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GEOLOGICAL AND GEOPHYSICAL REPORT		
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GEOLOGICAL AND GEOPHYSICAL REPORT

on the

CLIFF, CLIFF 1 TO 4, MAX 1 TO 4, DAVE 1 AND 2 CLAIMS,  
GREAT EASTERN (LOT 3437) AND COPPER KING (LOT 3065s) REV CG's  
and  
SUNRISE, SOMETHING GOOD, LISEY D FR AND SILENT FRIEND CG'S

Hedley-Olalla Area  
Osoyoos Mining Division

82E-4W, 5W  
(49°16' N. Lat., 119°51' W. Long.)

for

GOLDCLIFF RESOURCE CORPORATION  
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by

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GEOLOGICAL BRANCH  
ASSESSMENT REPORT  
May, 1993

22,882

## TABLE OF CONTENTS

	Page
SUMMARY AND RECOMMENDATIONS	1
1.0 INTRODUCTION	3
1.1 General	3
1.2 Location and Access	3
1.3 Physiography	3
1.4 Property and Claim Status	4
1.5 Area and Property History	4
2.0 EXPLORATION PROCEDURE	12
3.0 GEOLOGY AND MINERALIZATION	14
3.1 Regional Geology	14
3.2 Claim Geology	15
3.3 Mineralization	17
4.0 GEOPHYSICS	19
4.1 Magnetometer Survey	19
4.2 VLF-EM Survey	19
5.0 CONCLUSIONS AND RECOMMENDATIONS	20
6.0 REFERENCES	21
7.0 CERTIFICATE OF QUALIFICATIONS	25

### APPENDICES

Appendix I	-	Certificates of Analysis
Appendix II	-	Rock Sample Descriptions
Appendix III	-	Geophysical Equipment Specifications
Appendix IV	-	VLF-EM and Magnetic data
Appendix V	-	Cost Statement

## ILLUSTRATIONS

FIGURE	PAGE
1. Location Map	follows page 1
2. Claim Map	follows page 4
3. Property Geology	follows page 14
4. Compilation - Lee Zone	pocket
5. Geology - Golconda Zone	follows page 16
6. Magnetometer Survey - Golconda Zone	follows page 19
7. VLF-EM Survey (Seattle) - Golconda Zone	follows page 19

## TABLES

Table	page
I Drill Hole Data - Cliff Project	5
II Underground Workings - Cliff Project	6
III Drill Hole Data - Shepherd-Sunrise	7
IV Mineral Intercepts - Shepherd-Sunrise	8
V Drill Hole Data - Valley Zone	10

## SUMMARY AND RECOMMENDATIONS

The Cliff Property is located five kilometers north of Keremeos at Olalla, B.C.. Goldcliff Resource Corporation holds five modified grid mineral claims, six two post mineral claims, two reverted Crown Grants and four Crown Grants covering a total of 72 units. The property is located in the Osoyoos Mining Division.

The area has been the scene of exploration for base and precious metals since the late 1800's. A large number of properties have been explored in the area including the Sunrise (gold), Something Good (gold), Bullion (gold), Golconda (copper, molybdenum), Copper King (copper) and Dolphin (copper). Approximately 20 kilometers northwest of the property at Hedley, Mascot Gold Mines Limited resumed production in the spring of 1987 at the Nickel Plate Mine.

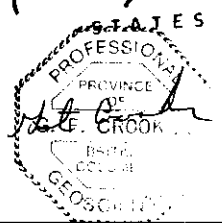
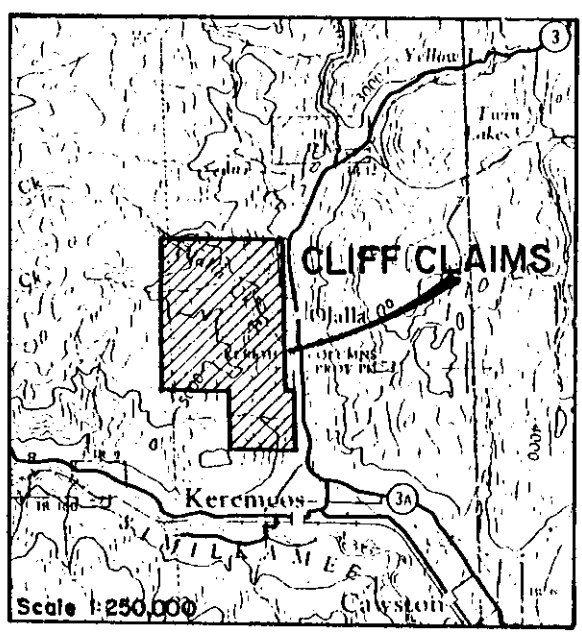
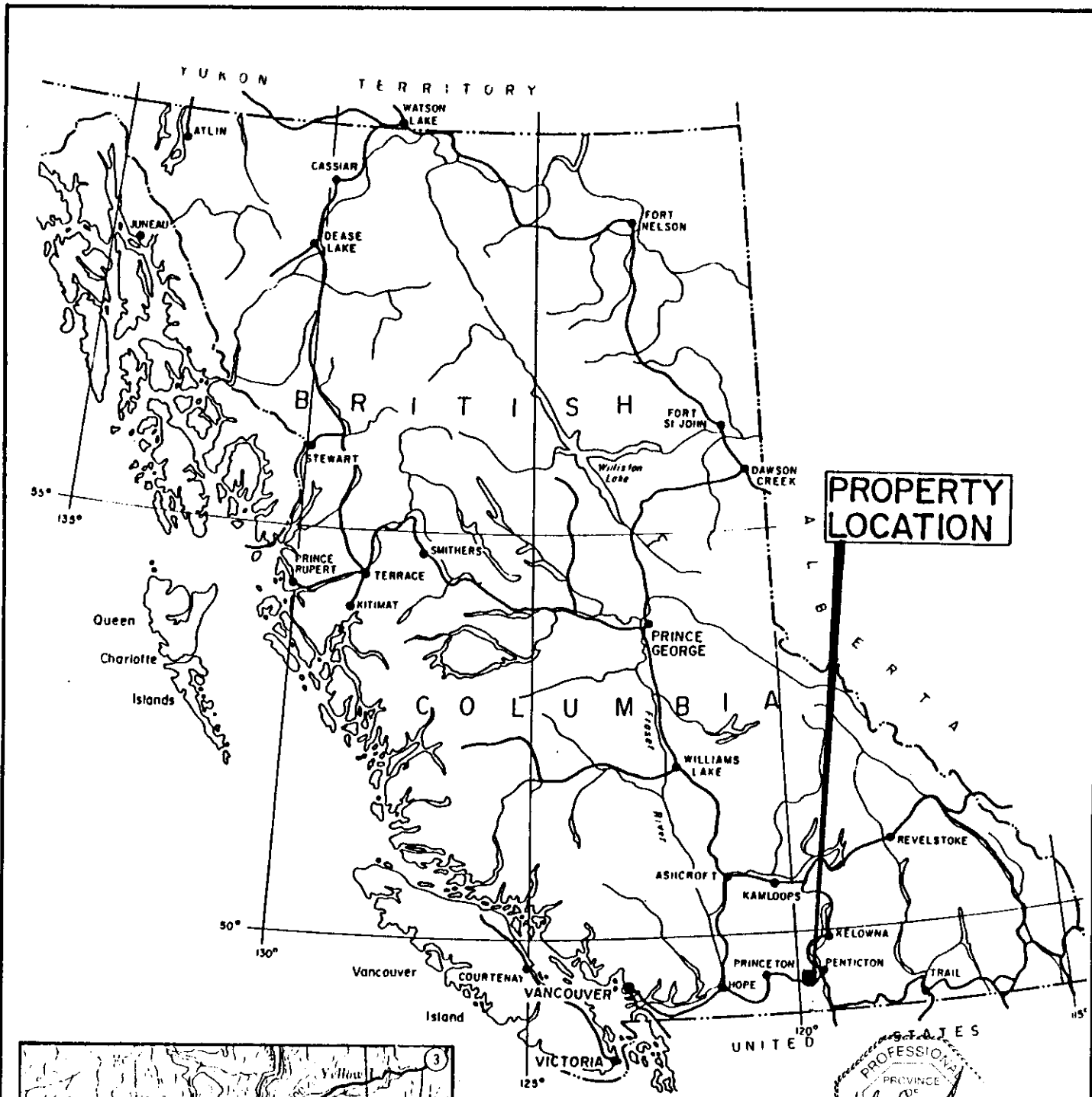
The Copper King, Golconda, Sunrise and Something Good properties are within the claim group presently controlled by Goldcliff. On the Copper King, a massive magnetite-pyrite skarn with lesser chalcopyrite occurs. Three levels with extensive workings exist on the Golconda and a small mill has operated on the property several times in the past. The Something Good contains a 110 foot section of adit with significant gold values in a carbonate flooded breccia zone. On the Sunrise significant gold values are contained in quartz veins as well as silicious, pyritic breccia zones.

Several areas of the Cliff claim have been explored by other operators. A number of old hand trenches have exposed gold mineralization along the Cliff Zone (figure 3). Soil sampling in the area also delineated gold geochemical anomalies.

Goldcliff has been exploring the property since 1986 and a number of VLF-EM conductors, gold and multi-element soil geochemical anomalies and favourable geological structures have been outlined. The main zones of interest (figure 3) include the Cliff, Frank, Valley, Lee and Golconda zones. The addition of the Sunrise and Something Good Crown Grants add two more significant targets to the property.

The 1992-1993 exploration program was mainly carried out on the Lee and Golconda zones. Prospecting, rock sampling and geological mapping were carried out on the Lee zone while a grid was established on the Golconda zone and VLF-EM and magnetometer surveying, geological mapping and prospecting were carried out. Rock samples were also collected from the Something Good Crown Grant and the central portion of the Cliff zone.

Prospecting and rock sampling on the Lee zone confirmed a large zone of fractured and pyritized chert and bleached, fractured, clay altered and pyritized intrusive which contain weakly anomalous gold and copper values. The mineralized cherts gave up to 56 ppb gold



GOLDCLIFF RESOURCE CORPORATION	
CLIFF PROJECT	
LOCATION MAP	
N.T.S. 82E-4,5W	OSOYOOS M.D., B.C.
0 200 400 KM.	
SCALE : AS SHOWN	DATE : march 1993
DRAWN BY : G.F.C.	FIGURE NO. 1

and 264 ppm copper. The mineralized intrusives gave significantly higher gold and copper values of up to 455 ppb and 678 ppm respectively.

Several narrow shear zones (2 to 30 cm) on the Golconda zone gave up to 177 ppb gold, 40.0 ppm silver, >10000 ppm copper and 3448 ppm molybdenum. The magnetometer survey defined a number of deep magnetic lows along Olalla Creek indicating the creek is following a major structural feature. The VLF-EM survey indicated a number of north trending, weak to strong conductors but no causes are apparent for them.

Three rock samples were taken from the Something Good breccia zone. Two of the samples gave anomalous values of 3430 and 1710 ppb gold and 176 and 174 ppb platinum. The platinum values are believed to be the first reported from the area of the Olalla stock.

Recommendations are as follows:

The target areas outlined by this and previous exploration programs should have continued exploration by geochemical sampling, prospecting, trenching and drilling if required. These target areas include the Lee, Cliff, Sunrise, Something Good and Golconda zones.

Respectively submitted,

  
Grant Crooker, B.Sc., P. Geo.,  
Consulting Geologist

## 1.0 INTRODUCTION

### 1.1 GENERAL

Field work was carried out intermittently on the Cliff property from August 23, 1992 through April 16, 1993 by Grant Crooker, geologist.

The program was mainly carried out on the Lee and Golconda zones. On the Lee zone, prospecting, rock sampling and a small amount of geological mapping were carried out. The work program on the Golconda zone consisted of establishing grid lines, VLF-EM and magnetometer surveying, prospecting, rock sampling and geological mapping. A few rock samples were also collected from the Cliff claim and Something Good Crown Grant.

### 1.2 LOCATION AND ACCESS

The property (Figure 1) is located 5 kilometers north of Keremeos, near Olalla in southern British Columbia. The property lies between 49°13'15" and 49°16'30" north latitude and 119°49'30" and 119°53'15" west longitude (NTS 82E-4W, 5W).

Access to the property is via Highway 3A, then turning west at Olalla onto the two wheel drive Olalla Creek Road. This road along Olalla Creek gives access to the Dave 1 and 2, Max 1 to 4, Cliff and Cliff 2 claims.

An old four wheel drive mining road turning south from the main Olalla Creek Road gives access to the Lisey D Fraction, Silent Friend, Something Good, Great Eastern and Copper King claims, higher elevations of the Max 1 to 4 claims and eastern portions of the Cliff claim.

A man made trail leads to the western section of the Cliff claim and a poorer quality trail leads to the Lee zone.

### 1.3 PHYSIOGRAPHY

The property is located in the Okanagan Highlands of southern British Columbia. Elevation varies from 550 to 1830 meters above sea level. Topography is steep with few level spots and precipitous cliffs occur at many locations on the property.

