833903
Hedley

Tom Schroeter
Apr. 10/86

Mascot Gold Mines Limited

VANCOUVER BRITISH COLUMBIA

Nickel Plate Mine Project

STAGE 1 REPORT

OCTOBER, 1985

MASCOT GOLD MINES LIMITED
1440-800 WEST PENDER STREET
VANCOUVER, B.C.

689-5453

SECTION 1

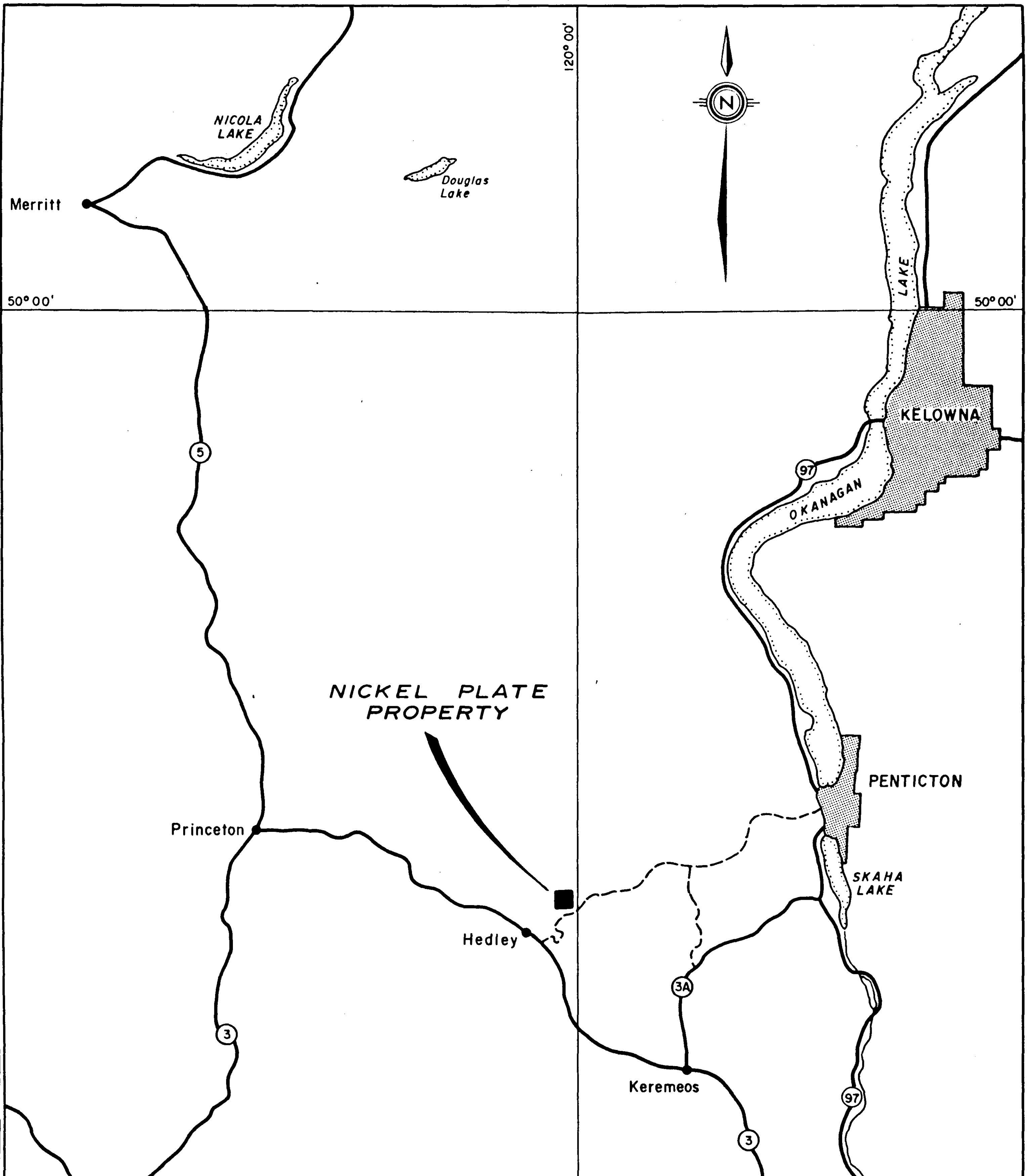
INTRODUCTION

1.1 GENERAL INFORMATION

The Nickel Plate Mine is located on the eastern slope of Nickel Plate Mountain in the Osoyoos Mining Division of British Columbia, at 49° 22' North latitude and 120° 02' West longitude. The mine is 42 kilometers (26 mi.) from Penticton, of which 29 kilometers (18 mi.) is paved. A second access to the site is by a 16 kilometer (10 mi.) gravel road which leaves Highway No. 3 approximately 3 kilometers (2 mi.) southeast of Hedley (Fig. 1.1 and Fig. 1.2). The site lies in the southern edge of the Thompson Plateau which is steeply trenched by the Similkameen River valley. The proposed open pits will be located at elevations from 1,555 m (5,100') to 1,875 m (6,150'), and tailings impoundment area will be located at an elevation of about 1,355 m (4,450'). The mean daily temperature at the mine site ranges from -8.3°C (17.1°F) in January to 12.4°C (54.3°F) in July. The average annual precipitation is 584.8 mm (23.02"), with 65% falling as snow.

Mining and milling of gold ore on the Nickel Plate property began in 1904, and approximately 54,000,000 grams (1.5 million ounces) of gold were produced prior to the mine's closure in 1955. Following the closure, all of the mine buildings and equipment were either dismantled and removed from the site or destroyed.

Mascot Gold Mines Limited (Mascot) has conducted exploration programs each year since 1979. The exploration programs to 1984 outlined an open pit reserve of approximately 3.0 million tonnes grading 5.15 grams of gold per tonne (3.3 million tons @ 0.15 troy ounces of gold per ton). Based on these reserves, Mascot started to prepare a detailed study of the opening of a mine on Nickel Plate Mountain.



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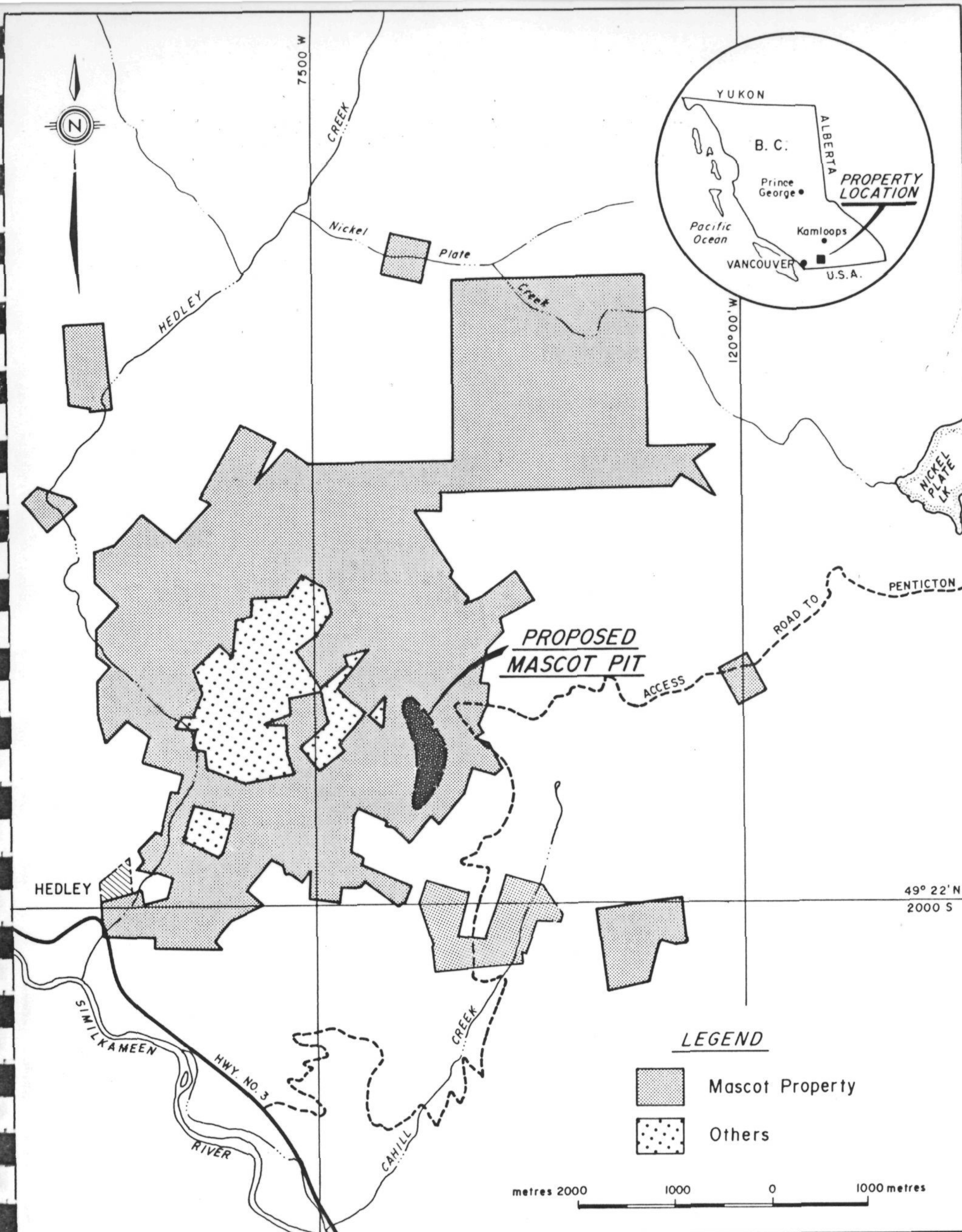
NICKEL PLATE PROJECT
LOCATION MAP

