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SEPTEMBER 7, 1962.

CONSOLIDATED MOGUL MINES LTD.,
SUITE 405-25 ADELAIDE ST. WEST,
TORONTO 1, ONTARIO.

800906

ATT'N. MR. H.D. FORMAN

DEAR SIRS:

REPORT: DETAILED GEOLOGICAL-DIP NEEDLE
SURVEY, WELCO PROSPECT, LYTTON, B.C.

PRELIMINARY

THE PRESENT PROGRAMME WAS CARRIED OUT AS RECOMMENDED IN THE SUMMARY REPORT OF JULY 7, 1962. FIELD WORK WAS DONE BETWEEN AUGUST 13-24.

PERSONNEL WERE: W.M. SHARP, ENGINEER-IN-CHARGE; L. OLSON AND G.A. SEALE, ASS'T. ENGINEER AND ENGINEERING ASSISTANT RESPECTIVELY; AND R. WELCH, CO-OWNER, AS PACKER, CAMP COOK, ETC.

A TENT CAMP PROVIDED ADEQUATE SHELTER, BUT GENERALLY COOL WET WEATHER DELAYED FIELD WORK TWO TO THREE DAYS BEYOND THE TIME NORMALLY REQUIRED FOR A SUMMER OPERATION.

PROPERTY DETAILS ARE, GENERALLY, AS DESCRIBED IN THE PREVIOUS REPORT. HOWEVER, TRANSIT-CHAIN CHECKS OF THE CLAIM GROUP-ORIGINALLY LOCATED BY COMPASS-DISCLOSED TWO FRACTIONS. IT WAS SUGGESTED TO R. WELCH THAT HE STAKE AT LEAST ONE OF THESE TO PROTECT AN IMPORTANT SECTION OF THE GROUP.

ADDITIONAL EXPLORATORY WORK SINCE THE JULY 7 REPORT CONSISTS OF TWO 50' LONG TRENCHES, AVERAGING THREE FEET IN DEPTH, TO FURTHER INVESTIGATE THE 'SKARN-DIORITE' CONTACT IN THE VICINITY OF THE ORIGINAL WORKINGS.

FIELDWORK-RECENT PROGRAMME

SURVEYING

FIRST WORK CONSISTED OF RUNNING A BRUNTON-TAPE TRAVERSE OVER THE MAIN PART OF THE GROUP. THIS WAS PLOTTED ON A SCALE OF 1" = 200' - CANCELLING THE EFFECTS OF 'LOCAL ATTRACTION' AS MUCH AS POSSIBLE - FOR THE PURPOSE OF LOCATING A BASE-LINE FOR THE DIP-NEEDLE GRID. BECAUSE OF UNCERTAINTIES ARISING FROM COMPASS DEVIATION, AND WHICH COULD NOT BE ELIMINATED SATISFACTORILY, A CONTROL TRAVERSE BY TRANSIT-CHAIN WAS RUN AS A MORE SATISFACTORY BASE FOR THE DIP-NEEDLE GRID. THIS WAS PLOTTED ON '100-SCALE', A HYPOTHETICAL BASE-LINE (D-N ~~2~~) DRAWN IN, AND GRID CROSS-LINES No's 1-4 DRAWN IN. NEXT, THE INITIAL CROSS-LINE PICKETS WERE PLACED BY TRANSIT, AND THE CROSS-LINES EXTENDED TO REQUIRED DISTANCES BY PICKET-LINE AND CLINOMETER-TAPE.

GEOLOGICAL DETAILS WERE MAPPED ALONG AND ADJACENT TO ALL TRANSIT TRAVERSE AND PICKETED CROSS-LINES. DIP-NEEDLE OBSERVATIONS WERE GENERALLY CONFINED TO THE CROSS-LINES.

SAMPLING - SAMPLING WAS DONE IN SECTIONS OF APPRECIABLE MINERALIZATION, ALTHOUGH THIS COULD NOT BE DONE SYSTEMATICALLY, OR ADEQUATELY, AT ALL SECTIONS BECAUSE OF THE RATHER LIMITED EXTENT OF OUTCROPS THROUGH INTERESTING SECTIONS.