Olalla and Shuttle Creeks flow through the property and have water all year long. Several springs also occur on the property. Vegetation varies from open range land to a forest cover of pine and fir trees. Some sections have heavy deadfall and thicker brush.

#### 1.4 PROPERTY AND CLAIM STATUS

The Cliff, Cliff 1 to 4, Copper King and Great Eastern claims, and Sunrise, Something Good, Lisey D Fraction and Silent Friend Crown Grants (Figure 2) are owned by Grant Crooker of Keremeos B.C., and are under option to and operated by Goldcliff Resources Corporation 1505-409 Granville Street, Vancouver, B.C., V6C 1T2. The Max 1 to 4 and Dave 1 and 2 claims are owned outright by Goldcliff.

The property is located in the Osoyoos Mining Division and consists of five modified grid claims, six two post claims, two reverted Crown Grants and four Crown Grants covering 72 units. The Cliff 2, 3 and 4 claims were all reduced in size in March of 1993.

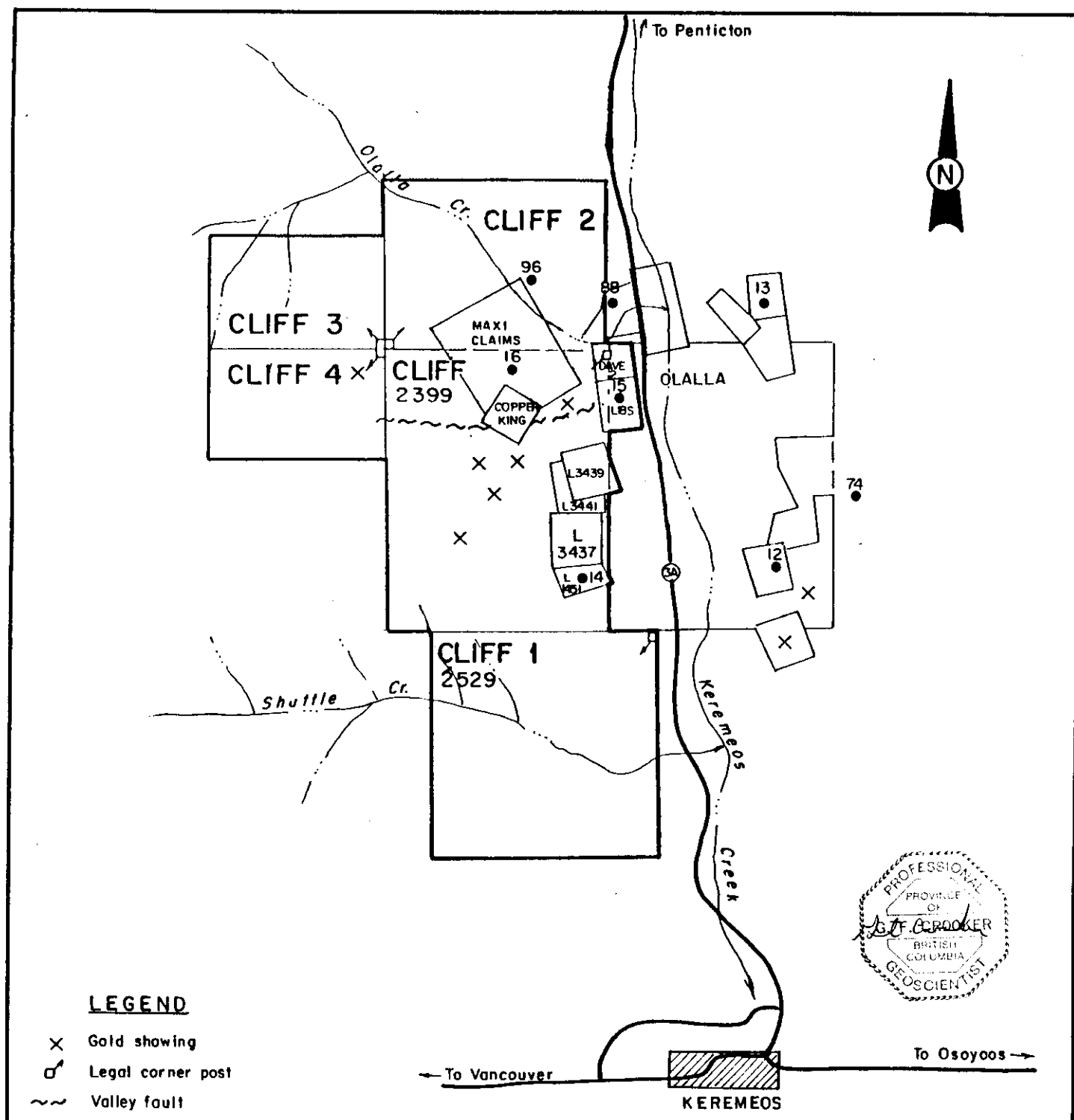
Claim	Units	Mining Division	Tenure No.	Record Date	Expiry Date
Cliff	20	Osoyoos	246603	04/01/86	04/01/00*
Cliff 1	16	Osoyoos	246661	10/30/86	10/30/97
Cliff 2	12	Osoyoos	246693	03/30/87	03/30/97*
Cliff 3	6	Osoyoos	246694	03/30/87	03/30/99
Cliff 4	6	Osoyoos	246688	03/30/87	03/30/99
Copper King	1	Osoyoos	247161	03/15/90	03/15/01*
Great Eastern	1	Osoyoos	246173	06/01/78	06/01/01
Max 1	1	Osoyoos	247670	09/12/74	09/12/00*
Max 2	1	Osoyoos	247671	09/12/74	09/12/00*
Max 3	1	Osoyoos	247672	09/12/74	09/12/00*
Max 4	1	Osoyoos	247673	09/12/74	09/12/00*
Dave 1	1	Osoyoos	247669	07/09/74	07/09/00*
Dave 2	1	Osoyoos	247684	10/22/74	10/22/00*
Lisey D Fr	1	Osoyoos	L 3441	CG	
Silent Friend					
Fraction	1	Osoyoos	L 3439	CG	
Something					
Good	1	Osoyoos	L 1451	CG	
Sunrise	1	Osoyoos	L 18s	CG	

\* Upon acceptance of this report.

#### 1.5 AREA AND PROPERTY HISTORY

The Goldcliff property is located in the Olalla-Hedley Gold Camp in southern British Columbia. Mining activity has been carried out in this area since the 1880's. The property is located 20 kilometers southeast of Hedley, where Mascot Gold Mines Limited resumed production by open pit methods at the Nickel Plate Mine in the spring of 1987. Homestake Mines acquired the Nickel Plate Mine through a merger during 1992 and reserves are believed to be sufficient to enable production to continue until the end of 1995.





**LEGEND**

- X Gold showing
- Legal corner post
- ~ Valley fault

Min. File No.	Property name	Product
82E-5W-12	Dolphin	Cu, Ag
-13	Bullion	Au, Cu
-14	Something Good	Au
-15	Sunrise	Au
-16	Golconda	Cu, Mo, Au
-17	Dief	Mn, Ro
-88	Homestead	Cu
-96	Olalla	Ag, Au
-74	Opulence	Cu

**GOLDCLIFF RESOURCE CORPORATION**

**CLIFF PROJECT**

**CLAIM MAP**

N.T.S. 82E-4,5W      OSOYOOS M.D., B.C.

0      1      2      3 KM.

SCALE: 1:50,000	DATE: march 1993
DRAWN BY: G.F.C.	FIGURE No. 2

A number of mining properties have been explored in the Olalla area since the 1880's. These include the Bullion, Copper King, Dolphin, Golconda, Opulence, Something Good and Shepherd-Sunrise. Exploration has been oriented towards copper, molybdenum, silver and gold.

During 1991 Goldcliff optioned the Sunrise (Lot 18s), Something Good (Lot 1451), Silent Friend Fr (Lot 3439) and Lisey D Fraction (Lot 3441) Crown Grants from Grant Crooker. These acquisitions give Goldcliff control of all of the Olalla Gold Camp west of Highway 3A. A number of prospects which have had significant amounts of work carried out on them in the past are included in this package. These include the Something Good (Lot 1451, Minfile 82E-SW-014), Sunrise (Lot 18S, Minfile 82E-SW-015), Golconda (Max Claims, Minfile 82E-SW-016), Copper King and Valley Zones (figures 2 and 3). A summary of the drill hole data and underground workings located on the property is presented in Tables I and II below.

ZONE	COMPANY	YEAR	NO. HOLES	FOOTAGE (FEET)
Copper King	Friday Mines	1961	2	487+
Golconda	Friday Mines	1961	7	?
Golconda	Trent Resources	1969	10	3,915
Golconda	Brenda Mines	1978	4	2,927
Shepherd-Sunrise	Hedley Monarch	1946	5	1,938
Shepherd-Sunrise	Friday Mines	1961	11	4,134
Something Good	Hedley Monarch	1948	12	1,903
Valley	Freedom Resources	1981	1	493
Valley	Freedom Resources	1983	4	1,741
Valley	Friday Mines	1961	2	1,182
			58	18,720+

Table I. Drill Hole Data - Cliff Project

ZONE	COMPANY	WORKING	YEAR	DEVEL (FEET)
Copper King	-	Magnetite Shaft	≈1918	20
Copper King	-	Adit #1	≈1918	25
Copper King	-	Adit #2	≈1918	65
Golconda	D MacEachern	No. 1 Level	1918+	225
Golconda	D MacEachern	No. 2 Level	1918+	1000
Golconda	Mollycot Mines	No. 5 Level	1967+	1270
Golconda	-	Stopes	1918+	500
Shepherd-Sunrise	Hedley Monarch	Haulage Tunnel	1947	32
Shepherd-Sunrise	Hedley Monarch	Powder Tunnel	1947	288
Shepherd-Sunrise	-	Pyroxenite Tun.	-	216
Shepherd-Sunrise	Hedley Monarch	Shepherd Tunnel	1947	280
Shepherd-Sunrise	-	Sunrise Tunnel	1900	96
Shepherd-Sunrise	-	Sunrise Shaft	1900	45
Something Good	Gold Valley	Adit #1	1936	360
Something Good	Gold Valley	Adit #2	1936	150
Something Good	Gold Valley	Adit #3	1936	385
				<u>4957</u>

Table II. Underground Workings - Cliff Project

A minimum of 58 drill holes totalling 18,720 feet and 4957 feet of underground development have taken place on the property. In addition to these prospects, Goldcliff has developed the Frank, Cliff (Cliff claim) and Lee Zones (Cliff 4 claim).

On the Something Good property (Lot 1451), a carbonate shear and breccia zone occurs in argillaceous and cherty sediments near the contact of a large pyroxenite body. Calcite, quartz, and pyrite occur within the breccia zone which contains significant gold values.

Three adits were driven on the zone in 1936-1937. The No. 1 adit (2541 feet ASL) was driven for 360 feet with the direction gradually changing from 255° to 235°. It followed the footwall of the shear zone with the first 110 feet of the adit in a well defined breccia zone with significant gold values. Samples taken by the resident geologist for the B.C. Department of Mines in 1937 (M.S. Hedley) ranged from 0.05 ounces per ton gold over 54 inches to 2.20 ounces per ton gold over 11 inches. Beyond this point the graphitic shear contained negligible gold values.

The No. 2 adit (2,470 feet ASL) was driven 150 feet westward approximately parallel to the No. 1 adit. The adit is mainly in pyroxenite, with the last 20 feet in cherty sediments.

The No. 3 adit (2342 feet ASL) was driven for 385 feet at approximately 255° mainly in pyroxenite. The last 10 feet of the adit are in blocky fractured quartzite. Negligible gold values were encountered in the adit.

A limited amount of diamond drilling was also carried out with some gold values reported. From the face of No. 2 adit, 6 holes were drilled south-westerly at vertical angles ranging from 0° to 60° above the horizontal. The holes were drilled along the strike of the breccia zone in No. 1 adit and four reached the elevation of the upper workings. Some values were encountered in the drilling but little information was gained regarding the downward extension of the breccia zone.

From the face of No. 3 adit, 3 holes were drilled near the strike of the breccia zone in No. 1 adit. Two were fanned to the south and one was drilled north-westerly. The core from all 3 holes showed mainly argillaceous and quartzitic sediments with minor amounts of limestone and short sections of pyroxenite. The only mineralization was scattered crystals of pyrite and calcite veinlets with no gold values.

The Shepherd-Sunrise property (Lot 18s) appears to have the most economically significant mineralization in the Olalla Camp. Several mineralized quartz veins and a siliceous, pyritic breccia zone have been explored by trenching, diamond drilling and several adits.

The diamond drilling was carried out in two phases, the first between 1946 and 1948 by Hedley Monarch Mines Ltd. (5 holes, 1,934 feet), and the second during 1961 and 1962 by Friday Mines Ltd (11 holes, 4,134+ feet). A summary of the drill hole data is given in Table III.

