

GEOPHYSICAL -- GEOLOGICAL

REPORT ON

CLAIM GROUP --

VICTORIA, COPPER CANYON, KLONDYKE

CLAIM RECORD NUMBERS --

21G, (18240), 22G, (18241), 68G (18243)

LOCATION --

ABOUT 20 MILES BY ROAD N.W. OF THE CITY OF DUNCAN,  
B.C., ON THE CHEMAINUS RIVER ROAD, APPROXIMATELY  
8 MILES WEST OF HIGHWAY NO. 1, AND APPROXIMATELY  
AT LATITUDE  $48^{\circ} - 52'$  N., LONGITUDE  $123^{\circ} - 48'$  W.,  
VICTORIA MINING DISTRICT, B.C.

AUTHOR --

A.B.L. WHITTLES, PH.D.

HOLDER OF CLAIMS --

F. C. LORING

FIELD WORK DONE JUNE, 1978.

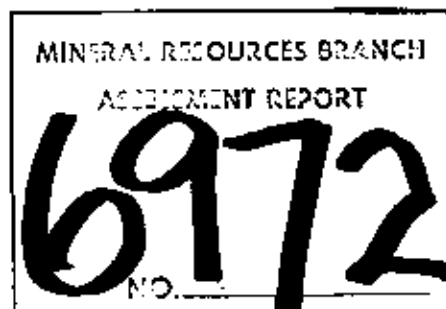


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ASSESSMENT REPORT SUMMARY

UP UNTIL THE PRESENT REPORT, ALL OF THE WORK DONE ON THIS CLAIM GROUP WAS TO THE WEST OF THE CHEMAINUS RIVER, AND MOSTLY FROM THE CENTER LINE OF CLAIM 22G SOUTH (DR. WHITTLES AND F.C. LORING, 1971; DR. WHITTLES, 1973). THIS PRESENT REPORT REPRESENTS A PRELIMINARY RECONNAISSANCE VLF-EM SURVEY OF THE VICTORIA CLAIM, AND A FAIRLY CLOSE EXAMINATION OF GEOLOGY ON THE WEST SIDE OF THE CHEMAINUS RIVER.

BECAUSE OF THE PRELIMINARY NATURE OF THE SURVEYS, RANDOM LINES WERE USED EXCLUSIVELY ALONG AREAS OF EASY ACCESS. THIS HAS ALLOWED THE MAIN FEATURES OF THE CLAIM TO BE ESTABLISHED, ESPECIALLY PROBABLE TRENDS OF MINERALIZATION AND THE LOCATION OF EARLIER TEST PITS AND ADITS. ALSO, UPON DRAFTING UP THESE LINES, THE LOCATIONS OF THE CLAIM BOUNDRIES COULD BE ESTABLISHED WITH RESPECT TO THE RANDOM LINE STATIONS. THIS WAS TO ALLOW FUTURE SURVEY LINES TO BE SELECTED WITH MORE ACCURACY, PARTICULARLY IF LINE RL78B, WHICH LIES NEAR THE SOUTH BOUNDRY, OF THE VICTORIA CLAIM, WERE USED.

THE RANDOM LINES ALSO PROVIDED FOUR NORTH-SOUTH PROFILES WHICH CROSSED THE TREND OF MINERALIZATION, AND ONE OF THESE LINES (ALONG THE RIVERS EDGE) PROVIDED A GEOLOGICAL PROFILE THAT SHOULD PROVE VERY USEFUL IN INTERPRETING THE VLF-EM RESULTS OBSERVED IN THE DRIFT COVERED AREAS.

IN GENERAL, THE RESULTS, WHILE VERY PRELIMINARY, SUGGEST AT LEAST FIVE MAIN MINERALIZED ZONES EXIST ON THE BELT OR TREND OF MINERALIZATION REPORTED TO COME DOWN THE MOUNTAINSIDE FROM THE WELL KNOWN MINERALIZATION ON MT. SICKER. TWO OF THESE SEEM NEAR THE SOUTHERN EDGE OF THE TREND, AND THREE ARE LOCATED CLOSER TO THE NORTHERN EDGE.

PAGE TWO

THE TWO SOUTHERN ZONES AND THE MOST SOUTHERLY OF THE NORTHERN MINERALIZED ZONES APPEAR TO HAVE BEEN INTERSECTED BY THE PRESENT SURVEY. THE RESULTS SUGGEST THAT FUTURE WORK SHOULD BE CONCENTRATED ON THE NORTHERN HALF OF CLAIMS 21G AND 22G.

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1. PROPERTY DESCRIPTION, LOCATION  
AND ACCESS.

THE PROPERTY LOCATION IS SHOWN IN FIGURES 1 AND 2, NEAR THE TOWN OF CHEMAINUS, ON VANCOUVER ISLAND, B.C., CANADA. IT IS REACHED BY USE OF THE MACMILLAN-BLOEDEL LOGGING ROAD STARTING AT THE ISLAND HIGHWAY JUST NORTH OF THE CHEMAINUS CUTOFF. SOME 8 MILES ALONG THE LOGGING ROAD A SMALL SIDE ROAD CUTS OFF TO THE EAST AND ENTERS CLAIM 22G. THIS CLAIM ACCESS ROAD PROCEEDS RIGHT DOWN TO THE CHEMAINUS RIVER, AS SHOWN IN FIGURE 2. SEVERAL OLD LOGGING ROADS CUT THROUGH THE PROPERTY AS DOES THE CHEMAINUS RIVER AND SEVERAL SMALL STREAMS. THE PROPERTY IS FAIRLY FLAT TO THE WEST, BUT STEEP NEAR THE RIVER AND TO THE EAST. THERE ARE THE REMAINS OF SEVERAL OLD BUILDINGS AND MACHINERY IN THE AREA.

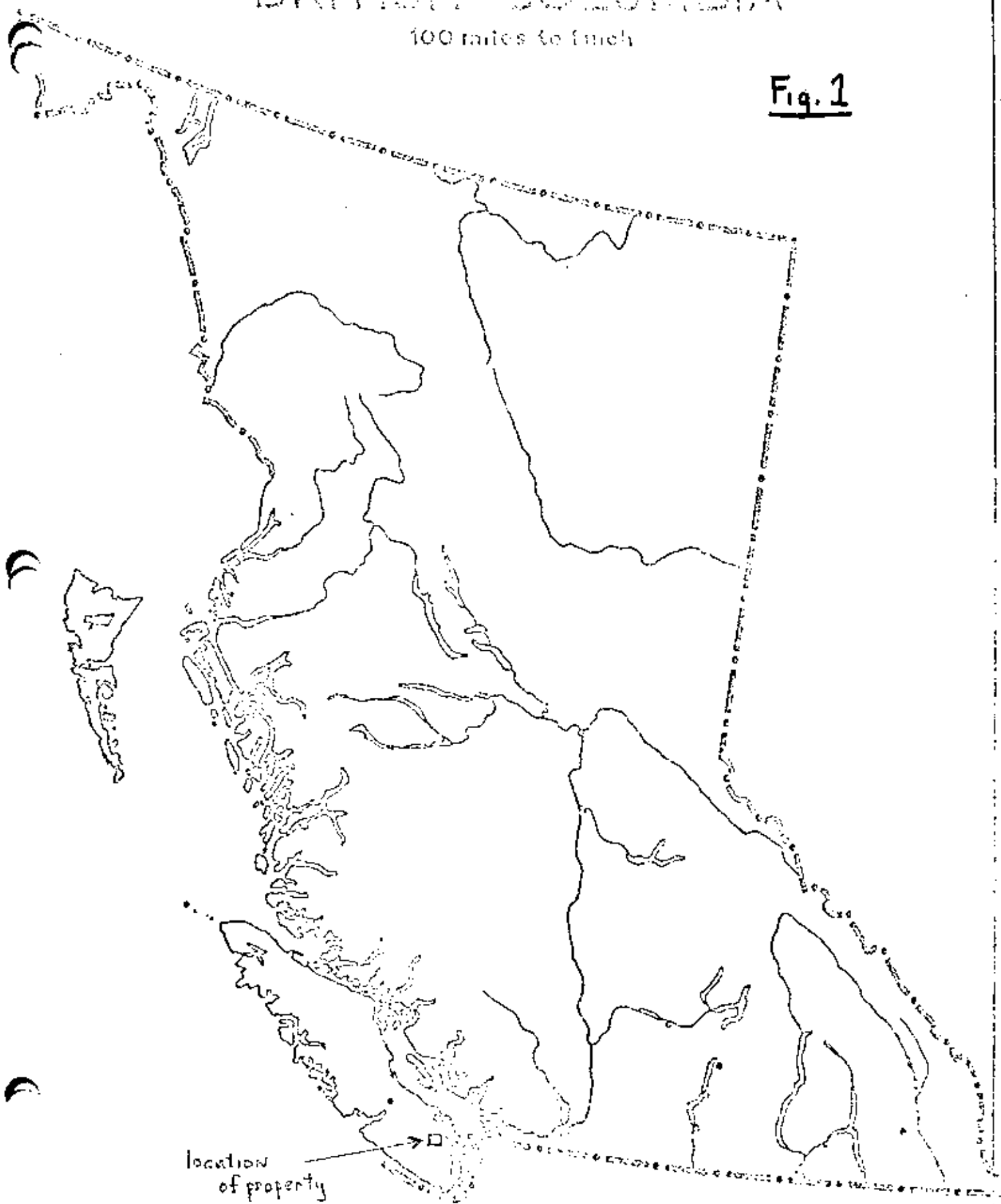
MOST OF THE AREA IS COVERED WITH OVERBURDEN, AND SMALL AND LARGE TREES WITH HEAVY UNDERGROWTH.

