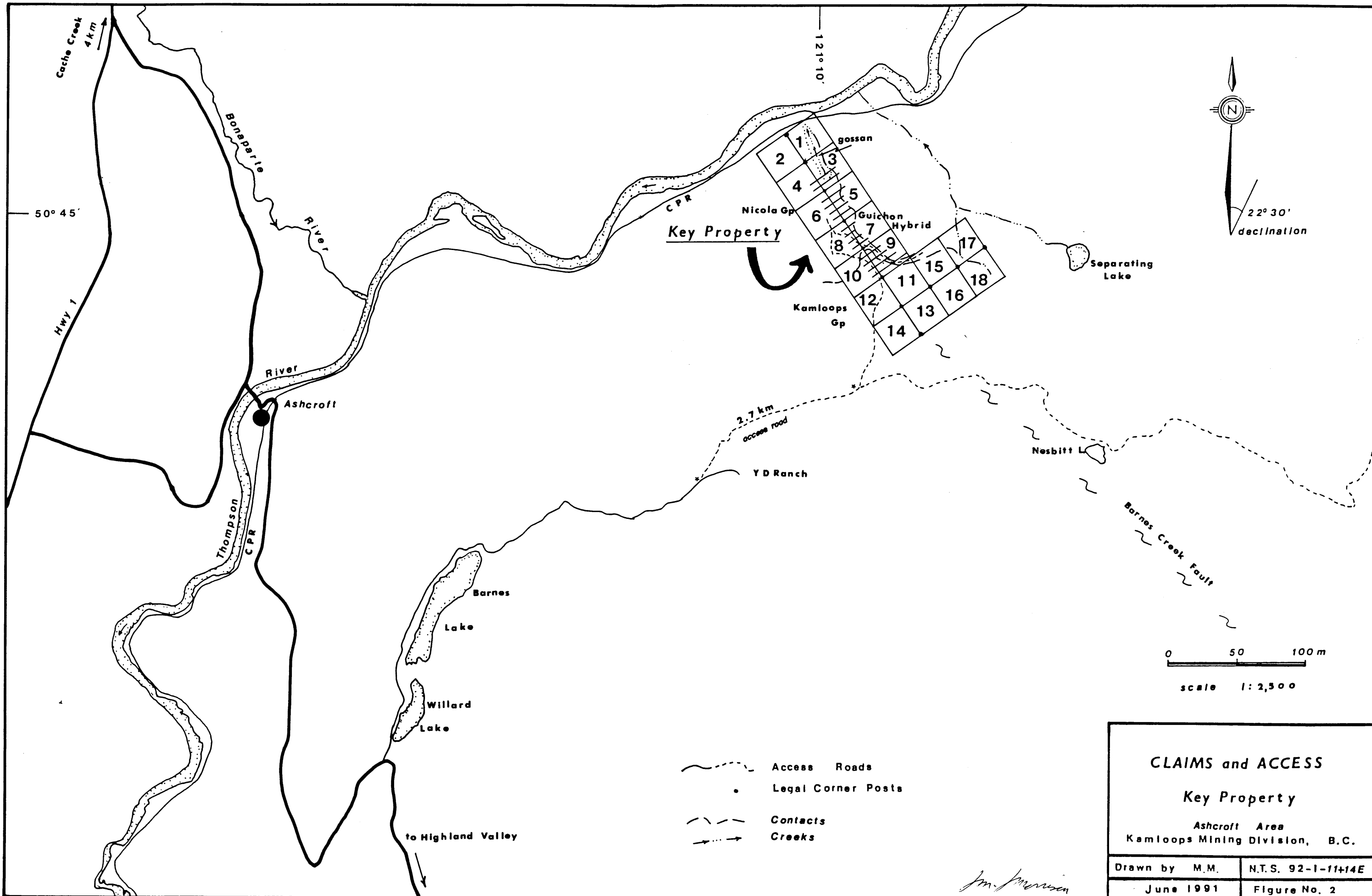
The gossan zone was staked as a potential porphyry copper-molybdenum prospect as it lies midway between the very productive copper-molybdenum porphyry mines of Highland Valley and the "Maggie" copper-molybdenum porphyry deposit on Bonaparte River north of Cache Creek, B.C.