D.H. NO.	TARGET	AZMUTH	ANGLE	DEPTH (FEET)
S-1	Sweetner Vein	164°	-46°	460
S-2	Sweetner Vein	191°	-24°	480
S-3	Sweetner Vein	220°	-09°	270
S-4	Sweetner Vein	190°	-31°	340
S-5	Sweetner Vein	310°	-24°	388
H-1	Sweetner Vein	202°	-54°	330
H-1A	Sweetner Vein	202°	-62°	274
H-2	Sweetner Vein	187°	-55°	325
H-3	Sweetner Vein	176°	-59°	467
H-4	Breccia Zone	179°	-45°	413
H-5	Breccia Zone	184°	-59°	425
H-6	Sweetner Vein	?	?	≈270
H-7	Sweetner Vein	?	?	≈375
H-8	Breccia Zone	198°	?	425
H-9	?	?	?	?
H-10	Breccia Zone	209°	?	≈430
H-11	Sweetner Vein	?	?	≈400

Table III. Drill Hole Data - Shepherd-Sunrise

Most of the drilling was carried out under the Shepherd Tunnel on the Sweetner Vein, with 4 holes drilled 550 feet west of the Shepherd Tunnel on a silicious, pyritic breccia zone.

The mineralization appears to be related to the east-west striking Valley Fault. During drilling on the quartz veins, the gold bearing silicious, pyritic breccia zone was discovered. This breccia zone also appears to be related to the Valley Fault. Table IV below lists the principal mineral intercepts.

D.H. NO.	ZONE	MINERAL INTERCEPT FT	TRUE WIDTH FT	AU OZ/T	AG OZ/T
S-1	Sweetner Vein	135.0-155.0	17.32	0.026	0.522
S-2	Sweetner Vein	136.5-138.6	2.0	0.926	4.040
	Sunrise Vein	265.0-267.1	2.0	0.882	3.010
S-3	Sweetner Vein	152.0-154.0	2.0	1.120	0.760
H-1	Sweetner Vein	196.0-200.3	2.73	0.947	1.209
H-1A	Sweetner Vein	198.5-204.0	3.67	0.872	0.703
H-2	Sweetner Vein	268.8-270.0	0.90	0.040	1.550
H-3	Sweetner Vein	179.2-182.5	2.20	1.080	1.254
H-4	Sweetner Vein	333.0-335.9	2.00	0.603	0.263
H-5	Sweetner Vein	347.5-355.0	5.21	0.171	0.336
or	Breccia	315.6-373.8	39.07	0.056	0.140
H-6	Sweetner Vein	235.5-240.5	4.51	0.031	0.150
H-7	Sweetner Vein	346.5-352.5	0.01	0.573	0.540
H-8	Breccia	383.0-392.5	8.05	0.330	1.080
or	Breccia	365.2-407.0	35.49	0.110	0.345
H-10	Breccia	354.9-361.1	5.15	0.063	0.250
and	Breccia	403.8-413.4	7.86	0.139	0.528

Table IV. Mineral Intercepts - Shepherd-Sunrise

The drilling has indicated ore reserves of approximately 3100 tons of 0.85 ounces per ton gold and 2.00 ounces per ton silver above and below the Shepherd Tunnel. Approximately 300 tons of ore averaging 0.53 ounces per ton gold and 0.45 ounces per ton silver were shipped during the 1946-1948 period from the Shepherd Tunnel.

The drill results also indicate significant values over wider widths in the breccia zone west of the Shepherd Tunnel. No further drilling has been carried out on the property.

The Golconda property (Max 1 to 4, Dave 1 and 2) was acquired by Goldcliff during 1990. It is located along the northern boundary of the Cliff claim and consists of a shear zone up to five feet wide made up of one or more slickensided and gouge filled fault planes cutting pyroxenite. A number of quartz lenses between 30 and 60 feet long and 12 to 50 inches wide occur within the shear zone. These zones appear to occur at changes in attitude in the structure. The quartz is crudely banded and contains pyrite,

chalcopyrite, molybdenum, and minor galena. Values in gold and silver also occur within the structure.

Three main levels follow the shear zone, which strikes south 56° east. Level No. 1 (2,547 feet ASL) consists of 225 feet of crosscutting and drifting, of which about 140 feet is on the shear. Level No. 2 (2,423 feet ASL) contains about 1,000 feet of crosscutting and drifting of which about 450 feet is on the shear. Level No. 5 (2,147 feet ASL) consists of 1,270 feet of workings with only a few feet on the shear. A number of stopes, ore passes and manways connect the 3 levels.

Diamond drilling programs have been carried out on the Golconda at least three times, in 1961 by Friday Mines (7 holes, footage unknown), in 1969 by Trent Resources (10 holes, 3,915 feet), and in 1978 by Brenda Mines (4 holes, 1,938 feet). None of the drill results are available for the Friday Mines or Trent Resources drilling. The Brenda Mines drilling indicated continuity of the shear zone to depth but the values were considered "low grade".

During 1970, Toru Kikuchi was retained by Trent Resources to calculate ore reserves on the property. He calculated ore reserves of 59,781 tons grading 1.64% copper and 0.97% molybdenite in the "visible, probable and obtainable" categories.

Limited production has come from the property, and a small mill has operated several times. During 1957 a 45 ton/day mill was in operation and during 1960, 1500 tons of ore gave 2 ounces of gold, 460 ounces of silver, 61,060 pounds of copper, 1,406 pounds of lead and 5,414 pounds of molybdenum. During the period 1970 through 1972 a 100 ton/day mill was erected on the property but little production was obtained.

The Copper King reverted Crown Grant was acquired by Goldcliff during 1990. Some trenching and several short adits were driven on the Copper King by previous owners. This work exposed a large garnet, epidote, calcite and ferro-magnesium mineral bearing skarn zone containing massive magnetite and pyrite with lesser chalcopyrite, hematite and malachite. The mineralized zone is found at or near the contact of the pyroxenite and/or quartz diorite and overlying quartzites and argillites.

Two diamond drill holes were drilled to test the skarn mineralization by Friday Mines in 1961. This drilling apparently gave sub-economic values in the order of 0.40% copper with no mention of gold. Sampling by Goldcliff in 1991 gave up to 10,845 ppm copper with low gold values.

On the area covered by the Cliff claim, hand trenching, cat trenching, airborne VLF-EM and magnetometer surveying, ground VLF-EM surveying, geochemical soil sampling and diamond drilling have been carried out in the past.

Freedom Resources Ltd. carried out the last significant exploration on the claim area during the 1981 through 1983 period. The airborne VLF-EM survey (1981) indicated two strong conductors, one associated with the Valley Fault, and a second in the area of hand trenching at approximately 9100N+9400E (Cliff and Frank Zones). The airborne magnetometer survey delineated the pyroxenite stock. Follow-up soil sampling and ground VLF-EM surveying were carried out over a small portion of the area. A significant gold geochemical anomaly with coincidental VLF-EM conductors was delineated at approximately 9000N to 9700N, and 9300E to 9800E (Cliff and Frank Zones). No follow-up work was carried out in this area.

Along the Valley Fault (Valley Zone) at approximately 9900N and 10050E, cat trenching and diamond drilling has been carried out. The trenching exposed a north-south striking quartz vein, as well as a section of silicified and carbonatized syenite. This zone is described as being the westward extension of the silicious, pyritic breccia zone on the Sunrise. Table V contains a summary of the drill hole data from the Valley Zone.

D.H. NO.	GRID COORD.	AZMUTH	ANGLE	DEPTH (FEET)
C-1	9936N+10056E	180°	-50°	442
C-2	9875N+10038E	000°	-50°	740
81-1	9805N+10208E	000°	-45°	500
83-1	10132N+10520E	180°	-45°	388
83-2	9892N+10074E	000°	-45°	351
83-3	9922N+10076E	000°	-45°	505
83-4	9996N+10550E	175°	-45°	497

Table V. Drill Hole Data - Valley Zone

During 1961 two diamond drill holes were drilled by Friday Mines Ltd. to test the zone. Drill hole C-1 returned the best intersection, 0.03 oz/ton Au, 0.087 oz/ton Ag, 0.026 % Cu, with a trace of molybdenum from 100.8-115.05 feet. A number of other intersections of "weakly mineralized" syenite were reported, with only trace values in Au and Ag.

Freedom Resources Ltd. drilled five holes along the Valley Fault structure. Drill hole 81-1 was drilled north across the fault and into the syenite. Drill holes 83-2 and 83-3 were drilled in a northerly direction in an attempt to intersect the quartz vein north of the silicified and carbonatized zone. Two other holes, 83-1 and 83-4 were drilled along the structure further east. None of the drill holes encountered economic gold mineralization.

During the period 1986 through 1992 a number of exploration programs were carried out on the property by Goldcliff Resource Corporation. This work included establishing a grid on all or portions of the Cliff, Cliff 2, 3 and 4, Great Eastern and Copper King claims and the Something Good, Silent Friend, Lisey D Fraction and Sunrise Crown Grants. Geological, geochemical and geophysical surveys were then carried out over the grid.

Favourable results were obtained from these surveys. A number of VLF-EM conductors, gold and multi-element soil geochemical anomalies and favourable geological structures were outlined on the property. Several poorly exposed quartz stockwork and breccia zones gave values up to 1850 ppb gold in place, and up to 3400 ppb in float.

Four significant zones have been delineated by the exploration programs including the Frank, Valley, Lee and Cliff (north, central and south) zones (figure 3). Further information on these zones is available in previous reports by Goldcliff Resource Corporation.



## 2.0 EXPLORATION PROCEDURE

The grid co-ordinate system established in 1986 was used to expand the grid onto the Golconda zone (Max 1-4, Dave 1 and 2 claims) acquired during 1991.

### GRID PARAMETERS

- main baseline direction N-S along 10,000E
- survey lines perpendicular to baseline
- survey line separation 100 meters
- survey station spacing 25 meters, slope corrected
- survey total - 10.7 kilometers

### GEOCHEMICAL SURVEY PARAMETERS

- survey total - 40 rock samples
- 40 rock samples analyzed by 31 element ICP and Au
- 10 rock samples also analyzed for Pt and Pd

The rock samples were sent to Min-En Laboratories Ltd., 705 West 15th Street, North Vancouver, B.C. for geochemical analysis. Laboratory techniques for geochemical analysis consists of preparing samples by drying at 95° C and grinding to minus 150 mesh. A 31 element ICP analysis and Au (fire or wet) were then carried out on the samples. Ten samples were also analyzed for Pt and Pd by fire assay.

### GEOPHYSICAL SURVEY PARAMETERS

#### TOTAL FIELD MAGNETIC SURVEY

- survey line separation 100 meters
- survey station spacing 25 meters
- survey totals 10.7 kilometers
- measured total magnetic field in nanoteslas (gammas)
- instrument - Scintrex MP-2 Proton Magnetometer
- instrument accuracy  $\pm$  1 nanotesla

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 were plotted on figure 6.

**VLF-EM SURVEY**

- survey line separation 100 meters
- survey station spacing 25 meters
- survey total 10.0 kilometers
- 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 were plotted on figure 7.

### 3.0 GEOLOGY AND MINERALIZATION

#### 3.1 REGIONAL GEOLOGY

The Cliff Property (Figure 3) is located within the Intermontane Belt of British Columbia. Most of the property is underlain by marine sedimentary and volcanic rocks. An ultramafic to alkalic stock has intruded the eastern margin of the Cliff claim, the southern portion of the Cliff 2 claim, and most of the Great Eastern, Copper King, Max 1 to 4 and Dave 1 and 2 claims.