THE GEOLOGICAL FEATURES WILL BE DESCRIBED IN SECTIONS 4 AND 5. THE OBSERVABLE STRUCTURE-AT THE CHEMAINUS RIVER'S EDGE-SHOWED A NUMBER OF SCHISTIC FORMATIONS, WITH MINERALIZATION, STRIKING SOUTH 80<sup>0</sup> WEST AND DIPPING ABOUT 70<sup>0</sup> TO THE SOUTH. MINERALIZATION APPEARS TO BE MOSTLY PYRITE WITH SOME CHALCOPYRITE.

# BRITISH COLUMBIA

100 miles to inch

Fig. 1



location  
of property

Figure 2.  
DETAILED LOCATION MAP





2. OWNERSHIP

THE CLAIMS DISCUSSED IN THIS REPORT ARE OWNED BY MR. F. C. LORING, P.ENG. OF QUALICUM, B.C.

THESE CLAIMS ARE:

<u>NAME</u>	<u>RECORD NUMBER</u>
VICTORIA	21G (18240)
COPPER CANION	22G (18241)
KLONDYKE	68G (18243)

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3. HISTORY

THE FIRST RECORDED MINING INTEREST IN THE MOUNT SICKER AREA OCCURRED IN THE YEAR 1897, FOLLOWING A FOREST FIRE WHICH EXPOSED GOSSANS ON WHAT WOULD LATER BECOME THE LENORA AND TYEE SOUTH ORE BODIES OF MOUNT SICKER MINES.

THE COPPER CANION CLAIM AREA FIRST APPEARS IN THE MINISTER OF MINES ANNUAL REPORT FOR THE YEAR 1898, WHICH REPORTED ON THE COPPER CANION CLAIM AS FOLLOWS:

"ON THIS CLAIM A TUNNEL HAS BEEN RUN 100 FEET ALONGSIDE A QUARTZ REEF HIGHLY MINERALIZED WITH COPPER PYRITES. THE WIDTH OF THE REEF IS 18 INCHES."

THE CLAIM AREA AGAIN APPEARS IN THE 1903 REPORT, WHICH MENTIONS MINERALIZED LENSES OCCURRING ON THE VICTORIA AND COPPER CANION CLAIMS, AND STATES THAT THEY ARE SMALLER SIZE THAN PREVIOUSLY NOTED, WITH THE LARGEST SHOWING A WIDTH OF ONLY 6 OR 7 FEET, AND THE MINERALIZATION CONSISTING OF QUARTZ, WITH IRON SULPHIDES, OR PYRRHOTITE, WITH A SMALLER QUANTITY OF CHALCOPYRITE. THEY ALSO STATE THAT THE BARITES FOUND ON THE UPPER PART OF THE HILL, I.E. THE MOUNT SICKER OREBODIES, ARE LACKING. THE REPORT OF 1903 ALSO STATES THAT THESE CLAIMS ARE LOCATED ALONG THE STRIKE OF, AND ON THE SAME BAND OF SCHISTS AS OCCURRING ON THE TYEE AND LENORA PROPERTIES, AND THAT THIS BAND CAN BE TRACED FROM THESE PROPERTIES THROUGH THE VICTORIA AND COPPER CANION CLAIMS.

ON THE VICTORIA CLAIM, THERE WAS REPORTED TWO TEST PITS, AND A TUNNEL 150 FEET IN LENGTH, DRIVEN BELOW THE PITS. TWO SHORT CROSS-CUTS FROM THIS TUNNEL SHOWED A MINERALIZED ZONE IN THE SCHIST TO THE NORTH, AND DIORITE TO THE SOUTH. ON THE STEEP BANK OF THE RIVER, OUTCROPS OF FAIRLY SOLID IRON SULPHIDES WERE REPORTED, AND WERE TESTED BY TUNNELS A FEW FEET LONG, SHOWING A SMALL AMOUNT OF COPPER, AND LOW GOLD VALUES.

IN ADDITION, IN THE 1903 REPORT, WORK IS REPORTED ON THE WEST BANK OF THE RIVER, ON THE COPPER CANYON CLAIM. HERE, A TUNNEL WAS DRIVEN TO THE WEST FOLLOWING THE STRIKE OF THE SCHISTS FOR 310 FEET. A QUARTZ VEIN VARYING IN WIDTH FROM 1 TO 18 INCHES CAN BE TRACED IN THE ROOF OF THIS TUNNEL FOR 135 FEET FROM THE MOUTH, AT WHICH POINT IT STOPS. FROM THIS TUNNEL 5 CROSS-CUTS WERE DRIVEN, IN NORTH AND SOUTH DIRECTIONS, LOOKING FOR AN EXTENSION OF THIS QUARTZ VEIN, BUT WITHOUT SUCCESS. FROM THE END OF THE TUNNEL, A RAISE WAS BEING DRIVEN UP TO THE SURFACE. THE ONLY MINERALIZATION OF ANY IMPORTANCE NOTED WAS IN THE QUARTZ VEIN, WHICH CONTAINED A CONSIDERABLE AMOUNT OF IRON SULPHIDES AND SOME SMALL PERCENTAGE OF COPPER, WITH LOW GOLD VALUES.

THE CLAIM AREA APPEARS AGAIN IN THE 1928 REPORT, AS BEING OWNED BY THE CHEMAINUS VALLEY MINING COMPANY, LIMITED, A RE-ORGANIZATION OF THE MOUNT SICKER AND BRENTON MINES, LIMITED. THE REPORT IS AS FOLLOWS:

"CONSIDERABLE WORK WAS DONE ON THE PROPERTY BEFORE THE WAR, CONSISTING OF A 300 FOOT SHAFT, AND DRIFTS FROM IT ON ONE CLAIM, A SHORT TUNNEL AND A GREAT DEAL OF SURFACE WORK ON ANOTHER CLAIM, ALL EXPOSING, IT IS STATED, SOME ATTRACTIVE COPPER SHOWINGS. THE COMPANY IS CONTEMPLATING RESUMING OPERATIONS IN THE NEAR FUTURE."

MINERAL RIGHTS WERE ACQUIRED BY THE PRESENT OWNERS IN 1970. PROGRESS TO DATE IS COVERED BY REPORTS IN 1971, (DR. WHITTLES AND F.C. LORING, 1971 AND 1973). (DR. WHITTLES, 1973). FURTHER RECONNAISSANCE SURVEY WORK ACROSS THE VICTORIA CLAIM IS DISCUSSED IN THIS REPORT.

4. GENERAL GEOLOGY OF THE AREA

THE AREA CONSISTS OF META-VOLCANICS (SICKER VOLCANICS) AND SCHIST FORMATIONS RUNNING NEARLY EAST AND WEST. (SEE MULLER 1971 MAP). THE SCHIST FORMATION OBSERVED ON CLAIMS 21G AND 22G ARE ASSUMED TO BE THE SAME FORMATION WHICH RUNS THROUGH THE MT. SICKER MINES LTD. GROUP OF CLAIMS TO THE EAST. THE ANNUAL REPORT OF THE MINISTER OF MINES (1928) NOTES THAT THERE ARE TWO MINERALIZED ZONES ON THE CLAIMS TO THE EAST (ON MT. SICKER). THESE INCLUDE ONE (AT THE SOUTHERN EDGE OF THE SCHIST ZONE THAT RUNS THROUGH THE PROPERTY) WHICH HAS HIGHER COPPER AND LOWER ZINC CONTENT THAN THE NORTH ZONE (THE NORTH ZONE IS LOCATED AT, OR CLOSE TO, THE NORTHERN EDGE OF THE SCHIST ZONE). THE MINERALIZATION ASSOCIATED WITH THE NORTH AND SOUTH EDGES OF THE SCHIST ZONE SEEMS TO EXTEND RIGHT THROUGH THE VICTORIA CLAIM AND ONTO THE COPPER CANYON CLAIM, ALTHOUGH AT LEAST FIVE MAJOR MINERALIZED ZONES ARE INDICATED ALONG THE RIVER'S EDGE, RATHER THAN TWO.

THE SCHIST ON THE EDGE OF THE CHEMAINUS RIVER STRIKES ABOUT NORTH 80° EAST, DIPS 70° TO THE SOUTH, AND IS MORE SILICIOUS, MORE COMPACT AND LESS FOLIATED THAN THAT OCCURRING WITH THE MT. SICKER DEPOSITS.

THE OLD ADIT ON CLAIM 22G-ADIT NUMBER 1-APPARENTLY WAS EXPLORING THE SOUTHERN EDGE OF THE SCHIST ZONE. ACCORDING TO THE 1898 ANNUAL REPORT, THE MINERALIZED ZONE EXPLORED BY THIS OLD ADIT WAS A "QUARTZ REEF", HIGHLY MINERALIZED WITH COPPER PYRITES. THE WIDTH OF THE REEF IS 18 INCHES. THE DEPOSIT APPEARS TO LACK THE LARGE PERCENTAGE OF BARITE FOUND IN THE LENORA-TYEE (ON MT. SICKER) DEPOSITS.