ALL ESSENTIAL INFORMATION IS SHOWN ON THE ACCOMPANYING PLAN - GEOLOGICAL-DIP NEEDLE SURVEY. A SET OF CROSS-SECTIONS HAS BEEN PREPARED - AT EACH CROSS-LINE - BUT NOT PRESENTED WITH THIS REPORT. IN THE EVENT OF FURTHER GEOPHYSICAL WORK THEY WILL BE NECESSARY.

GEOLOGICAL DETAILS

REGIONAL

THE CLAIM GROUP STRADDLES A LARGE SEPTUM OF VARIABLY-ALTERED "NICOLA" OR "CACHE-CREEK" VOLCANIC AND SEDIMENTARY ROCKS, AND WHICH CUTS ACROSS THE GENERAL NORTHWESTERLY TREND OF ENCLOSING LYTTON BATHOLITH AT A LARGE ANGLE. OTHER SEPTA, CONTAINING MORE LIMY SEDIMENTS (ALTERED) AND LESS TUFF, LIE RATHER CLOSELY SOUTH OF THE 100-SCALE MAPPED AREA, AND ALSO CONTAIN APPRECIABLE MINERALIZATION WITHIN THE FEW SECTIONS TOUCHED BY RECONNAISSANCE TRAVERSES TO DATE. FURTHER INVESTIGATION OF THESE COULD ACCOMPANY A FUTURE PROGRAMME INVOLVING ONLY A MODEST AMOUNT OF PHYSICAL EXPLORATION WITHIN THE KNOWN AREA.

THE RECENT INVESTIGATION SHOWS THE BATHOLITH TO BE COMPLEX IN COMPOSITION, IN THAT IT EVIDENTLY CONTAINS ROCKS THAT ARE GRADATIONAL IN CHARACTER FROM DEFINITELY METAMORPHOSED TUFFS- TO META-DIORITES- TO APPARENTLY PRIMARY DIORITES. IT ALSO CONTAINS A MAJOR GRANITIC COMPONENT, OF UNKNOWN TOTAL EXTENT, TO THE EAST OF MAIN AREA. CERTAIN FACIES OF THIS SUITE CONTAIN MUCH (PRIMARY) MAGNETITE, ~~AND~~ WHICH TENDS TO OBSCURE THE PATTERN OF ZONES, OR ANOMALIES, CONSISTING OF 'INTRODUCED' MAGNETITE-GENERALLY RELATED ^{TO} 'SKARN' TYPES AND SILICIFIED AND OTHERWISE ALTERED TUFFS.

LOCAL AREAL

THE SIGNIFICANT PART OF THE AREA COVERED IN DETAIL IS COMPOSED ^{OF} MODERATELY- TO HIGHLY ALTERED VOLCANIC- SEDIMENTARY BEDS SITUATED BETWEEN TWO PRINCIPAL DIORITIC BODIES APPROXIMATELY CONFORMABLE TO STRUCTURAL TRENDS OF THE ENCLOSED ROCKS. STRUCTURALLY, THE MOST OBVIOUS FEATURE IS AN ARCH-LIKE FLEXURE CONCAVE TO THE SOUTHEAST ^{WEST}. RELATED MINOR STRUCTURES CONSIST OF MILD FOLDS, SHEAR-FAULTS AND QUARTZ-FILLED TENSION FRACTURES. THE RELATIONSHIP OF MAJOR AND MINOR STRUCTURES, AS WELL AS BY THE FOLD PATTERN IN THE AREA SOUTHEAST OF LINE No 2-NORTH, INDICATES RELATIVE INTER-BED DISPLACEMENTS IN WHICH THE MORE SOUTHWESTERLY UNITS HAVE SHIFTED TO THE NORTHWEST WITH RESPECT TO MORE NORTHEASTERLY UNITS. IF THIS ASSUMPTION IS CORRECT, BEDDING AND CONTACT SECTIONS HAVING MORE NORTHERLY TRENDS SHOULD LIE WITHIN 'TENSION' ZONES MORE 'OPEN' TO MINERALIZATION. THIS WOULD SUGGEST ADDITIONAL EXPLORATION TO THE SOUTHEAST OF LINE # 1-5, AND ONLY SLIGHT EMPHASIS ON FURTHER WORK N.W. OF LINE # 4.