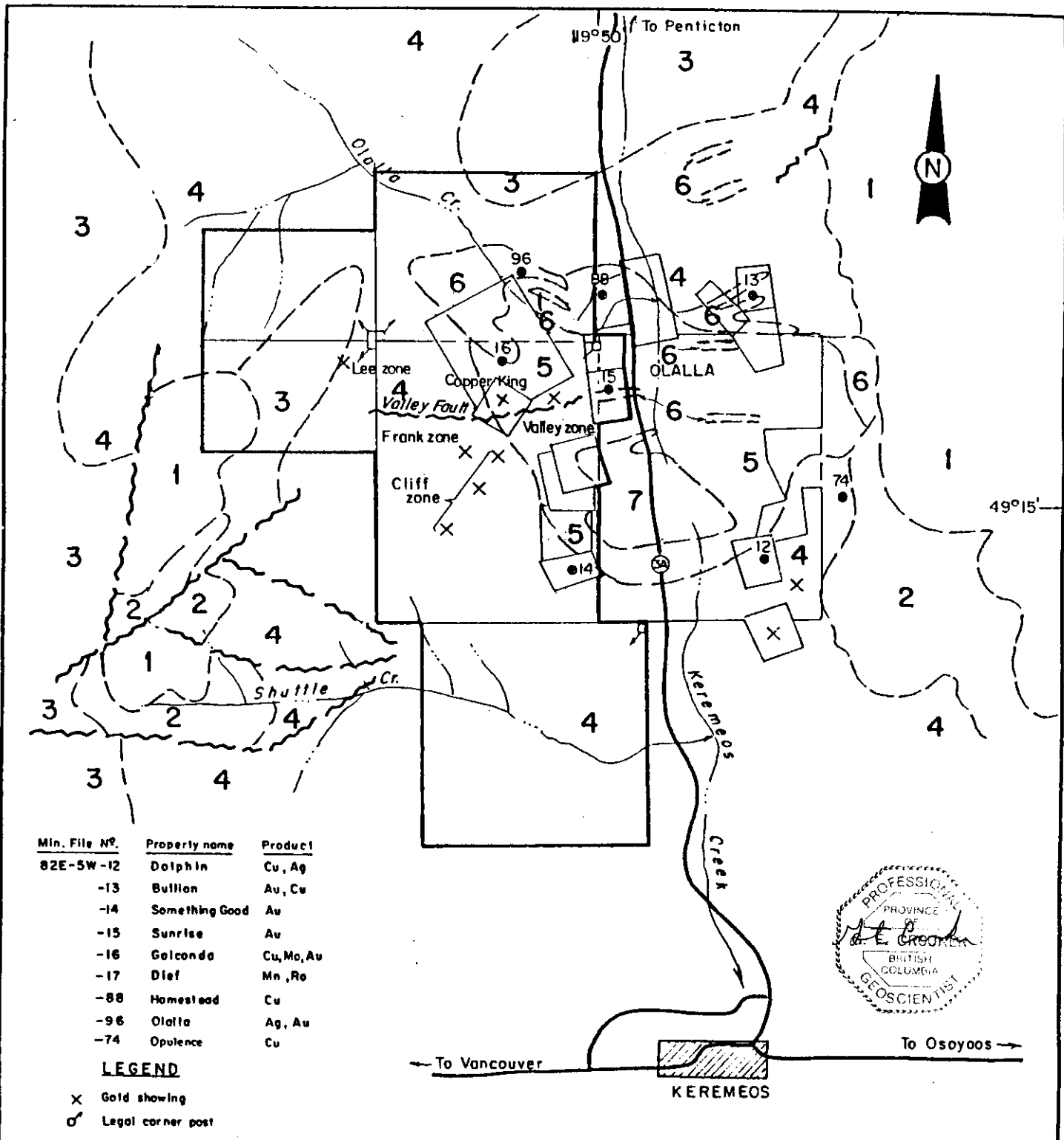
Early work in the area by Bostock and others described the marine sedimentary and volcanic sequence as belonging to the Old Tom, Shoemaker, Bradshaw, and Independence Formations. However as these formations do not form distinct, mappable units, Milford (1984) referred to the sequence as the Apex Mountain Group.

The Apex Mountain Group consists of five major lithofacies: massive and bedded chert, greenstone, chert breccia, argillite and limestone. Together they form a broadly folded, east dipping sequence that has an overall increase in age towards structurally higher rocks in the area. The maximum and minimum ages based on faunal ages in limestones and chert are Early Carboniferous and Middle to Late Triassic respectively.

The depositional environment of the Apex Mountain Group is interpreted to be generally deep, open-ocean basin. Shallow water deposition occurred locally. The group is interpreted to represent at least part of an ancient subduction complex that formed by eastward directed underthrusting and accretion of successively younger slices of oceanic sedimentary and volcanic rocks.

Other assemblages possibly temporally correlative with the Apex Mountain Group include the Kobau, Chapperon, Harper Ranch, and Cache Creek Groups.

The ultramafic to alkalic stock occupies approximately six square miles and is of late Mesozoic age. The stock grades from a peripheral zone of pyroxenite, high in mafics and magnetite, to a magnetite deficient granitic core. Faulting with associated veining, brecciation and mineralization occurred as contemporaneous or post consolidation features.



Min. File No.	Property name	Product
82E-5W-12	Dolphin	Cu, Ag
-13	Bullion	Au, Cu
-14	Something Good	Au
-15	Sunrise	Au
-16	Galconda	Cu, Mo, Au
-17	Dief	Mn, Fe
-88	Homestead	Cu
-96	Olatla	Ag, Au
-74	Opulence	Cu

ROCK	TIME / UNIT	FORMATIONS
VOLCANIC & SEDIMENTARY	TERTIARY	
	1 Basalts	MARRON
	2 Conglomerates, sandstones	KETTLE RIVER
METAMORPHIC	PERMIAN	
	3 Greenstone	OLD TOM
	4 Chert	SHOE MAKER
PLUTONIC	MESOZOIC	OLALLA STOCK
	5 Pyroxenite	
	6 Diorite	
	7 Syenite	

**GOLDCLIFF RESOURCE CORPORATION**

**CLIFF PROJECT**

**PROPERTY GEOLOGY**

N.T.S. 82E-4,5W      OSOYOOS M.D., B.C.

0      1      2      3 KM.

SCALE: 1:50,000	DATE: march 1993
DRAWN BY: G.F.C.	FIGURE NO. 3

### 3.2 CLAIM GEOLOGY

Much of the property has been geologically mapped in previous years. All of the rock units found on the property are described below, with specific references to the units mapped during the 1992-1993 field program.

Most of the property is underlain by marine sedimentary and volcanic rocks of the Apex Mountain Group. Units 1 through 3 are members of this unit.

Unit 1 consists of mainly chert, with minor tuff and quartzite. The chert is predominantly massive, although some sections show distinct bedding. The chert varies in colour from black and green to blue. Bedding appears to be northeasterly with moderate dips to the northwest and small scale folding was noted in a few locations. Near the contact of the Olalla Stock and the Apex Mountain Group, the unit becomes more characteristic of a quartzite rather than a chert. Numerous tiny white quartz veinlets were observed in many locations.

Thin section interpretation of several rocks from this unit indicates a fine quartz matrix with a network of quartz veinlets cutting the fine quartz. There is a suggestion the unit may be a silicified tuff.

Unit 1a usually occurs within unit 1, and consists of poorly sorted, angular to subangular black or blue chert clasts within a microcrystalline matrix. The unit is usually no more than a few tens of meters thick, and occurs within the massive chert unit, often pinching out along strike.

Unit 1b consists of moderate to intense shearing with subrounded chert clasts. The unit often occurs near the emplacement of feldspar porphyry dykes and sills, and may be related to the emplacement of the dykes and sills.

Unit 2 is a greenstone unit which occurs within the chert, possibly due to the local extrusion of lava in shallow water. The rocks are generally greenish, massive and finely crystalline. They are likely of basaltic or andesitic composition.

Thin section interpretation of one rock from this unit indicated it to be of gabbroic composition.

Unit 3 is a finely crystalline, light blue-grey limestone. The unit varies from a few centimeters to perhaps 10 meters in thickness, and occurs rarely on the property.

Units 4 through 8 all appear to be derivatives of the Olalla Stock.

Unit 4 is a fine to medium grained equigranular rock, consisting mainly of dark green augite pyroxene. Generally 5 to 10% magnetite occurs within the pyroxenite.

Unit 5 is a syenite which has two modes of occurrence. Unit 5a is a coarse grained massive syenite, greyish-orange in colour which occurs as narrow "veins" or as small bodies. Orthoclase is the main constituent, with 5% biotite and 2 to 5% magnetite. Unit 5b is a fine grained, light grey to buff to pink syenite occurring within the central portion of the stock. The main constituent is orthoclase, with augite being the main ferromagnesium mineral. The syenite is believed to be of metasomatic origin.

Unit 6 consists of feldspar porphyry dykes and sills. The dykes vary from less than 1 meter, up to 100 meters or more in width at the Lee zone. They are generally fine to medium grained with plagioclase phenocrysts in a plagioclase or K-spar groundmass. Hornblende, epidote and chlorite occur in varying concentrations within the unit. Bulk composition varies from latite to diorite.

Unit 7 is a massive hornblende dyke which occurs in only a few locations on the property.

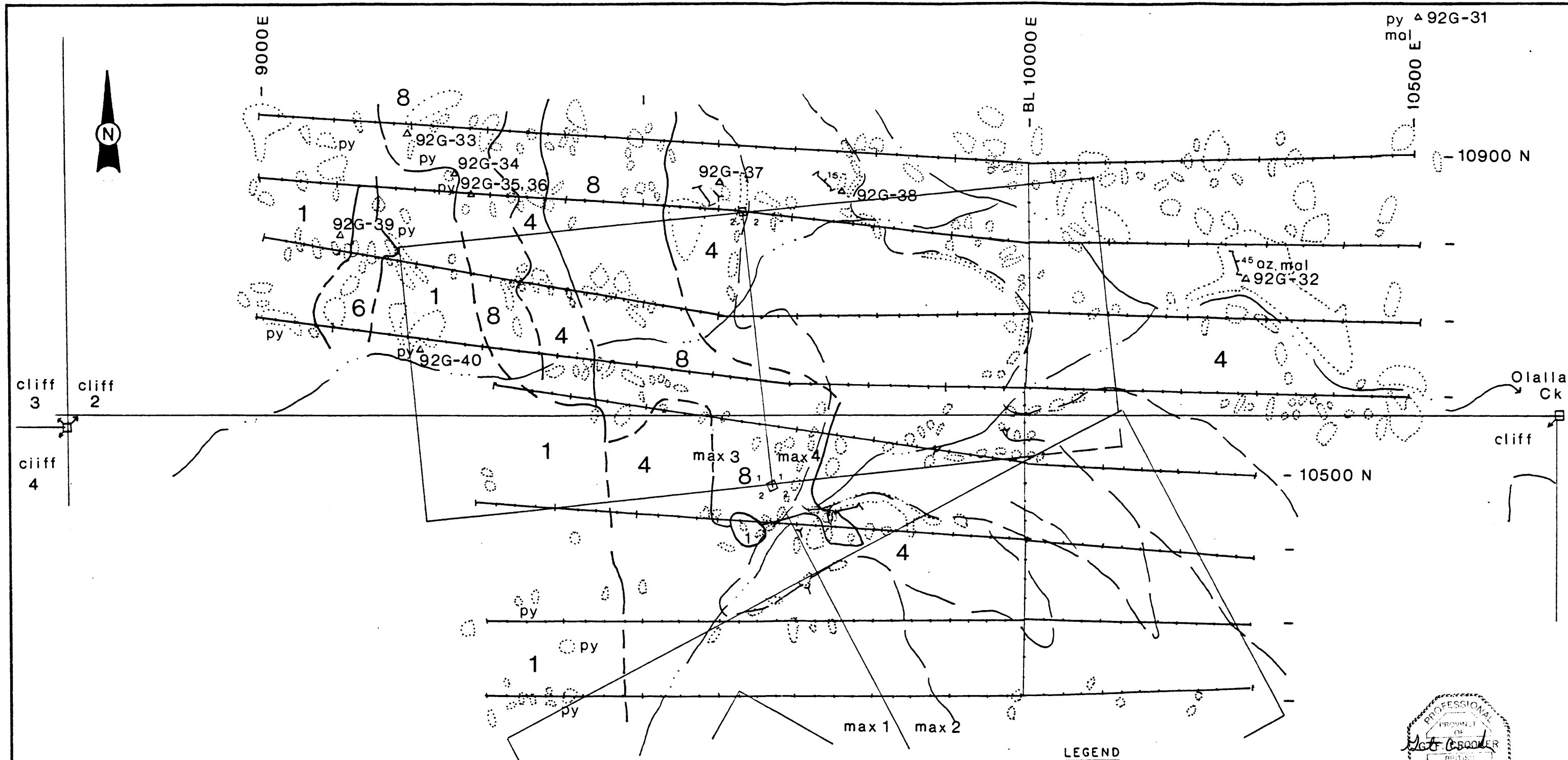
Unit 8 is a dark grey, fine grained monzonite with a colour index of approximately 60%. It contains from 25 to 40% augite which gives the rock its characteristic dark colour. Orthoclase and plagioclase feldspars, with local olivine and hornblende form the remaining major constituents of the rock.

#### Golconda Zone

The extreme western portion of the Golconda grid is underlain by grey, black and green cherts (Unit 1) of the Apex Mountain Group. These sediments have been intruded by pyroxenite (Unit 4), feldspar porphyry dykes and sills (Unit 6) and monzonite (Unit 8) of the Olalla stock.

The pyroxenite occupies all but the western portion of the grid with the monzonite forming a narrow band between the pyroxenite and the sediments. The monzonite is up to 200 meters in width and in the northwest corner is split by a 50 to 100 meter wide band of pyroxenite.

A north trending dyke of feldspar porphyry intrudes the sediments at approximately 9100E on lines 10600N through 10900N. The dyke is up to 75 meters wide and a minimum of 200 meters long.