THE MINING REPORT OF 1903 DISCUSSED THE UNDERGROUND WORK TO SOME EXTENT. THE MINERALIZATION OBSERVED ON THE RIVER BANK DISAPPEARED 135 FEET IN, WHICH CORRESPONDS TO THE VLF-EM HIGH OBSERVED AT 100W, 200S (WHICH APPEARS QUITE LOCALIZED). THE ADIT CONTINUES FOR ANOTHER 200 FEET WITH CROSS-CUTS OFF NORTH AND SOUTH. MOST OF THE UNDERGROUND WORK BEYOND THE 135 FEET CUT OFF APPEARS TO BE IN SCHIST.

OTHER QUARTZ VEINS WERE OBSERVED TO THE SOUTH AND NORTH OF THE ADIT. ONE (AT APPROXIMATELY 200W, 800S-SEE FIG. 3 1973 REPORT) WAS OPENED BY A SHORT BLAST HOLE AND A GRAB SAMPLE TAKEN. THIS ASSAYED AT 10.2% COPPER. THESE SMALL VEINS APPEAR TO STRIKE IN A DIFFERENT DIRECTION TO THE SHEAR ZONES, ABOUT N 65<sup>0</sup> W, AND SEEM TO BE QUITE LOCALIZED. DIORITE IS REPORTED IN THE AREA, SPECIFICALLY ON THE VICTORIA CLAIM 21G. (SEE THE 1903 MINISTER OF MINES ANNUAL REPORT AND THE NEXT SECTION).

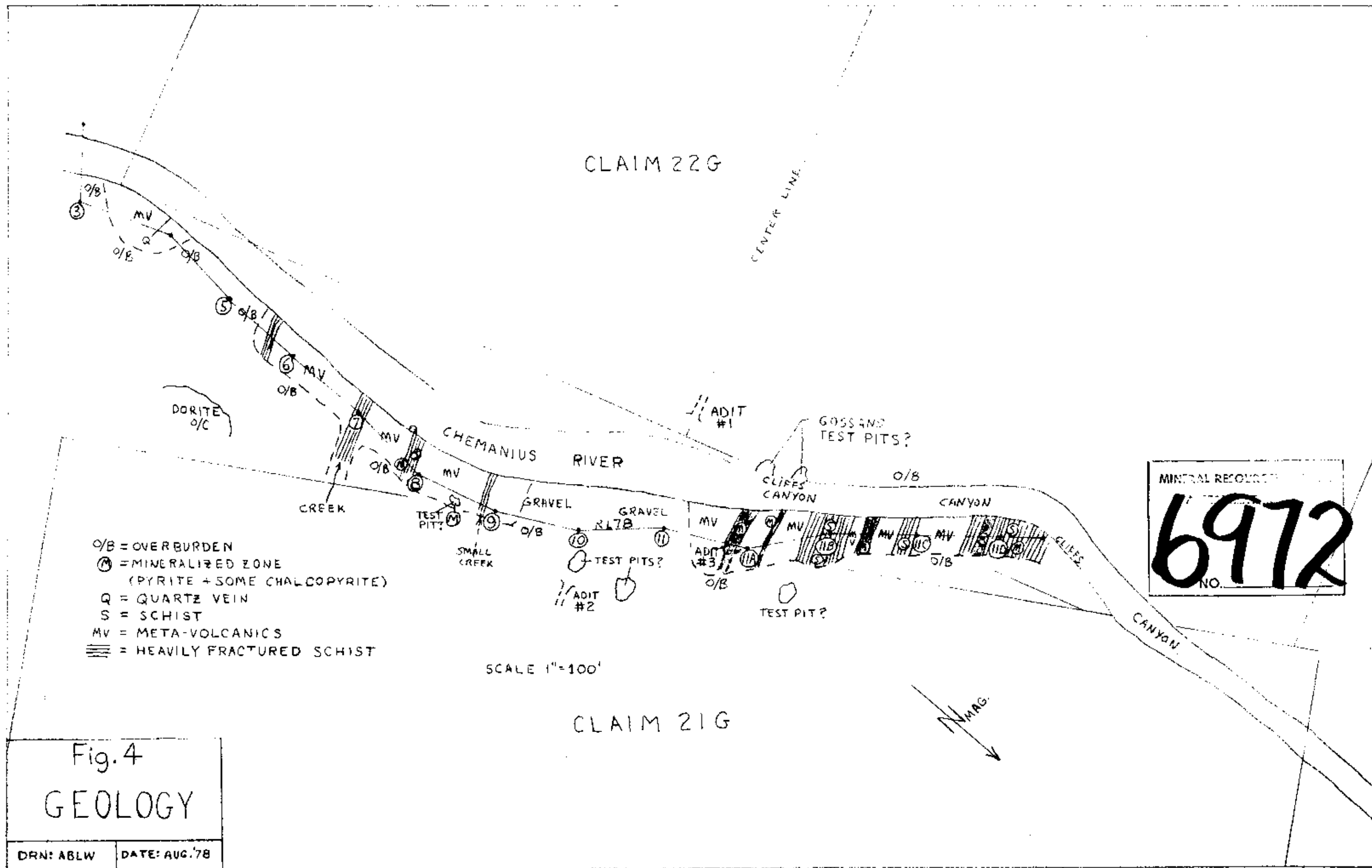
5. GEOLOGICAL MAPPING (FIGURE 4)

PREVIOUS GEOLOGICAL MAPPING (DR. WHITTLES, 1973) OUTLINED THE MAIN GENERAL FEATURES FOUND IN THE MINERALIZED SCHIST ZONE. THAT REPORT SUGGESTED THAT THE MINERALIZED ZONE INTERSECTED BY ADIT NUMBER 1 (SEE FIGURE 4 OF THIS REPORT), WAS LIKELY LOCATED ALONG THE SOUTHERN EDGE OF THE SCHIST ZONE THAT COMES IN FROM THE EAST, FROM THE MT. SICKER DEPOSITS. LITTLE MINERALIZATION OF IMPORTANCE WAS FOUND ANY FARTHER SOUTH EITHER IN THE 1973 REPORT ON THE WEST SIDE OF THE RIVER, OR IN THIS REPORT ON THE EAST SIDE OF THE RIVER.

TO THE NORTH OF ADIT NUMBER 1, ZONES OF MINERALIZATION AND GOSSANS ARE REPORTED AT LEAST 600 FEET NORTH (1973 REPORT) ON THE WEST SIDE OF THE RIVER, AND AT LEAST 400 FEET NORTH ON THE EAST SIDE (SEE FIGURE 4 THIS REPORT).

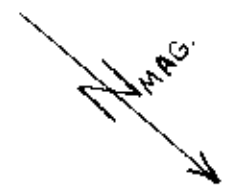
THE ACTUAL NORTHERN EDGE OF THE SCHIST ZONE COULD NOT BE EASILY DETERMINED ON THE EAST SIDE OF THE RIVER, BECAUSE OF THE STEEP CANYON WALLS PRESENT PAST STATION RL78-11D+50'. IT IS, HOWEVER, FAIRLY SAFE TO ASSUME FOR THE PRESENT THAT THE MINERALIZED SCHIST ZONE IS 400 TO 600 FEET WIDE. THIS CONCLUSION IS SUPPORTED BY THE VLF-EM WORK REPORTED IN SECTION 7 OF THIS REPORT.

THE MAIN FEATURES OF THE MINERALIZED SCHIST ZONE SEEM TO CONSIST OF AT LEAST TWO LARGE VEIN-LIKE STRUCTURES ON THE SOUTHERN SIDE, NUMEROUS SMALLER VEINS IN THE CENTRAL PART, AND AT LEAST 3 MINERALIZED ZONES OF VARIABLE SIZE (PERHAPS 10'-20' WIDE) ON THE NORTHERN SIDE. (SEE FIGURES 81A, AND 81B, 1973 REPORT; FIGURE 4 OF THIS REPORT). THE MATERIAL IN BETWEEN THE MINERALIZED VEINS AND ZONES VARIES FROM A RELATIVELY UNIFORM METAVOLCANIC ROCK TO INTENSELY FRACTURED SILICIOUS SCHIST.



