

Pb - age Jurassic

TILLICUM

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SUMMARY OF THE

EXPLORATION AND PILOT MINING PROGRAM

ESPERANZA GOLD PROPERTY

ARROW LAKES AREA, SOUTHEAST BRITISH COLUMBIA

SLOCAN MINING DIVISION

LATITUDE 49°59'N LONGITUDE 117°43'W

N.T.S. 82-F/13 &
82-K/4

BY

BERNARD DEWONCK

JOHN McCLINTOCK

WAYNE J. ROBERTS

FOR

ESPERANZA EXPLORATIONS LTD.

DECEMBER, 1986

SUMMARY.

Diamond drilling and underground drifting programs conducted on the ESPERANZA GOLD PROPERTY at Tillicum Mountain successfully outlined continuity of high grade gold reserves in the HEINO-MONEY GOLD ZONE.

The 1986 evaluation program with expenditures totalling \$662,000 included 2003 feet of surface diamond drilling; 580 feet of underground diamond drilling; 510 feet of drifting; 155 feet of raising; 430 feet of slashing and 738 feet of test hole drilling.

The underground drifting and bulk sampling program defined continuous gold bearing skarn with values to 1.63 oz/T gold along 120 feet of drift length in several levels where earlier drill holes indicated lower grade. All further reserve definition programs should include drill holes for skarn location and drifting programs for continuity and grade of gold content.

The 1986 programs delineated a probable reserve of 6756 Tons grading 0.99 oz/T gold as well as a detailed drill defined reserve of 1300 Tons grading 3.00 oz/T gold in the HEINO-MONEY ZONE. This zone contains an overall drill indicated reserve of 40,000 Tons grading 0.60 oz/T gold and an additional reserve potential to the 2000 Level of 150,000 Tons grading 0.60 oz/T gold. Muck rounds from this year's drifting program was stockpiled on site for subsequent direct shipment to a custom mill. RESERVES

The 1986 underground exploration program provided the reserve base and encouragement required to establish a test mining and "on-site" test milling program in 1987.

INTRODUCTION

Exploration programs conducted during the period 1981-1984 targeted and drill tested three major gold-silver zones, as well as outlining numerous other showings on the property. High-grade reserves containing over 24,000 ounces of gold were indicated with the HEINO-MONEY ZONE; in addition, a drill-indicated reserve of over 5 million Tons, grading 0.05 oz/Ton gold was indicated within the EAST RIDGE ZONE; and over 3 million Tons grading 3 oz/Ton silver was outlined in the SILVER QUEEN ZONE.

The 1985 program focused on preparing the HEINO-MONEY GOLD ZONE for production. Limited underground drifting was conducted to define continuity of gold mineralization as well as prepare the overall development scenario. Test mining of approximately 2,700 Tons from both surface and underground, and direct shipping to a custom mill and the Cominco smelter was undertaken to determine feasibility of small scale production.

Prompted by the success of the 1985 program, a more comprehensive program of surface and underground diamond drilling, drifting, raising and test holing was undertaken on the HEINO-MONEY ZONE in 1986. The purpose of the 1986 program was to develop sufficient reserves to justify the construction of a mill and to provide a bulk sample of "run of the mine" ore material for a milling test.

The 1986 exploration program included surface diamond drilling to:

- (a) confirm the continuity of the ore zone between previously drilled holes and to identify targets for the extension of the Money Adit (2130 level) initiated in 1985;
- and (b) test the downdip extension of a mineralized structure trending transversely to the HEINO-MONEY ZONE.

A limited amount of underground diamond drilling, in short, closely spaced holes, tested the down-dip potential for a high-grade shoot extending below the 2160 level (Heino Adit).

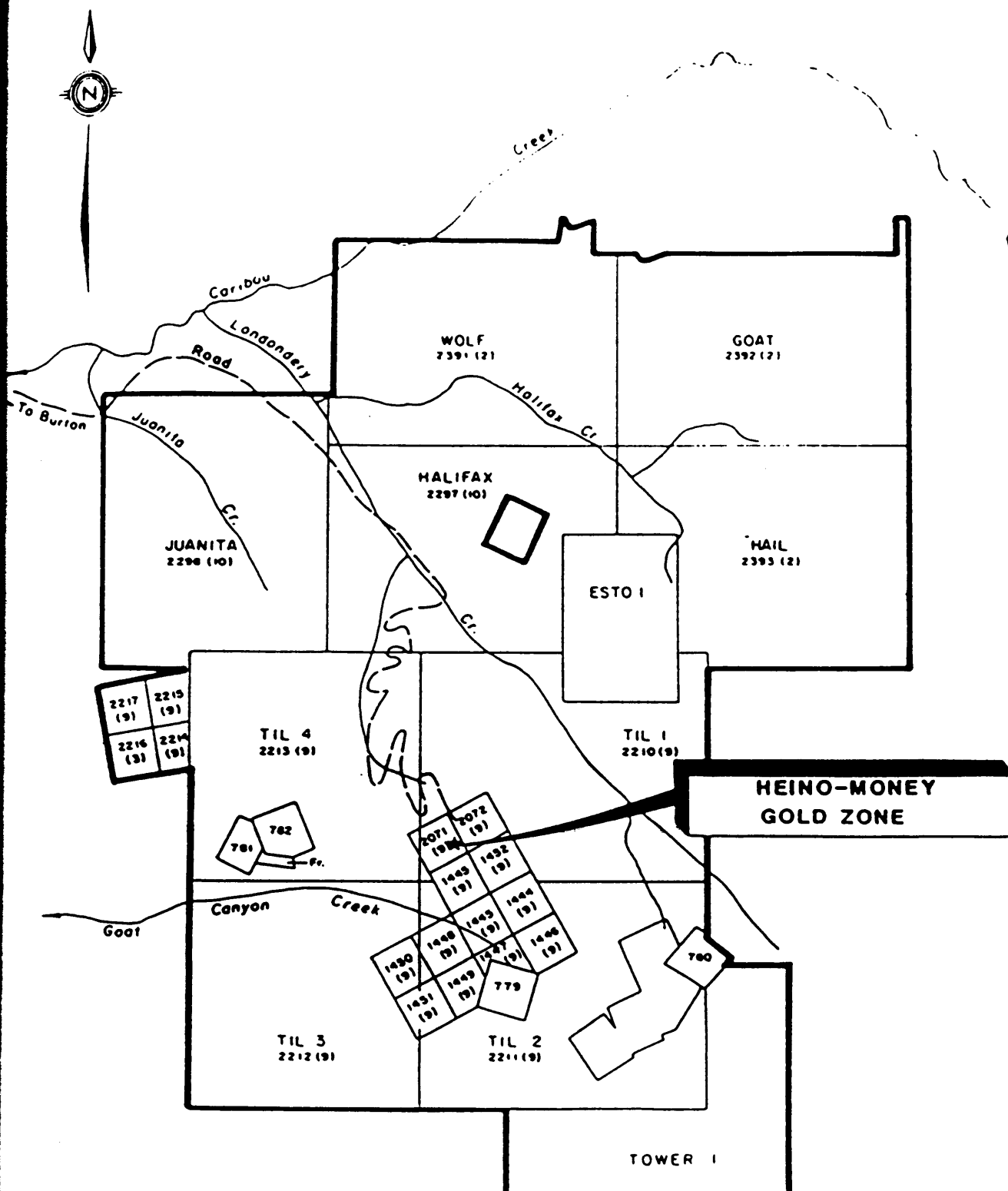
The underground work included extension of the 2130 Level, driving of a 2136 Sub-level with raises and ore passes constructed between these levels and to the 2148 Level (Screamer Sub-level). These drifts and raises confirmed the continuity of the ore zone from surface to the 2130 Level.