DATE: FEB. / 1985	SCALE: 1 : 600,000	DRAWING No. 1·1



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NICKEL PLATE PROJECT

LOCATION & PROPERTY MAP

DATE: DEC. /1984	SCALE: 1: 50,000	DRAWING No. 1·2

SECTION 2

PROJECT DESCRIPTION

2.1 HISTORY AND RECENT EXPLORATION

2.1.1 History

The mining history of the Hedley Mining District dates to the 1860's when placer gold was discovered near the mouth of Hedley Creek by prospectors attracted to British Columbia by the rich placer discoveries of the Cariboo District in 1859. The period of placer mining was short in duration with the pay gravels being exhausted in a couple of years.

In 1894 the first recorded mineral claim was staked in the Hedley Camp marking the beginning of a period of exploration for lode gold deposits. This exploration work culminated in the construction of a mine on Nickel Plate Mountain in 1899. The owners of four claims, including the Nickel Plate claim, succeeded in interesting Mr. M.K. Rodgers, a representative of Marcus Daly, the Butte, Montana copper baron, in the claims. Within a year of optioning the claims, the Daly group purchased the claims from the original owners, Messrs. Arundel and Wollaston.

The exploration and development work carried out on the claims was very successful. In the valley below a 40 stamp mill, concentrating and cyanide plant was constructed, along with 5.6 kilometers (3.5 miles) of electric railway and gravity tramway to connect the mine and Hedley plant. A flume, 4.8 kilometers (3 miles) long, up Hedley Creek was installed to supply power to run the mill, generate electrical power, and compress air. On May 4, 1904 the first stamp mills began operation.

Two companies were formed to operate the plant and mine; the Yale Mining Company operated the mine and the Daly Reduction Company operated the recovery plant in Hedley. By 1909, 151,500 tonnes averaging 23.9 grams of gold per tonne (167,000 tons averaging 0.696 t.oz. Au/ton) had been milled. Hedley Gold Mining Company took over both mining and milling operations in 1909, and operated continuously until 1931, when all the known ore reserves were exhausted and the mine closed.

The Hedley Gold Mining Company's holdings were optioned by J.W. Mercer of New York in 1932 and in 1933, Kelowna Exploration Company was formed to take over the property. By 1934 a program of cross cutting, drifting and diamond drilling had indicated and proved sufficient ore to justify rehabilitating the mill and tramway. Full operations were resumed at the Nickel Plate Mine at a rate of 190 tonnes per day (210 tpd).

At the same time, Hedley Mascot Gold Mines, Ltd. completed the development work required to reach the Mascot Fraction which contained the down dip extension of the Nickel Plate ore bodies. By 1936, this mine was also operating on Nickel Plate Mountain. The Mascot mine was operated until 1949, with approximately 635,000 tonnes (700,000 tons) of ore being produced during the mine's life, almost exclusively from the Mascot Fraction.

The Nickel Plate Mine, owned by Kelowna Mines (Hedley) Limited, was maintained in production until 1955. In that year, operations were suspended due to the steady increase in costs in relation to the fixed price of gold. The total ore mined from the Nickel Plate property and the Mascot Fraction amounted to 3,599,100 tonnes (3,967,350 tons) with a gross content of 53,374,229 grams (1,556,749 ounces) of gold, 6,452,534 grams (188,199 ounces) of silver, and 1,834,970 kilograms (4,077,305 pounds) of copper.

2.1.2 Recent History

Following the cessation of production, all the equipment and buildings were removed. The claims and surface rights were transferred to Burden Investors Services in 1965. From 1967 to 1971, the property was under option to Giant Mascot Mines Limited, a predecessor of Campbell Resources. In 1971, Mascot Gold Mines Limited, a subsidiary of Giant Mascot, acquired the property. During the 1955 to 1979 period, only minor exploration work was carried out.

In 1979, with the dramatic increase in the price of gold, Mascot commenced the rehabilitation of the upper haulageways and conducted a sampling program within the more accessible stopes.

In late 1980, a surface diamond drilling program totalling 4,415 meters (14,480 feet) in 97 holes was initiated in the Sunnyside and Nickel Plate Systems. This was followed by an extensive underground drilling program through the winter of 1981-82 aggregating an additional 9,904 meters (32,486 feet) in 377 holes in 12 areas. During this period, some 82.9 meters (272 feet) of drifting was carried out in the newly discovered Sunnyside 250 Zone.

During the summer and fall of 1982, a surface program of geologic mapping, surface trenching, sampling and a limited amount of surface and underground diamond drilling was undertaken to locate surface expressions of ore bodies and to obtain a greater understanding of the structures in the areas previously known. This surface work located the new Silverside Zone, added dimensions to the known Sunnyside No. 1 Zone and expanded the information base in the Bulldog No. 3 Zone.

A program of surface and underground exploration was carried out on the Nickel Plate property between April and December of 1984. Details of the program are as follows:

- 68.1 line kilometers (42.3 mi.) surface grid established with transit control lines cut every 305 meters (1,000 ft.)
- 60.2 line kilometers (37.4 mi.) of soil geochemical survey on 30.5 meters (100 ft.) grid
- 31.4 line kilometers (19.5 mi.) of magnetometer survey
- 61.2 line kilometers (38.0 mi.) of V.L.F. Electromagnetic survey
- 10.8 line kilometers (6.7 mi.) of Induced Polarization survey
- 18.0 kilometers (11.2 mi.) of drill access road either upgraded or constructed, along with 259 drill sites
- 4,007 meters (13,145 ft.) of underground diamond drilling in 120 holes
- 9,153 meters (30,029 ft.) of surface diamond drilling in 111 holes
- 10,422 meters (34,193 ft.) of surface rotary-percussion drilling in 148 holes.

In September 1984, all available previous drilling and assay data were integrated into a computer data base by Mintec, Inc. of Tucson, Arizona. From this data, computer generated sections were obtained and the property was looked at as an integrated whole, rather than as a series of discrete zones. A concurrent computer appraisal of drill-indicated reserves was sufficiently encouraging to warrant modification of the drill program to uniformly test for surface mining potential.

Underground drilling continued to test the deeper sub-surface targets and was successful in extending the Sunnyside 250 and 450 Zones.

Surface drilling was successful in confirming and expanding open-pit potential of the property.

2.2 GEOLOGY AND ORE RESERVES

2.2.1 Regional Geologic Setting

The Hedley area lies in the Intermontane Belt of the Canadian Cordillera. It is underlain by a sequence of deformed, mainly Mesozoic, volcanic and sedimentary rocks intruded by large plutons of mid-Jurassic to Tertiary age.

The oldest rocks in the area are Mississippian to Lower Triassic, oceanic sediments and volcanics. They represent a back arc - marginal basin assemblage tentatively assigned to the Slide Mountain Terrane.

Younger volcanic and sedimentary rocks of the Upper Triassic Nicola Group are widespread throughout the region. This early Mesozoic sequence belongs to an island arc assemblage, termed Quesnellia, which along with slices of the oceanic Slide Mountain Terrane, was accreted onto the North American continent around Middle Jurassic time.

During the Cretaceous, volcanics and sediments of the Spences Bridge/Kingsvale Groups were deposited.

The youngest rocks in the area are Eocene volcanic flows and sediments of the Princeton Group.

Plutonic activity continued from Jurassic to Tertiary time. The large Pennask Batholith, lying north of Hedley, has been dated in the 140 to 150 million year range. Other granodiorite plutons of similar age lie to the south and east and underlie Nickel Plate Mountain. A granite-granodiorite pluton of Cretaceous or Lower Tertiary age intrudes Nicola sediments west of Hedley.