- O/B = OVERBURDEN
- Ⓜ = MINERALIZED ZONE  
(PYRITE + SOME CHALCOPYRITE)
- Q = QUARTZ VEIN
- S = SCHIST
- MV = META-VOLCANICS
- ≡ = HEAVILY FRACTURED SCHIST

SCALE 1"=100'



MINERAL RESOURCE  
 NO. **6972**

**Fig. 4  
GEOLOGY**

DRN: ABLW    DATE: AUG. '78



THE PRESENT SURVEY PROVIDES MORE DETAILS THAN WERE AVAILABLE FROM PREVIOUS WORK. ADIT NUMBER 2 (FIGURE 4) IS APPARENTLY THE 150 FOOT ADIT REPORTED IN THE 1903 MINISTER OF MINES REPORT. ALTHOUGH IT IS LARGELY COLLAPSED AT THE ENTRANCE, IT CAN BE SEEN TO EXTEND 50 OR MORE FEET. THE DIORITE REPORTED TO THE EAST OF RL78-S (FIGURE 4) WOULD AGREE WITH THAT REPORTED INTERSECTED BY THE SOUTHERN CROSS-CUT FROM ADIT NUMBER 2, WHILE THE LARGE VEIN FOLLOWED BY ADIT NUMBER 1 (ON THE WEST SIDE OF THE RIVER) WAS ALSO INTERSECTED BY THE NORTHERN CROSS-CUT OF ADIT NUMBER 2. THIS VEIN IS APPARENTLY QUITE CONTINUOUS FROM STATION 600W, 150S ON CLAIM 22G (1973 REPORT FIGURE 82) OVER A 1,000 OR MORE FEET ACROSS THE RIVER TO THE NORTH OF ADIT NUMBER 2 ON CLAIM 21G. IT MUST PASS ABOUT 25' TO THE SOUTH OF STATION RL78-11 (THIS IS ALSO INDICATED ON THE VLF-EM PROFILES (SEE SECTION 7, AND FIGURE 15). THIS VEIN SEEMED TO BE THE MAIN FEATURE ON THE CLAIMS; HOWEVER, IT IS NOW EVIDENT THAT THE EARLIER SURVEYS MISSED A SECOND MAJOR ZONE JUST 100 FEET TO THE NORTH, AND ALSO MISSED, OR AT LEAST UNDERESTIMATED, THE POSSIBLE IMPORTANCE OF THE NORTHERN MINERALIZED ZONES.

THE SECOND MAJOR SOUTHERN MINERALIZED ZONE (100' TO THE NORTH OF THE VEIN IN ADIT NUMBER 1) WAS FOUND ON THE EAST SIDE OF THE RIVER. A SHORTER ADIT (NUMBER 3, STATION RL78-11+80 FEET) HAS BEEN DRIVEN IN ON THIS FEATURE IN THE PAST, BUT IT IS NOW COMPLETELY FILLED IN BY RIVER SAND AND ITS DEPTH IS UNKNOWN. THIS MINERALIZED ZONE IS A VERY IMPRESSIVE FEATURE, APPROXIMATELY 6 FEET ACROSS (COMPARED TO THE 18" VEIN OF ADIT NUMBER 1), WITH 1 TO 2 FEET OF MASSIVE MINERALIZATION ON THE SOUTH WALL, SMALLER VEINS IN THE CENTER AND ON THE NORTH SIDE, AND WITH DISSEMINATED MINERALIZATION IN BETWEEN. THE MINERALIZATION APPEARS TO BE OF A SIMILAR COMPOSITION AND CHARACTER TO THAT SEEN IN ADIT NUMBER 1 VEIN.

IT IS NOT CLEAR AT THIS TIME WHY THIS MASSIVE FEATURE WAS NOT NOTICED IN THE EARLIER VLF-EM SURVEYS (ON THE OTHER SIDE OF THE RIVER) SINCE IT APPEARS TO CONTINUE ACROSS THE RIVER AND BE VISIBLE ON THE VERTICAL CLIFF ON THAT SIDE (ON CLAIM 22G). IT MAY HAVE PINCHED OUT, OR MAY SIMPLY BE A LENSE OF MATERIAL IN WHAT IS OTHERWISE A SMALLER VEIN. IN ANY CASE, THE ZONE APPEARS TO BE FAIRLY CONTINUOUS TO THE EAST (SEE SECTION 7, VLF-EM PROFILES AND FIGURE 15).

A SMALLER 6 INCH VEIN OF MASSIVE MINERALIZATION OCCURS ABOUT 40 FEET TO THE NORTH OF THIS LARGE 6 FOOT ZONE, AND ANOTHER MORE DISSEMINATED ZONE OCCURS ABOUT 135 FEET NORTH.

CONCERNING THE MOST NORTHERLY MINERALIZED ZONES, A REEXAMINATION OF THE DATA, PARTICULARLY IN THE 1971 REPORT, INDICATES THAT THERE MAY WELL BE IMPORTANT MINERALIZED AREAS 450' TO 550' TO THE NORTH OF THE CLAIM 22G CENTER LINE (THIS IS BASED ON THE VLF-EM RESULTS ALONG THE EXTREME NORTHERN EDGE OF THE GRID COVERING CLAIM 22G) THE "VERY RUSTY ZONE" OF FIGURE 81B OF THE 1973 REPORT ADDS FURTHER SUPPORT TO THIS CONCLUSION.

THE PRESENT DATA (FIGURE 4 OF THIS REPORT) INDICATES MINERALIZATION OVER ABOUT 10' AT RL78-11C+80 FEET. COARSE MINERALIZATION, IN NARROW VEINS IN A HEAVILY FRACTURED ZONE, ACCOMPANIED BY AN EXTENSIVE GOSSAN, MAY BE OBSERVED THERE. THE 1973 REPORT SUGGESTS THERE MAY BE AT LEAST TWO MORE SIMILAR FEATURES TO THE NORTH OF THIS ONE.

ONLY SMALLER VEINS SEEM TO OCCUR BETWEEN THE NORTHERN GROUP OF "THREE" ZONES, AND THE SOUTHERN GROUP OF TWO.

HENCE FUTURE WORK WILL HAVE TO BE SHIFTED TO THE NORTH TO COVER THE NORTHERN PART OF THE MINERALIZED SCHIST ZONE. IN FACT, THAT AREA COULD BE VERY PROMISING SINCE IT IS LARGELY DRIFT COVERED (AND THE EARLIER WORKERS DID NOT HAVE THE BENEFITS OF MODERN GEOPHYSICAL INSTRUMENTS), AND WHERE CUT BY THE RIVER, PRESENTS VERY STEEP CANYON WALLS (SO PHYSICAL EXPLORATION TECHNIQUES WOULD HAVE BEEN DIFFICULT AND COSTLY). THE NORTHERN PART OF THE SCHIST ZONE IS THUS VIRTUALLY UNEXPLORED, AND YET KNOWN TO BE MINERALIZED.

6. INSTRUMENTS

(A). LINE SURVEYING EQUIPMENT:

RANDOM LINES WERE SURVEYED ALONG EASILY ACCESSIBLE ROUTES, USING A HAND HELD COMPASS, AND A POLY CHAIN. DISTANCES WERE NOT CORRECTED FOR SLOPE, SINCE THE ROUTES WERE FAIRLY LEVEL FOR THE MOST PART.

(B). VLF-EM UNIT:

THE INSTRUMENT USED FOR THIS PORTION OF THE WORK WAS THE CRONE RADEM. THIS MAKES USE OF THE MAGNETIC PART OF THE ELECTROMAGNETIC WAVES EMITTED BY THE U.S. SUBMARINE RADIO STATIONS. THE STATION USED IN THIS SURVEY WAS JIM CREEK, WASHINGTON (NEAR SEATTLE) AT 18.6 KHZ. THE CODE FOR THIS STATION IS NPG.

THE CRONE RADEM MEASURES THE TILT ANGLE (TO  $\pm 1^{\circ}$  IN MOST READINGS) AND THE FIELD STRENGTH. ONLY THE TILT ANGLE WAS USED IN THE PRESENT RECONNAISSANCE WORK.

THE GROUND SLOPE WAS ALSO RECORDED IN DEGREES SO THAT THE EFFECT OF TOPOGRAPHY COULD BE ESTIMATED. THESE VALUES WERE PLOTTED ONLY IN AREAS WHERE THERE WAS A SIGNIFICANT VARIATION IN TILT ANGLE, TO CHECK IF THE TOPOGRAPHY CHANGES ALONE CAN ACCOUNT FOR THE TILT ANGLE VARIATIONS.

THE FIRST DERIVATIVE OF THE TILT ANGLE (THE SLOPE OF THE TILT ANGLE PLOT, WHICH IS FOUND BY SUBTRACTING ONE STATION'S TILT ANGLE VALUE FROM THAT OF THE NEXT STATION AND DIVIDING BY THE DISTANCE BETWEEN STATIONS) WAS ALSO USED SINCE IT IS LESS INFLUENCED BY TOPOGRAPHY. THE VALUES OF THE FIRST DERIVATIVE ARE IN DEGREES PER FOOT ( $^{\circ}/\text{FT}$ ).

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THESE VALUES WERE CALCULATED AND PLOTTED ONLY IN AREAS WHERE THERE WAS A SIGNIFICANT VARIATION IN TILT ANGLE.

INTERPRETATION IS BASED ON METHODS DISCUSSED BY DR. WHITTLES (1969) AND FRAZER (1969).