The 2112 Level was driven to intersect the down-dip extension of the "transverse" (Money-Pit) zone which had been exposed in the portal area of the 2130 Level and intersected by diamond drilling in 1986.

All assays were initially determined by atomic absorption methods in the 'on-site' field laboratory operated by Esperanza during the course of the program with the exception of back sample assays in the 2136 Level (numbers 38001-38050) and in the 2112 Level south of 5+14N (numbers 38051 to 31084 inclusive). These samples were analyzed by fire assay at Min-En Laboratories in North Vancouver, B. C.

The survey control grid appearing on all mine plans and sections is metric, however tonnage, grade and sample intervals are quoted in short tons, ounces per short ton and feet respectively. All elevations and level designations are in metres above sea level.

The geological legend appearing in Figure 4 should be referred to when viewing all geological maps.



2217 (9)	2215 (9)
2216 (9)	2214 (9)

2071 (9)	2072 (9)
1982 (9)	1952 (9)
1443 (9)	1444 (9)
1448 (9)	1449 (9)
1451 (9)	1446 (9)
1450 (9)	1447 (9)
1449 (9)	779

**HEINO-MONEY
GOLD ZONE**

ESPERANZA EXPLORATION LTD.
TILlicum GOLD PROJECT
CLAIM MAP

3% of Net Smelter Returns until the first \$3,000,000 has been so paid;
 2% of Net Smelter Returns until a further \$2,000,000 has been so paid;
 1% of Net Smelter Returns until a further \$1,000,000 has been so paid.

Total Maximum Payments: \$6,000,000

Provided that if the average grade of ore in respect of which Net Smelter Returns are payable for a given calendar quarter exceeds 2 troy ounces per short ton, prior to any concentration thereof, the above percentage of Net Smelter Returns payable to the Owners during that calendar quarter shall be doubled.

2. JUANITA/HALIFAX/ESTO:

The Juanita and Halifax claims were acquired by staking in 1980, while the Esto claim was staked in 1983.

<u>Name of Claim</u>	<u>No. of Claim Units</u>	<u>Record Number</u>	<u>Assessment Work Due Date</u>
HALIFAX	20	2297	Oct. 28, 1994
JUANITA	20	2298	Oct. 28, 1994
ESTO	<u>6</u>	4031	Jul. 29, 1994
Sub Total Claim Units:	<u>46</u>		

The Juanita, Halifax and Esto claims adjoin the north boundary of the TIL claims and form part of the overall Tillicum Property.

In accordance with the agreement dated September 20, 1980, with the Gustafson's, and production from mineral zones on the Juanita/Halifax/Esto which fall within one-half mile of the boundary of the TIL claims, is subject to the provisions of the above mentioned Gustafson agreement.

3. CARIBOU CREEK:

The Caribou Creek Property claims were acquired during 1981 under letter of agreement with Leslie Kiss, Prospector, of Vancouver, B.C.

REGIONAL SETTING:

The Esperanza Property is underlain by four principal rock assemblages. From oldest to youngest; Milford Group calc-silicate schists and hornfels, Slocan Group shale and tuffaceous shale, Rosslund Group amphibolite and meta andesite, and quartz diorite to quartz monzonite of the Goat Canyon and Halifax Creek intrusive complex.

The meta volcanic-metasedimentary succession has suffered through both regional and contact metamorphism. Unit boundaries are discontinuous and irregular due to faulting and folding. Two stages of intrusions are apparent with an earlier phase of diorite porphyry followed by quartz monzonite.

Gold and silver mineralization occurs in calc-silicate, quartz and carbonate skarn deposits developed within both metasedimentary and metavolcanic units.

PROPERTY GEOLOGY:

Exploration activity in 1986 focused on detailed evaluation of the HEINO-MONEY GOLD ZONE. The reader is referred to reports by Roberts/McClintock (1983), and McClintock (1984) for detailed lithological descriptions and structural settings of the various rock assemblages underlying the Property.

The following brief descriptions capsule lithologic descriptions, structural setting and distribution of unit assemblages throughout the Property (See also Figures 3 to 6).