A VLF-EM ground survey was carried out over the southern extension of the gossan zone by the writer in 1984 (Morrison, 1984). The same region was covered again with this year's magnetometer survey. The values obtained during this year's survey are displayed and contoured on Map K-91-1 accompanying this report.

LOCATION AND ACCESS

The Key Claim Group is situated immediately south of the Thompson River, 9 km northeast of Ashcroft, B.C. (Lat. 50°45'; Long. 121°09'; N.T.S. Maps 92-I-11&14E). The property is reached from Ashcroft via the Highland Valley Highway and the Barnes Lake road. A gravel road runs northeast beyond Barnes Lake to the YD Ranch, and from there a dirt road continues northeast 2.7 km and then

Continued . . .



LOCATION AND ACCESS - Continued

north for 1 km to the property (see Figure 2). The dirt road requires a four-wheel-drive vehicle during the wet spring and autumn seasons.

PHYSICAL FEATURES AND CLIMATE

The Key 1-4 mineral claims cover a steep, rocky slope immediately south of the Canadian Pacific Railway on the south side of the Thompson River. The slope rises from the 350 metre elevation at the railway grade to the 670 metre elevation over a distance of $\frac{1}{2}$ km. The slope continues at a more moderate grade to the 760 metre elevation across the Key 5-8 mineral claims and then levels out over the southern half of the property with an average elevation of 820 metres above sea level.

Precipitous bluffs on the eastern sides of the Key 1&3 mineral claims are coincident with outcrops of intrusive rock.

A light, patchy forest of Ponderosa pine, Douglas fir, and juniper covers the northern slopes and ravines. Elsewhere, sagebrush is widespread across the property.

Near river level the Key property has the same desert climate as Ashcroft with less than 30 cm of precipitation annually and hot (+30°C) summers. The precipitation and vegetation increases with elevation, and much of the property receives enough precipitation to support grass for summer range land.

A creek on the eastern side of the property provides drinking water for grazing cattle.

The winter snow pack seldom exceeds 30 cm and lasts only from November until early March.

CLAIM STATUS

The mineral claims making up the Key Claim Group are 100% owned by the writer, Mr. M. Morrison of Kelowna, B.C. Particulars on the 18 mineral claims, located within the Kamloops Mining Division are given below:

<u>CLAIM NAME</u>	<u>UNITS</u>	<u>DATE OF RECORD</u>	<u>RECORD NO.</u>	<u>EXPIRY* DATE</u>
Key 1	1	May 2/90	9291	May 2/93
Key 2	1	May 2/90	9292	May 2/93
Key 3	1	May 2/90	9293	May 2/93
Key 4	1	May 2/90	9294	May 2/93
Key 5	1	May 2/90	9295	May 2/93
Key 6	1	May 2/90	9296	May 2/93
Key 7	1	May 2/90	9297	May 2/93
Key 8	1	May 2/90	9298	May 2/92
Key 9	1	May 3/90	9299	May 3/92
Key 10	1	May 3/90	9300	May 3/92
Key 11	1	May 3/90	9301	May 3/92
Key 12	1	May 3/90	9302	May 3/92
Key 13	1	May 3/90	9303	May 3/92
Key 14	1	May 3/90	9304	May 3/92
Key 15	1	May 3/90	9305	May 3/92
Key 16	1	May 3/90	9306	May 3/92
Key 17	1	May 3/90	9307	May 3/92
Key 18	1	May 3/90	9308	May 3/92

* (New Expiry Date based on the acceptance of this report for Assessment Work Credits).

HISTORY

The first mention of work conducted over the gossan area now covered by the Key Claim Group is described in the Minister of Mines Annual Report, British Columbia for 1898, p. 1107. The

Continued . . .

HISTORY - Continued

property was called the Burr property at the time, and the description is as follows:

"The Burr group of eight claims is situated about 5½ miles east of Ashcroft, on the C.P. Railway, which runs through the property. It has a large body of ore, carrying gold and silver, but principally copper, and lies between diorite and granite. The country rock is diorite.

About 80 feet of tunnelling has been run in on the claims, which are most favourably situated for working, as the ore can be dumped into the cars without extra handling."

Further references of work conducted over the gossan zone are listed in the Minister of Mines Annual Reports for 1969, p.263; 1970, p.348; and 1971, p.362. The property was called the Pyrite property during the late 60's&early 70's. The work recorded consisted of soil geochemical surveying, I.P. surveying, and diamond drilling (3 drill holes in 1970). At least two of the three drill holes are believed to have been drilled well west of the gossan zone (judging from the location of drill core).