7. GEOPHYSICAL SURVEYS

(A). GENERAL FIELD PROCEDURES (REFER TO FIGURE 3)

THE COPPER CANION, KLONDYKE AND VICTORIA CLAIMS WERE SURVEYED IN 1897 AND LATER CROWN GRANTED. THE GEOPHYSICAL WORK DONE IN 1971 AND 1973 WAS BASED ON A BASE STATION (OW, ON CLAIM 22G), SET UP USING A STUMP 4" THICK, 4' HIGH AND SQUARE ON 3 SIDES. THE CLAIM BOUNDARIES WERE THEN ASSUMED ON THE BASIS OF THE OLD ADIT ON THE RIVER BANK WHICH WAS SHOWN IN THE 1903 REPORT TO BE LOCATED ABOUT 100' SOUTH OF CLAIM POST NUMBER 1. IN THE SUMMER OF 1973 THE NORTHERN CORNER POSTS OF 22G AND 21G WERE RELOCATED BY CPR SURVEYORS AND NOW EXIST AS 1P 20 AND 1P 21. THE ORIGINAL BASE STATION OW, ON WAS SURVEYED INTO THESE TWO IRON PINS (LINE RL1 1973). THIS RESULTED IN SHIFTING THE GRID LINES OF THE 1971 REPORT 100' NORTH, AND NOW HAS THE CENTRE LINE OF CLAIM 22G STARTING AT THE OLD ADIT.

IN THE PRESENT WORK ONLY RANDOM RECONNAISSANCE LINES WERE USED FOR A TENTATIVE EXPLORATION OF THE VICTORIA CLAIM. THESE LINES WERE STARTED AT STATION RL2-25 OF THE 1973 GRID ON THE NORTH EASTERN CORNER OF COPPERMINT 1.

RL78 STARTED AT RL2-25, CROSSED THE RIVER AND RAN NORTH FOR ABOUT 1,200' ALONG THE RIVER BANK WHERE STEEP CANYON WALLS STOPPED THE LINE. THE LINE WAS THEN CONTINUED OFF STATION RL78-3, PROCEEDING BRIEFLY SOUTH TO RL78-13, THEN NORTH TO RL78-30 ALONG AN OLD LOGGING ROAD, THEN SOUTH AGAIN ON A LARGE LOOP THAT TERMINATED AT RL78-48 (OR AT ABOUT RL78-19+30 FEET).

RL78A WAS THEN STARTED AT RL78-11B HEAD EAST BRIEFLY TO REACH THE UPPER EDGE OF THE STEEP RIVER BANK, THEN ALONG THE DRIFT COVERED EDGE SOUTH PARALLEL TO THE RIVER, UNTIL IT INTERSECTED RL78 AGAIN AT ABOUT RL78-19+30 FEET, AT THE SMALL CREEK.

THE RL78B LINE WAS STARTED AT STATION RL78-13, AND PROCEEDED EASTWARD ALONG A CREEK BED, THEN FROM STATION RL78B-6 ALONG A RATHER GOOD DIRT ROAD. IT LIES ALONGSIDE THE SOUTHERN BOUNDRY OF THE VICTORIA CLAIM, AND MAY BE VERY USEFUL IN STARTING REFERENCE POINTS FOR FUTURE NORTHERLY PROFILE LINES.

RL78C WAS A SHORT LINE RUN TO FIND THE LOCATION OF THE ROAD FROM RL78B-6 TO THE RIVER (RL78C TERMINATES AT RL78-13).

(B). VLF-EM SURVEYS

AS NOTED EARLIER A CRONE RADEM UNIT WAS USED ALONG THE RANDOM LINES. THE RESULTS ARE PLOTTED ON FIGURES 5-14. THE TILT ANGLE (OF THE RESULTING MAGNETIC COMPONENT OF THE VLF-EM FIELD) ARE GIVEN IN DEGREES. THE FIRST DERIVATIVE OF THE TILT ANGLE (SEE SECTION 6(B) FOR A DISCUSSION OF HOW THIS IS CALCULATED) WAS ALSO CALCULATED AND PLOTTED ONLY IN REGIONS WHERE IT WAS ABOUT  $0.10^{\circ}/\text{FT.}$  OR LARGER. AS NOTED IN THE 1973 REPORT (P. 83) VALUES MUCH SMALLER THAN THIS CANNOT BE EASILY DISASSOCIATED FROM TOPOGRAPHICAL SLOPE CHANGES.

RL7813 TO RL78-11D (FIGURES 5 AND 6).

NO APPRECIABLY ANOMALOUS AREAS ARE INDICATED ON FIGURE 5 ALTHOUGH THERE IS A GENERAL CHANGE FROM A NEGATIVE TO A POSITIVE TILT ANGLE. THE TOPOGRAPHICAL SLOPE IS A FEW DEGREES NEGATIVE. THIS CROSS OVER MAY INDICATE THE APPROXIMATE BOUNDARY OF THE DIORITE OBSERVED ON THE SOUTHERN PART OF CLAIM 21G.

SOME VERY NOTICABLE CONDUCTIVITY CHANGES OCCUR ON FIGURE 6. THE LARGER NEGATIVE FIRST DERIVATIVE AT 10+85 ( $0.16^0$ /FT.) SEEMS TO BE ASSOCIATED WITH THE MOST SOUTHERLY VEIN, FOLLOWED BY ADIT NUMBER 1 ON THE WEST SIDE OF THE RIVER, CLAIM 22G.

THE GENERAL TREND OF THE TILT ANGLE FROM POSITIVE TO NEGATIVE AT RL78-11 MIGHT ALSO INDICATE THE SOUTHERN EDGE OF THE WIDE MINERALIZED SCHIST ZONE DISCUSSED EARLIER.

ANOTHER AREA OF CONDUCTIVITY IS INDICATED BY A BROAD REGION OF  $0.16^0$ /FT. FIRST DERIVATIVE VALUES FROM RL78-11+50' TO RL78-11A+25'. THIS IS THE REGION OF THE 6FT. MINERALIZED ZONE EXPLORED BY ADIT NUMBER 3, AND THE SMALLER VEINS TO THE NORTH.

OTHER MINERALIZED ZONES DID NOT SEEM TO HAVE MUCH EFFECT BETWEEN STATION 11A AND 11D+50', EVEN THOUGH A LARGE MINERALIZED ZONE SEEMS TO BE LOCATED AT 11C+80' (SEE SECTION 5).



LINE: RL 78

DIRECTION → NORTH

STATION: NPG

+20°      13      12      3      4      5      6      7      8 .40%/ft

+10°      .20%/ft

0°

-10°      -20%/ft

-20°      -.40%/ft

QUARTZ VEIN, RUSTY.

- △-△-△ VLF FIELD STRENGTH (RELATIVE N.O.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (°/ft)
- ×-×-× GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 5

VLF - EM  
Profiles

DRN: ABLW    DATE: AUG 78

LINE: RL78

DIRECTION → NORTH

STATION: NPG

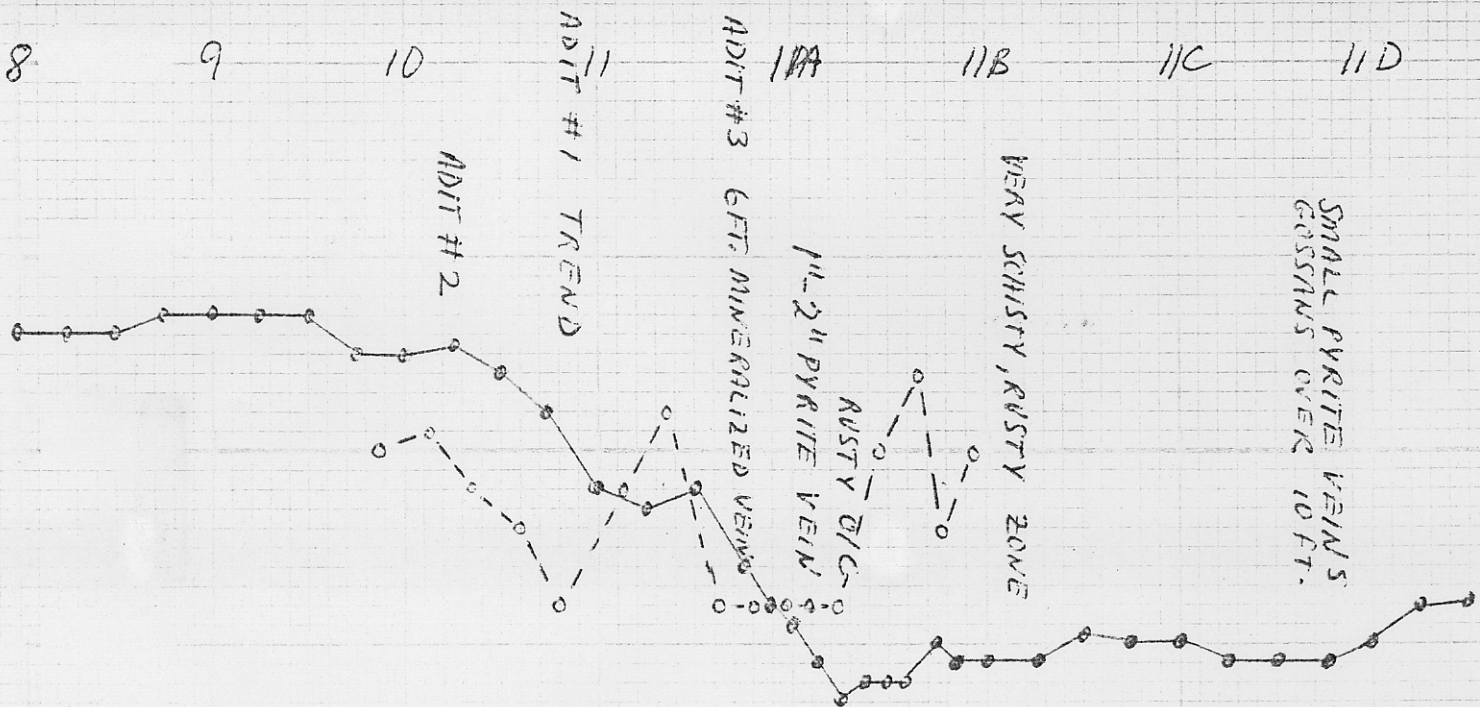
-30°

-20°

-10°

-20°

-30°



- △-△-△ VLF FIELD STRENGTH (RELATIVE NO.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (%/FT.)
- x-x-x GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 6  
VLF - EM  
Profiles

