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CARMI GOLD PROJECT

1980 FINAL REPORT

Greenwood Mining District
NTS 82E/6, 11

Owner: Kelvin Energy Ltd.

Operator: Kelvin Energy Ltd.

Location: Latitude 49° 29' 30"
Longitude 119° 08'

Claims: Carmi 1-6, Observatory, ML 290, ML 425

By: Louis Bell
KELVIN ENERGY LTD.
January 1981

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INTRODUCTION

General Statement

During the 1980 field season, Kelvin Energy Ltd. undertook a detailed geological and geophysical evaluation of the gold-silver potential of the company's 100% owned mineral claims in the Carmi area, British Columbia. The company's claim holdings emcompass 2400 hectares (5930 acres), within which are contained the former producing Carmi and Butcher Boy gold mines, as well as a number of old gold-silver prospects.

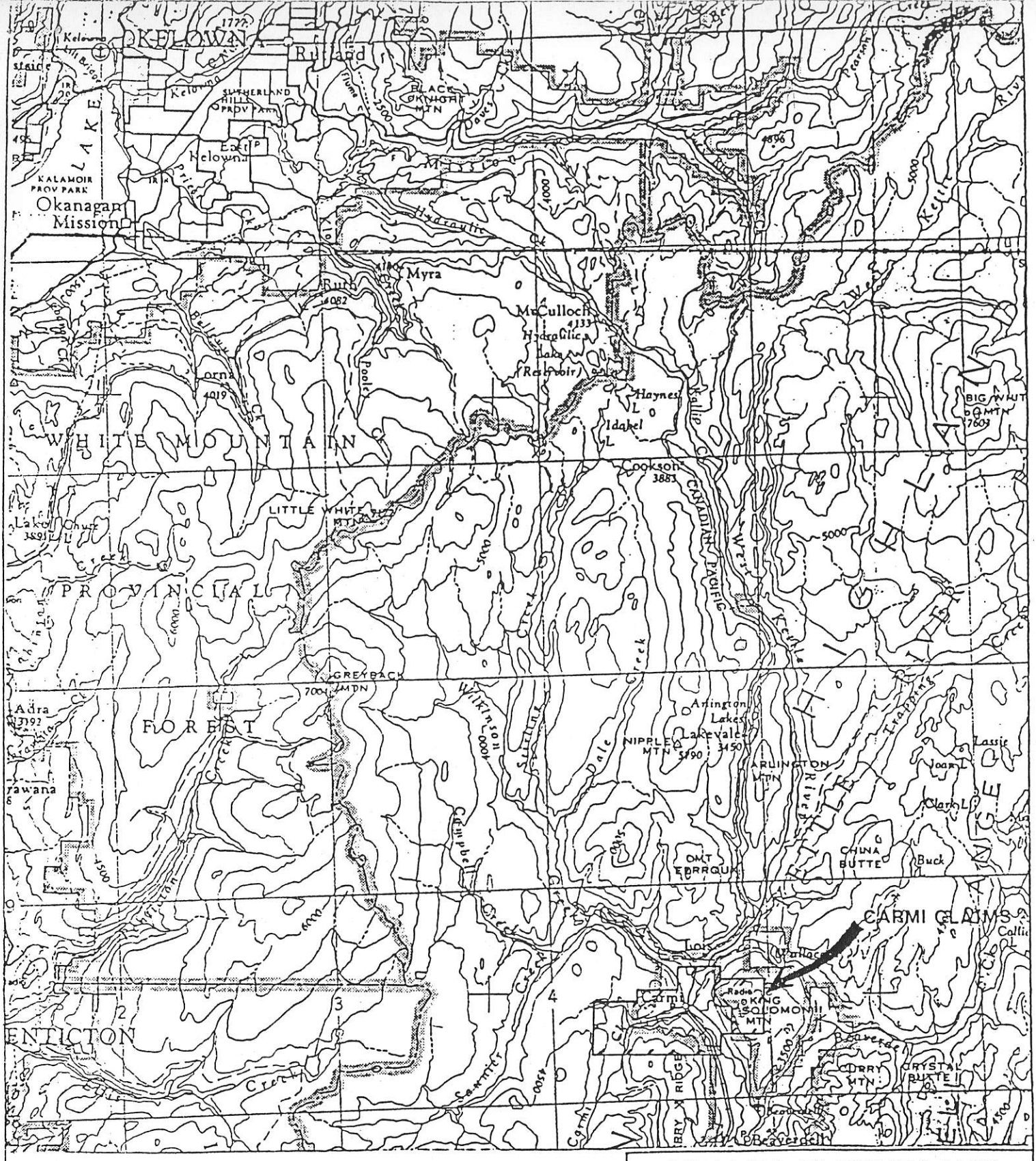
The 1980 exploration program included geological mapping, linecutting, prospecting, a VLF electromagnetic survey, a magnetometer survey, and an induced polarization-resistivity survey. The geological results of this work are presented and discussed in this report, together with the highlights of the geophysical surveys, and specific recommendations are put forward for additional exploration of the property. A comprehensive geophysical report has been prepared by Mr. Frank Dalidowitcz of MPH Consulting Ltd. to which the reader is referred for a detailed interpretation of the geophysical data.

Location

The Carmi property is situated 8 kilometers north of the settlement of Beaverdell, B.C. or 86 kilometers southeast of Kelowna (Figure 1). The approximate co-ordinates of the centre of the claim block are: latitude 49° 29' 30", longitude 119° 08'.

Access

Excellent road access to the property is afforded by Highway 33 which bisects the project area in a north-south direction. A number of old logging roads provide good 2 wheel drive access to all parts of the property. It is anticipated that Pope and Talbot Logging



KELVIN ENERGY LTD

LOCATION MAP
CARMI PROJECT

TO ACCOMPANY REPORT	SCALE 1:250,000	DATE DEC. 1980
BY: L BELL	NTS 82E/6/11	FIGURE NO. 1

Company Ltd., holder of the logging rights in the area, will build additional access roads through the property during the winter.