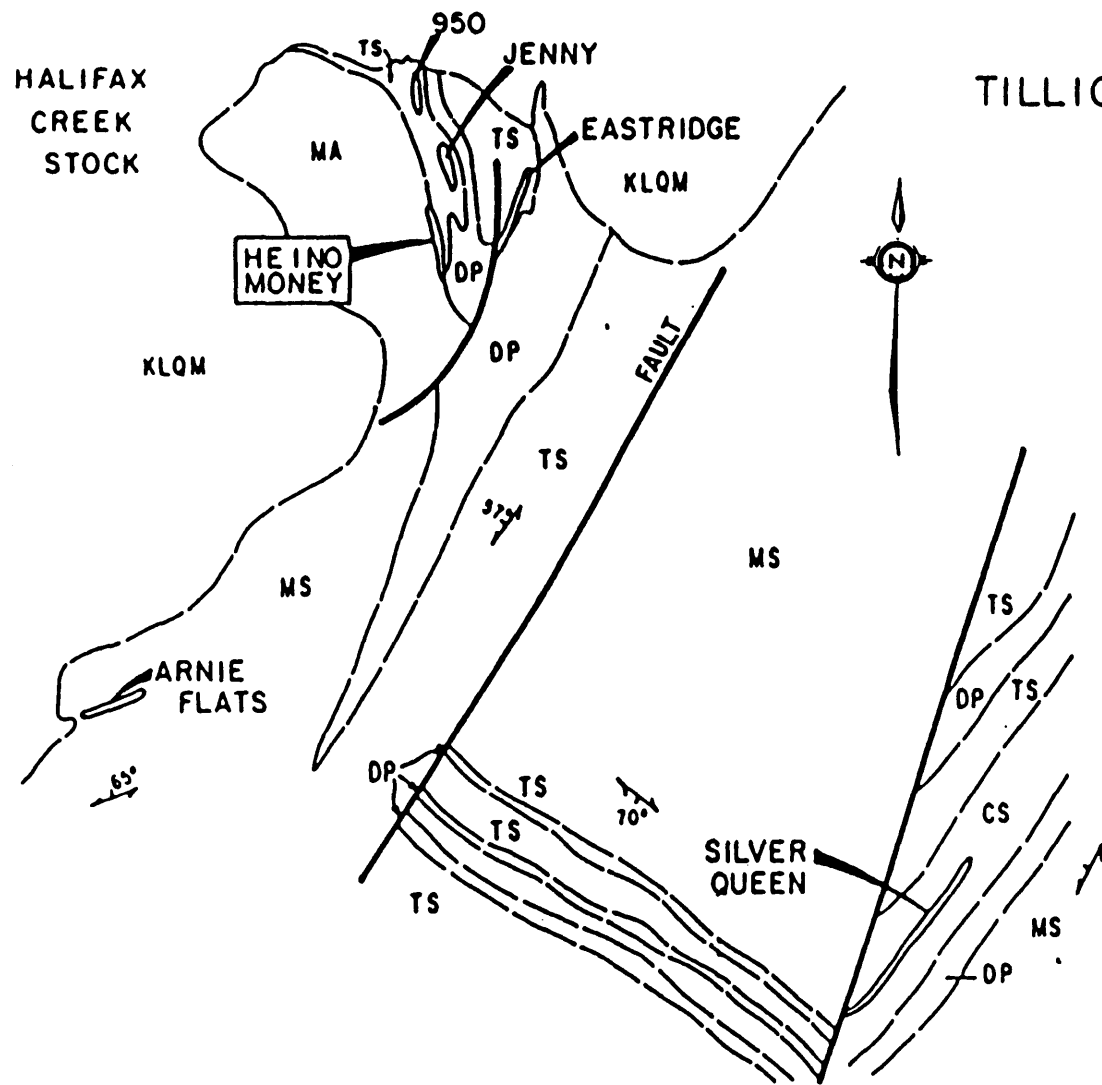
The Milford Group succession is described as fine to medium-grained clastic and volcanoclastic rocks that have been both regionally and thermally metamorphosed to pelitic and calc-silicate schists and hornfelses. The Slocan Group assemblage consists of dark grey shale variable tuffaceous components. The Rosland Group units are predominantly mafic volcanic flows, tuffs and breccias that have been metamorphosed to amphibolite and hornblende-plagioclase schists and gneisses.

Structure in the metamorphosed rocks is complex, with conflicting interpretations by Hyndman (1968) and Parrish (C.J.E.S. p 944, vol. 18, 1981).

The Goat Canyon and Halifax Creek stocks post-date regional metamorphism and intrude the older rocks in the north and west portion of the property. Both stocks are predominantly quartz monzonite with contaminated border phases of diorite, quartz-diorite and granodiorite.

The Mississippian to Permian Milford Group forms the base of the stratigraphic succession on the Property and consists of siltstones, quartzites and limey sediments which have been regionally metamorphosed to hornfels, schists and gneisses. The Milford succession underlies much of the south and eastern portion of the claims and is host for the stratabound silver mineralization at the Silver Queen Zone.

The Slocan Group consists of intercalated tuffaceous siltstone, shale and greywacke that is transitional to massive meta-andesite. The sequence of tuffaceous sediments varies to 100m in thickness and is exposed on the north



GEOLOGY TILLICUM GOLD PROPERTY

- | | |
|-----------------|-------------------------|
| KLOM | QUARTZ DIORITE, DIORITE |
| DP | DIORITE PORPHYRY |
| MILFORD GROUP ? | |
| CS | CALCAREOUS META-SEDS. |
| TS | TUFFACEOUS META-SEDS. |
| MA | META BASALTIC ANDESITE |
| MS | UNDIVIDED MILFORD GP. |