The main gossan zone was covered by the Burr #1 mineral claim, staked by the writer in 1982, and prospected in 1983 (Morrison, 1983). A larger, 20-unit, Burr #2 mineral claim was added to the south of the Burr #1 mineral claim by the writer in 1984, and a VLF-EM ground survey was conducted over the southern portion of the gossan zone and a projected extension of it to the southeast (Morrison, 1984).

The Burr property was allowed to lapse, but the gossan and ground to the southeast was restaked with the Key mineral claims by the writer in May, 1990.

REGIONAL GEOLOGY

Reference:

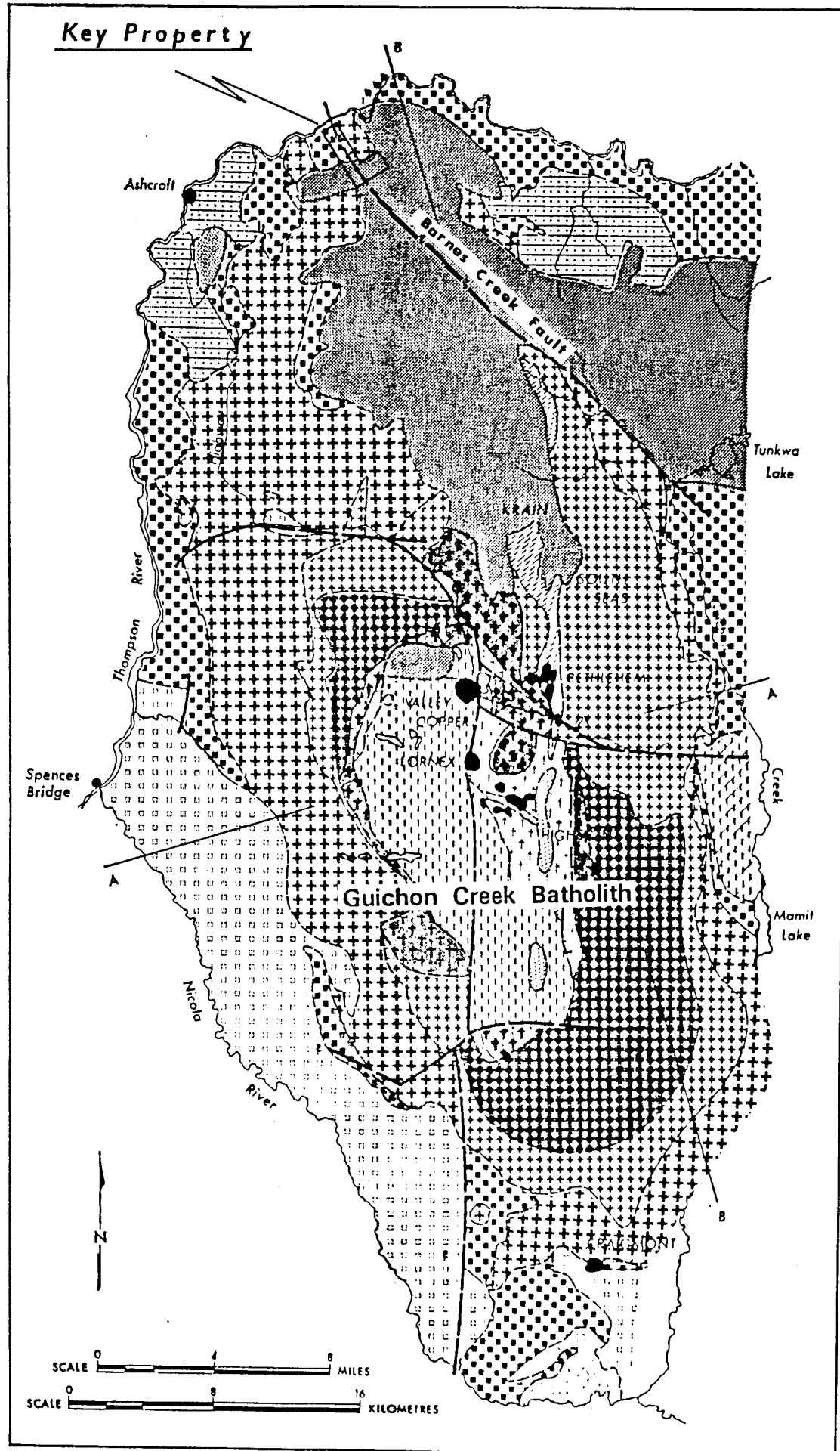
McMillan, W.J. Geology and Genesis of the Highland Valley Ore Deposits and the Guichon Creek Batholith. Porphyry Deposits of the Canadian Cordillera, C.I.M. Special Volume 15, pp. 85-103, 1976.