- 8 Monzonite
- 7 Mafic dyke
- 6 Feldspar porphyry (dykes & sills)
- 5 Syenite; a - coarse grained, b - fine grained
- 4 Pyroxenite
- SHOEMAKER FORMATION (Apex Mountain Group)
- 3 Limestone
- 2 Greenstone (gabbro?)
- 1b Chert breccia - sheared matrix
- 1a " " - chert " "
- 1 Chert, minor tuff, quartzite (silicified tuff)

- TS-1 □ Thin section location
- ~ Fault
- - - Geological boundary - defined, approx., assumed
- 6/30 Bedding - inclined, vertical, horizontal
- 65 Jointing & dip
- 34 Shearing & dip
- 30 qv Quartz vein or veinlet
- cv Calcite " " "
- d Dyke
- Bx Breccia
- C Carbonatite alteration

- Quartz stockwork
- mal Malachite
- az Azurite
- cpy Chalcopyrite
- py Pyrite
- ga Galena
- po Pyrrhotite
- mag Magnetite
- gf Graphite
- lm Limonite
- S Sulphur
- ep Epidote
- H Hornfels alteration

- LEGEND**
- Grid station
  - Property outline
  - Claim post 1 initial post, 2 final post
  - ♁ Legal corner post
  - CREEK OR STREAM
  - ROAD, CAT TRAIL
  - Adit
  - 88-C-1-Δ Rock sample location
  - OUTCROP

GOLDCLIFF RESOURCE CORPORATION

**CLIFF PROJECT**  
**GOLCONDA ZONE**  
**GEOLOGY**

N.T.S. 82E-4,5W OSOYOOS M.D., B.C.

0 100 200 300 METRES

SCALE 1:5000 DATE: MARCH 1993  
 DRAWN BY: G.F.C. FIGURE NO. 5

## Lee Zone

Several grid lines were mapped on the Lee zone. A small body of feldspar porphyry (Unit 6) up to 200 meters wide intrudes the cherts of Unit 1 along baseline 10500E at 8300E. The full extent of the intrusive body has not been determined at this time.

The sediments along the contact with the intrusive show varying amounts of fracturing and pyritization up to several hundred meters from the contact.

### 3.3 MINERALIZATION

Prospecting and rock sampling were carried out on the Lee and Golconda zones as well as the Something Good Crown Grant and Cliff claim.

Seven samples were taken from the Cliff claim. Samples 92C-1, 2 and 3 were taken from a small hand trench at 9285N & 9950E. This trench exposes a 30 to 60 centimeter wide quartz vein striking 201° and dipping 64° west. Up to 10% pyrite occurs within the vein and the wall rock. The sampling gave weakly anomalous gold values of up to 85 ppb and sample 92C-1 gave an anomalous molybdenum value of 4425 ppm.

Samples 92C-4 to 92C-6 were taken in the area of 9050N & 9065E and consist of sugary textured quartzite or possibly vein quartz with rusty fractures, boxworks and traces of malachite. The geochemical results gave one weakly anomalous gold value of 79 ppb and one weakly anomalous copper value of 374 ppm.

A single sample (92C-7) was taken at an old trench located at 9050N & 10150E. Magnetite and malachite occur on fractures within the pyroxenite and an anomalous copper value of 3047 ppm was obtained from the sample.

Three samples were taken from the Something Good breccia zone. Sample 92C-8 was taken across 3 meters of 1 to 20 mm wide quartz and calcite veinlets in a rusty matrix. This sample did not give an anomalous gold value. However, two other samples (92C-9 and 10) of the breccia zone gave anomalous results of 3420 and 1710 ppb gold, 567 and 4188 ppm arsenic, 77 and 672 ppm copper and 176 and 174 ppb platinum respectively. Sample 92C-9 was taken from the silicified breccia zone with crosscutting 1 to 2 mm calcite veinlets and sample 92C-10 was taken from rusty fault gouge. The anomalous platinum values are believed to be the first reported platinum values from the area of the Olalla stock.

Twenty rock samples (92G-11 to 30) were collected from a number of locations on the Lee zone (Figure 4). The material consisted of either fractured and pyritized chert or bleached, fractured,



pyritized and clay altered intrusive (Unit 6). The results were disappointing, although most samples did give weakly anomalous gold values and some samples gave anomalous copper values.

The rusty, fractured and pyritized cherts gave gold values only in the 15 to 30 ppb range. The bleached, fractured, pyritized and clay altered intrusive gave slightly higher gold values. These ranged up to 455 ppb in sample 92G-30.

Ten rock samples (92G-31 to 40) were collected from the Golconda zone (Figure 5). Sample 92G-31 was taken north of the grid at approximately 11070N & 10500E. Rusty, hornfels altered quartzite with pyrite and malachite has been intruded by pyroxenite. This sample gave 165 ppb gold, 12.3 ppm silver and >10000 ppm copper.

One sample (92G-32) was taken from a 2 to 30 cm wide, rusty, oxidized shear zone at 10775N & 10285E. The shear zone occurs within pyroxenite, contains malachite and azurite, strikes northwesterly and dips moderately northeast. The sample returned values of 177 ppb gold, 40.0 ppm silver, >10000 ppm copper and 3448 ppm molybdenum.

A number of narrow, oxidized, rusty, shears of variable orientation occur within pyroxenite at 10810N & 9575E. A short adit has been driven across the zone. A grab sample (92G-37) of the shear material gave 1105 ppm molybdenum and 46 ppb gold.

Another 10 cm wide, rusty, oxidized shear zone occurs within the pyroxenite at 10820N & 9775E. A grab sample (92G-38) of the shear material gave 848 ppm molybdenum and 62 ppb gold.

## 4.0 GEOPHYSICS

### 4.1 MAGNETOMETER SURVEY

A total field magnetic survey was carried out on lines 10200N through 10900N on the Golconda zone (figure 5). The magnetic response was very active with total field magnetic values ranging from 44,651 to 76,796 nT.

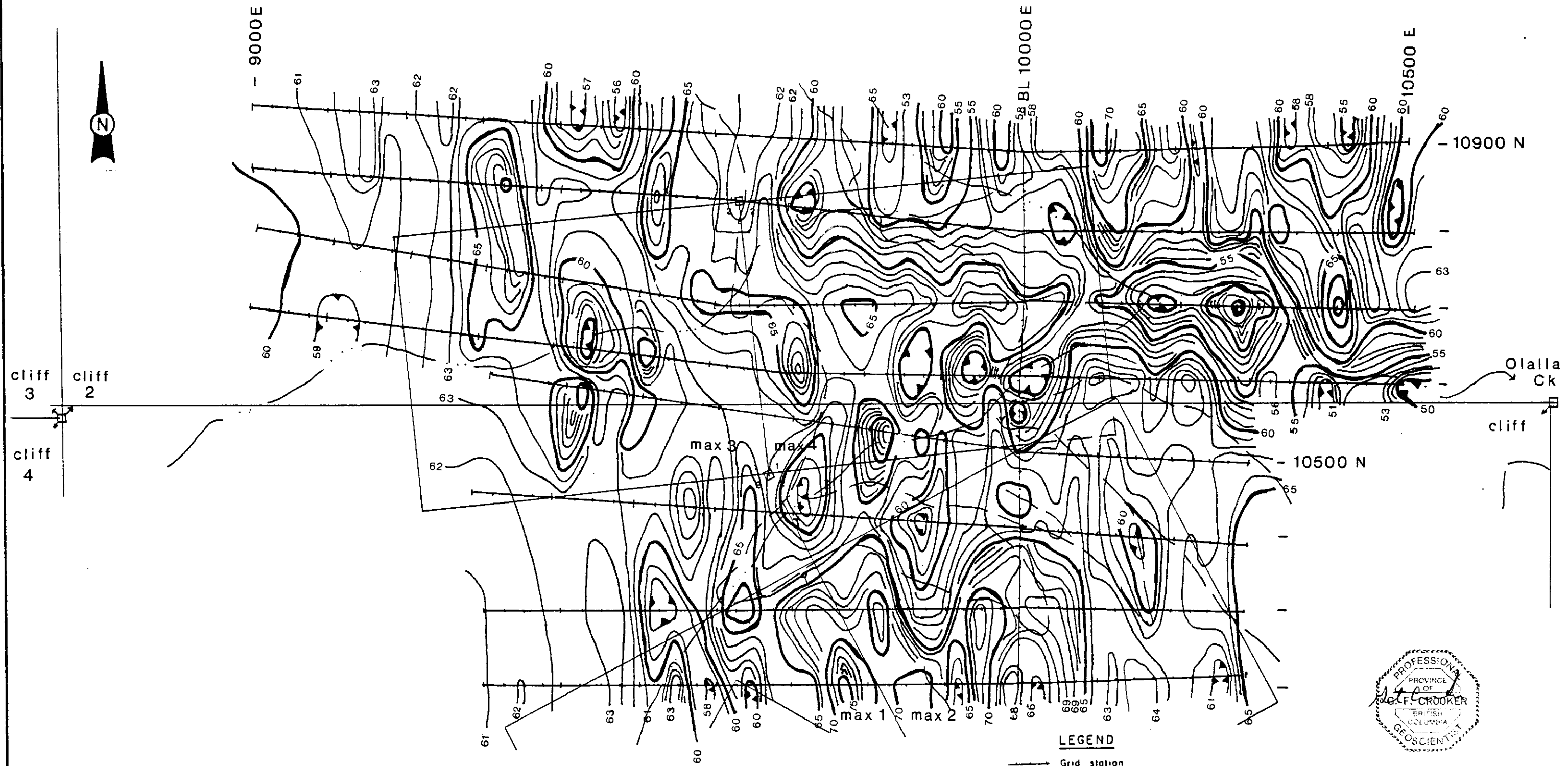
A number of very deep magnetic lows occur along Olalla Creek and to a lesser extent along the two tributaries of Olalla Creek. These magnetic lows probably represent major structural features which the creeks follow.

The magnetic highs all occur within the Olalla stock and are probably caused by large concentrations of magnetite within the pyroxenite and monzonite.

### 4.2 VLF-EM SURVEY

A VLF-EM survey was carried out on lines 10200N to 10900N on the Golconda zone. The VLF-EM profiles were plotted on figure 7, as were the conductors. The VLF-EM data has been influenced to a small degree by topography in the form of a positive bias when the operator faced uphill and a negative bias when the operator faced downhill. The anomalies exhibit short to long wavelengths and in-phase anomaly amplitude ranged from strong through moderate to weak.

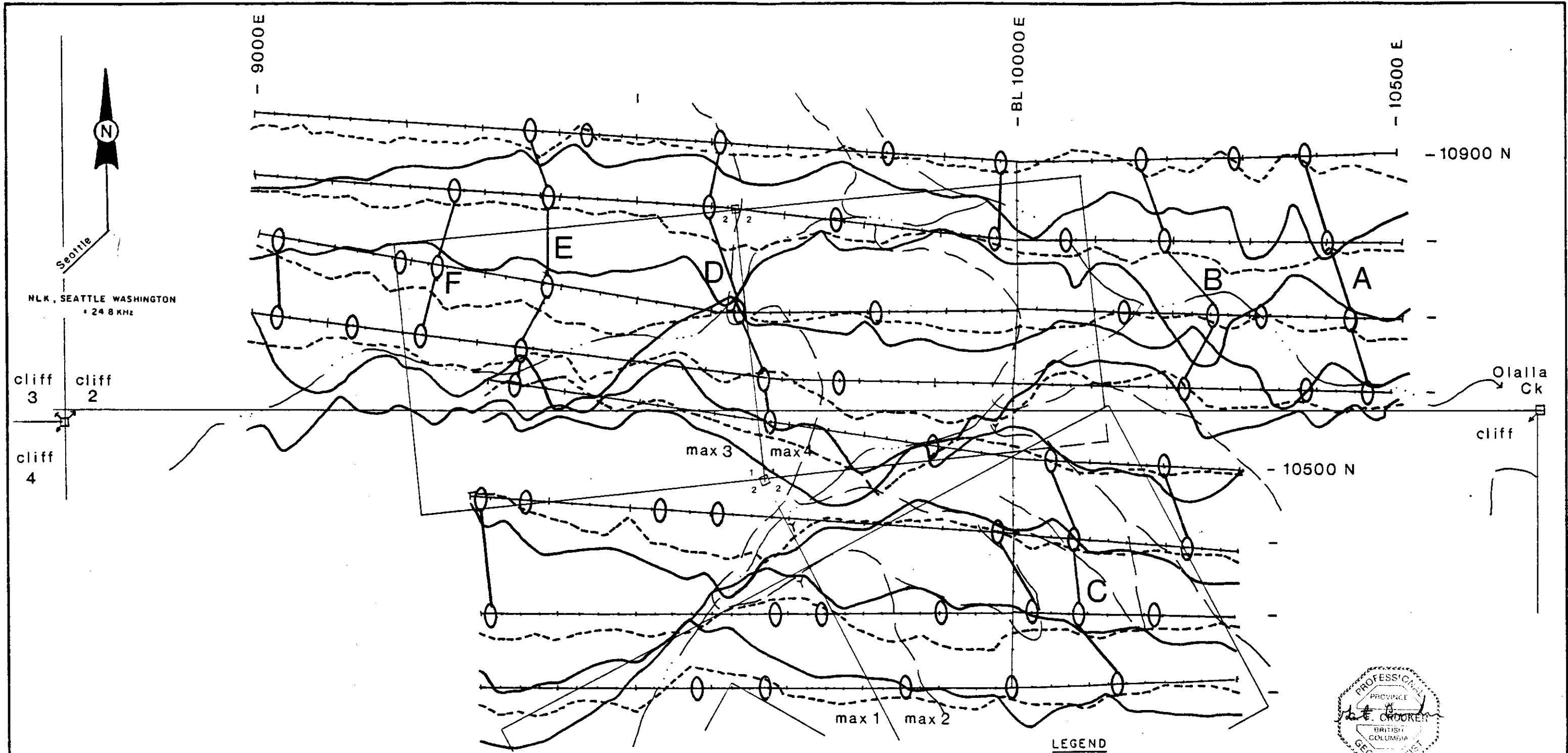
A number of weak to moderate northerly trending conductors were delineated by the survey. The conductor systems have been labelled "A" through "F" on figure 7. At this time, no correlation has been found between any of the conductors and the geological information or the magnetic survey.