0 1.0
KILOMETRE

Figure 3

LEGEND: TILlicUM DISTRICT

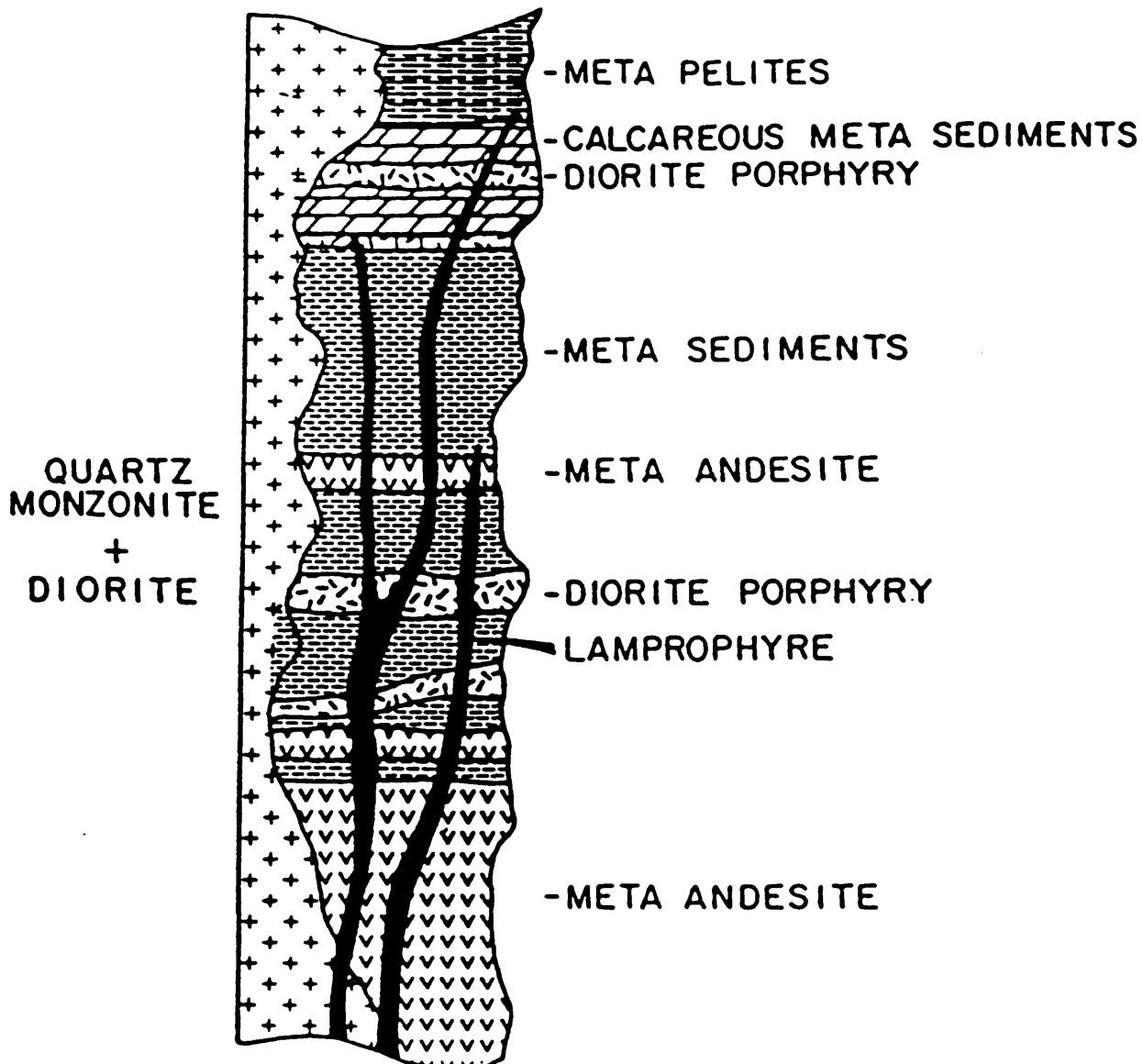
AGE	UNIT	DESCRIPTION	METAMORPHIC OVERPRINT	
			CALC-SILICATE SKARN	HORNFELS
UNKNOWN	LMP	LAMPROPHYRE DYKES DARK GREEN CARBONATE ALTERED, AUGITE-EPIDOTE BEARING LAMPROPHYRE		
	LGR	LEUCOGRANITE DYKES		
CRET.-JURASSIC	Kgmb	GOAT CANYON - MALIBU CREEK STOCKS HORNBLENDE-BIOTITE QUARTZ MONZONITE, minor QUARTZ DIORITE, GRANODIORITE		
		SKARN IMPREGNATIONS -GOLD MINERALIZATION	<p>DIOPSIDE-TREMOLITE QUARTZ SKARN-GOLD QUARTZ SKARN-GOLD-PYRITE TREMOLITE-GROSSULARITE K-FELD QUARTZ SKARN-PYRITE-GALENA-SPHALERITE-GOLD DIOPSIDE-TREMOLITE-CLINOZOISITE QUARTZ SKARN-PYRITE-GOLD TREMOLITE-EPIDOTE-CARBONATE-CHLORITE GARNET-K-FELDSPAR SKARN CLINOZOISITE-GARNET-DIOPSIDE-K-FELDSPAR QUARTZ SKARN-PYRITE-GOLD</p>	
UNKNOWN	DP	MASSIVE TO FOLIATED, GREY DIORITE PORPHYRY WITH SUBROUNDED PLAGIOCLASE PHENOCRYSTS IN MOTTLED AMPHIBOLIC GROUNDMASS WITH SPARSE ANNECERAL GARNETS		
	DH	HYBRID DIORITE-HIGHLY DIORITIZED METASEDIMENTS		
OCEAN GP.	SH	DARK-GRAY-BLACK HOISTINTLY LAMINATED SHALE, LOCAL DEVELOPMENT OF SILTSTONE LAMINATIONS	CALC-SILICATED-HORNFELSED SHALE	BIOTITE-ACTINOLITE-CHLORITE SCHIST
	TS	BEIGE-TAN-DARK GRAY, LAMINATED TUFFACEOUS SHALE	LAMINATED CALC-SILICATE BIOTITE-PLAGIOCLASE-CHLORITE-GARNET SCHIST	BIOTITE-CHLORITE-HORNBLLENDE SCHIST
	TV	BEIGE, PALE GREEN TUFFACEOUS ANDESITE	QUARTZ-TREMOLITE-CLINOZOISITE IMPREGNATED TUFFACEOUS ANDESITE	BIOTITE-ACTINOLITE-CHLORITE SCHIST
ISLAND	MA	DARK GREEN, FINE GRAINED META ANDESITE TO META-BASALTIC ANDESITE (BRECCIA, TUFFS, FLOWS)	ZEBRA ANDESITE, DIOPSIDE-TREMOLITE-ACTINOLITE-BIOTITE GARNETIFEROUS HORNFELS	PLAGIOCLASE-HORNBLLENDE-AUGITE EPIDOTE AMPHIBOLITE BIOTITE-HORNBLLENDE-PLAGIOCLASE-CARBONATE HORNFELS
FORD GP.	MC	PINK-BEIGE, FINE GRAINED, SUGARY TEXTURED, ALTERED CLASTICS INCLUDING QUARTZITE, ARKOSE AND SILTSTONE.	BIOTITE-MUSCOVITE-GARNETIFEROUS SKARN	QUARTZ-K-FELDSPAR-BIOTITE-CHLORITE SCHIST
	MO	YELLOW-BROWN, SUGARY TEXTURED, FINE GRAINED, ALTERED QUARTZITE	QUARTZ-TREMOLITE-SULPHIDE IMPREGNATED META QUARTZITE	MUSCOVITE-ORTHOCLASE-QUARTZ SCHIST
	SS	WHITE TO YELLOW, QUARTZ-SERICITE SCHIST (POSSIBLY CAUSED BY SHEARING AND ALTERATION OF DH1)		

- FERS**
- FAULTED, SHEARED
 - TUFFACEOUS
 - PYRITIC
 - LAMINATED
 - MASSIVE
 - QUARTZ VEINING
 - VISIBLE GOLD
 - PYRRHOTITE
 - MASSIVE SULPHIDE
 - GALENA
 - SPHALERITE
 - INTERMITTANT
 - WEAR

- ALTERATION TYPES**
- A - ALTERED, NOT DEFINED
 - H - HORNFELS
 - K - CALC-SILICATE
 - C - CARBONITIZATION
 - S - SILICIFICATION
 - N - SKARN
 - R - ARGILLIC ALTERATION (KAOLINITE, MONTMORILLONITE, PYROPHYLLITE)

Fig: 4

TIL LICUM GOLD PROPERTY LITHOSTRATIGRAPHIC COLUMN



0 500
METRES

FIGURE 5

slopes of Tillicum Mountain. Slocan Group assemblages are host for both the HEINO-MONEY and EAST RIDGE gold zones.

Massive flows, breccia and tuffs have recently been assigned to the Rosslund Group (Ray, G.E., 1985). These metavolcanics are composed of pillow flows, agglomerates and breccias on the west and north slopes of Tillicum Mountain with estimated thicknesses varying to 200m. Although only a few top determinations were recognized, it appears that the largest exposure of meta-andesite is overlain by a sequence of tuffaceous sediments interbedded with 5-20m thick flows of andesite. The metavolcanics are also host for structurally controlled gold-skarn mineralization at the Money Pit.

Diorite Porphyry is intrusive into the Milford-Slocan succession forming dykes and sills to 200m in thickness. These intrusives pre-date the Cretaceous Stocks and occur in swarms in the Tillicum Peak, Golden Hope and Silver Queen areas. The intrusive bodies have cores with medium-grained crowded porphyritic texture gradational into margins that are fine-grained and granular. Intense recrystallization and partial assimilation of the sedimentary units adjacent to the thicker porphyry sills has made contacts vague.

The Cretaceous age Goat Canyon and Halifax Creek stocks are intrusive into all the above mentioned units. The stocks are compositionally similar and are fine to medium-grained, hypidiomorphic granular quartz monzonite, granodiorite and quartz diorites with contaminated border phases of monzonite and diorite.