Topography

The mineral claims are situated within the rolling topography of the Okanagan Highland physiographic province that is characterized by relatively flat topped remnants of an old peneplain surface, now deeply dissected by stream erosion.

The crest and western flanks of King Solomon Mountain and the northern end of Cranberry Ridge occur within the property boundaries. Maximum relief on the property is 620 meters.

The West Kettle River flows in a southeast direction through the central area of the property, and Carmi Creek drains the western portion of the property, joining the main river at Carmi.

Outcrop forms less than 10 % of the surface area of the claims, and in a large portion of the property, old road cuts provide the only exposures of bedrock for geologic mapping purposes.

Claims

The property was acquired by Kelvin Energy Ltd. by way of a purchase agreement with Messrs. J. Hinks and J. Olinger of Kelowna, B.C. and originally consisted of 78 two-post mineral claims, two mineral leases, and a reverted crown grant. On October 20, 1980 the mineral claims were abandoned under section 28(1) of the Mineral Act, and subsequenly restaked under the new claim system in the configuration indicated in Figure 2. A complete tabulation of the mineral dispositions that form the Carmi property is presented below.

a) Mineral Claims

Name	Number of Units	Record Date	Record Number
Carmi 1	20	Oct. 28, 1980	2449
2	20	"	2450
3	20	"	2451
4	20	"	2452
5	4	"	2453
6	12	"	2454

b) Mineral Leases

Number	Contained Lots	Acreage
M290	L798, 2358, 2354, 1563, 1562 1565, 2355, 2353	410.90
M425	483	2.52

c) Reverted Crown Grants

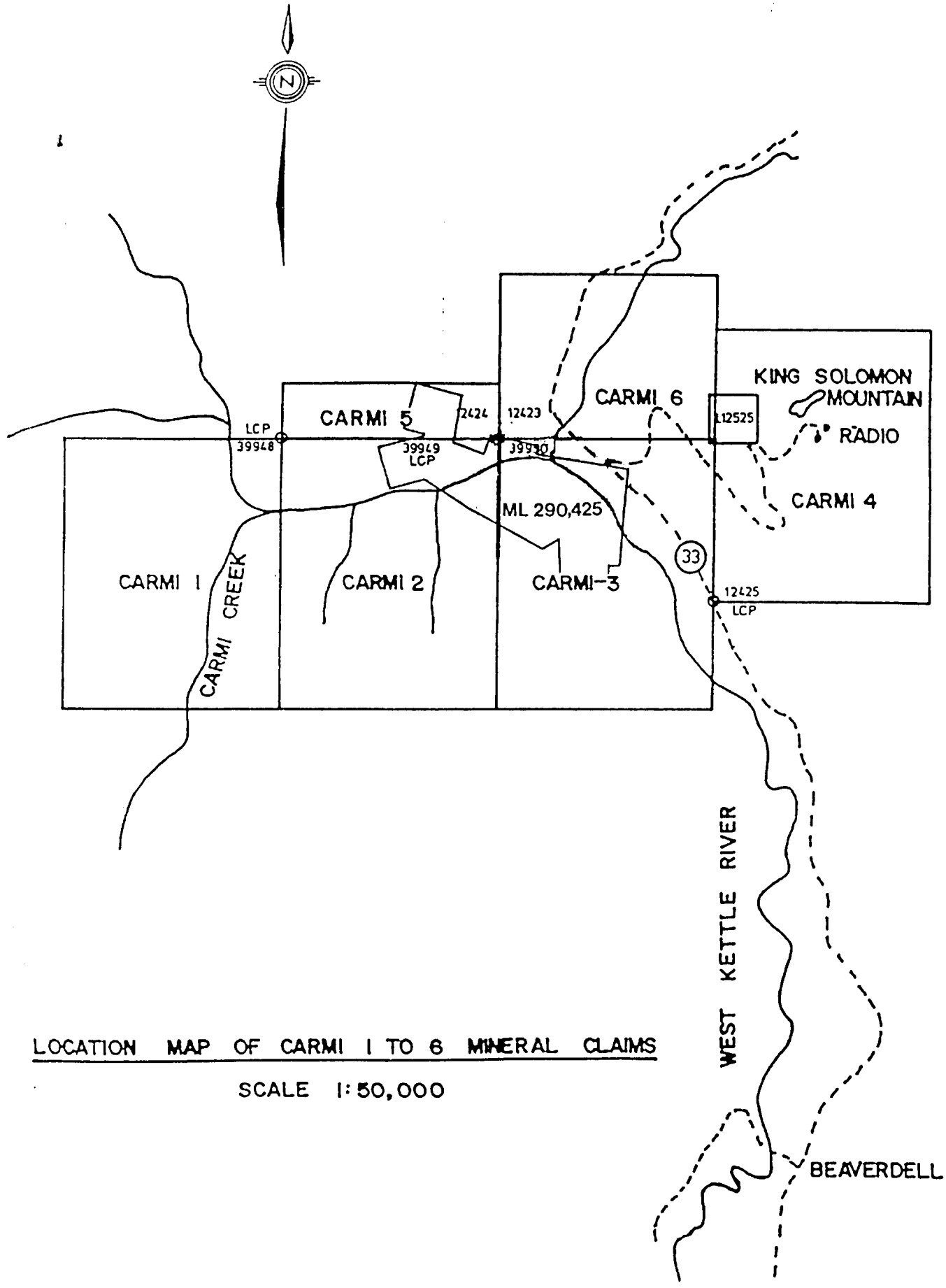
Name	Record Number	Lot	Acreage
Observatory	129	1252	51.65

Crown Claim & BA Fraction

#'s 2352 + 2357

Crown Grants

FIGURE 2



LOCATION MAP OF CARMI 1 TO 6 MINERAL CLAIMS

SCALE 1:50,000

PREVIOUS WORK

The Carmi-Beaverdell area has been the site of continuous exploration for gold-silver mineralization since 1896, precipitated by discovery of the Highland Bell silver mine at Beaverdell. This mine is currently operated by Teck Corp. Ltd. and has been in continuous production since 1901. Gold-silver bearing quartz veins were discovered on the Carmi and Butcher Boy claims in 1895 and were explored and developed by shaft sinking and drifting intermittantly to 1940.