SIGNIFICANT OCCURRENCES OF MINERALIZATION ARE SITUATED WITHIN THE EPIDOTE-GARNETITE SKARN ZONE ADJACENT TO THE MORE NORTHERLY DIORITE BODY. LOCAL STRUCTURAL CONTROL IS, PRESUMABLY, EFFECTED BY CONTACT SHEARS AND CROSS FRACTURES. FAVOURABLE HOST ROCKS ARE LIMY EPIDOTE-GARNET-HORNBLLENDE SKARNS. SIMPLE HARD, MASSIVE GARNETITES APPEAR TO BE UNFAVOURABLE. AT THE MAPPED HORIZON, AT LEAST, ZONES OF MINERALIZATION TEND TO BE PATCHY OR 'LENSY'. HOWEVER, THIS DOES NOT PRECLUDE STRONGER OCCURRENCES AT DEEPER HORIZONS, OR WITHIN MORE SOUTHEASTERLY SECTIONS OF THE CONTACT ZONES.

DIP NEEDLE RESULTS PROVIDED NO REALLY SIGNIFICANT ANOMALIES WHICH MAY BE USED ^{AS} POSITIVE GUIDES TO FURTHER EXPLORATION. ANOMALIES "A" & "D" SUGGEST POSSIBLE EXTENSIONS OF MAGNETITE AND, POSSIBLY, SULFIDE MINERALIZATION SOUTHEASTWARD.

P.3 - DETAILED GEOLOGICAL - DIP NEEDLE SURVEY, SEPT. 7

ANOMALIES "B" - "C" INDICATE ONLY THAT THERE WAS A GENERAL INTRODUCTION OF MAGNETITE WITHIN A BROAD BUT RESTRICTED ZONE CLOSE TO THE AXIS OF THE MAJOR FLEXURE, AND NOT PARTICULARLY ASSOCIATED WITH ANY SPECIFIC ROCK TYPE OR ZONE OF MINERALIZATION.

SUMMARY AND RECOMMENDATIONS

THE MOST FAVOURABLE AREA FOR FURTHER WORK APPEARS TO BE WITHIN THE "A" ZONE AND ITS SOUTHEASTERLY EXTENSIONS.

SECTIONS OF MINERALIZATION, AS INDICATED BY THE LOCALIZED SAMPLES TAKEN TO DATE, DO NOT FORM WORKABLE ORE SHOTS, BUT ARE SUFFICIENTLY ENCOURAGING TO JUSTIFY SOME FURTHER EXPLORATION - IN VIEW OF OTHER STRONG GEOLOGICAL FEATURES.

ALTHOUGH AN I.P. SURVEY, IN CONJUNCTION WITH ADDITIONAL GEOLOGICAL WORK WOULD PROVIDE THE QUICKEST AND MOST CONCLUSIVE TEST FOR IMPORTANT BODIES OF DISSEMINATED SULPHIDES, THIS WOULD BE BEST PRECEDED BY A LOWER-COST PROGRAM OF STRIPPING AND GEOLOGICAL MAPPING WITHIN THE 'CONTACT' SECTION OF THE PRESENTLY DELIMITED "A" ZONE AND ITS SOUTHEASTERLY EXTENSIONS.

COST ESTIMATES

(A) TRENCHING - FOR INVESTIGATION OF ACTUAL SKARN - DIORITE

CONTACT ZONE WITHIN LIMITS OF PRESENT WORKINGS AND S. E. EXTENSION OF ZONE BY TEST-PITTING - TRENCHING. ESTIMATE 6 TO 8 50-FOOT TRENCHES:

TRENCH LABOUR -	\$ 500.00
ENGINEERING & SUPERVISION -	500.00
PROPORTION TO GEOLOGICAL -	250.00
PACKING, HORSES -	50.00
CAMP EXPENSE -	200.00
ALLOWANCE FOR EQUIP & SUPPLIES	100.00
PROVISION FOR MISCELL. EXP.	100.00

TOTAL, MINIMUM - \$ 1700.00 ←

ESTIM. TOTAL, MAX. PROG'M. \$ 3000.00

(B) INDUCED POLARIZATION (I.P.) SURVEY - (CONTINGENT ON POSITIVE RESULTS FROM TRENCHING PROGRAM (A): 300' DEPTH TEST.