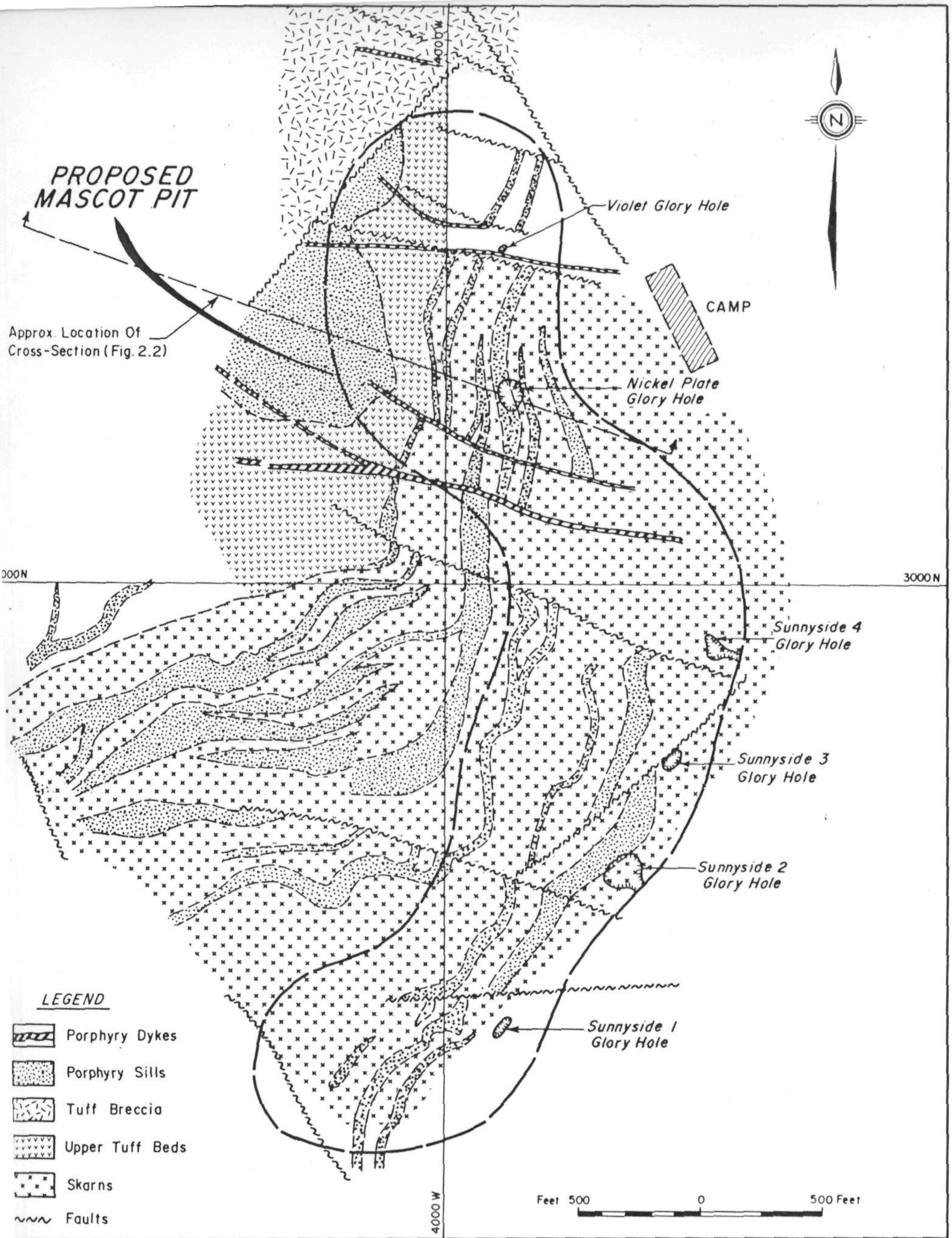
The upper part of Nickel Plate Mountain is composed of interbedded limestones, siltstones and volcaniclastic rocks which have largely altered to a calcic iron skarn. The strata lie on the western limb of a north trending anticline and dip gently (25-30°) to the north west. The Hedley intrusions, a series of small stocks, dykes and sills of Lower Jurassic age, intrude the upper part of Nickel Plate Mountain. The sequence is truncated by the Similkameen granodiorite intrusion (164 million years) which forms the base of the mountain.

2.2.2 Property Geology

The Nickel Plate mine area is underlain by an assemblage of altered/metamorphosed volcaniclastics and carbonates of the Hedley Formation (part of the Upper Triassic Nicola Group) intruded by sills and dykes of andesite porphyry (Figure 2.1). Near the top of Nickel Plate Mountain silicified sediments and coarse limestone breccias occur. These grade downward into a sequence of highly altered layered skarns which were originally interbedded tuffaceous volcanics and carbonates.

The Sunnyside Formation forms the lowermost beds and contains a massive, blue-gray limestone horizon up to 45 meters (150 ft.) in thickness. It is comprised of 90 to 96% calcite with variable amounts of graphite, quartz and tremolite constituting the remainder. Below this limestone band are bedded limestones and clastics similar to the lower Hedley Formation.

The central skarn sequence is so highly altered that the origin of these rocks cannot be determined even with petrographic studies. To expedite the logging of drill core and rotary-percussion samples, this sequence was subdivided into four recognizable alteration facies: silica skarn, garnet-pyroxene skarn, calc-pyroxene skarn, and calc skarn.



Mascot Gold Mines Limited

NICKEL PLATE PROJECT

GENERAL GEOLOGY

DATE: DEC. / 1984	SCALE: 1" = 500'	DRAWING No. 2.1

1) The silica skarn is typically aphanitic, gray to brown-gray, with well defined 1 to 3 cm (.039 to 1.18 inch) bands. It has a cherty appearance and exhibits small scale breccia textures locally. Petrographic work indicates that the rock was originally an andesite-latite tuff that has been largely altered to a mixture of very fine quartz and calcite crystals. The quartz/calcite ratio ranges from 1:1 to 2:1 with up to 30% diopside and tremolite present. Remnants of unaltered tuff occur locally. This unit is found throughout the section, interbedded with the other skarn facies.

2) Garnet-pyroxene skarn encompasses a wide range of compositions from slightly altered, pyroxenitic tuff, to rocks completely altered to fine grained iron-rich pyroxene with or without red-brown garnet (grossularite-andradite). Pyroxene skarn, formed by partial or complete alteration of the original rock, is typically pale blue to pale green and composed of fine grained clusters of pyroxene (ferrosalite-hedenbergite) with lesser tremolite and calcite. Remnant layering or banding is visible locally. Garnet occurs in the more highly altered zones where all of the original minerals have been replaced by fine grained pyroxene with lesser calcite and tremolite. It generally occurs in bands or lenses ranging in thickness from 1 cm to 1 m (0.39 inch to 3.28 ft.). Layers of massive garnetite are quite common. Garnets normally vary in size from 0.2 to 2 mm (.008 to .08 inch) with zoning visible in thin sections. Other than the percentage of visible garnet, the mineralogy of the garnet pyroxene skarn is only distinguishable petrographically due to the extremely fine grain size of the matrix. The garnet pyroxene skarn occurs both interbedded with, and stratigraphically above the calc-pyroxene skarn. Alteration intensity shows a general decrease towards the top of the section where it grades into pale blue-gray silicified tuffs and tuff breccias at the top of Nickel Plate Mountain.

(3) Calc-pyroxene skarn is generally grayish-green and contains between 20 and 50% coarsely crystalline calcite. Fine grained pyroxene and lesser, secondary silica are the other major constituents.

(4) Calc skarn is commonly gray to white and exhibits fine to medium grained sucrosic texture and it is composed of 50 to 90% calcite with quartz, diopside and residual feldspar making up the remainder. There is conflicting evidence as to whether the rock was originally a tuff or an impure limestone. This facies generally occurs in the lower part of the section and grades into the massive limestone. It is commonly interbedded with silica and/or calc-pyroxene skarn and contains layers of black, graphitic calc skarn 3 to 9 meters (10 to 30 feet) in thickness.

The Hedley Formation is intruded by numerous sills and several major dykes of andesite porphyry. This phase is part of the Hedley intrusions dated at 189 million years. Two episodes of andesite dyke emplacement post-date the porphyry phase. No ages have been determined from either of these subvolcanic intrusive phases.

In progress? (G. Kay)

Andesite porphyry sills and dykes make up between 20 and 50% of the stratigraphic package in the mine area and commonly vary in thickness from 3 to 30 meters (10-100 ft.). Original mineralogy consisted of plagioclase and hornblende phenocrysts in a fine grained plagioclase groundmass but diopside has replaced both phenocrysts and groundmass, often to such an extent that the porphyritic texture is rendered indistinct. K-feldspar content is commonly enhanced near the sill borders and in narrow sills due to assimilation of the more felsic tuffs resulting in local compositional variation from andesite to latite. Sills in contact with gold-bearing skarn zones commonly carry significant gold values themselves.