As the title of the above reference implies the geology and metallogenesis of the Guichon Creek batholith are covered in detail by W.J. McMillan and the writer feels that there is no need to repeat them here. Figure 3, accompanying this report, however, has been reproduced from the W.J. McMillan paper and the Key Claim Group has been added to the map to demonstrate where the property is located relative to the Guichon Creek batholith, the Barnes Creek Fault, and the large Highland Valley porphyry copper-molybdenum orebodies.

In detail, Figure 3 illustrates that the rock to the northeast of the Barnes Creek fault in the vicinity of the Key property is a quartz diorite hybrid phase of the Guichon Creek batholith which is believed to have been emplaced 198⁺⁸ million years ago. The quartz diorite is in fault contact with, and also intrudes, Upper Triassic Nicola Group volcanic rocks which lie on the southwest side of the Barnes Creek fault. Movement on the Barnes Creek fault is believed to be left-lateral (McMillan).

It appears that the high degree of clay alteration and pyritization at the gossan zone on the Key property is genetically related to the emplacement of the quartz diorite intrusive and /or to late solutions ascending the Barnes Creek fault structure.

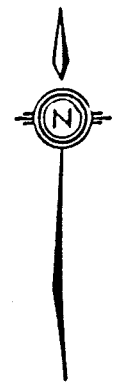
The southern half of the Key property is covered by flat-lying andesite and basalt flows of the Tertiary Kamloops Group that are estimated to range from 10 to 100 metres thick. A mantle of Pleistocene drift covers three-fourths of the property.



- TERTIARY**
 VOLCANIC AND SEDIMENTARY ROCKS
- CRETACEOUS (?)**
 VOLCANIC AND SEDIMENTARY ROCKS
- JURASSIC**
 SEDIMENTARY ROCKS
- INTRUSIVE ROCKS OF THE BATHOLITH**
 POST-BETHSAIDA DYKES
 BETHSAIDA PHASE
 POST-SKEENA DYKES AND PLUGS
 SKEENA VARIETY
 POST-BETHLEHEM DYKES AND PLUGS
 BETHLEHEM PHASE *
 HIGHLAND VALLEY PHASE
 CHATAWAY VARIETY
 GUICHON VARIETY
 HYBRID PHASE
- INTRUSIVE ROCKS OF UNCERTAIN AFFILIATION**
 GUMP LAKE PHASE
 COYLE "GRANITE"
- UPPER TRIASSIC**
 VOLCANIC AND SEDIMENTARY ROCKS
- SYMBOLS**
 BRECCIA BODIES ▲▲ OR ■
 ORE DEPOSITS, IMPORTANT PROSPECTS ● x
 AREAS WITH SWARMS OF PORPHYRY DYKES ○
 FAULTS, MAPPED, INFERRED ———
 SECTION LINES FOR GRAVITY PROFILES A—A
- * DESIGNATION OF GRANITIC UNITS AS PHASES OR VARIETIES
 FOLLOWS THE USAGE OF NORTHCOTE, 1969.

from CIM Special Volume No. 15

Jm. Morrison



Regional Geology
Key Property

Ashcroft Area
 Kamloops Mining Division, B.C.

	N.T.S. 92-1-11+14E
June 1991	Figure No. 3

Geology of the Guichon Creek batholith.

PROPERTY GEOLOGY

A creek runs through the centre of the gossan zone on the Key 1&3 mineral claims exposing tens of metres of limonitic and clay altered rock. As mentioned (under Regional Geology) the gossan and creek marks the trace of the Barnes Creek fault, with a quartz diorite hybrid phase of the Guichon Creek batholith lying to the northeast, and andesitic rocks of the Upper Triassic Nicola Group lying to the southwest. The quartz diorite intrudes the volcanics and the contact is marked by severe fracturing and argillic alteration.