The Carmi deposit was explored by an inclined shaft (-60^{o}) 91 meters long, with levels extending east and west at the 30.5 meter (100 foot) and 46 meter (150 foot) levels. The Butcher Boy deposit was developed by an inclined shaft (-60^{o}) at least 67 meters deep, and was explored by drifts on the 46 meter level that connect underground with the Carmi workings. A 122 meter long adit also develops the Carmi claims approximately 350 meters east of the main Carmi shaft, and an inclined shaft of unknown length is situated just outside the portal of this adit. The Carmi and Butcher Boy claims include at least 1100 meters of underground workings. With the exception of the River adit, all of the workings are now filled with water and are inaccessible. The only map available of the underground workings is a 1934 survey map at a scale of 1"-40'. No work has been done on the property since 1940, and there is no record of the old workings ever being diamond drilled.

A number of smaller exploratory adits, rock cuts, and shafts also occur within the property boundaries, but no significant quantities of ore appear to have been located in any of these workings.

The available tonnage and grade production figures for the Carmi and Butcher Boy occurrences, as published in the annual reports of the

British Columbia Dept. of Mines are tabulated below.

Year	Tons Mined	Au(oz) Recovered	oz/T	Ag(oz) Recovered	oz/T
1899-1900	900	>900	1.00	--	
1915	1115	≃300	0.269	--	
1916	1655	662	0.40	652	0.394
1936	52	28	0.538	241	4.633
1937	42	28	0.666	267	6.350
1940	603	222	0.768	910	1.509
Total:	4,367	2,140		2570	

$\bar{x} = 0.49$.

$\bar{x} = 0.88$.

2352

REGIONAL GEOLOGIC SETTING OF THE PROJECT AREA

Reconnaissance scale (1:250,000) geologic mapping by H.W. Little of the Geologic Survey of Canada (Map 15-1961) indicates that the project area is underlain by a diversity of rock types ranging in age from Proterozoic to Eocene-Oligocene.

The pre-Tertiary basement rocks consist of:

a) The Anarchist Group - a Permian (?) sequence of metasedimentary rocks that occur as roof pendants and inclusions within the Nelson batholith.

b) The Nelson Batholith - a foliated Jurassic-Cretaceous pluton consisting predominantly of medium grained, hornblende-biotite quartz diorite.

c) The Valhalla Intrusions - a series of Cretaceous dykes and small intrusive bodies of non-foliated granites and quartz monzonites.

The Tertiary rocks consist of:

a) The Marron Formation - a complex sequence of Eocene feldspar porphyry andesites, agglomerates, and crystal tuffs, with comagmatic feeder dykes and sills.

The area is complexly faulted with north-south and east-west trending structures predominant. Gold-silver mineralization in the Beaverdell-Carmi area occurs in quartz veins injected into predominantly east-west trending faults and shear zones.

DETAILS OF 1980 EXPLORATION PROGRAM

During the period August 30 to November 4, 1980, Kelvin Energy Ltd. undertook an extensive geological and geophysical evaluation of the Carmi claims. The purposes of this exploration program were to evaluate the economic potential of the former gold producers and to systematically explore the property for buried gold deposits by using modern geophysical techniques which were not available when the property was originally explored from 1896 to 1940.

A brief summary of the exploration activities undertaken on the property is presented below.

a) Linecutting

A 1425 meter long baseline was cut at an azimuth of 100°, with crosslines established at 75 meter intervals. The crosslines extend 500 meters north of the baseline and 1000 meters south, and were picketed at 25 meter intervals using 1 meter long wooden lathes as markers. A tie line was cut parallel to the baseline at a point 950 meters grid south for the purpose of establishing control on the crosslines.

Because of the early recognition of a significant I.P. anomaly, the geophysical grid area was expanded by extending the baseline an additional 450 meters to the east. Crosslines were topofiled and blazed north and south of the extended baseline so that the I.P. anomaly could be delineated. A total of 34.8 km of cut and chained grid were established on the property.

b) Magnetometer Survey

Magnetic readings were taken at 25 meter intervals over the entire grid using a proton precession type G816 Geometrics magnetometer. All magnetic data were corrected for diurnal variations in the earth's magnetic field by tying in individual readings to one of a series of base

stations established along the baseline using a looping technique. The survey was conducted by Ms. Marthe Archambault of Kelvin Energy Ltd.. The corrected field data was plotted at a scale of 1:2000 and contoured with a 25 gamma contour interval.

c) VLF Electromagnetic Survey

A VLF electromagnetic survey was undertaken using a Geonics EM16 unit to locate structural breaks and conductive lithologic units. Readings were taken every 25 meters using Station NAA (Cutler, Maine., 17.8 Khz) as the source of the primary signal. Both the dip angle and quadrature readings of each station were plotted at a horizontal scale of 1:2000, with a vertical scale of 1 cm=20%.

d) IP Survey

A McPhar P660 variable frequency induced polarization system was employed for this survey, using a dipole-dipole electrode array with an "a" spacing of 50 meters. Detailed specifications and survey procedures are presented in Mr. Frank Dalidowitcz's geophysical report.

The induced polarization and apparent resistivity data are presented both as pseudo-sections and contoured plan maps at scales of 1:2500 and 1:2000 respectively.

e) Geologic Mapping

The entire property was geologically mapped at a scale of 1:6000 using an uncontrolled airphoto mosaic of the same scale for control. Geologic observations were plotted in the field on Diazol copies of the airphoto mosaic and subsequently transferred to a mylar base map that was prepared from the mosaic.

The area covered by the geophysical surveys was mapped in detail at a scale of 1:2000 using the grid lines for control.

RESULTS OF 1980 EXPLORATION PROGRAM

a) Geology

1) Description of Rock Units

The geologic setting of the claim groups as determined by surface mapping and extrapolation of contacts and fault zones indicated by the geophysical surveys is presented in Figure 3. A detailed geologic map of the area covered by the geophysical grid is presented in Figure 4.