Two varieties of andesite dykes, the "Brown" and "Black" dykes, intrude the sequence along steeply-dipping fault structures. The "Brown" dykes are fine grained, dark brown to black andesite exhibiting patchy diopside/tremolite alteration. These dykes closely resemble the andesite porphyry in texture and are probably genetically related. The "Black" dykes are fine grained, usually dark green and composed mainly of fine plagioclase laths with extremely fine interstitial chlorite. They are the youngest intrusive phase recognized in the area. Both dyke phases contain from 2 to 5% magnetite and/or pyrrhotite.

2.2.3 Structure

The Hedley Formation, consisting of an altered volcaniclastic-carbonate sequence on Nickel Plate Mountain, strikes approximately north-south and dips west. Transverse folds with north-westerly axes complicate the westerly dip; these folds constitute a major ore control, particularly for the Nickel Plate System.

ORE CONTROLS

Andesite porphyry sills intrude the Hedley Formation along shears which climb slightly through the bedding and crosscut the earlier sharp folds. They are themselves slightly folded and brecciated by later folding which is co-axial with the earlier folds. A set of andesite porphyry dykes with vertical (average) dip and east-west strike are coeval with the sills, so that in north-south section these intrusions appear as a tree, with a dyke as the trunk and the sills as the limbs. Sill-dyke junctures also constitute a major ore control.

The Bradshaw Thrust is a major steeply west-dipping thrust fault, which strikes northeast, passing through Hedley, along the lower portion of Hedley Creek and up Bradshaw Canyon. Flattish zones of brecciation near the summit of Nickel Plate Mountain may be related to the Bradshaw Thrust. Conodonts collected from carbonate clasts within one of these breccia zones are of Karnian age, slightly older than the Sunnyside Formation, indicating some form of transport from underlying strata.

Triassic

2.2.4 Mineralization

The main sulphide minerals are pyrrhotite, arsenopyrite, pyrite, chalcopyrite and sphalerite. Invariably associated with these sulphides are lesser amounts (<1%) of cobaltite and hedleyite ($Bi_7 Te_3$). Other minerals occurring locally in concentrations up to 2% include magnetite, native copper, scheelite and pyrargyrite. Trace amounts of galena, molybdenite and breithauptite (NiSb) are also present locally.

In the Nickel Plate and Sunnyside systems, native gold 1 to 20 microns in size is invariably associated with, or contacts grains of hedleyite. These two phases are usually included in arsenopyrite or in gangue just adjacent to arsenopyrite.

In the sulfide-rich zones of the Bulldog system gold also occurs as relatively coarse grains of electrum (20 to 300 microns). The electrum occurs within pyrrhotite and chalcopyrite which fill fractures in pyrite and arsenopyrite. The Bulldog Zone also carries significant silver values (30 to 200 ppm). The silver values are more closely related to copper content than to gold or arsenic, therefore the electrum and pyrargyrite probably contribute only a small fraction with the bulk of the silver being contained in chalcopyrite.

Arsenopyrite, pyrrhotite and chalcopyrite generally form clusters of coarse to fine crystals along healed fracture planes. Locally, they form massive sulphide lenses which can attain a thickness of up to ten feet. Chalcopyrite occurs as fine blebs replacing the other sulphides and as discrete crystals.

Mineralization of economic interest is contained in two main ore systems, the Sunnyside and the Nickel Plate, which differ principally in their vertical placement within the Nickel Plate Formation.

The Sunnyside system lies near the base of the Hedley Formation, just above the Sunnyside Limestone, and up to 500 feet below the productive horizons of the Nickel Plate system. The system forms an arc along the eastern and southern slopes of Nickel Plate Mountain, extending south from the more northerly Nickel Plate system for about one-half mile. A number of Sunnyside zones were exploited to varying degrees: Sunnyside 100, 200, 300, 400, 450 and Bulldog. Each zone is associated with a fold axis and/or a sill/dyke juncture.

The 'Morning Orebodies', which are not presently accessible, may represent a down-dip extension of the Sunnyside system, as the 'Morning Ores' occur about 120 meters (400 ft.) vertically below the most westerly down-dip extensions of the Nickel Plate system.

The host of gold mineralization within the Sunnyside system is generally a calc-pyroxene skarn, but this mineralization may extend upward into garnet-pyroxene skarns, particularly where strong structural controls in the form of dykes or tight fold axes are present. Petrographic work suggests that the favorable Sunnyside calc-pyroxene skarn may originally have been one very extensive andesitic volcaniclastic sequence.

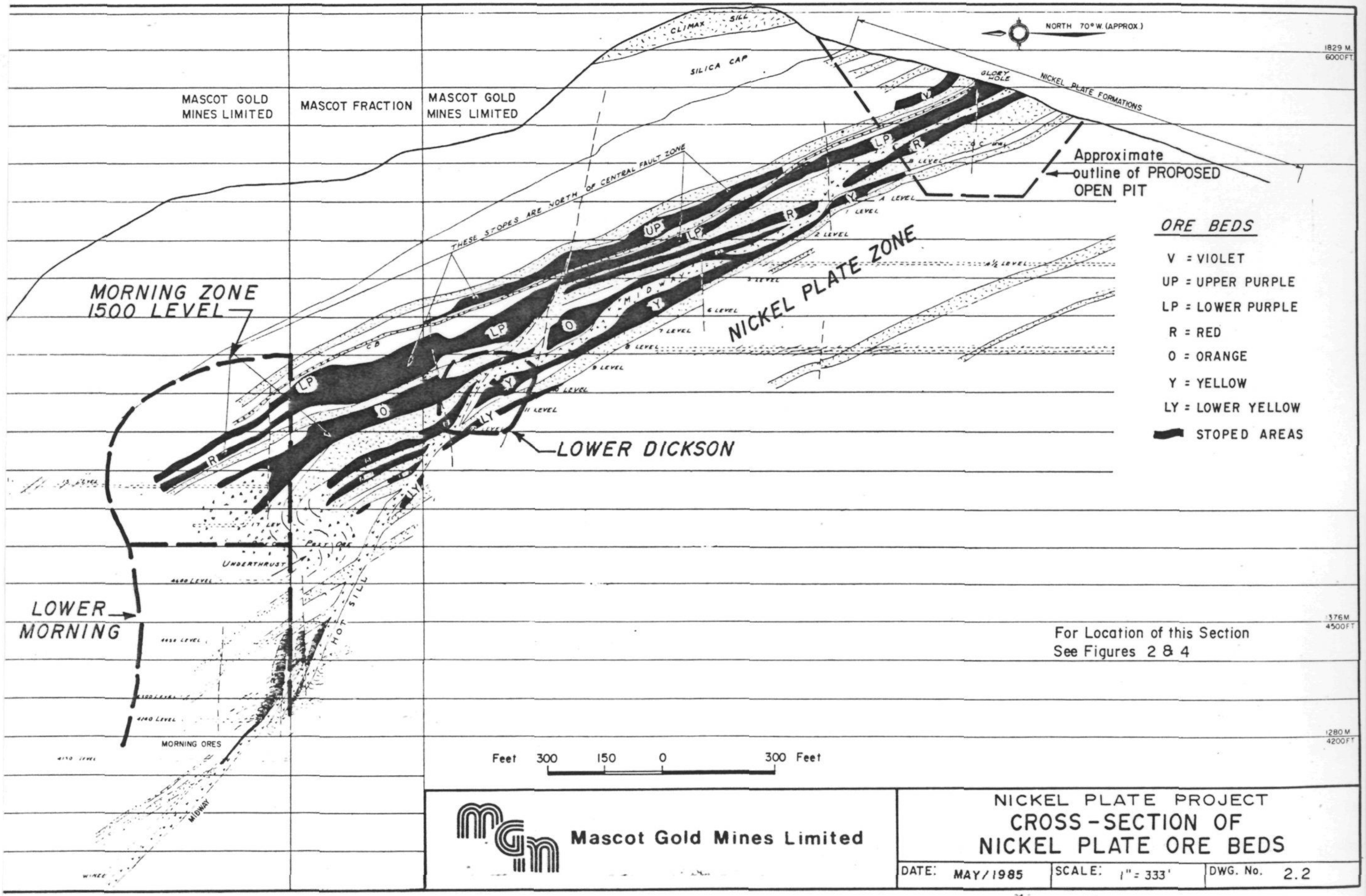
The Nickel Plate System contained the most northerly of the former ore bodies mined on the Nickel Plate Property. This system occurs in the lower half of the Hedley Formation over a stratigraphic thickness of around 75 meters (250 ft.) (see Figure 2.2). Gold mineralization occurs within a seven member series of ore horizons having the appearance of overlapping "shingles", which extend down-dip from surface for about 900 meters (3,000 ft.). The ore horizons are bounded by andesite porphyry sills in most cases. In close proximity to the through-going Flange Dyke structure the ore horizons often show increased thickness and higher gold grades. The more productive ore horizons were mined across continuous strike lengths of up to 150 meters (500 ft.).