DRN: ABLW

DATE: AUG 78

PAGE TWENTY-FOUR

RL78A (FIGURE 7)

CONTINUATION OF THE MINERALIZED TRENDS ARE INDICATED HERE, ALTHOUGH SMALLER FIRST DERIVATIVE VALUES WERE FOUND ( $0.08^{\circ}$ /FT.). THE ONE AT 3+50' CORRESPONDS TO THE MOST SOUTHERLY VEIN, AND THE ZONE FROM 2+40' TO 2+90' SHOULD BE THE ZONE EXPLORED BY ADIT NUMBER 3.

RL78-13 TO RL78-30 (FIGURES 8 AND 9).

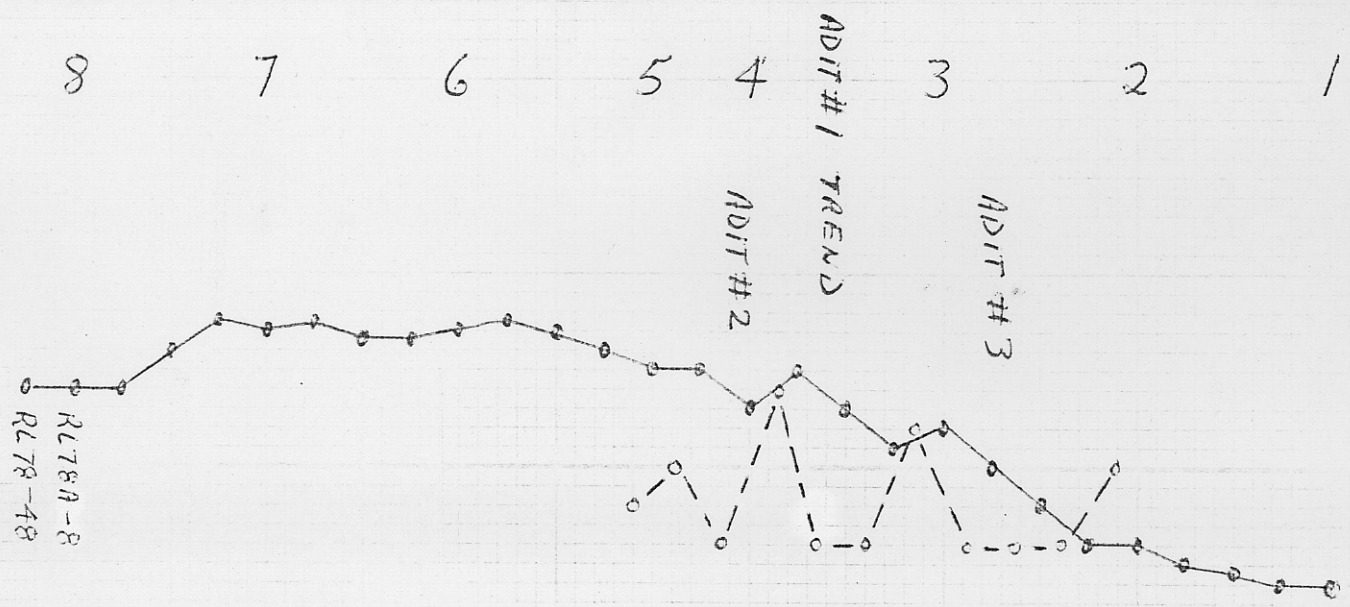
FIGURE 8 SHOWS NO SIGNIFICANT CHANGES IN TILT ANGLE APART FROM THE SAME GENERAL FEATURE NOTED ON FIGURE 5: A BROAD CROSSOVER FROM NEGATIVE TO POSITIVE VALUES PERHAP INDICATING THE DIORITE/METAVOLCANIC-SCHIST BOUNDRY.

FIGURE 9 HAS SOME FIRST DERIVATIVE VALUES THAT MAY BE SIGNIFICANT. SINCE THE INDICATED DIP OF THE SCHIST AND MINERAL FORMATIONS IS ABOUT  $70^{\circ}$  TO THE SOUTH, AS ONE GOES WEST FROM THE RIVER ON CLAIM 22G THE MINERALIZATION SHOULD FOLLOW OR BE PARALLEL TO THE CENTER LINE (A FEW DEGREES NORTH OF WEST). ON CLAIM 21G THE OPPOSIT WOULD BE TRUE: AS ONE GOES EAST FROM THE RIVER THE MINERALIZATION SHOULD TREND PARALLEL TO THE CLAIM 21G BOUNDRIES (A FEW DEGREES NORTH OF EAST). THIS IS INDICATED ON FIGURE 9. THE VALUES ARE SMALL, SUGGESTING A DEEPER OVERBURDEN OR A DECREASE IN THE MINERALIZATION. THE MOST SOUTHERN AND NORTHERN (?) EDGES OF THE MINERAL TREND SEEM TO BE THE STRONGEST.

LINE: RL78A

DIRECTION — NORTH

STATION: NPG



- VLF FIELD STRENGTH (RELATIVE NO.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (°/ft.)
- GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 7  
VLF - EM  
Profiles

DRN: ABLW	DATE: AUG-78
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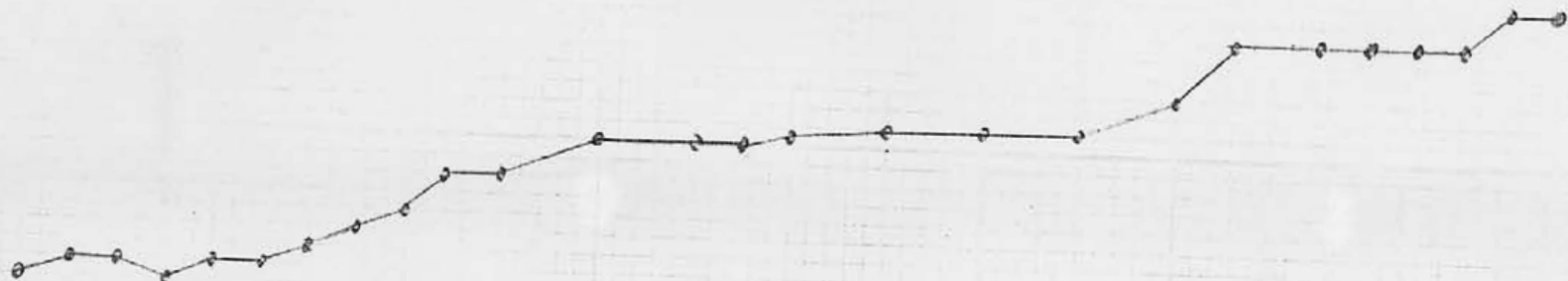
LINE: RL78

DIRECTION → NPG

NPG

13      14      15      16      17      18      19      20      21

CREEK



- ▲— VLF FIELD STRENGTH (RELATIVE N.O.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (%/ft.)
- x—x— GROUND SLOPE (DEGREES DIP TO NORTH)

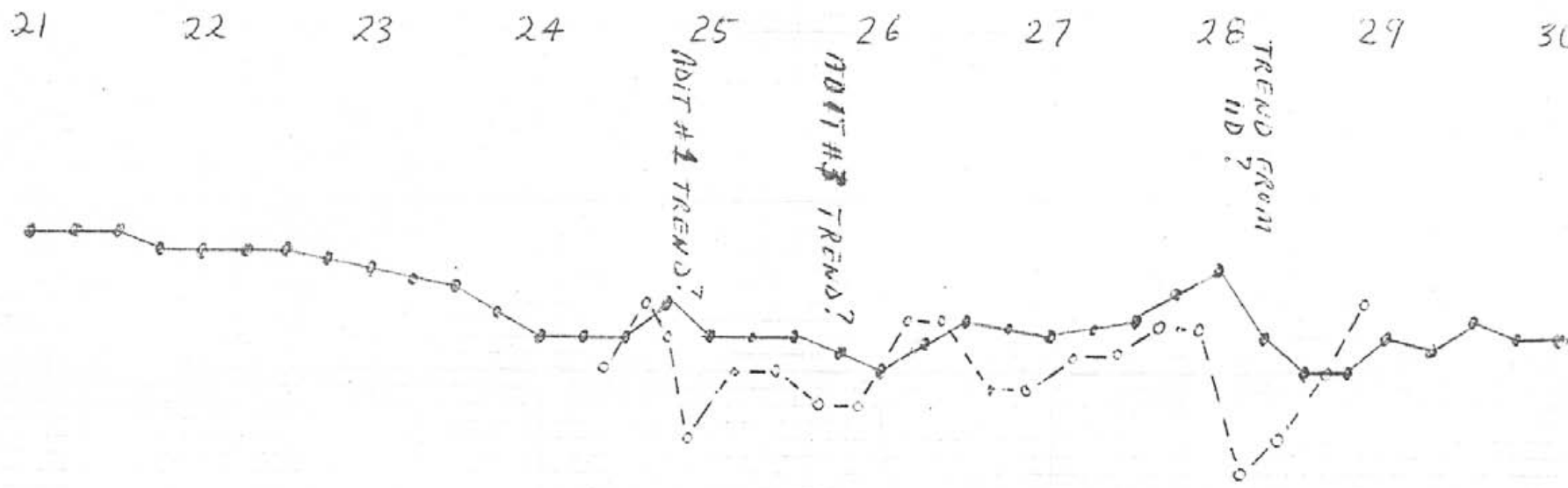
Fig. 8  
VLF - EM  
Profiles

DRN: ABLW

DATE: 7/6/78

RL 78

NPG



-20°

-30°

- VLF FIELD STRENGTH (RELATIVE N.O.)
- - -○- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (%/ft.)
- x-x-x GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 9  
VLF - EM  
Profiles