The youngest rocks on the property are narrow (less than 4 metres), northerly-trending, steeply-dipping lamprophyre dykes that are continuous along strike for hundreds of metres. Although present throughout the property, these dykes are concentrated in two swarms that cross through the EAST RIDGE and HEINO-MONEY gold zones.

Structure is complex and is dominated by steep angle normal and reverse faults. Most faults have little offsets, however, several faults with major displacements divide the property into fault-bounded blocks. Within fault-bounded blocks, little evidence of folding exists. The metamorphic fabric of the rock closely parallels the bedding planes with minor or parasitic folding only very rarely observed.

Figure 6 is a simplified surface geological map of the HEINO-MONEY ZONE area, to which locations of both the 1986 drill holes and principal mine levels have been added. Also identified are the site of the original Money Pit showing (now the 2130 Level portal) and the "transverse" structure, as mapped on surface. The 1986 Exploration programs outlined two auriferous skarns at or near the contact between the Rosslund Group metavolcanics and the tuffaceous volcanics/sediments of the Slocan Group. Gold bearing sulphide skarn mineralization, exposed in the Money Pit, occurs in the "transverse" fault which trends in an arcuate pattern through meta-andesite. The two zones appear to merge south and beyond the 2112 Level drift. The arcuate "transverse" also appears to terminate the north-south trending HEINO-MONEY skarn and possibly displace the gold bearing HEINO structure 100 metres to the east.

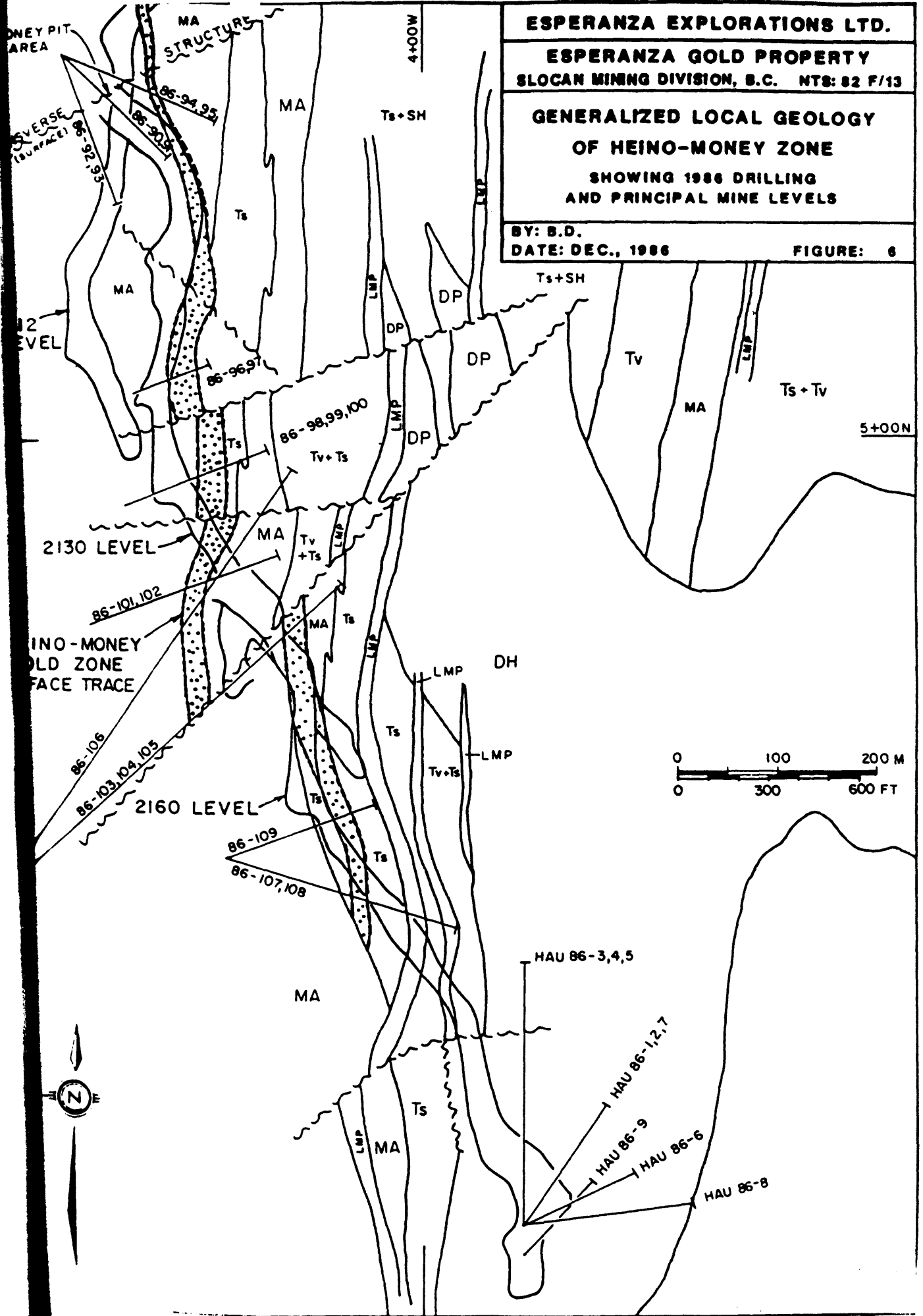
ESPERANZA EXPLORATIONS LTD.

ESPERANZA GOLD PROPERTY
SLOCAN MINING DIVISION, B.C. NTS: 82 F/13

GENERALIZED LOCAL GEOLOGY
OF HEINO-MONEY ZONE
SHOWING 1986 DRILLING
AND PRINCIPAL MINE LEVELS

BY: B.D.
DATE: DEC., 1986

FIGURE: 6



Pb-Age = Jurassic

GOLD-SILVER MINERALIZATION:

19.

Gold occurs in calc-silicate, quartz skarns developed in metasedimentary and metavolcanics adjacent to or in close proximity to diorite porphyry sills. Skarn assemblages consist of quartz, plagioclase, tremolite-actinolite, clinozoisite, garnet, biotite and microcline. Skarns contain quartz-calc-silicate segregations, injections and veins that vary from less than 1cm to 3m thick. These segregations are generally conformable to the metamorphic fabric, although locally they display cross-cutting features.

Native gold occurs within the skarn assemblages as 25 micron disseminations to 1cm coarse flakes within and along the margins of the quartz-calc-silicate segregations. Skarns also contain variable amounts of pyrrhotite, pyrite, sphalerite, galena, as well as traces of chalcopyrite and tetrahedrite. The sulphides occur as fine disseminations oriented within the plane of the metamorphic foliation and as coarse-grained aggregates within the segregations. A petrographic study of polished thin sections undertaken by Ken Northcote (Tillicum 1982 Report) indicates that the gold is contemporaneous with pyrrhotite, pyrite, sphalerite, galena mineralization and pre-dates arsenopyrite and tetrahedrite crystallization. Colin Godwin (pers. comm.) has obtained a Jurassic lead-isotope age for galena mineralization from the Money Pit.