2.2.5 Geology of Proposed Tailings and Waste Dumps

The proposed tailings site for the Nickel Plate operation lies between 4350 and 4500 feet elevation on the west side of Cahill Creek. Due to lack of outcrop, all geologic information was obtained from a series of drill holes. Overburden cover, consisting of glacial till and alluvium, blankets the area and ranges from 10 to 60 meters (30 to 200 ft.) in depth.

The area is largely underlain by volcanic and intrusive rocks of Mesozoic age but an east-west trending basin has been filled by a younger, sedimentary debris-flow deposit of possible Tertiary age.

The oldest rocks represented are andesite and andesite porphyry of the Upper Triassic Nicola Group. The rocks are generally dark green and commonly fragmental. They may be closely related to the Hedley Intrusive phase which give rise to the swarm of sills and dykes higher up in the Nicola sequence. Alteration is limited to local silicification and deuteric alteration of feldspar phenocrysts. Pyrite is fairly common as fracture fillings and disseminations. No anomalous gold values were detected.



NORTH 70° W. (APPROX.)
1829 M. 6000 FT.
CLIMAX SILL
SILICA CAP
GLORY HOLE
NICKEL PLATE FORMATIONS
MASCOT GOLD MINES LIMITED
MASCOT FRACTION
MASCOT GOLD MINES LIMITED
THESE STOPES ARE NORTH OF CENTRAL FAULT ZONE
Approximate outline of PROPOSED OPEN PIT
NICKEL PLATE ZONE
MIDWAY
MORNING ZONE 1500 LEVEL
LOWER DICKSON
UNDERTHRUST
HOT SILL
LOWER MORNING
MORNING ORES
A LEVEL
1 LEVEL
2 LEVEL
6 LEVEL
7 LEVEL
8 LEVEL
9 LEVEL
10 LEVEL
11 LEVEL
ORE BEDS
V = VIOLET
UP = UPPER PURPLE
LP = LOWER PURPLE
R = RED
O = ORANGE
Y = YELLOW
LY = LOWER YELLOW
STOPED AREAS
1376 M 4500 FT
For Location of this Section
See Figures 2 & 4
1280 M 4200 FT
Feet 300 150 0 300 Feet
Mascot Gold Mines Limited
NICKEL PLATE PROJECT
CROSS-SECTION OF
NICKEL PLATE ORE BEDS
DATE: MAY/1985
SCALE: 1" = 333'
DWG. No. 2.2

The Similkameen Pluton of Mid Jurassic age intrudes the Nicola sequence and forms a basement complex throughout the region north of the Similkameen River. It consists of a medium to coarse grained, biotite granodiorite with aplitic phases common near the margins. Older rocks of the Nicola Group and associated Hedley Intrusions commonly form roof pendants and rafted inclusions within the granodiorite. Deep weathering of the granodiorite was observed in one drill hole. Elsewhere it appeared fairly fresh and unaltered except for minor deuteric alteration of feldspars and chlorite rimming biotite. No anomalous gold values were detected.

The youngest rock type in the area is a conglomerate occupying a possible fault-bound basin trending east-west through the centre of the area. The conglomerate contains angular clasts varying in size from pebbles to boulders in a matrix of fine grained, buff coloured sandstone. The clasts consist of a heterogeneous mixture of Nicola Group rocks and Similkameen granodiorite. This is interpreted as representing a debris flow or landslide deposit possibly related to Tertiary block faulting. A blue-gray sandy silt layer overlying the conglomerate is probably a preglacial lacustrine deposit.

The drilling program, which included fourteen drill holes, carried out by Mascot Gold Mines indicates that the near surface mineral potential of the bedrock underlying the proposed tailings is insignificant.

The proposed waste dump site lies in a small valley northeast of the mine site between 1600 and 1800 meters (5300 and 5900 feet) in elevation. Bedrock information was derived mainly from three diamond drill holes. A producing water well is located immediately below the proposed waste site and a second well has been drilled in the same area to monitor groundwater flow in overburden.

Overburden consists of glacial till and aluvium and ranges in depth from approximately 3 meters (10 ft.) at the higher elevations, to 22 meters (74 ft.) at the water well sites.

The proposed site is underlain by thinly bedded, dark blue-gray to black limestone and limy siltstones of the Hedley Formation of Upper Triassic (Early Norian) age. Alteration is limited to calcite veining. Minor pyrite mineralization occurs along fractures. Zones of crackle brecciation are fairly common with calcite infillings. A few minor sills of andesite porphyry were intersected in the upper drill holes and are probably related to the Hedley Intrusives of Lower Jurassic age.

All drill core was split and analyzed for gold by fire assay. No gold mineralization was detected.

Drill hole data is summarized below:

	DRILL LOCATION			ORIENTATION		
Hole No.	Lat (N)	Dep (W)	Elev m (ft.)	Bearing	Dip	Depth m (ft.)
S81-72	5710	2760	5760 (1756)	045	-45	61.0 (200)
S81-85	5612	2900	5705 (1739)	340	-45	4.3 (14)
MB85-285	4996	2769	5545 (1690)	-	-90	139.0 (457)

2.2.6 Reserves

The reserve estimate is now being revised to include the entire Property, to include the 1984 drill information, and to effect a division between surface and underground reserves. A preliminary Summary of Reserves by John DeLeen, P. Eng., presents the current total reserves as 5.5 million tons with a grade of 0.16 oz Au/ton (5.0 million tonnes @ 5.49 grams per tonne).

There is excellent potential for extension of both surface and underground reserves. Geochemical and geophysical surveys have detected 18 anomalous zones lying beyond the margins of the known mineralization that warrant further investigatory drilling or trenching.

2.2.6.1 Surface Reserves

In order to complete the evaluation of the massive amount of drill hole data and to investigate the possibilities of using open pit mining methods, data from 1749 drill holes, located within 400 ft. (120 meters) from the surface, were evaluated by computer methods. This study indicated the near surface gold bearing mineralization could probably be mined by open pit methods. A drilling program was subsequently completed, during the fall and winter of 1984, in the possible open pit area (Figure 2.3).

The preliminary estimate of the tonnage and grade obtained by Mintec, Inc., was received on January 23, 1985. These figures are being checked and some revisions are expected before the calculations are finalized. The parameters used by Mintec, Inc. and the estimates of the tonnages and grades quoted on Table 2.1 are from their preliminary report. The open pit areas referred to in the Mintec, Inc. report are indicated on Figure 2.3.

The open pit was modeled using blocks 10 feet east- west, 25 feet north-south, and 10 feet high (3m x 7.6 m x 3m). The gold interpolated value, using trend planes and the IDS (inverse distance squared) method, was used to design the economic pits. Figures 2.4, 2.5, and 2.6 show typical sections, with interpolated ore blocks, through the open pit area.