**LEGEND**

- Grid station
- Property outline
- Claim post 1 initial post  
2 final post
- Legal corner post
- CREEK OR STREAM
- ROAD, CAT TRAIL
- 1000 nT contour interval
- 5000 nT "
- 75 75000 nT
- MAGNETIC LOW

<b>GOLDCLIFF RESOURCE CORPORATION</b>	
<b>CLIFF PROJECT</b>	
<b>GOLCONDA ZONE</b>	
<b>MAGNETOMETER SURVEY</b>	
N.T.S. 82E-4,5W	OSOYOOS M.D., B.C.
SCALE 1:5000	DATE: MARCH 1993
DRAWN BY: G.F.C.	FIGURE NO. 6



N  
 Seattle  
 NLK, SEATTLE WASHINGTON  
 24.8 KHz

**LEGEND**

- Grid station
- Property outline
- Claim post 1 initial post  
2 final post
- ⊕ Legal corner post
- - - CREEK OR STREAM
- ROAD, CAT TRAIL
- ⊕ ANOMALOUS INFLECTION (IN-PHASE)
- IN-PHASE
- - - QUADRATURE
- VLF-EM CONDUCTOR



GOLDCLIFF RESOURCE CORPORATION

**CLIFF PROJECT**  
**GOLCONDA ZONE**  
**VLF-EM PROFILES**  
**(Seattle)**

N.T.S. 82E-4,5W      OSOYOOS M.D., B.C.

0      100      200      300 METRES

SCALE 1:5000	DATE: MARCH 1993
DRAWN BY: G.F.C.	FIGURE NO. 7

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Prospecting and rock sampling on the Lee zone confirmed a large zone of fractured and pyritized chert and bleached, fractured, clay altered and pyritized intrusive which contain weakly anomalous gold and copper values. The mineralized cherts gave up to 56 ppb gold and 264 ppm copper. The mineralized intrusives gave significantly higher gold and copper values of up to 455 ppb and 678 ppm respectively.

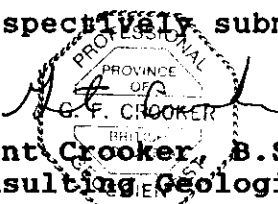
Several narrow shear zones (2 to 30 cm) on the Golconda zone gave up to 177 ppb gold, 40.0 ppm silver, >10000 ppm copper and 3448 ppm molybdenum. The magnetometer survey defined a number of deep magnetic lows along Olalla Creek indicating the creek is following a major structural feature. The VLF-EM survey indicated a number of north trending weak to strong conductors but no causes are apparent for them.

Three rock samples were taken from the Something Good breccia zone. Two of the samples gave anomalous values of 3430 and 1710 ppb gold and 176 and 174 ppb platinum. The platinum values are believed to be the first reported from the area of the Olalla stock.

Recommendations are as follows:

The target areas outlined by this and previous exploration programs should have continued exploration by geochemical sampling, prospecting, trenching and drilling if required. These target areas include the Lee, Cliff, Sunrise, Something Good and Golconda zones.

Respectively submitted,

  
Grant Crooker, B.Sc., P. Geo.,  
Consulting Geologist

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### 7.0 CERTIFICATE OF QUALIFICATIONS

I, Grant F. Crooker, of Upper Bench Road, Keremeos, in the Province of British Columbia, hereby certify as follows:

1. That I graduated from the University of British Columbia in 1972 with a Bachelor of Science Degree in Geology.
2. That I have prospected and actively pursued geology prior to my graduation and have practised my profession since 1972.
3. That I am a member of the Canadian Institute of Mining and Metallurgy.
4. That I am a Fellow of the Geological Association of Canada.
5. That I am a Professional Geoscientist registered with The Association of Professional Engineers and Geoscientists of the Province of British Columbia.
6. That I am the owner of the Cliff, Cliff 1 to 4, Copper King and Great Eastern Claims.
7. That I am the owner of the Sunrise, Something Good, Lisey D Fraction and Silent Friend Fraction Crown Grants.

Dated this 9<sup>th</sup> day of may

, 1993, at Keremeos, in the

Province of British Columbia.



**Grant Crooker, B.Sc., P.Ge.,  
Consulting Geologist**

**Appendix I**

**CERTIFICATES OF ANALYSIS**





**MIN-EN LABORATORIES**  
 (DIVISION OF ASSAYERS CORP.)

**SPECIALISTS IN MINERAL ENVIRONMENTS**  
 CHEMISTS • ASSAYERS • ANALYSTS • GEOCHEMISTS

**VANCOUVER OFFICE:**  
 705 WEST 15TH STREET  
 NORTH VANCOUVER, B.C. CANADA V7M 1T2  
 TELEPHONE (604) 980-5814 OR (604) 988-4524  
 FAX (604) 980-9621

**SMITHERS LAB.:**  
 3176 TATLOW ROAD  
 SMITHERS, B.C. CANADA V0J 2N0  
 TELEPHONE (604) 847-3004  
 FAX (604) 847-3005

**Geochemical Analysis Certificate**

**2V-0919-RG1**

Company: **G.F.C. CONSULTANTS INC.**  
 Project: **GOLDCLIFF**  
 Attn: **GRANT CROOKER**

Date: **OCT-16-92**

Copy 1. G.F.C. CONSULTANTS INC., KEREMEOS, B.C.

*We hereby certify* the following Geochemical Analysis of 10 ROCK samples submitted SEP-01-92 by GRANT CROOKER.

Sample Number	PT-FIRE PPB	PD-FIRE PPB
92C-01	<5	<5
92C-02	<5	<5
92C-03	5	<5
92C-04	<5	<5
92C-05	<5	<5
92C-06	<5	<5
92C-07	<5	<5
92C-08	<5	<5
92C-09	176	<5
92C-10	174	<5

Certified by 

**MIN-EN LABORATORIES**

COMP: G F C CONSULTANTS INC.  
 PROJ: CLIFF  
 ATTN: GRANT CROOKER

**MIN-EN LABS — ICP REPORT**  
 705 WEST 15TH ST., NORTH VANCOUVER, B.C. V7M 1T2  
 (604)980-5814 OR (604)988-4524

FILE NO: 3V-0020-RJ1  
 DATE: 93/01/14  
 \* ROCK \* (ACT:F31)

SAMPLE NUMBER	AG PPM	AL %	AS PPM	B PPM	BA PPM	BE PPM	BI PPM	CA %	CD PPM	CO PPM	CU PPM	FE %	K %	LI PPM	MG %	MN PPM	MO PPM	NA %	NI PPM	P PPM	PB PPM	SB PPM	SR PPM	TH PPM	TI PPM	V PPM	ZN PPM	GA PPM	SN PPM	W PPM	CR PPM	AU-FIRE PPB
92G-11	.1	.23	10	1	233	.2	4	.14	.1	4	107	1.33	.08	2	.21	54	14	.01	5	200	5	1	7	1	515	25.0	6	1	1	7	146	18
92G-12	.3	.32	16	1	286	.2	6	.16	.1	5	85	1.37	.06	2	.29	65	20	.01	5	240	4	2	9	3	654	30.1	9	2	1	7	128	17
92G-13	.5	.17	28	1	2251	.2	10	.04	.1	7	13	4.32	.77	1	.03	22	11	.07	1	840	6	1	43	2	1375	15.9	2	1	1	7	130	122
92G-14	.1	.23	28	1	2196	.5	8	.07	.1	8	24	6.52	.84	1	.10	31	12	.13	1	690	6	2	43	3	1001	60.4	3	3	1	6	112	189
92G-15	.1	.16	25	1	692	.5	5	.04	.1	7	58	4.80	.20	1	.03	32	12	.01	1	470	6	2	3	3	310	54.8	5	3	1	10	204	44
92G-16	1.0	1.80	30	10	480	.3	16	1.82	.1	23	56	4.72	.21	10	1.07	384	3	.10	1	1450	9	5	60	6	2548	155.9	24	7	3	7	67	7
92G-17	.4	.70	24	1	133	.3	8	.60	.1	9	28	2.62	.16	4	.57	166	6	.05	11	460	8	3	30	4	1078	56.5	15	4	2	10	209	15
92G-18	.1	.88	48	2	197	.6	7	.36	.1	17	264	6.20	.27	6	.34	906	12	.02	15	170	13	6	1	5	473	62.3	30	5	1	8	134	29
92G-19	.1	3.71	111	12	2274	2.3	19	1.18	.1	24	208	12.22	1.48	14	.99	2334	4	.08	15	3550	23	13	44	12	2373	228.3	137	13	4	12	121	56
92G-20	1.1	1.75	31	5	423	.3	17	1.78	.1	24	122	4.13	.15	9	1.21	409	2	.18	16	1540	9	4	55	4	2776	106.1	29	8	3	7	77	14
92G-21	.3	.94	48	2	687	.7	6	.21	.1	9	198	2.90	.35	6	.64	150	12	.01	21	550	11	5	5	5	443	71.9	24	5	1	10	188	12
92G-22	.5	.40	66	1	193	.4	5	.06	.1	4	97	1.84	.08	2	.32	81	6	.01	2	110	6	6	2	3	200	14.1	13	4	1	8	183	5
92G-23	1.1	1.85	28	7	1565	.3	16	1.21	.1	13	48	5.02	.20	8	.63	165	2	.13	1	1500	8	5	101	5	2513	151.0	15	6	3	7	50	14
92G-24	.9	1.52	37	4	346	.3	16	1.15	.1	18	132	5.73	.15	8	1.08	365	2	.05	11	1160	12	5	29	6	2505	156.0	24	8	3	9	90	126
92G-25	2.3	.93	41	3	80	.6	13	.44	.1	12	678	10.07	.12	1	.29	146	21	.04	1	140	13	5	1	7	1340	84.4	12	7	2	7	67	41
92G-26	.5	1.16	30	4	147	.4	12	.69	.1	14	44	3.46	.15	11	1.10	410	2	.06	3	1020	16	4	18	5	1610	90.6	32	6	2	6	81	13
92G-27	.5	.60	28	1	473	.3	9	.17	.1	8	56	2.57	.18	6	.67	144	10	.01	15	540	9	3	10	5	943	64.7	16	6	1	11	194	29
92G-28	.5	1.19	29	3	867	.4	11	.58	.1	9	112	3.33	.21	5	.72	181	25	.07	4	860	9	4	47	4	1519	84.7	19	6	2	6	81	22
92G-29	.5	.36	22	1	277	.3	8	.20	.1	6	81	2.22	.16	1	.26	80	11	.03	2	510	2	2	30	3	1001	46.0	9	4	1	9	171	10
92G-30	.8	.88	38	3	400	.5	14	.55	.1	12	255	6.55	.26	4	.63	161	3	.06	1	1240	19	4	87	5	1979	139.8	15	6	3	8	70	455