The silver content of the skarns is highly variable. Gold-rich skarns commonly have very low silver contents with silver-gold ratios of less than 1:1. Silver-rich skarns, such as the Silver Queen Zone, contain very low gold values. It is of significance that silver rich skarns are hosted in highly calcareous sediments which structurally overlie the volcanic sedimentary sequence that hosts the gold bearing skarns.

Exploration programs conducted during the period 1981-1984 targeted and drill tested three major gold-silver zones, as well as outlining numerous other showings on the Esperanza Property. High grade gold reserves in the order of 24,000 ounces were outlined in the HEINO-MONEY ZONE; in addition, a drill indicated reserve of over 5 million tons, grading 0.05 oz/ton gold was indicated within the EAST RIDGE ZONE; and over 3 million tons grading 3 oz/ton silver was outlined in the SILVER QUEEN ZONE. The 1985 and 1986 programs are focused on proving additional reserves within the Heino-Money Zone. For detailed descriptions of all mineralized zones on the Esperanza Property, please refer to Roberts and McClintock (1983), McClintock (1984), and Roberts (1986).

SURFACE DIAMOND DRILLING.

Beaupre Diamond Drilling Ltd. of Princeton, B. C., completed 2,003 feet of NQ drilling, of which 352 feet in six holes (86-90 to 86-95 inclusive) were drilled to intersect the gold-sulphide "transverse" structure which trends southwest across the 2130 Level portal area (site of the original Money Pit). The remaining 1,651 feet in 19 holes (86-96 to 86-109 inclusive) were drilled on the main HEINO-MONEY ZONE to better define the auriferous skarn zone prior to extending the 2130 Level (Money Adit).

True sections on all the drill holes showing assay intervals and values and geology appear as Figures 7(a) to 7(j) inclusive. Figure 9 is a plan view of all drill holes in the HEINO-MONEY ZONE. Values are stated as ounces per Ton for gold over the true width in feet. Also appearing on this map are the locations of the longitudinal section (Figure 15) and composite cross sections A-A' to I-I' + 5mN [Figures 17(a) to 17(e)]. A summary of the ore zone intercepts for the surface drill holes is provided in Table 1.

Drill holes 86-90 to 86-95 tested the "transverse" structure above the 2120 Level. Drilling showed the zone to trend 023° with a subvertical to 70° W making the zone more oblique to the main skarn zone than previously thought.

In all six drill holes the skarn zone occurs entirely within meta-andesite. Gold grades of the skarn varied from 0.11 over 3 feet in hole 86-95 to 1.63 over 3.5 feet in hole 86-91. Although all gold mineralization is in skarn no direct correlation exists between skarn intensity and degree of silicification. In drill holes 86-94 and 86-95 low, but anomalous gold values are hosted in less intensely skarned andesite at the footwall contact of the skarn. The high-grade gold values in drill hole 86-92 occur in skarn andesite adjacent to quartz-rich skarn while in drill holes 86-90 and 86-91, best gold grades are in the most intense skarning and sulphide mineralization. In hole 86-90 visible gold occurs over a one foot interval (assay 5.28 oz/Ton) in skarn with minor disseminated sulphide content; the next foot in similar skarn assayed 0.18 oz/Ton) and the last 1.5 feet of the skarn, consisting almost entirely of quartz and massive sulphides, assayed 0.48 oz/Ton gold. The same quartz/massive sulphide sequence in hole 86-91 recorded a much better assay (1.04 oz/Ton gold) with the most intense skarn having the highest gold grades.

The results described above are derived from relatively closely spaced intercepts within a single structure and emphasize the high variability of gold grades, sulphide content and alteration intensity of the skarn. Therefore, unless holes are closely spaced (<5m) drilling results should only be used to provide an indication of grade and to guide underground development. Definition of ore reserves requires a combination of closely spaced drilling and extensive underground sampling.

To this end, drill holes 86-96 to 86-106 inclusive, drilled on the HEINO-MONEY ZONE, were directed at filling in gaps between earlier drill holes and providing intercepts where subsequent drifting would be carried out. It was originally planned that all drill holes through the HEINO-MONEY ZONE would be drilled in fans parallel to previously established cross section lines A-A' to H-H', however, topography combined with extremely heavy rain made many of the proposed sites unsafe and forced drilling from sites off section lines. These new sites dictated hole orientation for holes 86-103 to 86-109 inclusive. Hole 86-102 was terminated prematurely because drill site fill slumped away; hole 86-106 provided the planned intercept. Additional drilling along strike beyond and at similar elevations as holes 86-103 to 86-105 inclusive was planned, but had to be eliminated when drill sites became unstable.

All holes except 86-97 and 86-102 (mentioned above) intersected the skarn zone at the meta-andesite/tuffaceous volcanics contact, as anticipated and documented by previous drilling. Grades varied from 0.04 oz/Ton gold over 3.0 feet (hole 86-105) to 9.26 oz/Ton gold over 3.2 feet (hole 86-104), the two extremes being only 18 feet apart. It was fortuitous, however, that the two best drill intercepts (holes 86-104 and 86-106) occurred at the 2130 Level. See Table 1 for a summary of drill hole assays.

Holes 86-107, 108 and 109 were drilled at the south end of the main skarn to define depth continuity of high grade gold mineralization outlined in hole 82-2. Holes 86-107 and 86-108 stopped short of the target area beyond lamprophyre dykes.

detail drilling from more suitably located stations is required to explore at depth and along strike to locate what are probably offset continuations of this zone. True sections of the underground drill holes appear in Figures 8(a) to 8(e) inclusive.

UNDERGROUND DEVELOPMENT.

Nemo Resources of New Denver, B. C. was contracted by Esperanza to complete a total of 510 feet of drifting, 155 feet of raising and 430 tons of slashing. In addition, 738 feet of test-holes were drilled with cuttings collected from 2 to 40 foot intervals.

The 2130 Level (Money Adit) collared in 1985 was extended, the 2136 Level (Money Adit Sub-level) was established by raising from 2130 Level, and the 2112 Level (Transverse Adit) was collared at surface. As well as the raise accessing 2136 Level to 2148 Level, a short exploration raise was driven above spectacular gold mineralization encountered in the Sub-level. The "Screamer" raise was driven from 2136 Level to 2148 Level to provide both ventilation and an escapeway, and an ore chute links 2130 and 2136 Levels underneath the "Screamer" raise. Several raise rounds plus slashes were taken in areas of high back sample assays in both the 2130 and 2112 Levels. Track-gauge is 24 inches on 2130 Level and 18 inches on 2112 Level.)