The geologic mapping indicates that the property is largely underlain by a hornblende-biotite quartz diorite in which are found both large and small roof pendants of metasedimentary rocks. A younger site of volcanic rocks and associated porphyry dykes are found intrusive into these rocks. The geologic units that were recognized on the property are described below in their interpreted chronological order.

Table of Formations

Period or Epoch	Formation	Map Units	Lithology
Paleocene-Eocene	Marron Formation	5	Andesite, porphyritic andesite, crystal tuff, agglomerate
Post-Cretaceous	Veins and Dykes	4	Pegmatite, quartz veins, quartz pebble dyke
Cretaceous	Valhalla Intrusions	3	Quartz monzonite, granodiorite, quartz diorite
Jurassic-Cretaceous	Nelson Plutonic Rocks	2	Hornblende-biotite quartz diorite
Permian	Anarchist Group	1	Quartzite, pyritic quartzite, chlorite schist, gneiss, marble

i) Anarchist Group Metasediments (1a-f)

The oldest rocks exposed in the project area are a sequence of predominantly biotitic quartzites, with minor interbedded gneisses, marbles, and pyritic quartzites, all believed to be part of the Anarchist Group of Permian age. Good exposures of these rocks occur south of Carmi along the railroad tracks, and along Carmi Creek, just west of the detailed grid area. The metasediments occur as a number of roof pendants in the intrusives and range in size from less than 10 meters across to a maximum exposed size of 1000 by 300 meters.

Biotitic quartzites (1a) are the most common metasedimentary rock type found on the property. These rocks are light brown to dark grey weathering, fine grained, well foliated, and contain 5-15% biotite and/or muscovite flakes aligned parallel to the bedding. The rocks are conspicuously bedded, with individual beds 1-4 cm in width. Occasionally the quartzites contain small, elongate, smokey grey quartz lamallae stretched parallel to the foliation.

Pyritic, micaceous quartzites (1b) outcrop immediately above the River adit to from an elongate zone of rusty brown weathering outcrops along the old riverbank ledge. The pyritic quartzites contain up to 2% very finely disseminated pyrite that is often partially leached. These rocks are commonly interbedded with the biotitic quartzites and are commonly less than 1 meter wide.

Minor amounts of quartzo-feldspathic gneisses (1c) were found within the predominantly quartzitic sequence. The gneisses are holocrystalline granular rocks consisting of felsic rich layers separated by wisps and segregations of biotitic material.

Several outcrops of highly weathered metasediments (1d) occur in road cuts along the new logging haulage road along the south bank of

Carmi Creek. These rocks weather light yellow to orange-brown in color and are very crumbly, severly weathered, and frequently stained with dark black manganese streaks. They are so rotten they can be easily crumbled by hand into a fine sand. The sedimentary nature of these rocks is indicated by the occurrence of recognizable quartz and foliated, bleached biotite, and by a remnant planar fabric that is suggestive of bedding.

Dark, greenish black weathering chloritic schists (1e) outcrop in the vicinity of the old Carmi hotel. This rock type is well foliated, fine grained, and probably represents a metamorphosed argillaceous rock.

Brown weathering, medium grained, white granoblastic marbles (1f) were observed interlayered with the quartzites at several localities on the property. These marbles are frequently contorted into small scale folds, and reach a maximum width of 1 meter. The marbles give off a fetid smell when cracked open.

ii) Nelson Plutonic Rocks (2a-c)

The Carmi gold property is largely underlain by a large body of hornblende-biotite quartz diorite (2a) of the Jurassic-Cretaceous Nelson Plutonic Complex. This rock is medium grained, white weathering, and is slightly to strongly foliated. The quartz diorite is hypidiomorphic granular in texture, and has an average modal composition of 20% quartz,15% biotite, 15% hornblende, and 50% plagioclase plus accessories. Biotite is invariably present, but local variants can contain little, if any, hornblende. Biotite occurs as both irregular shreds and in booklet form, while hornblende typically forms subhedral, stubby crystals. The quartz and feldspar are subhedral to anhedral in texture. Chloritic alteration of the ferromagnesium minerals is common, and several areas of stong propylitic alteration were also observed on the

property.

In the south-central portion of the claim group, the quartz diorite is highly weathered and rotted, and appears to have largely escaped glacial erosion. Excellent exposures of weathered quartz diorite (2b) occur in a road cut along the new logging road on the south bank of Carmi Creek. The quartz diorite is very crumbly and can be easily disintegrated by hand, and in the new road cut the rock was observed to be weathered to a vertical depth of at least 7 meters from surface. Along this logging road the weathered intrusive is commonly stained pink or green. The pink staining is produced by secondary iron oxides formed during the weathering of the hornblende and biotite in the rock, while the green staining appears to be related to the formation of clay minerals formed during weathering of the feldspar in the rock. Hornblende is largely destroyed in the quartz diorite but its' former presence is indicated by greenish clay-chlorite pseudomorphs. Additional exposures of highly weathered quartz diorite are also found in road cuts along old logging roads in the south-central portion of the property. This area coincides with a resistivity low that was recognized during the I.P. survey. It is interesting to speculate on the possibility that these highly weathered rocks may have originally been covered and protected from glacial erosion by a thin plateau basalt capping, subsequently removed by erosion; however, only minor basalt float was found on the property, so this explanation of the presence of these highly weathered rocks is not supported by field evidence.

In the vicinity of the May adit, (Figure 4) the quartz diorite has been intensely sheared in a north to northwest direction to produce a chloritic, schistose rock (2c) in which remnant patches of less sheared intrusive material attest to the original identity of the rock.

iii) Valhalla Plutonic Rocks (3a-c)

A series of small dykes and plugs intrusive into the Nelson plutonic rocks are believed to be part of the Cretaceous Valhalla intrusions. A number of small, isolated outcrops of intrusive rocks that are similar in appearance to rocks displaying definite intrusive relationships with the Nelson plutonic rocks are also considered to belong to the Valhalla rocks. Within the property boundaries, the Valhalla intrusions are more felsic than the Nelson rocks and consist predominantly of a white weathering, biotite-hornblende quartz monzoite (3a). The rock weathers white and has a medium grained, equigranular texture.