The main gossan zone is 900 metres in length and 200 metres in width and disappears below a cover of till to the south. Much of the rock is decomposed beyond recognition, but some less altered rock was noted to be a hybrid of diorite and andesite containing 2 to 5% pyrite. Locally the rock is cut with small quartz veins.

A southern extension of the strongly fractured and altered rock below the till cover seems very likely.

Northeast of the fault the quartz diorite is blocky to massive in structure and rises to form steep cliffs on the Key 1&3 mineral claims. The Nicola Group andesite is also massive and fresh 300 metres southwest of the fault zone.

The Guichon-Nicola contact zone, like the gossan zone, is covered by drift south of the Key 3 mineral claim and the exact position of the contact is unknown.

Flat lying andesites and basalts of the Kamloops Group of 10 to 100 metres in thickness overlie the pre-Tertiary rocks on the Key 9-14 mineral claims making it difficult to determine the exact trace of the Barnes Creek fault across the property.

GROUND MAGNETOMETER SURVEY - 1991

A grid was established across portions of the Key 3-10 mineral claims as outlined on Map K-91-1. The Baseline was measured out along the claim location line (328 degrees azimuth) sub-parallel to the main gossan zone. Flagged grid lines were then run perpendicular to the Baseline at 100 metre intervals. Stations were marked at each 25 metre measure along each grid line. A Topolite belt chain and a Silva Ranger compass were used to establish the 1.7 km of Baseline and 6.8 km of grid line. The grid was laid-out in conjunction with the ground magnetometer survey.

A Scintrex MF-2 Portable Fluxgate Magnetometer was used to survey the property. The magnetometer with a resolution of 5 gammas was considered suitable for the survey.

Baseline station values were established by making a double traverse along the baseline on a day of slight diurnal variation. The baseline stations were then corrected for diurnal variations, and the corrected values were used during the survey.

Looped traverses were made along pairs of grid lines, starting and ending at baseline stations (usually within 1 to 2 hours), and corrections were made to all values for diurnal variations. During this year's survey, intermediate readings were taken midway between all flagged grid stations in addition to the grid station readings to increase the detail of the survey. All of the corrected readings are plotted on the contoured magnetometer map, K-91-1, accompanying this report. A constant value of 50,000 gammas has been subtracted from all of the values on the map for ease of plotting and clarity.

DISCUSSION

Note: the following discussion refers to magnetic values plotted on Map K-91-1 and allows for the subtraction of 50,000 gammas from all values recorded during the survey.

Brief geological notes were made during the course of the magnetometer survey on the Key Claim Group, and these notes, used in conjunction with the survey data illustrated on Map K-91-1, allow for some interpretation of the underlying geology.

The magnetic "texture" on Map K-91-1 can be divided into four zones which can in turn be correlated with known rock types or overburden as follows:

1. the area of high relief magnetics and complex contour patterns on the southwest corner of the Key 3 mineral claim and southwest of the Baseline on the Key 4&6 mineral claims can be correlated with underlying Nicola Group andesites;

2. the region of low magnetic relief from grid line 16S to grid line 20S represents an area of moderate drift cover through which the magnetic character of the underlying bedrock has been greatly modified, making identification of the rock type impossible;

3. the higher magnetic relief noteable on either side of the Baseline on the Key 8 & 9 mineral claims correlates with an area known to be underlain with Kamloops Group andesites and basalts; and

4. the series of magnetic "highs and lows" (dipoles) at the eastern ends of grid lines 25E, 23E, 22E, 21E, 20E, 14E, 13E, 9E and 8E possibly represent magnetite-rich zones at the assimilation contact zone between the Nicola Group andesites and

Continued . . .

DISCUSSION - Continued

the Guichon Hybrid intrusive (the fact that high relief magnetics are lacking on the eastern ends of grid lines 17E, 16E, 12E and 11E could mean that the Guichon Hybrid intrusive contact is buried below drift further to the west on these lines and therefore not traceable with the magnetometer).

The main purpose of the magnetometer survey was to magnetically trace the Barnes Creek fault zone southeast from the gossan zone to that portion of the Key property covered by shallow drift. To that end, the survey has met with limited success.