Figure 10 is a surface plan indicating location of the principal levels including the inactive 2160 Level (HEINO Adit), with respect to local topography. Geological, sample location and assay plans for the 2112, 2130, 2136 and 2160 Levels appear as a series of level plans [Figures 11(a) to 11(g) inclusive, 12(a) to 12(g) inclusive, 13(a) to 13(g) inclusive, and 14(a) & 14(b)]. A longitudinal section through the HEINO-MONEY ZONE (Figure 15) displays a compilation of drill intercepts, mining levels and assays averaged over pertinent lengths and volumes.

The 2130 Level, of which 75 feet was driven in 1985, was advanced an additional 180 feet [rounds 14 to 43, see Figure 12(a)]. The mineralized fault exposed in the 1985 program [see Figure 12(g)] was followed through round 19

where it becomes very tight and almost disappears. Recognition of an earlier surveying error relocated the drift some 4 metres (13 feet) further south. This prompted re-direction of the drift to the left to intersect the skarn zone defined by drill holes 83-27, 86-100, 86-106 and 86-104. The zone is first encountered in rounds 23 and 24, at which point the drift turns left again to follow the 145-150° trend. At the present face, the zone has been reduced to a narrow band of skarn-altered meta-andesite, however, it is still gold-bearing (0.12 oz/Ton gold over 1.31 feet). The drift successfully encountered all the above mentioned drill holes and passed through a particularly high-grade shoot (rounds 35 to 38 inclusive averaged 6.59 oz/Ton gold). Rounds 23 to 43, plus raise rounds and slash taken in high grade, averaged 1.61 oz/Ton gold in 570 Tons along 120 feet.

The 2136 Level was established to investigate the continuity of high-grades recorded in rounds 35 to 38 of the 2130 Level. The overall average of muck taken out of 2136 Level is lower, (0.38 oz/Ton gold in 421 tons along 119 feet) but certain areas in the drift did produce high grade values (round 11 north assayed 1.51 oz/Ton gold and a slash left in the fifth round of the raise accessing 2136 assayed 4.98 oz/Ton gold). The average is also diluted by the last round south which, to some extent, was taken outside the gold-bearing skarn. The grade variation and unpredictability that occurs within the skarn is evident on these two levels and is even more marked when one considers that spectacular free gold was found in a few quartz-rich segregations in skarn located in the east wall of 2136 Level (round 2 south) but that an "exploration" raise above rounds 2 and 3 south and a slash down the east wall to the face produced low to very low values. Virtually all the visible gold was carefully removed separately before any raising or slashing was done.

Results of development on the 2130 and 2136 Levels indicate that, although a clearly defined high-grade shoot with grade comparable to rounds 35 to 38 (2130 Level) cannot be pinpointed, the skarn zone in general carries significant gold values. Grades in the "exploration" raise averaged 0.05 oz/Ton but muck from the "Screamer" raise and the ore chute averaged 1.45 oz/Ton and 0.79 oz/Ton respectively.

The 2112 Level was driven without a drill-defined target at that level. It was felt, however, that the continuity of structure displayed in drilling and underground development on the HEINO-MONEY ZONE to date made this a worthwhile venture. This year's surface drilling on the "transverse" structure had reached the 2120 Level, indicating a mineralized zone dipping as steeply as sub-vertical, and the drift was directed accordingly to the area almost directly below the best holes (86-90 and 86-91). The skarn zone was successfully encountered and exposed along a drift length of 107 feet. Muck from rounds 15 to 34 averaged 1.63 oz/Ton gold in 570 tons over a drift length of 110 feet. Tables 3 to 6 summarize much tonnages used in grade calculations.

The skarn zone on this level occurs entirely within meta-andesite and has a distinctly overall higher sulphide content than on the other levels. A band ranging in width from two to fourteen inches, consisting of almost solid pyrrhotite, pyrite, galena, sphalerite and minor arsenopyrite and chalcopyrite, can be followed continuously from round 14 to round 30. Beyond round 30 the sulphides and skarn thin and at round 33 are abruptly cut off by a cross-cutting fault [see Figure 11(g)].

Outside the massive sulphide band there are occasional patches and lenses of massive sulphide that appear to be tangential off shoots of the main structure. During the course of development work it was sometimes unclear which trend was the principal one and slashes were taken both to the left and right to expose them. It now seems apparent that the once "transverse" trend turns and aligns itself with the HEINO-MONEY ZONE in rounds 22 and 23; as one approaches the face it bears to the east. In plan view the 2112 Level face is about 3 metres (10 feet) west of both the north face of 2137 Level and the point where 2130 Level intersects the skarn zone; strong concentrations of massive sulphides, which are not characteristic of the upper levels, are evident at these points also.

Future development on 2112 Level should explore the area immediately east of the present face to locate the skarn zone which, based on the evidence in higher levels, will be found at or near the meta-andesite/tuffaceous

volcanics contact. Extrapolation of the sub-vertical structure from 2130 Level and the zone's gentle bearing to the east side of 2112 Level supports the likelihood that the main skarn zone lies to the east.

ORE RESERVES.

The probable geological ore reserves of the HEINO-MONEY ZONE are estimated to be 8,056 tons grading 1.320 ounces gold per ton using a 0.102 per ton cut-off and a minimum thickness of 4 feet. These reserves can be subdivided into three separate zones or shoots known as: MONEY or "transverse", SCREAMER and HEINO Shoots.

MONEY	3,432 tons grading 1.022 oz. gold/ton (probable)
SCREAMER	3,324 tons grading 0.969 oz. gold/ton (probable)
HEINO	<u>1,300 tons grading 3.00 oz. gold/ton (drill indicated)</u>
	<u>8,056 tons grading 1.32 oz. gold/ton</u>