On King Solomon Mountain, a large area of fine grained, massive, green weathering hornblende-biotite quartz diorite (3b) occurs as a circular intrusive mass 1000 meters in diameter. The contact with the surrounding Nelson quartz diorite is nowhere exposed; however, along the eastern border of this intrusive, a narrow linear gulley marks the contact, and may indicate that the intrusive is at least in part fault bounded. This quartz diortie is similar in composition to the coarser grained Nelson quartz diorite, but lacks a well developed foliation.

Immediately above the May adit, quartz eye porphyry (3c) occurs as a irregular intrusive mass in the Nelson quartz diorite. This rock contains 20-30% euhedral quartz eyes up to 1 cm across in a greenish-white chloritic matrix, and locally contains 5% euhedral biotite flakes.

iv) Veins and Dykes (4a-c)

A number of narrow quartz veins and pegmatite dykes were observed within the detailed grid area.

Large, white bull quartz veins (4a) up to 2 meters wide on surface were emplaced along a major shear zone that extends through the Butcher Boy and Carmi shafts. Old British Columbia Dept. of Mines

reports indicate that the individual quartz veins pinch and swell, and vary in width from several centimeters to 5 meters. On surface the quartz veins are frequently rusty due to the oxidation of disseminated pyrite.

Several coarse grained, quartz-feldspar pegmatite dykes (4b) that reach a maximum width of 2 meters were found intrusive into the Nelson quartz diorite. The quartz in the pegmatite is smokey grey in color.

An unusual quartz-pebble dyke (4c) that consists of angular quartz fragments in a fine grained felsite matrix outcrops near the old Carmi hotel and cuts through Anarchist Group metasediments.

v) Marron Formation Volcanics (5a-g)

A number of fine grained, andesitic dykes, flows, and pyroclastic rocks outcrop on the property, and are believed to be correlative to the Marron Formation volcanics of Eocene age. These rocks are typically fine grained, frequently porphyritic, and display a wide variation in color, degree of weathering, and phenocryst composition and content.

The most common volcanic rock is a dark grey weathering, fine grained andesite (5a) which occurs as dykes in the Nelson quartz diorite that range in width from less than 1 meter to an exposed width of at least 10 meters. The fine grained andesite has a pale green fresh surface, and locally contains 5-10% stretched vesicles.

Feldspar porphyry andesite (5b) dykes occur as small rubbly outcrops within overburden covered areas that are believed to be underlain by quartz diorite. The andesite weathers light grey to green in color, and contains 10-40% subhedral feldspar phenocrysts and 10% euhedral hornblende needles in a fine grained, grey matrix.

Feldspar-hornblende porphyry dykes (5c) are up to 2 meters in width and contain 20-30% subhedral feldspar phenocrysts and 10% euhedral hornblende needles in a fine grained, grey matrix.

A large ourcrop area of intercalated massive feldspar porphry andesite flows, crystal tuffs, and minor agglomerates occurs along the southern border of the property at the top of Cranberry Ridge. The feldspar porphyry andesites (5d) are similar in appearance to their probable feeder dykes of rock unit (5b), and locally have a crude, columnar jointed appearance.

The crystal tuffs and agglomerates (5e) are delicately to crudely bedded and consist of chaotic mixtures of broken feldspar cyrstals and rounded andesite flow fragments.

2) Structure

The Anarchist Group metasediments in the vicinty of the River adit, and south of Carmi along the old railroad tracks have a uniform, persistant strike direction of 130-140°, with southwest dips of 20-60°. The Nelson quartz diorite where adjacent to these sediments also has a foliation parallel to the regional strike of the metasediments.

The results of the VLF and magnetometer surveys suggest that the property is transected by a number of northeast-southwest and northwest-southeast trending faults and shear zones. Underground mapping in the River adit indicated that the mineralized quartz veins have been offset by both northwest and northeast trending faults with horizontal displacements of 1-3 meters. The east-west fault zone through the Butcher Boy and Carmi shafts appears to be wider and more persistant than the north-south minor faults. In the River adit, shearing is much more intense and widespread in the metasediments than in the more competent quartz diorite.

3) Mineralization

The gold-silver mineralization that is present in the old workings on the property occurs in quartz veins that have been emplaced in shear and fault zones. The following descriptions of the mineralization in the old workings were prepared from information published in British Columbia Dept. of Mines Annual Reports, and from field examinations of mineralized rocks from the old ore and waste dumps.

i) Butcher Boy and Carmi Deposits

Although the Butcher Boy and Carmi deposits were originally mined as separate occurrences, they are connected at depth and were developing the same vein system. The Carmi mine was developed on the 30.5 meter and 46 meter levels and connects with the Butcher Boy on the 46 meter level. These underground workings are currently filled with water and are inaccessible, however, an old 1934 underground map obtained from a former operator of the Carmi mine indicates that the main Carmi vein strikes N85^{o}E and dips south at 60^{o}. This vein has a continuous length of at least 76 meters underground, but it is offset by northeast trending faults. The old reports indicate that the vein material mined from the Carmi shaft varies in thickness from 0.6-4.6 meters while the thickness of the Butcher Boy vein varies from 0.3 to 1.5 meters. The veins in the Butcher Boy occurrence are less continuous and more complexly faulted that in the Carmi workings.

In both occurrences, the gold is contained in pyrite which forms both massive, granular banded stringers of euhedral pyrite cubes up to 11 cm across, and euhedral disseminations in the quartz veins. Pyrite is the principal sulphide mineral present and can locally form up to 20% of the rock by volume. Argentiferous galena occurs as small 1-2 mm

euhedral crystals, and assays of over 1% Pb have been obtained from the two occurrences. Minor amounts of anhedral chalcopyrite are occasionally observed in the weathered surface material. Honey brown sphalerite that is sometimes difficult to recognize in weathered specimens also occurs in the veins, and assays of up to 1% zinc have been obtained from the veins. The vein gangue material is predominantly milky white quartz with minor black weathering ankerite. No free gold has ever been definitely reported from the Carmi or Butcher Boy claims. The wall rock is hornblende-biotite quartz diorite that has narrow, highly chloritic, greasy seams up to 2 mm wide developed immediately adjacent to the veins.