A distinct magnetic low is coincident with a creek cutting the gossanous fault zone on grid lines 8S at 3+75E (-680 gammas); 9S at 3+75E (-660 gammas); 10S, 4+00E (-640 gammas); 11S, 4+25E (-150 gammas); 12S, 4+25E (70 gammas); and 13S, 4+15E (80 gammas). A magnetic low continues ^{south} east coincident with a valley, on lines 14S at 3+85E (350 gammas); 15S at 3+85E (370 gammas); and 16S at 4+15E (470 gammas) across a drift covered region.

There is, however, no clear magnetic expression of the fault continuing southeast of grid line 16S where the till cover deepens. The till is deep to grid line 20S, and then the Kamloops Group volcanics mask the magnetics of the underlying pre-Tertiary rocks to the southern limits of the survey at grid line 25S.

CONCLUSIONS AND RECOMMENDATIONS

The 1991 magnetic survey conducted over portions of the Key 3-10 mineral claims proved to be moderately useful in outlining the major geological units on the property. More importantly, the Barnes Creek fault was traced across a portion of the property as a magnetic "low" coincident with gossanous, clay-altered rock in a creek valley. The magnetic trace of the fault is less clear

Continued . . .

CONCLUSIONS AND RECOMMENDATIONS - Continued

in light drift covered regions to the south-east of the gossan zone, and totally unclear on the southern portions of the property where overlying Kamloops Group volcanic rocks complicate the magnetics.


The Barnes Creek fault must cross the entire Key property as indicated on W.J. McMillan's Regional Map (see Figure 3). The pyritic, clay altered zone could well follow the fault below the cover of drift and Kamloops Group volcanics on the southern portions of the Key property. Somewhere along the fault zone, below the thin cover of Kamloops Group volcanics, there could be a hidden copper-molybdenum porphyry deposit or a supergene copper deposit.

It is recommended that an Induced Polarization survey be conducted over the southern end of the exposed gossan zone and that the survey be continued southeast along the projection of the Barnes Creek fault to pick up any sulphide mineralization that might be associated with the fault below the thin cover of Kamloops Group volcanics.

Reverse Circulation Percussion Drilling could then be conducted to test any I.P. anomalies that show up from under the drift cover or volcanics.

The property is lightly forested and very accessible for drilling purposes.

June 25, 1991
Kelowna, B.C.


Murray Morrison - B.Sc.

REFERENCES

Duffell, S. and McTaggart, K.C.

1952: Ashcroft Map-Area, British Columbia,
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1976: Geology and Genesis of the Highland
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Morrison, M.S.

1983: Prospecting Report on the Burr #1
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1984: Radem VLF-EM Ground Survey Assessment
Report on the Burr 1&2 Mineral Claims,
Ashcroft Area, Kamloops Mining Divi-
sion.*

Northcote, K.E.

1969: Geology and Geochronology of the
Guichon Creek Batholith, B.C. Dept.
of Mines and Petroleum Resources,
Bulletin No. 56.

* Assessment Reports filed with the Ministry of Energy, Mines
and Petroleum Resources of British Columbia.

APPENDIX A

STATEMENT OF QUALIFICATIONS

I, Murray Morrison, of the City of Kelowna, in the Province of British Columbia, do hereby state that:

1. I graduated from the University of British Columbia in 1969 with a B.Sc. Degree in Geology.
2. I have been working in all phases of mining exploration in Canada for the past twenty-one years.
3. During the past twenty-one years, I have intermittently held responsible positions as a geologist with various mineral exploration companies in Canada.
4. I have examined many mineral properties in Southern British Columbia during the past twenty-one years.
5. I conducted the geophysical survey outlined in this report.
6. I own a 100% interest in the Key 1-18 Mineral Claims.

June 25, 1991

Kelowna, B.C.

A handwritten signature in cursive script, reading "Murray Morrison", is written over a solid horizontal line.

Murray Morrison - B.Sc.

APPENDIX B

STATEMENT OF EXPENDITURES - ON THE KEY CLAIM GROUP

Statement of Expenditures in connection with a Magnetometer Survey carried out on the Key Claim Group, located 9 kilometres northeast of Ashcroft, B.C. (N.T.S. Maps 92-I-11E&14E) for the year 1991.

MAGNETOMETER SURVEY (6.8 KM)

M. Morrison, geologist	5 days @ \$250.00/day	\$ 1250.
Truck, 4x4 (incl. gasoline and insurance)	5 days @ \$ 75.00/day	375.
Meals and Lodging	5 days @ \$ 55.00/day	275.
Flagging and belt chain thread		25.
Magnetometer rental	5 days @ \$ 25.00/day	<u>125.</u>
	sub-total	\$ 2050.