ESTIM. 8 DAYS I.P. CHARGES	\$ 3000.00
I.P. TRANSPORT, INCL. MOB-DEMOB.	500.00
GEOLOGICAL & I.P. SUPERVISION -	1000.00
ENGINEERING - I.P. LINE CREW	750.00
I.P. LINE PREP. STEEP, ROUGH TERRAIN	500.00
GENERAL PACKING EXPENSE -	100.00
CAMP EXPENSE	300.00

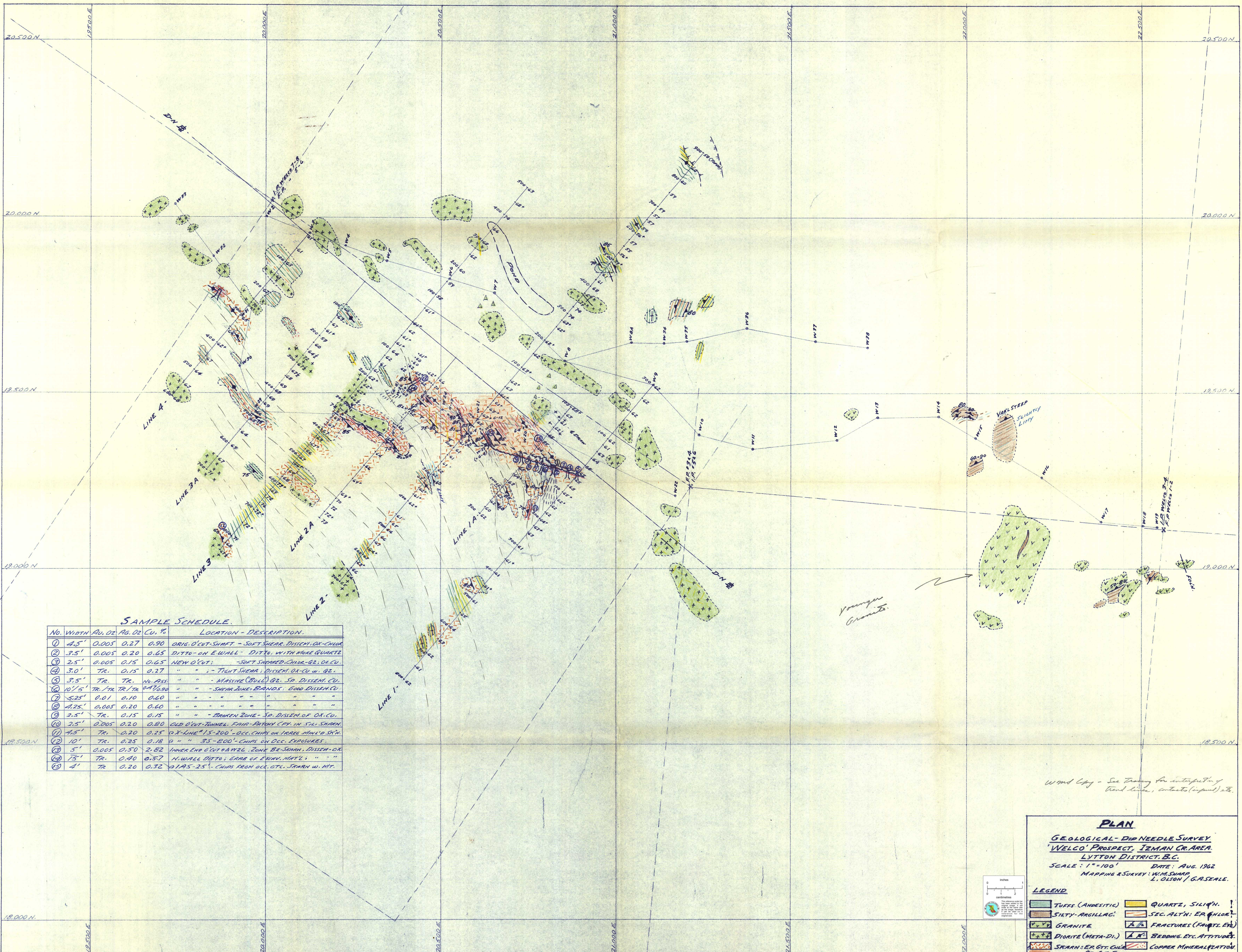
TOTAL. \$ 6150.00 - TO MAX. \$ 7500.00

NOTE: OPTION EXPENSE NOT INCLUDED IN ABOVE ESTIMATES. ADVICE FROM HUNTING SURVEY CORP. IS THAT THEIR 'PORTABLE' I.P. UNIT MAY NOT BE AVAILABLE UNTIL LATE THIS FALL OR PERHAPS NEXT SPRING. THIS, BY REASON OF OPTION PAYMENTS, WOULD HAVE A DIRECT BEARING ON TOTAL EXPENSE ESTIMATES.

RESPECTFULLY SUBMITTED.

W. M. Sharp
ENGINEER.

MR. H. D. FORMAN 1. ENCL.
" S. A. PERRY 1. ENCL.



SAMPLE SCHEDULE.

No.	WIDTH	Av. Oz.	Ag. Oz.	Cu. %	LOCATION - DESCRIPTION.
①	4.5'	0.005	0.27	0.90	ORIG. O'UT-SHIRT - SOFT SHEAR, DISSEM. OX-CHLOR.
②	3.5'	0.005	0.20	0.65	DITTO - ON E WALL - DITTO, WITH MORE QUARTZ
③	2.5'	0.005	0.15	0.65	NEW O'UT - SOFT SHEAR, CHLOR. BR. OX. CU.
④	3.0'	TR.	0.15	0.27	" " - TIGHT SHEAR, DISSEM. OX-CU w. BR.
⑤	3.5'	TR.	TR.	No. Ass.	" " - MASSIVE (BULL) BR. SP. DISSEM. CU.