In the 1934 Minister of Mines Annual Report it is stated that " . . . in the Carmi shaft below the 150 foot level, some well mineralized segregations and bands of ore were found in quartz widths varying from 4-7 feet, . . . some good ore has been found on the floor of the 150 foot level for 265 feet along the east adit." The old 1934 underground map indicated that an area 33.5 meters (110') by 1.07 meters (3.5') on the east wall of the Carmi shaft below the 46 meter levels averages .55 oz Au/ton. Available tonnage and grade figures indicate that considerable amounts of ore averaging .4 oz Au/ton and .9 oz Ag/ton were produced from these workings. There may still be ore grade material present in the deeper levels of the Carmi deposit.

The results of analyses on samples collected from the Butcher Boy and Carmi dumps are presented below:

Sample	Deposit	Au(oz/ton)	Ag(oz/ton)	Pb(%)	Zn(%)
BB 1	Butcher Boy	2.25	3.8	.15	.28
BB 2	"	.082	.905	.17	.58
BB 3	"	.496	1.4	.21	.11
CG 1	Carmi	1.46	3.9	1.32	.985
CG 2	"	.554	3.3	.21	.45
CG 3	"	2.19	3.4	1.12	.43

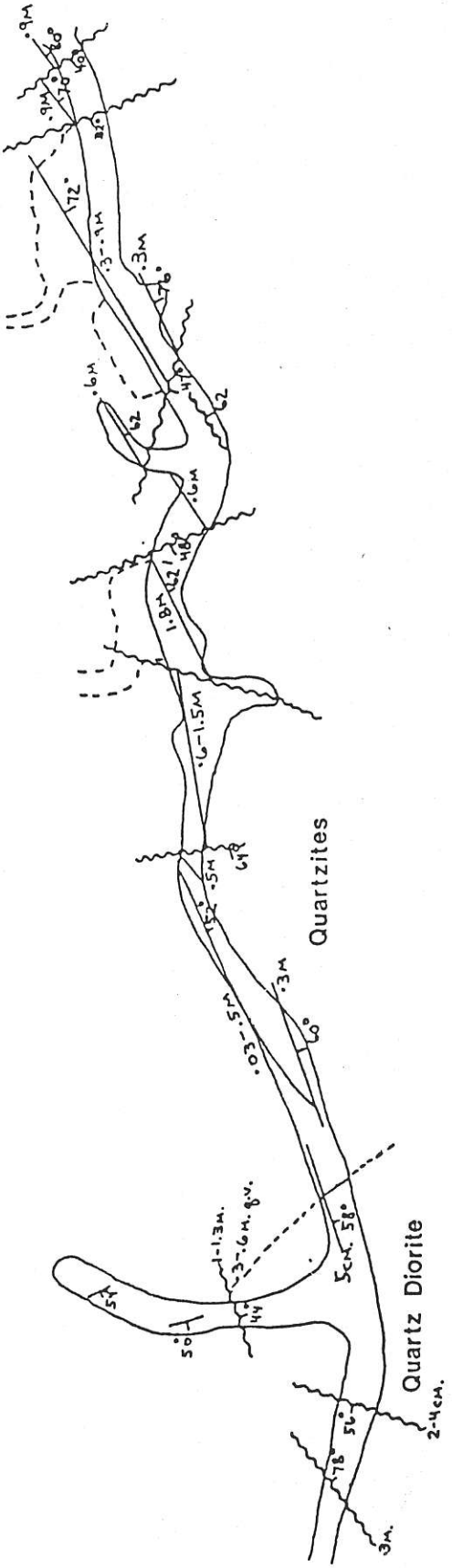
Sample descriptions for the above rock specimens are presented in the appendix of this report.

ii) River Adit

The River adit is currently accessible but must be entered with caution, as there is one area 13 meters in from the portal where one has to squeeze through a narrow opening in a pile of unstable caved material. The air inside the adit was tested and found to be good. The adit is 122 meters long, and an inclined shaft just outside the portal extends at least 20 meters down to an area of underground workings of unknown extent that are now filled with water.

Mining operations were undertaken in the adit on large bull quartz veins up to 2.5 meters (8') wide injected into irregularly sheared and faulted metasediments that are now strongly chloritized. Fracturing and shearing are much more prevalent in the metasediments than in the quartz diorite that occurs towards the end of the adit. Stoping operations have been undertaken on two veins thay may in fact be faulted segments of the same vein. Several narrow cross faults were also mineralized with gold-silver bearing quartz veins. The gold-silver mineralization in the River adit is similar in mode of occurrence to the Butcher Boy and Carmi workings.

The underground geology of the River adit is shown in Figure 5 and underground assays and sample sites are shown on Figure 6. Sixteen assay samples were collected underground and 18 samples were collected from the waste dump. The assay data for the samples from the dumps are presented overleaf and sample descriptions are presented in the appendix of this report.