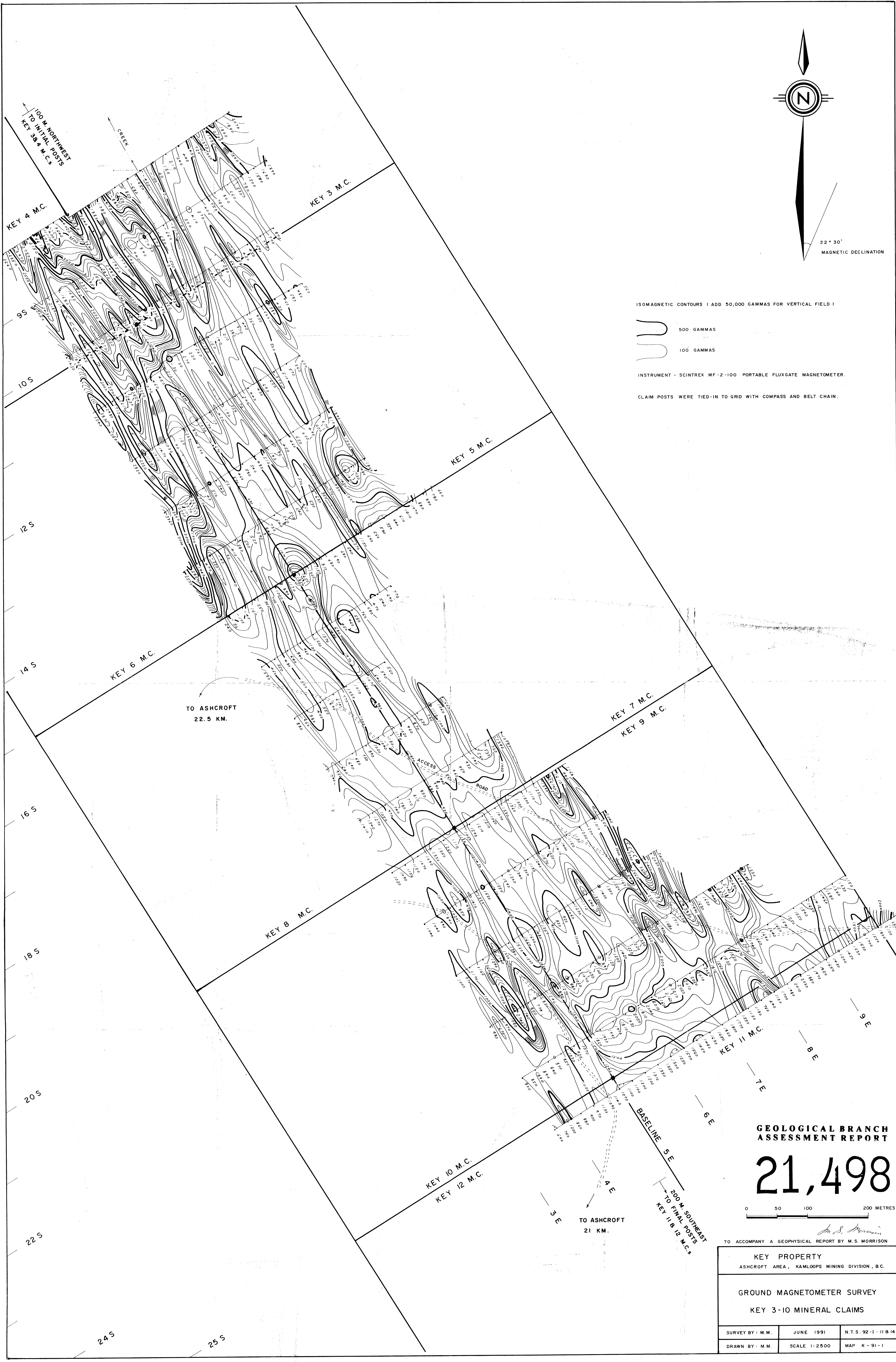
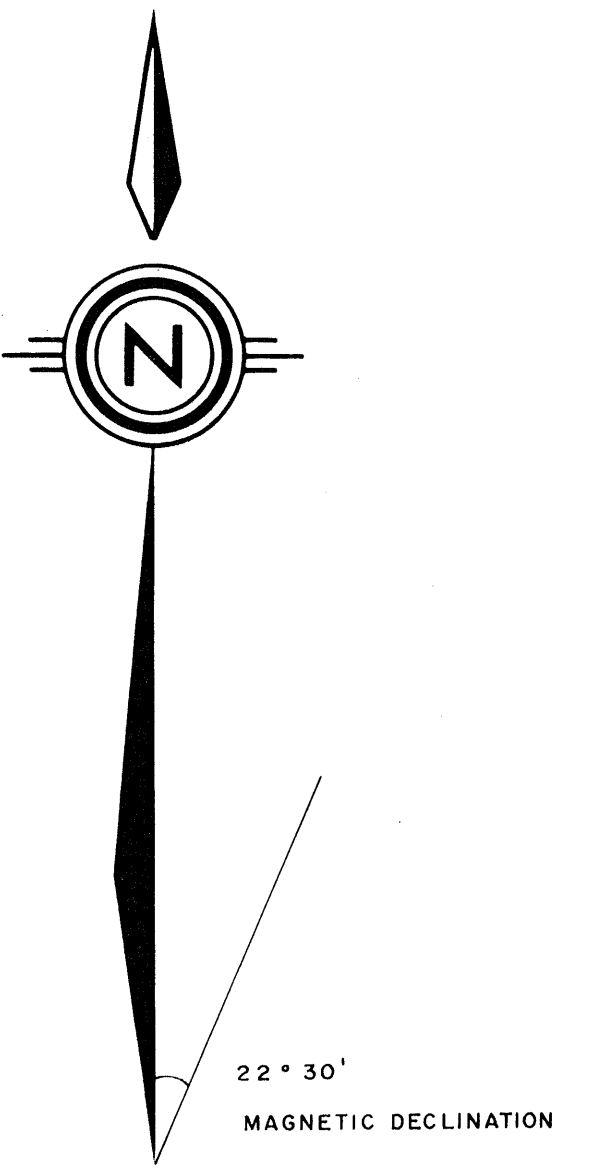
REPORT PREPARATION COSTS