DRN: ABLW	DATE: AUG 78
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PAGE TWENTY-EIGHT

RL78-30 TO RL78-48 (FIGURES 10 AND 11)

VERY LITTLE CONDUCTIVITY CHANGE CAN BE DEDUCED FROM THESE TWO PROFILES. THIS MIGHT INDICATE ON THE THE FLECTURE OR FOLDING LINES OF THE TYPE OBSERVED ON CLAIM 226 (1973 REPORT, FIGURE 82), A VERY DEEP OVERBURDEN, OR A DIMINISHING OF MINERAL CONTENT.

RL78B LINE (FIGURES 12, 13 AND 14)

NO CHANGES OF SIGNIFICANCE AS FAR AS MINERALIZATION ARE NOTED ALONG THIS LINE; HOWEVER, THIS IS NOT SURPRISING SINCE IT PARALLELS THE TRENDS OF FORMATION IN THIS AREA.

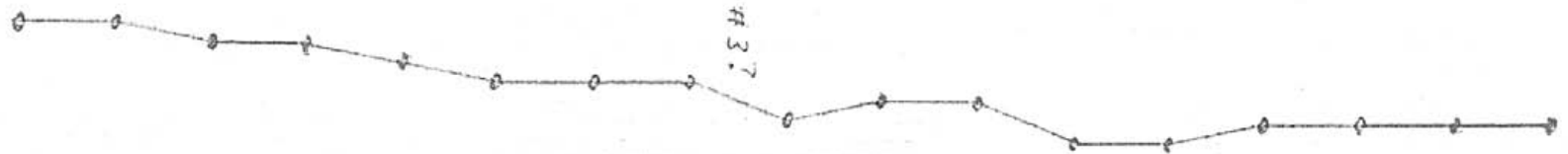
THE GENERAL CROSSOVER FEATURE NOTED IN FIGURES 5 AND 8 IS HOWEVER, PRESENT.

RL78

NPG

38 37 36 35 34 33 32 31 30

TREND ADIT #37



- VLF FIELD STRENGTH (RELATIVE NO.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (°/ft.)
- x—x— GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 10  
VLF - EM  
Profiles

DRN: ABLW    DATE: AUG 78



RL 78

NPG

46      45      44      43      42      41      40      39      38



-30°

-30°

- VLF FIELD STRENGTH (RELATIVE NO.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (%/ft.)
- ×—× GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 11  
VLF - EM  
Profiles

DRN: ABLW      DATE: AVG-78

RL78B

NPG

1 2 3 4 5 6 7 8 9



- VLF FIELD STRENGTH (RELATIVE N.O.)
- x— VLF TILT ANGLE (DEGREES DIP TO NORTH)
- o— FIRST DERIVATIVE (%/ft.)
- x—x— GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 12  
VLF - EM  
Profiles

DRN: ABLW

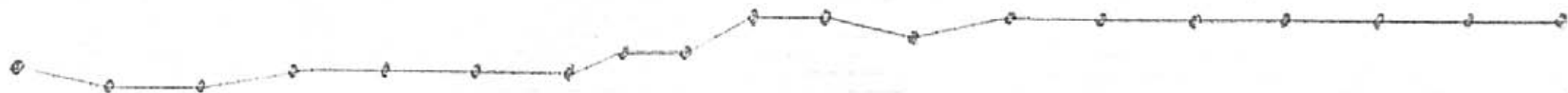
DATE: AUG 78

LINE: RL78B

STRE

NPG

9 10 11 12 13 14 15 16 17 18



- VLF FIELD STRENGTH (RELATIVE NO.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (%/ft.)
- GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 13

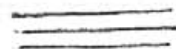
VLF - EM

Profiles

DRN: ABLW

DATE: AUG 78

RL78B



18 19 20



-20°

-30°

- VLF FIELD STRENGTH (RELATIVE N.O.)
- VLF TILT ANGLE (DEGREES DIP TO NORTH)
- FIRST DERIVATIVE (°/ft.)
- \*—\*—\* GROUND SLOPE (DEGREES DIP TO NORTH)

Fig. 14  
VLF - EM  
Profiles

DRN: ABLW | DATE: AUG 78

3. INTERPRETATIONS

POSSIBLE MINERALIZED ZONES EAST OF THE RIVER CAN ONLY BE GUESSED AT ON THE BASIS OF THE PRESENT VERY SKETCHY RESULTS. THESE RESULTS DO, HOWEVER, SUGGEST SEVERAL MINERALIZED ZONES WITHIN THE MAIN SCHIST ZONE. THESE ARE ILLUSTRATED IN FIGURE 15, BUT WILL BE USEFUL ONLY FOR A GUIDE TO FURTHER WORK.

TWO MAIN MINERALIZED ZONES ARE SUGGESTED ON THE SOUTHERN EDGE OF THE MAIN TREND FROM MT. SICKER, AND POSSIBLY THREE ON THE NORTHERN EDGE. THESE ALL TREND INTO THE NORTHERN HALF OF THE VICTORIA CLAIM.

9. RECOMMENDATIONS

IT IS RECOMMENDED THAT A BASE LINE BE CAREFULLY LOCATED FROM ADIT NUMBER 1 (RUNNING TO THE EAST )PARALLEL TO THE VICTORIA CLAIM 216 NORTH BOUNDARY) TO THE EASTERN BOUNDARY.

PROFILE LINES SHOULD THEN BE RUN EVERY 100 FEET PERPENDICULAR TO THE BASE LINE, MOSTLY TO THE NORTH, BUT PERHAPS 200 FEET TO THE SOUTH, UNTIL THE SOUTHERN EDGE OF THE MINERALIZED SCHIST ZONE CROSSES THE BASE LINE (AT ABOUT STATION RL78-24 OF THE PRESENT SURVEY).

VLF-EM SURVEYS SHOULD THEN BE CONDUCTED AND FOLLOWED UP BY THE DETAILED TYPE OF SURVEYS USED IN THE 1973 REPORT.

10. REFERENCES

- (1). 1898 REPORT OF THE MINISTER OF MINES OF B.C.' PAGE 1148.
- (2). 1903 REPORT OF THE MINISTER OF MINES OF B.C.; PAGES II,-239, 240, 252, 253.
- (3). 1928 REPORT OF THE MINISTER OF MINES OF B.C.; PAGE C365.
- (4). 1968 (NOVEMBER 30) "GEOPHYSICAL REPORT ON MT. SICKER MINES LTD. (NPL)" BY E.P. SHEPPARD, P. ENG.
- (5). 1969 "PROSPECTING WITH RADIO FREQUENCY EM-16 IN MOUNTAINOUS REGIONS"; WESTERN MINER, VOL. 42, NO. 2, MARCH 1969, BY A.B.L. WHITTLES.
- (6). 1969 "GEOLOGY & MINERAL POSSIBILITIES OF VANCOUVER ISLAND" BY J.E. MULLER AND D.J.T. CARSON. PAPER PRESENTED TO THE ANNUAL MEETING OF THE PROSPECTORS & DEVELOPERS ASSOCIATION.
- (7). 1969 "CONTOURING OF VLF-EM DATA"; GEOPHYSICS, VOL. 34, NO. 6, DECEMBER 1969, BY D.C. FRASER.
- (8). 1971 "GEOPHYSICAL-GEOCHEMICAL REPORT ON THE COPPER CANYON GROUP" BY A.B.L. WHITTLES AND F.C. LORING.
- (9). 1971 "GEOLOGICAL RECONNAISSANCE MAP OF VANCOUVER ISLAND AND GULF ISLANDS"; J.E. MULLER, GEOLOGICAL SURVEY OF CANADA.
- (10). 1973 "GEOPHYSICAL-GEOLOGICAL-GEOCHEMICAL REPORT ON THE COPPER CANYON GROUP"; BY A.B.L. WHITTLES.