LEGEND

- Quartz vein with dip and width indicated
- Fault with dip and width indicated
- Stoped area
- Geologic contact
- Strike and dip of bedding

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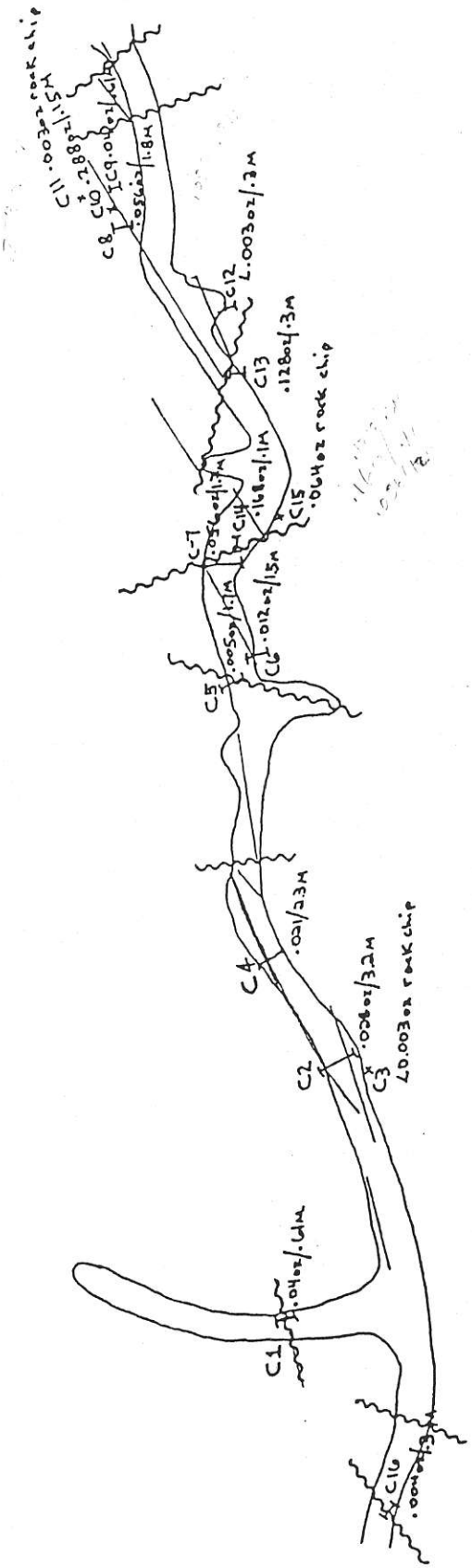
RIVER ADIT UNDERGROUND GEOLOGIC MAP

TO ACCOMPANY REPORT BY: L BELL	SCALE 1:480 NTS 82E/6/11	DATE DEC, 1980 FIGURE NO. 5



LEGEND

Fault

Quartz vein

C-1 .1oz/.3M — Assay sample location, number, width and gold value in oz/ton

KELVIN ENERGY LTD

RIVER ADIT UNDERGROUND SAMPLING MAP

TO ACCOMPANY REPORT	SCALE 1:480	DATE DEC, 1980
BY: L BELL	NTS 82E/6/11	FIGURE NO. 6

Sample No.	Au(oz)	Ag(ppm)	Pb(ppm)	Zn(ppm)	Cu(ppm)
C 17	0.068	4.7	125	>10000	2370
18	0.560	9.6	778	>10000	1826
19	0.066	3.4	109	1148	178
20	0.040	3.5	118	2233	79
21	0.040	1.3	16	556	75
22	0.028	3.3	45	6100	243
23	0.066	8.1	1104	>10000	171
24	0.048	0.6	220	884	27
25	0.044	4.5	382	926	247
26	0.092	17.5	90	8250	541
27	0.072	4.1	199	7170	245
28	0.064	4.7	163	6616	97
29	0.040	16.3	759	>10000	838
30	<0.003	4.3	5386	5560	144
31	<0.003	1.8	28	431	191
32	<0.003	<0.1	4	203	15
33	0.007	38.7	3150	>10000	1502
34	<0.003	3.0	542	950	40

Samples C24 and C25 with gold assays of .048 and .044 Au/ton respectively represent samples of find grained metasediments with 1-2% disseminated pyrite. These samples contained no vein pyrite material and may indicate that a halo of lower grade mineralized material envelops the main vein mineralization in the inaccessible underground workings at the River adit. By averaging this low grade material with the high grade ore zones, a considerable tonnage of ore averaging .1-.2 oz Au/ton might possibly be delineated.

The assay results indicate that zinc could be a by-product of mining operations.

The geologic setting of the mineralization in the River adit suggests that any areas of high sulphide content along fault or shear zones that are indicated by the I.P. and VLF surveys represent prime exploration targets.

3) May Adits

The two May adits were apparently driven to test for a westward extension of the mineralized zone that extends through the Carmi and

Butcher Boy workings. The lower adit is accessible for underground examination, but the upper adit is partially collapsed and is too dangerous to enter.

A narrow fault zone in the lower adit was observed to contain a very irregular quartz vein with locally heavy pyrite mineralization; however a sample of this material assayed only .028 oz Au/ton. These workings have no economic potential.

4) Other Workings

The property contains a number of old adits, shafts and rock cuts, the locations of which are indicated on Figures 3 and 4. Mr. J. Hinks has also indicated that a number of old workings are present on King Solomon Mtn. These workings should be located and examined during the 1981 field season. Most of the old workings were of an exploratory nature, or were driven on narrow rusty shear zones, and have little or no economic potential.

b) GEOPHYSICS

The geophysical surveys conducted on the property have outlined a major induced polarization-resistivity anomaly coincident with the inaccessible underground workings of the River adit. This anomaly has a continuous length of over 800 meters and correlates with a strong VLF bedrock conductor that is interpreted by Mr. Frank Dalidowticz of MPH Consulting Ltd. to be caused by a fault zone. Dalidowitcz believes that this I. P. anomaly may be "due to a core of stringer-like to massive sulphide mineralization surrounded by a halo of disseminated sulphides," and recommends three diamond drill holes to test the anomaly.

The induced polarization-resistivity results obtained over the Butcher Boy and Carmi shafts were negative, but this may be due to the narrow width of the mineralized zone, rather than to an absence of sulphides at depth.

The VLF survey data indicate a northwest-southeast conductor trend in the eastern sector of the survey area and a northeast-southwest trend in the western section. Most of the VLF conductors are believed to be due to shearing or faulting.

Three main magnetic trends were indicated by the magnetometer survey. Two of these trends are sub-parallel to the VLF trends, while the third magnetic feature trends north-south.

DISCUSSION OF RESULTS

The geologic mapping and examination of surface and underground workings have confirmed the published description of ore controls on the property, and have suggested that in the inaccessibel underground workings of the River adit, a halo of low grade mineralization may surround the higher grade vein material that was originally mined and shipped. One can only speculate as to how much ore remains in the ground in both the River and Carmi workings because of the lack of up to date underground geologic maps.