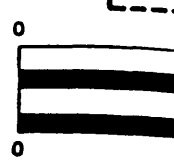
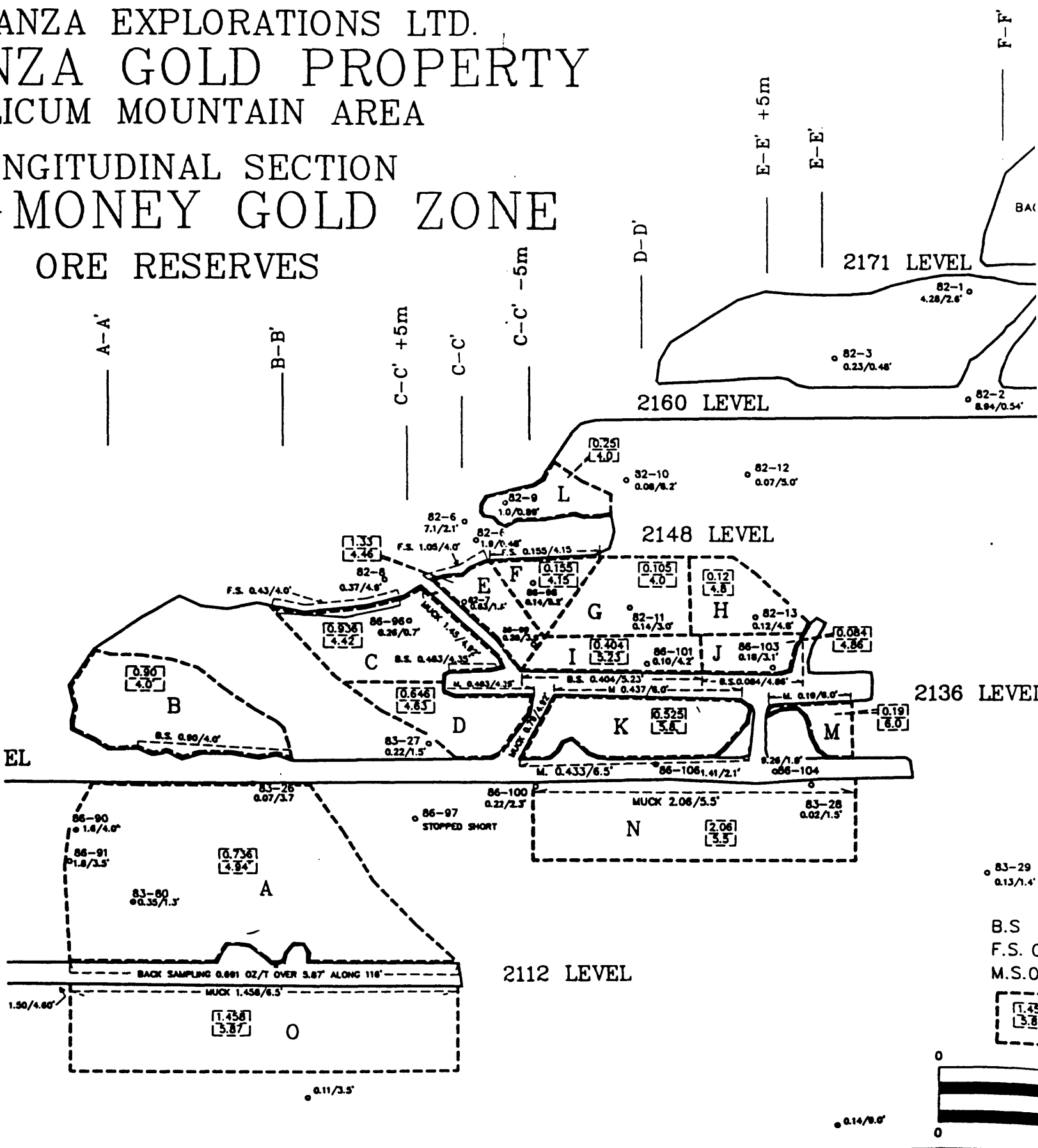
Ore reserves were calculated by projecting the ore zones on to a longitudinal section and subdividing the zones into 16 separate blocks based on location of underground sampling and drill holes (Figure 16).

Grades of individual blocks were assigned using the weighted average values obtained from muck, back and floor sampling of the underground or surface workings bounding the blocks. Drill hole assays in blocks defined by underground sampling were used to confirm continuity of the zone, but were not included in the calculation of the grades of blocks. This procedure is believed justified because back sampling is more detailed and therefore representative of the average grade of the skarn.

Tonnage of individual blocks were calculated by determining the area of each block using a planimeter then determining volume by multiplying by thickness. The volume of blocks was converted to contained tonnes using a factor of 3 tonnes per cubic metre. Conversion of tonnes to tons was achieved by multiplying tonnes by a factor of 1.1023. Tonnages and grades of the blocks used in the calculations are summarized in Table 7.

ANZA EXPLORATIONS LTD. ANZA GOLD PROPERTY MCCUM MOUNTAIN AREA

LONGITUDINAL SECTION MONEY GOLD ZONE ORE RESERVES



CONCLUSIONS AND RECOMMENDATIONS.

The programs of surface and underground drilling, drifting and raising carried out in 1986 on the HEINO-MONEY ZONE outlined probable reserves of 6,756 tons grading 0.996 oz/Ton gold and drill-indicated reserves of 1,300 tons grading 3.00 oz/Ton gold within the area of drill-indicated reserves of 40,000 tons grading 0.60 oz/T gold (calculated by Roberts in 1984). Underground development outlined continuity of high-grade gold values and provided encouragement for development and exploration to achieve our goal of production.

Surface drilling provided fill-in intercepts between previous holes as well as targets for extension of 2130 Level. Drilling of the MONEY or "transverse" zone provided sufficient encouragement to establish the 2112 Level drift. An underground drilling program was partially completed with several intercepts of high-grade gold recorded in a structurally and geologically complex area down-dip from high-grade raises mined in 1985 on 2160 Level. The scope of drilling was limited by drill station size and the program was terminated prematurely due to slow penetration rates and numerous equipment breakdowns.

All future drilling on the HEINO-MONEY ZONE should be completed from underground. The unpredictable and highly variable nature of gold grades necessitates numerous, closely spaced drill holes that can no longer be drilled in a cost-effective manner from available surface sites.

Underground development successfully established strike and dip continuity of the HEINO-MONEY ZONE. The muck rounds with assays exceeding 0.15 oz/T gold were stockpiled. The 2130 Level was extended and outlined a 90 foot interval of the skarn from which muck samples average 2.06 oz/Ton.

It had been previously postulated that high-grade shoots may plunge southerly at moderate angles within the sub-vertical, southerly striking skarn zone. Development of the 2136 Level did not define a continuous high grade shoot extending from 2130 Level but did encounter isolated sections

of the skarn having grades 1.0 oz/Ton. However, sample of muck from the 2130, 2136 and from raises and mill holes between these levels and surface, demonstrated that the skarn as a whole does contain gold values in excess of 0.8 oz/Ton gold. This implies that rather than selective mining of higher grade pockets of ore, all skarn should be considered for mining. Mining of lower grade ore will require on site milling.

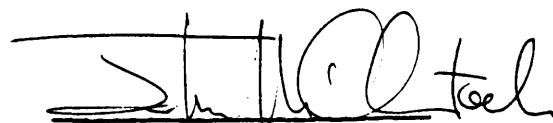
Work to date outlined depth continuity of the HEINO-MONEY ZONE below the 2112 Level and along strike beyond the south end of 2160 Level. Advance of both 2130 and 2112 Levels is required to permit establishment of drill stations from which closely spaced diamond drill holes can locate the skarn zone. Excavation of drill stations on the 2112, 2130 and 2160 Levels as far south as the 2160 Level could potentially add a further 17,000 tons of ore in excess of 0.8 oz/Ton to the existing probable reserve.

The level of financing available, together with the kind of mine development plan adopted will dictate the extent of reserve definition. The existing workings are in the skarn zone, which although allowing ready access to ore for milling, excludes use of these workings for exploration and development of additional reserves. In order for these workings to be used for both functions careful scheduling of work will be required. Future development will require mine engineering and planning that includes production mining to proceed in conjunction with advancement of gold reserves.

Respectfully submitted,



B. DEWONCK



J. McCLINTOCK

December, 1986.

W. J. ROBERTS

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