II APPENDICES

(A). COST ANALYSIS

(1). TIME USED BY DR. A.B.L. WHITTLES:

(A). FIELD WORK AND SUPERVISION JUNE 19,20,21, 1978.	3 DAYS	
(B). COMPUTING, PLOTTING AND INTERPRETATION OF DATA (AUG. 6,7 & 10, 1978). @ \$200.00/DAY,	3 DAYS	\$1,200.00

(2). <u>TIME USED BY F.C. LORING, P. ENG.</u> JUNE 19,20,21, 1978. @ \$200.00/DAY	3 DAYS	\$600.00
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(3). <u>TIME USED BY G. KINNEARD:</u> @ \$100.00/DAY	2 DAYS	\$200.00
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(4). <u>MILEAGE:</u>		
B. WHITTLES: 56 MI X 3 DAYS X 0.20/MILE =		\$33.60
F. LORING: 60 MI X 3 DAYS X 0.15/MILE =		\$27.00
G. KINNEARD: FERRY FARES (VANCOUVER-NANAIMO)		<u>\$18.00</u>
		<u>\$87.60</u>

(5). EQUIPMENT RENTAL		\$30.00
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(6). DUPLICATING, TYPING, BLUEPRINT COSTS		<u>\$55.00</u>
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TOTAL COSTS: \$2,172.60



(B). RESUME OF EXPERIENCE OF FIELD WORKERS

F. LORING, P. ENG. DID FIELD WORK FOR THREE DAYS. MR. LORING IS A GRADUATE MINING ENGINEER WITH 30 YEARS OF MINING AND EXPLORATION EXPERIENCE. MR. LORING IS A REGISTERED B.C. ENGINEER.

MR. G. KINNEARD WORKED FOR TWO FIELD DAYS. MR. KINNEARD HAS 2 YEARS OF COLLEGE GEOLOGY AND HAS HAD 7 YEARS OF PART TIME FIELD EXPERIENCE UNDER THE DIRECTION OF DR. A.B.L. WHITTLES.

(C). RESUME OF TECHNICAL AND FIELD WORK EXPERIENCE OF DR. A.B.L. WHITTLES, PH. D.

- (1). UNIVERSITY TRAINING AT UNIVERSITY OF B.C. AND UNIVERSITY OF TORONTO, WITH THE COMPLETION OF A PH. D. IN PHYSICS (GEOPHYSICS SECTION) IN 1964, FROM U.B.C.
- (2). PRIOR EXPERIENCE, (2 SUMMERS) WITH GEOPHYSICAL SECTION IMPERIAL OIL LTD., IN ALBERTA.
- (3). SURVEYING EXPERIENCE, BUTTLE LAKE POWER PROJECT.
- (4). FOUR YEARS AT THE B.C. INSTITUTE OF TECHNOLOGY, TEACHING GEOPHYSICAL PROSPECTING COURSES TO DAY AND EVENING STUDENTS, AND THREE YEARS AT MALASPINA COLLEGE.
- (5). CONSULTING EXPERIENCE DURING THE PAST 12 YEARS WITH COMPANIES IN VANCOUVER, VICTORIA, AND CALGARY, INCLUDING FIELD SUPERVISION AND INTERPRETATION.

PAGE THIRTY-NINE

- (6). FORMERLY IN CHARGE OF THE GEOLOGICAL TECHNOLOGY, MALASPINA COLLEGE, NANAIMO, WHICH INCLUDED THE TEACHING OF COURSES ON GEOPHYSICAL PROSPECTING AND GEOLOGY.
  
- (7). AN ACTIVE MEMBER WITH THE SOCIETY OF EXPLORATION GEOPHYSICISTS, AND THE B.C. GEOPHYSICAL SOCIETY.

*A.B.L. Whittles*

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DR. A.B.L. WHITTLES, PH. D.

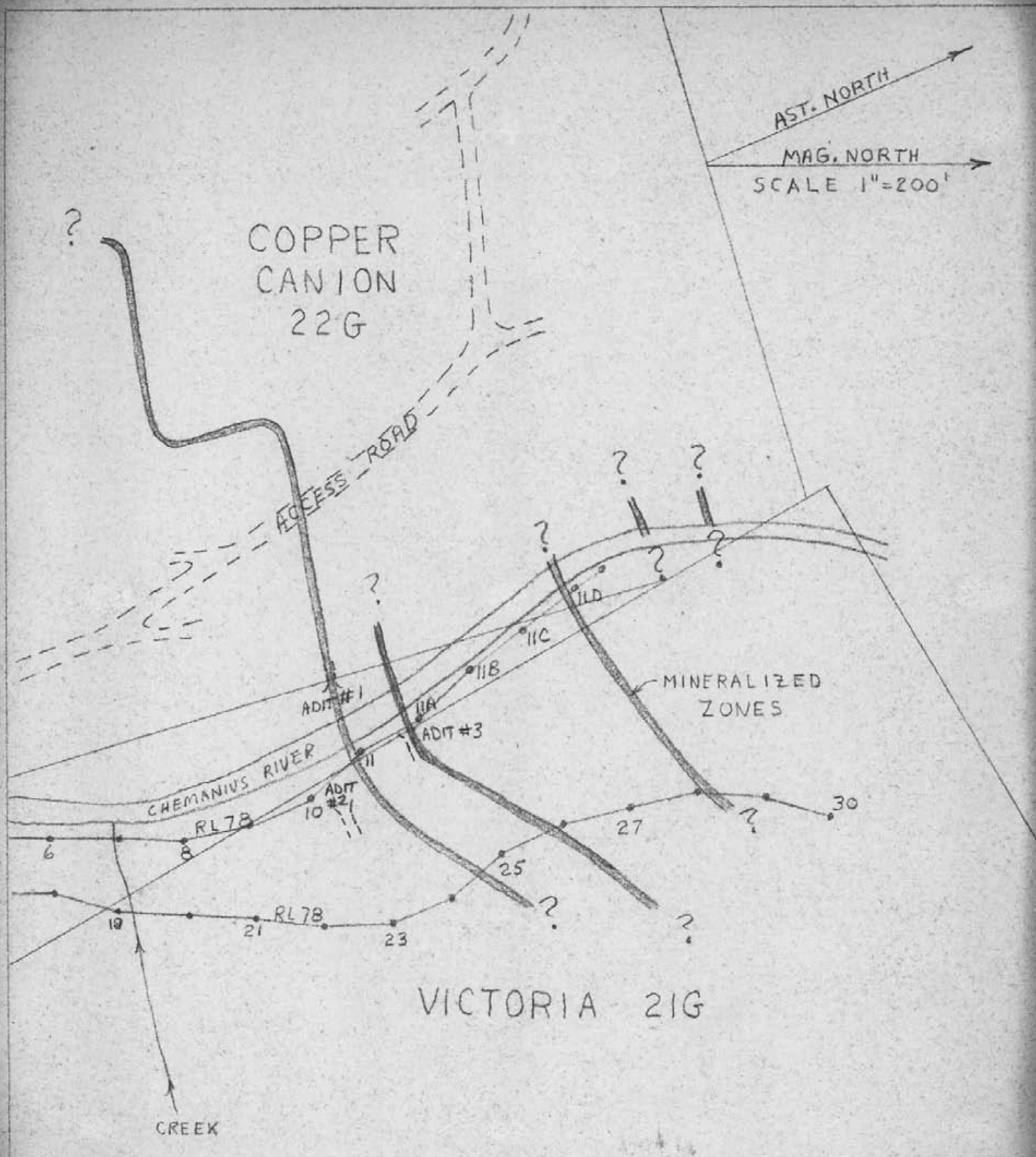


FIG. 15  
 HYPOTHESIZED TREND  
 OF MINERALIZED ZONE

DRN: AB.L.W.	DATE: AUG. 78
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COPPER  
MINT II

COPPER MINT I

COPPER  
CANYON  
22G

DONALD 63G

VICTORIA 21G

M4B LOGGING ROAD

ACCESS ROAD

AST. NORTH

MAG. NORTH

IP-21 IP-20

OPEN SHAFT

ADIT #1

ADIT #2

ADIT #3

ADIT #4

ADIT #5

ADIT #6

ADIT #7

ADIT #8

ADIT #9

ADIT #10

ADIT #11

ADIT #12

ADIT #13

ADIT #14

ADIT #15

ADIT #16

ADIT #17

ADIT #18

ADIT #19

ADIT #20

ADIT #21

ADIT #22

ADIT #23

ADIT #24

ADIT #25

ADIT #26

ADIT #27

ADIT #28

ADIT #29

ADIT #30

CHEMANIUS RIVER

CHEMANIUS RIVER

SMALL CREEK

CREEK

CREEK

CREEK

RL2-25  
(1973)

RL7B

RL7B

RL7B

RL7B

RL7B

RL7B

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ADIT #28

ADIT #29

ADIT #30

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**6972**  
NO.

SCALE: 1"=200'

FIG.3  
CLAIM, SURVEY  
LINE AND  
PHYSICAL FEATURES  
MAP

To accompany the Geophysical  
Geological 1978 Report,  
by A.B.L. Whittles, Ph.D.,  
on the Copper MINT Claim Group  
located on the Chemainus River,  
Victoria Mining District, B. C.

X A.B.L. Whittles