M. Morrison, geologist (correcting magnetometer readings for diurnal variation; plotting and contouring magnetometer readings; analyzing material and writing report)	1½ days @ \$250.00/day	\$ 375.
Drafting		50.
Typing		50.
Copying reports		<u>20.</u>
	sub-total	\$ 495
	<u>GRAND TOTAL</u>	<u>\$ 2545.</u>

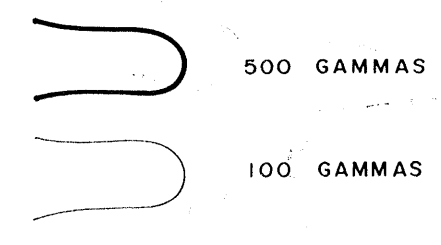
I hereby certify that the preceding statement is a true statement of monies expended in connection with the Magnetometer Survey carried out April 17-21, 1991.

June 25, 1991


Murray Morrison - Geologist



ISOMAGNETIC CONTOURS (ADD 50,000 GAMMAS FOR VERTICAL FIELD)

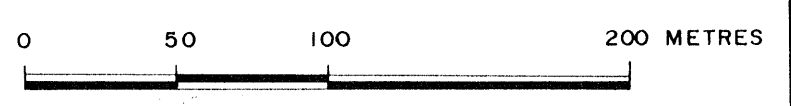


INSTRUMENT - SCINTREX MF-2-100 PORTABLE FLUXGATE MAGNETOMETER.

CLAIM POSTS WERE TIED-IN TO GRID WITH COMPASS AND BELT CHAIN.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

21,498



TO ACCOMPANY A GEOPHYSICAL REPORT BY M.S. MORRISON

<p>KEY PROPERTY ASHCROFT AREA, KAMLOOPS MINING DIVISION, B.C.</p>		
<p>GROUND MAGNETOMETER SURVEY KEY 3-10 MINERAL CLAIMS</p>		
<p>SURVEY BY: M.M.</p>	<p>JUNE 1991</p>	<p>N.T.S. 92-1-11014 E</p>
<p>DRAWN BY: M.M.</p>	<p>SCALE 1:2500</p>	<p>MAP K-91-1</p>