**Appendix II**

**ROCK SAMPLE DESCRIPTIONS**



ROCK SAMPLE DESCRIPTIONS

Sample No.	Grid Coord.	Type	Description
92C-1	9285N 9950E	grab	-quartz and calcite vein, boxworks, 5-10% py
92C-2	9285N 9950E	0.3 m chip	-trench, hanging wall wallrock, carbonate altered, quartz crystals, 10% py
92C-3	9285N 9950E	0.6 m chip	-trench, footwall quartz vein, carbonate altered, 1-5% py, strike 201° dip 64° W
92C-4	9100N 9900E	grab	-sugary textured quartz vein or quartzite, rusty fractures, fg boxworks, mal stain
92C-5	9000N 9900E	grab	-white-grey quartz vein or quartzite, rusty fractures with manganese stain
92C-6	9065N 9950E	grab	-old trench, white quartz, fractures with py, traces malachite
92C-7	9050N 10150E	grab	-old trench, pyroxenite with malachite and magnetite on 1 mm fractures
92C-8	8525N 10320E	grab	-Something Good breccia zone, 1-20 mm quartz and calcite veinlets, rusty matrix, over 3 m
92C-9	8525N 10350E	grab	-Something Good breccia zone, silicified, cross cutting 1-2 mm calcite veinlets, 1% pyrite, over 0.60 m
92C-10	8525N 10350E	grab	-Something Good breccia zone, very rusty, sheared material within shear, hanging wall of zone
92G-11	10350N 8320E	1.0 m chip	-grey chert, fractured, pyrite disseminated and along fractures, fracturing @ 155° vert, 242° dip 80°N
92G-12	10350N 8320E	1.0 m chip	-translucent chert, pyrite disseminated and along fractures @ 256° vert, 230° dip 80°S, 207° dip 75°E
92G-13	10350N 8310E	0.4 m chip	-clay alt dyke, 5% chert frags, 240° vert fracture -rusty, up to 20% boxworks along fracture
92G-14	10350N 8310E	grab	-50% clay alt dyke, 30% chert, 20% boxworks, orange & yellow iron oxides, contact of dyke & chert
92G-15	10350N 8310E	grab	-highly fractured grey chert, breccia fragments, up to 40% boxworks
92G-16	10550N 8308E	grab	-fg grey intrusive, pyrite occurs along fractures (1%), fracturing, 182° dip 64°W, 202° dip 28°E, 240° dip 68°N

92G-17	10570N 8280E	float	-grey chert, strongly fractured and rusty, boxworks, up to 5% pyrite
92G-18	10670N 8290E	grab	-strongly fractured, rusty chert cut by 037° fault, py, boxworks, highest concentration of pyrite along fault
92G-19	10685N 8315E	grab	-0.5 m fault zone (037°) with strong oxidation, 5% py, rusty fractured chert
92G-20	10100N 8300E	grab	-fg grey intrusive, rusty fractures, 1-3% disseminated pyrite
92G-21	10200N 8250E	grab	-fractured chert with boxworks and pyrite along fractures
92G-22	10275N 8250E	grab	-rusty, fractured pyritized chert, 1-5% pyrite and boxworks along fractures
92G-23	10350N 8310E	grab	-fractured, bleached intrusive, 5% pyrite on fractures (2 cm wide)
92G-24	10400N 8375E	grab	-resample 90G-27, rusty, bleached, fractured intrusive 1-5 mm quartz segregations? near hand trench
92G-25	10550N 8250E	grab	-10 cm wide zone of clay altered, bleached dyke, rusty fractures, yellow iron oxides and boxworks
92G-26	10420N 8195E	grab	-rusty intrusive, rusty fractures with up to 5% pyrite
92G-27	10340N 8310E	grab	-suboutcrop? rusty, fractured chert, up to 1 mm boxworks along fractures, 1-2% pyrite
92G-28	10340N 8310E	float	-intrusive, weak clay alteration & fracturing, boxworks along fractures, 1% disseminated pyrite
92G-29	10340N 8310E	float	-rusty, fractured chert, boxworks along fractures and disseminated
92G-30	10350N 8320E	float	-weakly clay altered, bleached intrusive, minor grey chert, pyrite along fractures and disseminated
92G-31	11070N 10500E	grab	-rusty, hornfels altered quartzite intruded by pyroxenite, pyrite, malachite
92G-32	10775N 10285E	grab	-oxidized shear zone, gouge, malachite, azurite, zone varies from 2-30 cms wide, strike 341° dip 45° NE
92G-33	10900N 9183E	grab	-rusty, bleached sediments, garnets, skarn? in contact with monzonite
92G-34	10830N 9240E	grab	-rusty, hornfels altered chert, 1-2% fg diss pyrite

92G-35	10800N 9275E	grab	-grey, silicified material, brown ankerite? 5-10% pyrite red iron oxides on weathered surfaces
92G-36	10800N 9275E	grab	-grey, silicified material, brown ankerite, up to 5% pyrite,
92G-37	10810N 9575E	grab	-series of narrow shears within pyroxenite, rusty, oxidized gouge,
92G-38	10820N 9775E	grab	-10 cm wide shear zone within pyroxenite, rusty, oxidized shear
92G-39	10700N 9105E	grab	-rusty, weakly fractured chert in contact with dyke, 1% disseminated pyrite
92G-40	10600N 9210E	grab	-rusty, weakly fractured chert, pyrite cubes along fractures, 1-3% pyrite

**Appendix III**

**GEOPHYSICAL EQUIPMENT SPECIFICATIONS**

GEONICS LIMITED  
VLF EM 16

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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° 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

## 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

**Appendix IV**

**VLF-EM AND MAGNETIC DATA**

Grant Crooker Data Listing

Area: Olalla, B.C.

Current File Name: goldclif.xyz

Grid: Cliff

March, 1993

Line & Station + = northing/easting

- = southing/westing

Instrument Type: Scintrex MP-2 and Geonics EM-16

Facing southeasterly using Seattle

Facing southerly using Cutler

DATA TYPES:

#1 Total Field Magnetic Values

#2 VLF-EM In-Phase Values

#3 VLF-EM Quadrature

#4 VLF-EM In-Phase Values

#5 VLF-EM In-Phase Values

DATA DETAILS:

Corrected Total Magnetic Field

Cutler Transmitter

Cutler Transmitter

Seattle Transmitter

Seattle Transmitter

N/S	E/W						
Line #	Station	# 1.	# 2.	# 3.	# 4.	# 5.	# 6.
line 10200							
10200	9300	60921			-28	-9	
10200	9325	61221			-33	-14	
10200	9350	62080			-31	-12	
10200	9375	61733			-29	-14	
10200	9400	62033			-24	-11	
10200	9425	62220			-18	-7	
10200	9450	62418			-10	-7	
10200	9475	63266			-6	-8	
10200	9500	61675			2	-12	
10200	9525	60009			13	-6	
10200	9550	63196			24	3	
10200	9575	58080			36	12	
10200	9600	57883			30	10	
10200	9625	61123			31	8	
10200	9650	59834			23	7	
10200	9675	64144			17	4	
10200	9700	64547			12	-3	
10200	9725	64351			8	-4	
10200	9750	69818			6	-6	
10200	9775	76796			6	-8	
10200	9800	70878			6	-8	
10200	9825	69307			5	-6	
10200	9850	70273			3	-4	
10200	9875	72105			-1	-6	
10200	9900	68531			0	-7	
10200	9925	62315			-4	-10	
10200	9950	71603			-4	-10	
10200	9975	66597			-4	-6	
10200	10000	61834			-15	-5	
10200	10025	65660			-21	-9	
10200	10050	67084			-13	-9	
10200	10075	69938			-12	-10	
10200	10100	63140			-10	-13	
10200	10125	62554			-4	-7	



10200	10150	64314	-13	-5
10200	10175	64373	-14	-4
10200	10200	62986	-16	-1
10200	10225	62213	-16	-1
10200	10250	61378	-18	-1
10200	10275	60053	-17	-3
10200	10300	65454	-18	-6
line 10300				
10300	9300	60887	-28	-10
10300	9325	61375	-42	-13
10300	9350	61407	-40	-13
10300	9375	61971	-36	-10
10300	9400	62377	-36	-13
10300	9425	62894	-30	-10
10300	9450	63599	-26	-8
10300	9475	63143	-24	-8
10300	9500	60754	-25	-10
10300	9525	57704	-20	-12
10300	9550	57369	-12	-11
10300	9575	59758	-3	-10
10300	9600	62598	11	-3
10300	9625	66322	14	3
10300	9650	66827	21	5
10300	9675	64275	24	8
10300	9700	66299	19	8
10300	9725	69009	19	8
10300	9750	68544	10	2
10300	9775	66184	2	-1
10300	9800	68410	5	-9
10300	9825	72156	10	-13
10300	9850	64459	14	-14
10300	9875	60808	13	-11
10300	9900	61451	9	-16
10300	9925	66269	2	-18
10300	9950	72209	5	-18
10300	9975	70785	5	-19
10300	10000	68582	3	11
10300	10025	69729	-1	-9
10300	10050	69909	-3	-9
10300	10075	67225	-4	-8
10300	10100	63964	-10	-11
10300	10125	63827	-10	-12
10300	10150	62786	-5	-8
10300	10175	59922	-7	-5
10300	10200	62681	-13	-6
10300	10225	63148	-14	-6
10300	10250	63465	-13	-5
10300	10275	63915	-13	-2
10300	10300	65582	-16	-4
line 10400				
10400	9300	61491	0	2
10400	9325	61626	-4	2
10400	9350	61936	-11	1
10400	9375	62363	-21	-5

10400	9400	62384	-27	-7
10400	9425	62585	-24	-9
10400	9450	62624	-23	-13
10400	9475	62172	-22	-14
10400	9500	61933	-23	-4
10400	9525	61371	-27	-16
10400	9550	62789	-31	-18
10400	9575	64824	-36	-20
10400	9600	60561	-31	-21
10400	9625	61595	-44	-23
10400	9650	65868	-33	-19
10400	9675	61308	-20	-23
10400	9700	59048	-19	-14
10400	9725	57270	-9	-5
10400	9750	60014	-3	2
10400	9775	63188	-3	0
10400	9800	64413	-4	1
10400	9825	61821	3	0
10400	9850	58418	12	3
10400	9875	56527	15	4
10400	9900	59613	12	6
10400	9925	61055	10	4
10400	9950	62224	10	3
10400	9975	63282	5	-1
10400	10000	63642	1	-1
10400	10025	64098	3	-6
10400	10050	63251	10	-2
10400	10075	64703	4	-3
10400	10100	62561	-8	-7
10400	10125	60232	-3	-6
10400	10150	58938	-3	-6
10400	10175	59818	-6	-3
10400	10200	62303	-8	-4
10400	10225	63104	-11	-3
10400	10250	62658	-18	-3
10400	10275	63586	-17	-2
10400	10300	67297	-17	-5
line 10500				
10500	9300	63536	-21	-7
10500	9325	63767	-15	1
10500	9350	64957	-23	0
10500	9375	64288	-17	5
10500	9400	66378	-13	8
10500	9425	72973	-14	3
10500	9450	61273	-15	-1
10500	9475	63791	-14	-5
10500	9500	58034	-5	0
10500	9525	60001	-1	3
10500	9550	60681	-3	2
10500	9575	61185	-9	-1
10500	9600	61661	-10	-3
10500	9625	62516	-13	-4
10500	9650	62388	-19	-6
10500	9675	62575	-23	-7

10500	9700	62606	-28	-8
10500	9725	63655	-33	-1
10500	9750	60312	-37	-14
10500	9775	61070	-39	-17
10500	9800	67294	-33	-18
10500	9825	74969	-27	-28
10500	9850	63166	-3	-16
10500	9875	66682	-1	-10
10500	9900	59739	-11	-2
10500	9925	62053	2	7
10500	9950	60400	10	8
10500	9975	64092	13	7
10500	10000	60602	18	6
10500	10025	62148	16	4
10500	10050	62598	6	0
10500	10075	63371	-1	-4
10500	10100	62413	-4	-4
10500	10125	60686	-2	-4
10500	10150	62897	-3	-3
10500	10175	62896	-5	-3
10500	10200	61973	-13	-4
10500	10225	61709	-18	-2
10500	10250	62917	-15	-1
10500	10275	63878	-8	-1
10500	10300	63676	-2	-2
line 10600				
10600	9000	59412	-59	-13
10600	9025	59758	-57	-14
10600	9050	60194	-69	-14
10600	9075	60694	-61	-12
10600	9100	59595	-47	-7
10600	9125	59498	-37	-6
10600	9150	60372	-42	-8
10600	9175	60597	-41	-6
10600	9200	61231	-37	-7
10600	9225	61637	-41	-13
10600	9250	62609	-46	-14
10600	9275	63623	-36	-12
10600	9300	66174	-38	-15
10600	9325	64836	-29	-9
10600	9350	64311	-28	-6
10600	9375	64583	-37	-8
10600	9400	65956	-30	-2
10600	9425	57702	-29	-1
10600	9450	52293	-29	-13
10600	9475	57927	-19	-6
10600	9500	59396	-15	-3
10600	9525	60269	-3	2
10600	9550	60688	1	7
10600	9575	61384	5	8
10600	9600	62332	-13	-1
10600	9625	62601	-17	-3
10600	9650	62869	-17	-1
10600	9675	63417	-20	-3