The results of the 1980 exploration program on the Carmi claims are very exciting, and have considerably enhanced the potential of the property for the development of a gold-silver mining operation. The next logical step in the exploration of the property should be a major diamond drill program. If the results of the diamond drill program are successful, the shaft at the portal of the River adit and the main Carmi shaft should be both pumped and rehabilitated so that an underground mapping and sampling program could be initiated.

It should be noted that although the results to date are very encouraging, the possibility does exist that the I.P. anomaly is due to barren pyrite in pyritic quartzites.

Two areas of the property are recommended for diamond drilling and are described below.

a) Carmi Shaft Area

The old underground maps and reports that are available for the Carmi workings indicate that an ore zone at least 69 meters long occurs along the floor of the 46 meter level. The down dip extension of this zone is exposed in the east wall of the Carmi shaft where an area 33.5 meters by 1.07 meters averaged .55 oz Au/ton. It is not known whether any additional

levels occur below the 46 meter level, or whether this ore zone was stoped. The available underground data suggests that both the grade and continuity of the mineralization in the Carmi workings increase with depth.

The geophysical results were negative over the Carmi shaft, but this may be due to the narrow width of the mineralized zone relative to the I.P. survey electrode spacing, and the lack of disseminated sulphides in the wall rocks.

The Carmi workings represent an attractive geologic target that should be drill tested.

b) River Adit Anomaly

An I.P. anomaly at least 800 meters long extends through the River adit and is coincident with a good V.L.F. bedrock conductor. The anomaly is interpreted by Mr. Frank Dalidowitcz of MPH Consulting Ltd. as being attributable to 3% sulphides by volume over a 50 meter width, and is suggestive of " a response from a massive to stringer polarizable source with a surrounding disseminated halo." This description fits the underground workings examined in the River adit, and suggests that the I.P. anomaly is due to pyrite in quartz veins that have been injected into a shear zone and are surrounded by a halo of disseminated mineralization.

This anomaly represents an attractive exploration target and should be drill tested.

RECOMMENDATIONS

It is recommended that:

1) A 1000 meter drill program be undertaken with drill hole locations as follows;

Hole No.	Area	Collar	Azimuth	Dip	Length (m)
1	River Adit	4+50E/0+27N	010°	-45°	75
2	"	6+40E/0+38S	045°	-45°	65
3	"	7+80E/1+90S	051°	-45°	150
4	"	5+15E/0+06N	010°	-60°	70
5	"	5+50E/0+12S	010°	-60°	120
6	Carmi Shaft	2+04E/0+80S	352°	-60°	80
7	"	2+47E/1+11S	352°	-60°	120
8-11 Locations to be based on results of holes 1-7.					320
					1000

2) Discussions be undertaken with several mine contractors to acquire preliminary estimates of the cost of dewatering and rehabilitating the underground workings.

3) The geologic mapping of the eastern portion of the claim group be completed, and any additional showings located during the mapping be sampled.

APPENDIX 1

DESCRIPTIONS OF ASSAY SAMPLES

a) Page 19

BB1 - Sample from ore dump bin of massive banded pyrite in quartz gangue, 20-30% pyrite.

BB2 - Sample from waste dump of fine grained, stongly sheared green metasediment or andesite dyke with 1-2% pyrite cubes and black slickensides.

BB3 - Sample from ore dump bin of pyrite and galena in a quartz gangue with 15-20% pyrite and 2-3% galena.

CG1 - Sample from waste dump of massive white quartz vein material with 8% pyrite and 1% galena.

CG2 - Sample from waste dump of quartz gangue containing 10-15% pyrite in massive ribbons and 1-2 % galena.

CG3 - Sample from waste dump with 10-15% pyrite and 1% galena in a quartz gangue.

b) Page 23

NOTE: All samples collected from waste dump at River adit.

C17 - Quartz vein material with 2-3% disseminated pyrite and a massive pyrite stringer and inclusion of sheared, greasey green black wall rock.

C18 - Quartz vein material containing 20-30% pyrite as parallel stringers, also a 3mm quartz stringer crosscutting mineralization.

C19 - Quartz vein material containing 10% pyrite cubes with greasey chloritic slips and streaks.

C20 - Silicified, highly sheared, chlorite rich metasediment, with 10% fine disseminated pyrite, also crosscutting quartz stringers.

C21 - Fine grained, greasey siliceous sediment with 2-3% disseminated pyrite cubes, also several 1-4mm quartz stringers with paper thin chloritic selvedge edges.

C22 - Quartz ankerite vein 1-2 cm wide through fine grained chloritic sheared metasediment, some pyrite along edges of vein, also narrow pyrite rich stringers.

C23 - Highly sheared, greasey green-black metasediment, with 3-5% pyrite in stringers, contains 10,000 ppm zinc but no recognizable sphderite.

C24 - Fine grained, greenish colored siliceous metasediment with 5% fine pyrite disseminations.

C25 - Fine grained, greenish grey siliceous quartzite with 3% disseminated pyrite.

C26 - Quartz vein with 10% ½-1cm pyrite cubes and some small heavily chloritized inclusions.

C27 - 3 cm quartz vein with 2% disseminated pyrite and sphalerite with greenish chloritic wall rocks that are heavily pyritized.

C28 - Bedded, silicified grey to black quartzite with 2-3% disseminated pyrite and several stringers of massive pyrite mineralization.

C29 - Weathered quartz vein materail with malachite stain and 2-5% sphalerite.

C30 - Siliceous metasediment with quartz-calcite stringer with sphalerite and galena.

C31 - Fine grained, dark grey quartzite with 1% disseminated pyrite cubes.

C32 - Quartz ankerite vein, with ankerite weathered black.

C33 - Quartz vein with large globs of sphalerite, some very fine disseminated pyrite in wall rocks, trace of galena.

C34 - Fine grained siliceous green-grey metasediment minor disseminated pyrite, also one sphalerite rich vein and several coarser pyrite stringers.