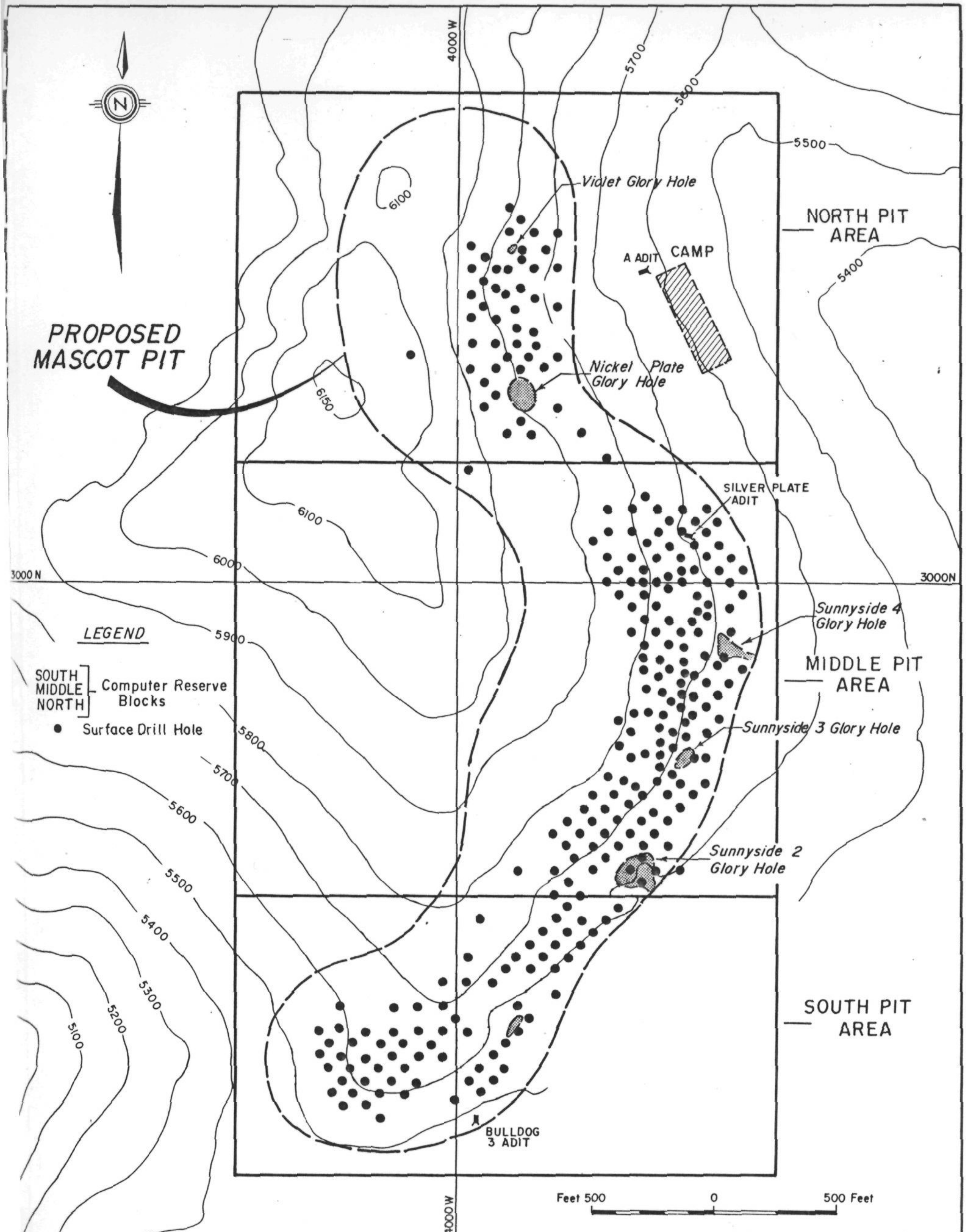
Essentially, three ultimate pit designs were computed, one each for gold prices at $300, $350, and $400, in U.S. dollars.

A total direct operating cost of $30.00 Cdn./ton was used in the study.

The ore tonnage factor is 10.5 $ft.^3$/ton (0.328 m^3/tonne), and the waste tonnage factor is 12.5 $ft.^3$/ton (0.39 m^3/tonne). A constant pit wall slope of 50 degrees was used for all designs. Subsequent, geotechnical studies have indicated that some pit wall slopes can safely be increased to 60°, and as a result stripping ratios may be reduced.

For the above given costs and prices, calculations were completed on the minimum economic cut-off grades of 0.06, 0.05, 0.04 and 0.03 ounces of gold per ton (2.0, 1.7, 1.4, 1.0 grams per tonne). In other words, these are the minimum gold grades shipped to the mill in the design computations.

Using a cut-off grade of 0.05 ounces of gold per ton (1.7 grams of gold per tonne) the following reserves,expressed in million of tons, noted in the Mintec, Inc. report are as follows:

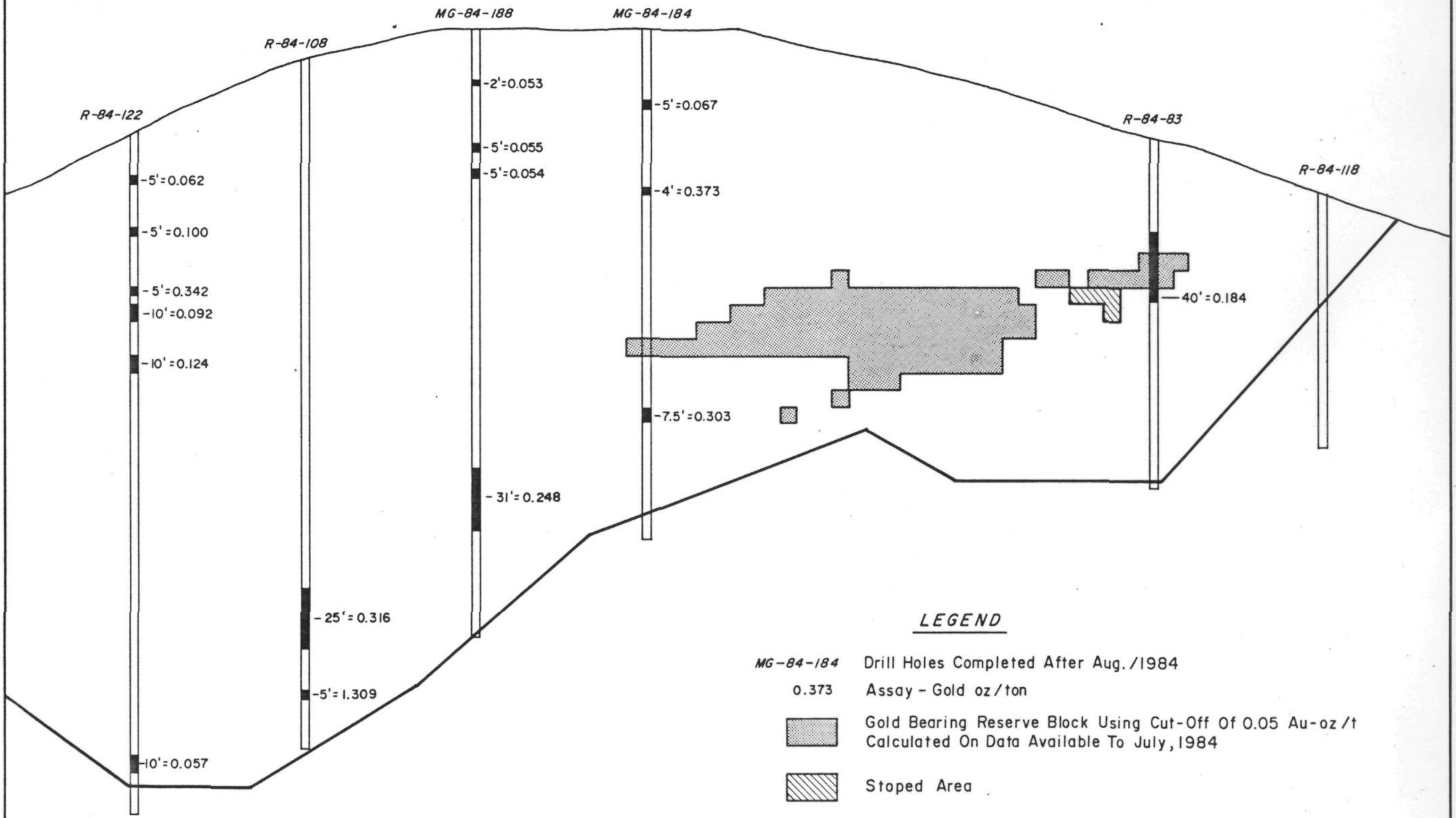


Mascot Gold Mines Limited

NICKEL PLATE PROJECT

PROPOSED OPEN PIT

DATE: APRIL / 1985	SCALE: 1" = 500'	DRAWING No. 2·3

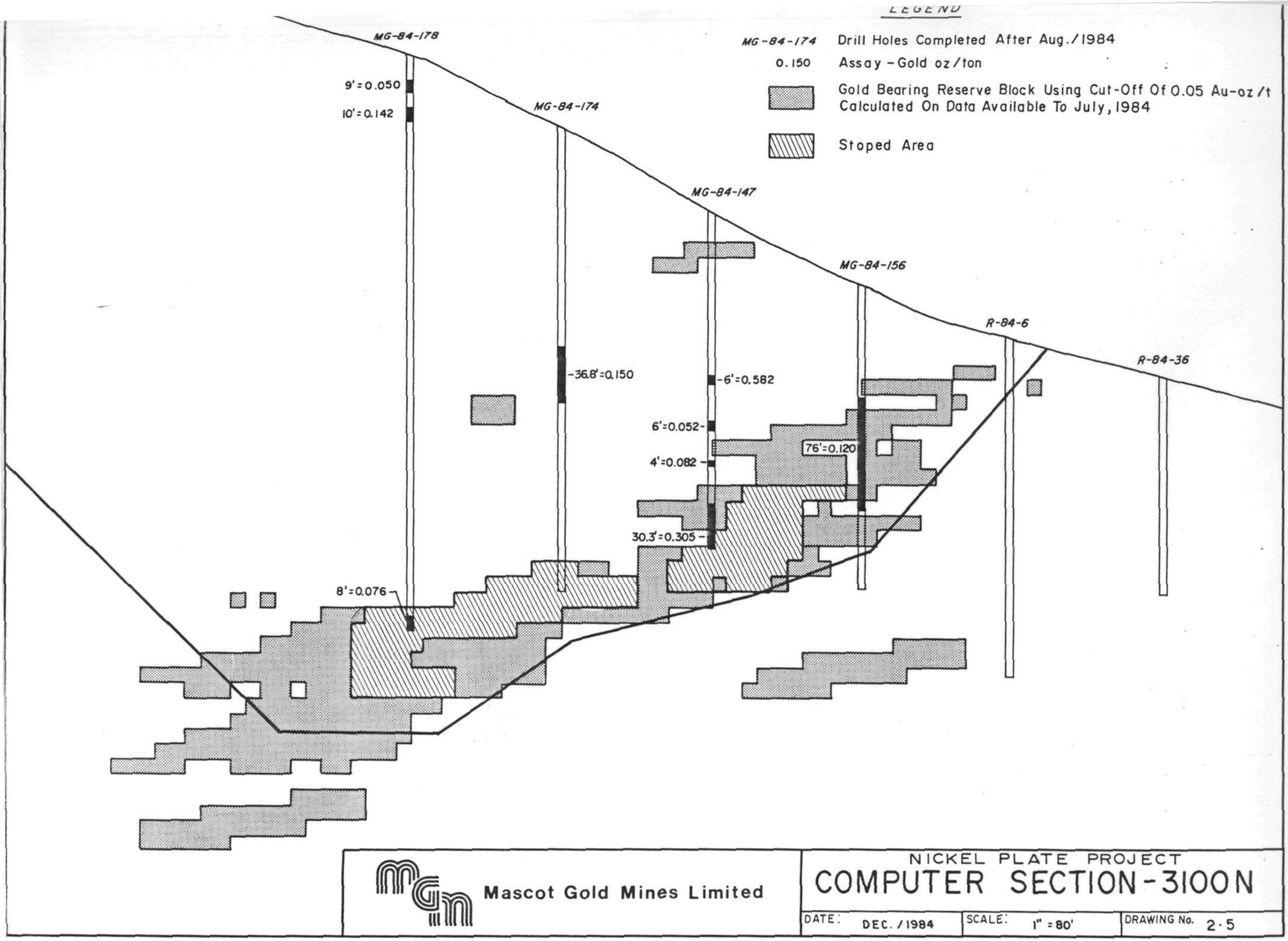


Mascot Gold Mines Limited

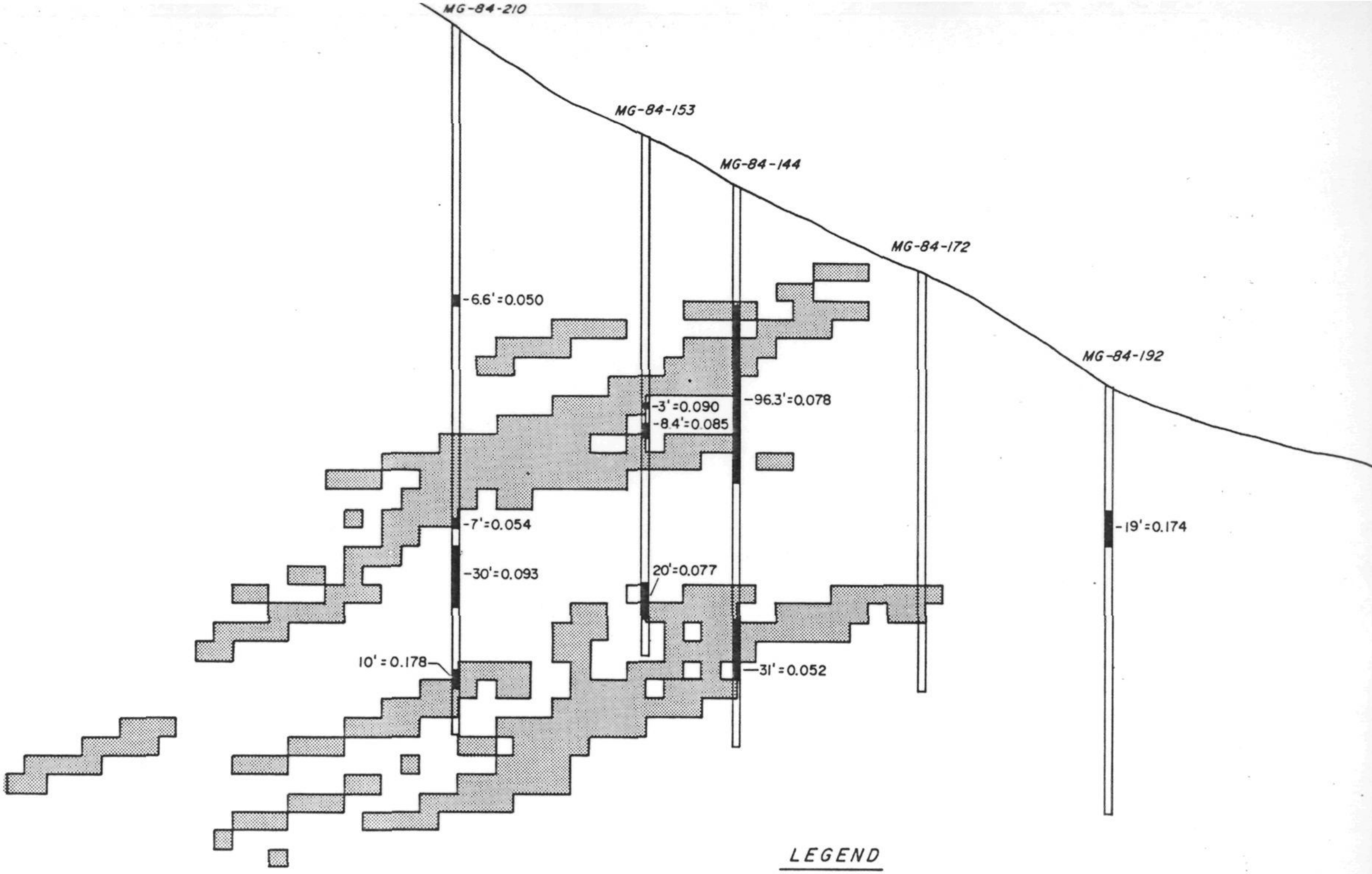
NICKEL PLATE PROJECT

COMPUTER SECTION - 1050 N

DATE:	SCALE:	DRAWING No.
DEC. / 1984	1" = 80'	2·4



LEGEND
MG-84-174 Drill Holes Completed After Aug./1984
0.150 Assay - Gold oz/ton
Gold Bearing Reserve Block Using Cut-Off Of 0.05 Au-oz/t Calculated On Data Available To July, 1984
Stoped Area
MG-84-178
9'=0.050
10'=0.142
8'=0.076
MG-84-174
36.8'=0.150
MG-84-147
6'=0.582
6'=0.052
4'=0.082
30.3'=0.305
MG-84-156
76'=0.120
R-84-6
R-84-36
Mascot Gold Mines Limited
NICKEL PLATE PROJECT
COMPUTER SECTION-3100N
DATE: DEC./1984
SCALE: 1" = 80'
DRAWING No. 2·5



LEGEND

MG-84-192	Drill Holes Completed After Aug./1984
0.174	Assay - Gold oz/ton
[shaded box]	Gold Bearing Reserve Block Using Cut-Off Of 0.05 Au-oz/t Calculated On Data Available To July, 1984

Mascot Gold Mines Limited

NICKEL PLATE PROJECT

COMPUTER SECTION-4250N

DATE: DEC./1984	SCALE: 1" = 80'	DRAWING No. 2·6

TABLE 2.1

OPEN PIT RESERVES

Gold - $300 (US)/oz

Ore	3.214	(Tons 10^6)
	2.916	(Tonne 10^6)
Grade	0.149	(oz gold/t)
	5.109	(g. gold/tonne)
Waste	27.608	(Tons 10^6)
	25.045	(Tonne 10^6)
Strip Ratio	8.589	

Gold - $350 (US)/oz

Ore	3.671	(Tons 10^6)
	3.330	(Tonne 10^6)
Grade	0.150	(oz gold/t)
	5.143	(g. gold/tonne)
Waste	34.776	(Tons 10^6)
	31.548	(Tonne 10^6)
Strip Ratio	9.615	

Gold - $400 (US)/oz

Ore	3.789	(Tons 10^6)
	3.437	(Tonne 10^6)
Grade	0.149	(oz gold/t)
	5.109	(g. gold/tonne)
Waste	38.779	(Tons 10^6)
	35.180	(Tonne 10^6)
Strip Ratio	10.235	

The reserve figures were based on drill hol information obtained from 2,146 holes. A total of 38,0 composite assays were used to complete the reser figures. In areas not investigated by drilling, the gra values were extended a distance of up to 75 feet (2 meters). The previously stoped areas have been removed a are not included in the open pit tonnages. T distribution of reserves between areas is approximately 4 in the Central Pit (Sunnyside) Zone, 30% in the North P (Nickel Plate) Zone, and 25% in the South Pit (Bulldo Zone.