10600	9700	65378	-26	-5
10600	9725	69046	-22	-4
10600	9750	63072	-24	-6
10600	9775	63507	-35	-14
10600	9800	63998	-47	-19
10600	9825	63056	-43	-15
10600	9850	61423	-38	-16
10600	9875	56966	-33	-16
10600	9900	60398	-30	-18
10600	9925	55001	-29	-20
10600	9950	51882	-17	-16
10600	9975	59098	-20	-22
10600	10000	54254	-6	-14
10600	10025	51790	-1	-4
10600	10050	56275	13	6
10600	10075	61190	11	8
10600	10100	64309	14	3
10600	10125	63289	13	2
10600	10150	63522	13	3
10600	10175	60371	12	6
10600	10200	63807	6	9
10600	10225	64096	-10	1
10600	10250	62615	-26	-8
10600	10275	55255	-22	-10
10600	10300	53492	-20	-9
10600	10325	56190	-19	-9
10600	10350	55022	-12	-7
10600	10375	54170	-10	-6
10600	10400	50188	-18	-8
10600	10425	54667	-13	-12
10600	10450	53371	-6	-8
10600	10475	53874	-14	-8
10600	10500	49965	-4	-6
line 10700				
10700	9000	59239	-42	-5
10700	9025	59703	-64	-8
10700	9050	59974	-72	-11
10700	9075	60515	-76	-14
10700	9100	60688	-75	-15
10700	9125	61022	-62	-11
10700	9150	60585	-54	-9
10700	9175	60721	-50	-17
10700	9200	61236	-54	-13
10700	9225	61935	-52	-11
10700	9250	62982	-61	-20
10700	9275	64698	-65	-17
10700	9300	65437	-56	-16
10700	9325	66813	-48	-12
10700	9350	69006	-36	-9
10700	9375	63935	-42	-12
10700	9400	59554	-63	-17
10700	9425	59597	-55	-16
10700	9450	59864	-53	-18
10700	9475	60861	-46	-19

10700	9500	61408			-31	-16
10700	9525	62784			-19	-10
10700	9550	63738			-9	-8
10700	9575	65440			-4	-4
10700	9600	65579			3	-7
10700	9625	65217			8	4
10700	9650	65807			-4	-2
10700	9675	65519			-5	-4
10700	9700	65246			-7	-4
10700	9725	63981			-8	-2
10700	9750	64426			-10	-1
10700	9775	65147			-11	1
10700	9800	65278			-5	-2
10700	9825	64912			-17	-4
10700	9850	64538			-16	-4
10700	9875	63209			-14	-5
10700	9900	61261			-17	-8
10700	9925	63530			-20	-9
10700	9950	63262			-20	-9
10700	9975	63477			-19	-10
10700	10000	61728			-16	-9
10700	10025	60227			-12	-10
10700	10050	61756			-5	-9
10700	10075	58219			-6	-8
10700	10100	54137			-6	-6
10700	10125	54654			-9	0
10700	10150	52452			-16	0
10700	10175	49551			-18	-2
10700	10200	50859			-14	-1
10700	10225	51617			-5	2
10700	10250	48460			-17	-3
10700	10275	44651			-24	-6
10700	10300	48267			-26	-2
10700	10325	52160			-48	1
10700	10350	58006			-47	-4
10700	10375	63235			-35	-7
10700	10400	76277			-22	-5
10700	10425	60187			-26	-3
10700	10450	63786			-35	-10
10700	10475	61769			-34	-9
10700	10500	63010			-30	-9
line 10800						
10800	9000	60070	-23	-9	-42	-6
10800	9025	60248	-22	-9	-40	-6
10800	9050	60466	-21	-6	-36	-7
10800	9075	60953	-19	-4	-38	-7
10800	9100	61119	-16	-2	-35	-7
10800	9125	62133	-15	0	-34	-7
10800	9150	63455	-16	-3	-35	-11
10800	9175	59999	-10	-1	-29	-11
10800	9200	61231	-9	0	-30	-9
10800	9225	61604	-8	3	-28	-5
10800	9250	62471	-14	1	-32	-7
10800	9275	64174	-21	-2	-39	-7

10800	9300	67470	-23	-2	-41	-5
10800	9325	70099	-19	-1	-38	-4
10800	9350	65706	-16	1	-32	-5
10800	9375	61656	-17	0	-33	-6
10800	9400	62481	-19	0	-39	-5
10800	9425	62511	-20	1	-40	-5
10800	9450	61834	-19	-1	-40	-7
10800	9475	62101	-19	-2	-36	-5
10800	9500	62791	-19	-1	-35	-6
10800	9525	69037	-23	-2	-34	-6
10800	9550	63819	-22	-7	-29	-14
10800	9575	64654	-17	-6	-26	-14
10800	9600	64701	-19	-9	-39	-16
10800	9625	61453	-27	-4	-54	-21
10800	9650	60736	-14	-9	-37	-18
10800	9675	64531	-6	-10	-25	-20
10800	9700	58813	-9	-8	-22	-13
10800	9725	54859	-3	-4	-14	-11
10800	9750	57054			-6	-6
10800	9775	57482			-14	-8
10800	9800	55999			-12	-9
10800	9825	53751			-12	-8
10800	9850	54513			-8	-4
10800	9875	54699			-4	-3
10800	9900	54072			1	1
10800	9925	55608			0	0
10800	9950	55406			-2	-1
10800	9975	56280			-10	-3
10800	10000	56992			-13	-7
10800	10025	56936			-12	-8
10800	10050	53434			-11	-8
10800	10075	56146			-25	-8
10800	10100	60563			-12	-4
10800	10125	65805			-11	-7
10800	10150	59368			-19	-11
10800	10175	59471			-34	-6
10800	10200	59718			-50	-6
10800	10225	58227			-64	-6
10800	10250	62202			-65	-8
10800	10275	62996			-41	-16
10800	10300	59003			-34	-14
10800	10325	67876			-28	-14
10800	10350	63912			-17	-12
10800	10375	63868			-19	-10
10800	10400	60410			-25	-2
10800	10425	63817			-34	-5
10800	10450	62550			-35	-3
10800	10475	58562			-40	-3
10800	10500	61815			-35	-3
line 10900						
10900	9000	60394	-18	-3	-38	-6
10900	9025	60613	-17	-1	-37	-5
10900	9050	60887	-13	2	-35	-6
10900	9075	61284	-13	1	-35	-8

10900	9100	61870	-7	2	-30	-6
10900	9125	62345	-7	1	-30	-8
10900	9150	63621	-5	2	-30	-9
10900	9175	61600	-6	2	-26	-11
10900	9200	61287	-2	4	-21	-7
10900	9225	62489	-2	2	-21	-8
10900	9250	61133	-3	2	-20	-8
10900	9275	63567	-1	2	-21	-8
10900	9300	63879	0	2	-17	-4
10900	9325	63755	1	6	-14	-4
10900	9350	63960	10	1	-9	-7
10900	9375	60850	3	-2	-17	-15
10900	9400	57857	7	4	-11	-6
10900	9425	56247	8	14	-5	4
10900	9450	58150	-3	12	-15	1
10900	9475	55006	-5	10	-15	-1
10900	9500	60641	-1	9	-12	-2
10900	9525	63348	1	8	-10	-1
10900	9550	65668	4	6	-7	-2
10900	9575	63080	4	4	-6	-3
10900	9600	62489	3	2	-8	-4
10900	9625	62428	-8	3	-17	-5
10900	9650	61684	-9	2	-20	-4
10900	9675	61106	-10	3	-21	-4
10900	9700	62878	-10	8	-18	-4
10900	9725	60548	-8	5	-13	-4
10900	9750	57131			-8	0
10900	9775	55623			-5	2
10900	9800	55060			-11	-2
10900	9825	52721			-15	-2
10900	9850	54791			-18	-1
10900	9875	58887			-18	-1
10900	9900	60014			-21	-4
10900	9925	52681			-19	-3
10900	9950	57703			-20	-4
10900	9975	61241			-27	-4
10900	10000	57674			-37	-4
10900	10025	59896			-40	-2
10900	10050	59310			-30	2
10900	10075	59807			-27	-6
10900	10100	71672			-20	5
10900	10125	67531			-16	3
10900	10150	67930			-20	-2
10900	10175	62538			-29	-9
10900	10200	64401			-26	-3
10900	10225	57389			-29	-6
10900	10250	63305			-26	-2
10900	10275	63753			-25	6
10900	10300	63282			-52	-8
10900	10325	62592			-51	-12
10900	10350	57044			-25	0
10900	10375	58069			-34	0
10900	10400	56923			-54	-9
10900	10425	54894			-46	-5

10900	10450	58469					
						-43	-5
10900	10475	62546				-39	-8
10900	10500	59159				-32	-12

E/W	N/S						
Line #	Station	# 1.	# 2.	# 3.	# 4.	# 5.	# 6.

line 10000

10000	10200	61834					
10000	10225	65285					
10000	10250	66434					
10000	10275	69057					
10000	10300	68552					
10000	10325	68372					
10000	10350	69221					
10000	10375	68317					
10000	10400	63642					
10000	10425	67657					
10000	10450	67092					
10000	10475	63413					
10000	10500	60602					
10000	10525	58921					
10000	10550	51842					
10000	10575	56782					
10000	10600	54254					
10000	10625	59554					
10000	10650	62875					
10000	10675	60772					
10000	10700	61728					
10000	10725	57606					
10000	10750	58197					
10000	10775	57578					
10000	10800	56992					
10000	10825	55080					
10000	10850	57258					
10000	10875	58353					
10000	10900	57674					



**Appendix V**

**COST STATEMENT**

## COST STATEMENT

### SALARIES

- Grant Crooker, Geologist, Geologist  
Aug 23, Oct 6, 7, 19, 21, 27, 1992,  
March 10, 13, 18, 22, 23, 25, 30,  
April 2, 5-7, 9, 12, 15, 16, 25, 30,  
May 7, 1993  
24 days @ \$ 400.00/day \$ 9,600.00

### MEALS AND ACCOMODATION

- Grant Crooker - 20 days @ \$ 60.00/day 1,200.00

### TRANSPORTATION

- Vehicle Rental (Ford 3/4 ton 4x4)  
Aug 23, Oct 6, 7, 19, 21, 27, 1992,  
March 10, 13, 18, 22, 25, 30, April  
2, 5-7, 9, 12, 15, 16, 1993  
20 days @ \$ 60.00/day 1,200.00
- Gasoline 175.30

### EQUIPMENT RENTAL

- Magnetometer - Scintrex MP-2  
March 22, April 9, 12, 1993  
3 days @ \$ 25.00/day 75.00
- VLF-EM - Geonics EM-16  
March 10, April 5-7, 9, 1993  
5 days @ \$ 25.00/day 125.00

### FREIGHT

44.63

### SUPPLIES

- Hipchain thread, flagging, geochem bags, etc. 94.01

### GEOCHEMICAL ANALYSIS

- 10 rocks, 31 element ICP, Au fire assay,  
Pt, Pd @ \$ 16.43/sample 164.24
- 20 rocks, 31 element ICP, Au fire assay  
@ \$ 20.60/sample 411.95
- 10 rocks, 31 element ICP, Au wet  
@ \$ 16.33/sample 163.24

DRAUGHTING

600.00

PREPARATION OF REPORT

- Secretarial, reproduction, telephone,  
office overhead etc.

600.00

**Total**

**\$ 14,453.37**

-8200E

-8400E

-8600E

-8800E

— 11,500N

— 11,000N

— 10,500N

— 10,000N

— 9700N

GEOLOGICAL BRANCH ASSESSMENT REPORT

22,882

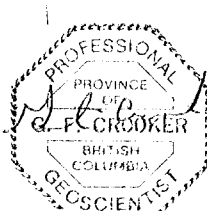
- 8 Manzanite
- 7 Mafic dyke
- 6 Feldspar porphyry (dykes & sills)
- 5 Syenite: a - coarse grained, b - fine grained
- 4 Pyroxenite
- SHOEMAKER FORMATION (Apex Mountain Group)
  - 3 Limestone
  - 2 Greenstone (gabbro?)
  - 1b Chert breccia - sheared matrix
  - 1a - - - chert
  - 1 Chert, minor tuff, quartzite (siltified tuff)

LEGEND

- I.D. post
- ◻ Legal corner post
- Pre 1990 grid
- 1990 grid
- CREEK OR STREAM
- py Pyrite
- lm Limonite
- 90G-20 Rock sample location & N<sup>o</sup>.
- I VLF-EM Conductor
- As anomalous > 20 ppb
- Cu - - - > 100 ppm

- TS-1 O Thin section location
- Fault
- Geological boundary - defined, approx. assumed
- Bedding - inclined, vertical, horizontal
- Jointing & dip
- Shearing & dip
- Quartz vein or veinlet
- Calcite - - -
- Dyke
- Bx Breccia
- C Carbonatite alteration
- OUTCROP
- Rusty Fracturing

- Quartz stockwork
- ma Malachite
- az Azurite
- cpy Chalcopyrite
- py Pyrite
- ga Galena
- pa Pyrrhotite
- maq Magnetite
- gf Graphite
- lm Limonite
- S Sulphur
- sp Epidote
- H Hornfels alteration



**GOLDCLIFF RESOURCE CORPORATION**

**CLIFF PROJECT LEE ZONE COMPILATION**

N.T.S. 82E 4,5W OSOYDOS M.D., B.C.

0 50 100 200 Metres

SCALE 1:2500 DATE: JAN 1993

DRAWN BY: S.F.C. FIGURE NO.: 4