⑥	10' 1/2'	TR/TR	TR/TR	0.47/0.90	" " - SHEAR ZONE - BANDS - GOOD DISSEM. CU.
⑦	5.25'	0.01	0.10	0.60	" " - " " " " " " " "
⑧	4.25'	0.005	0.20	0.60	" " - " " " " " " " "
⑨	2.5'	TR.	0.15	0.15	" " - BROKEN ZONE - SP. DISSEM. OF OX. CU.
⑩	2.5'	0.005	0.20	0.80	OLD O'UT-TUNNEL, FAIR-PATH ON COP. IN SILL, SPARN.
⑪	4.5'	TR.	0.20	0.25	O'X-LINE# 15-200 - OCC. CHIPS ON IRREG. MIN'L'D SK'N.
⑫	10'	TR.	0.25	0.18	" " " " 35-200 - CHIPS ON OCC. EXPOSURES.
⑬	5'	0.005	0.50	2.82	INNER END O'UT RAYZL. ZONE BY SPARN, DISSEM. OX.
⑭	7.5'	TR.	0.40	0.57	N. WALL DITTO, GRAB OF EVERY. MAT'L.
⑮	4'	TR.	0.20	0.32	DIAS-25 - CHIPS FROM OCL. OTC. SPARN w. MT.

Wind Log - See Drawing for interpretation of trend lines, contours (isopach) etc.

PLAN
GEOLOGICAL-DIP NEEDLE SURVEY
WELCO PROSPECT, IZMAN CR. AREA
LYTTON DISTRICT, B.C.
 SCALE: 1"=100' DATE: AUG. 1962
 MAPPING & SURVEY: WIM SWARD
 L. OLSON / G.A. SEALE.

LEGEND

TUFFS (ANDESITIC)	QUARTZ, SILIC. !
SILTY-ARGILLAC.	SEC. ALT'N: ER. IN LOR.
GRANITE	FRACTURES (FAULTS, ETC.)
DIORITE (META-DI.)	BEDDING, ETC. ATTITUDES.
SPARN: ER. GT. CHLOR. BR. CCT. ETC.	COPPER MINERALIZATION