2.2.6.2 Underground Reserves

A summary of the underground reserve inventory the Nickel Plate Property completed by DeLeen, Wilkin and Thomas is included in the following table. T reserves are based on data from old drill holes, and wal sampling from the previous operations, as well as wo conducted by Mascot since 1979.

TABLE 2.2

SUMMARY OF UNDERGROUND RESERVES*

GRADE CUT-OFF	RESERVE CLASS		
	PROVEN	PROBABLE	POSSIBLE
0.05 - 0.08 (1.71 - 2.74)	115,761@0.08 (105,016@2.74)	205,572@0.07 (186,491@2.40)	86,299@0.08 (78,289@2.74)
+0.09 (+3.09)	828,273@0.18 (751,393@6.17)	775,199@0.20 (703,245@6.85)	231,887@0.22 (210,363@7.54)
Total	944,034@0.17 (856,409@5.83)	980,771@0.17 (889,736@5.83)	318,186@0.18 (288,652@6.17)
Cumulative Total		1,924,805@0.17 (1,746,145@5.83)	2,242,991@0.17 (2,034,797@5.83)

*NOTE: Units are in short tons, and troy ounces gold per sho ton. Metric equivalents, tonnes, and grams of gold pe tonne are included in parentheses.

TABLE 2.3

UNDERGROUND

SUMMARY OF GOLD BEARING RESERVES

GRADE PLUS 0.09 OZ AU/T

Location	* Pv T-G	Pb T-G	Ps T-G
Below Open Pit - Between $300-400 Pits	174,782-0.18 (158,559-6.17)	28,703-0.20 (26,039-6.86)	857- 0.86 (777- 29.49)
Below Open Pit - Below $400 Pit	76,181-.24 (69,110-.823)	76,994-0.19 (69,847-6.51)	24,955-0.37 (22,639-12.69)
Nickel Plate Zone	483,217-0.18 (438,365-6.17)	503,831-0.20 (457,065-6.86)	149,361-0.18 (135,497-6.17)
Lower Dickson Area	8,790-0.24 (7,974-8.23)	10,870-0.23 (9,861-7.89)	7,510-0.14 (6,813-4.80)
Morning - 1500 Level	73,780-0.17 (66,932-5.83)	113,870-0.21 (103,301-7.20)	43,230-0.24 (39,217-8.23)
Lower Morning	11,523-0.10 (10,453-3.43)	40,931-0.15 (37,132-5.14)	5,974-0.33 (5,420-1.13)
TOTAL	828,273-0.18 (751,393-6.17)	775,199-0.20 (703,2456.86)	231,887-0.22 (210,363-7.54)

Total Pv + Pb 1,603,472T-0.19 oz Au/T (1,454,638 -6.51) Ps 231,887T-0.22 oz Au/T (210,363 -7.54)

Total Pv + Pb + Ps 1,835,359T-0.19 oz Au/T (1,665,001 -6.51)

*NOTE: Metric equivalents, tonnes and grams of gold per tonne are included in parentheses.

Pv - Proven
Pb - Probable
Ps - Possible
T - Short tons
G - Oz Au/T

TABLE 2.3 (Cont'd)

UNDERGROUND

SUMMARY OF GOLD BEARING RESERVES

GRADE 0.05 TO 0.08 OZ AU/T

Location	* Pv T-G	Pb T-G	Ps T-G
Below Open Pit - Between $300-$400 Pits	17,662-0.08 (16,023-2.74)	6,739-0.07 (6,114-2.40)	2,286-0.0 (2,074-2.0
Below Open Pit - Below $400 Pit	12,956-0.08 (11,753-2.74)	53,602-0.07 (48,627-2.40)	25,998-0.0 (23,585-2.
Nickel Plate Zone	40,273-0.08 (36,535-2.74)	108,213-0.07 (98,169-2.40)	48,875-0.0 (44,338-2.
Lower Dickson Area	2,140-0.08 (1,941-2.74)	1,280-0.06 (1,161-2.06)	- -
Morning - 1500 Level	41,130-0.07 (37,312-2.40)	15,760-0.07 (14,315-2.40)	9,140-0.0 (8,292-2.
Lower Morning	1,600-0.07 (1,452-2.40)	19,978-0.07 (18,124-2.40)	- -
TOTAL	115,761-0.08 (105,016-2.74)	205,572-0.07 (186,491-2.40)	86,299-0.0 (78,289-2.

Total Pv + Pb 321,333T-0.07 oz Au/T (291,507 -2.40) Ps 86,299T-0.08 oz Au/T (78,289 0 2.74)

Total Pv + Pb + Ps 407,632T-0.07 oz Au/T (369,796 -2.40)

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*NOTE: Metric equivalents, tonnes and grams of gold per tonne are includ in parentheses.

Pv - Proven
Pb - Probable
Ps - Possible
T - Short tons
G - Oz Au/T

The reserves listed in Table 2.3 are located outside the limits of the proposed open pits, in various zones of the mine. Although detailed engineering studies have not been completed, Mascot expects to recover a portion of the listed underground reserves.

Currently studies are underway to determine underground areas in which concentrations of higher grade material remain, and to determine how to access and mine these areas. At the present time the Nickel Plate zone below the open pit looks like the most favourable.

Underground mining is not planned to begin until at least one year after the start-up of open pit operations.

2.3 MINING

2.3.1 General Description

Surface mining operations will employ standard open-pit mining methods utilizing drilling, blasting, loading and hauling operations to break and move 4.3 million tonnes (4.7 million tons) of

5.1 BACKGROUND

The Nickel Plate Mine site is located near the geographic centre of the Okanagan-Similkameen Regional District. This regional district is located in south-central British Columbia and covers an area of 11,014 km^2 (4,252 mi^2), extending from the Canada-United States boundary at Osoyoos (i.e. near the southeast boundary of the regional district) to a point 72 km north. Manning Park marks the western extremity of the regional district. Penticton in the Okanagan Valley is the major centre and is situated 400 km from Vancouver and 671 km from Calgary. Other communities in the region include Osoyoos, Oliver, Summerland, Keremeos/Cawston, Hedley and Princeton. The majority of the region's population (40.5%) live in the city of Penticton, while the remainder are roughly divided between the other municipalities and the rural areas. Based on the 1976 to 1981 trends, growth in the regional district is projected at a rate of 2.7% per year. At this rate, the population should reach 67,650 by the year 1991. The economy of the regional district varies according to sub-areas within the region, and is dominated by the city of Penticton. The economic base of this city has diversified over the years from being primarily dependent upon agriculture, to now include manufacturing and tourism. Manufacturing, particularly in the mobile home and portable buildings sector, winemaking, and construction dominate the goods-producing industries. Evidence of the importance of the hospitality sector to the city is the fact that Penticton is the third-ranking convention centre in British Columbia. Penticton and Osoyoos are also popular retirement centres. An unusually high percentage of the region's population is over the age of 65 (i.e. 18% of the regional population vs. a provincial average of 10.9%).

The population of the regional district in 1981 was 57,185. This was an increase of 24% over the 1971 population of 43,752. In all age-groups up to 49 years of age, the regional population is less than the provincial average; in all age-groups in the 50 and over category, the population of the region is higher than the average in the province as a whole. This fact again indicates the importance of the area for retirement purposes.

The mining industry is not at present a significant contributor to the economy of Penticton or its sub-regions in terms of the labour force, but there is considerable economic spin-off in terms of goods and services purchased by the two large mines located within the regional district (i.e. the Newmont Similkameen Mine in Princeton and Brenda Mines near Peachland). The communities of Keremeos/Cawston and Hedley are primarily dependent upon agriculture. Beef cattle are an important agricultural commodity throughout the Okanagan-Similkameen Regional District, and are especially important in the area between Keremeos and Hedley. In 1981, land not suited to cultivation supported a population of some 27,000 cattle in the area.

Tourism, as indicated, is one of the key economic activities in the region. Penticton and Osoyoos particularly are heavily reliant on tourism, with summer populations increasing by two or three times the normal resident population. Penticton, in particular, is dependent upon tourism as well as convention trade. The Osoyoos district, with its numerous lakes and warm dry climate is not only a popular tourist destination area, but also an important stopover point for travelers.

In the south Similkameen Valley (i.e. Keremeos and Hedley area), the tourism emphasis is primarily on the provision of services to the travelling public, as there are no lakes along the major highway to attract visitors. The economic effect of tourism on the south Similkameen continues to grow with improvements to the highway network.

As stated previously, the municipalities of Penticton, Keremeos and Hedley are the three municipalities most likely to be affected, either positively or negatively, by the development of the Nickel Plate Mine. Of the 57,185 residents in the regional district in 1981, 23,180 live in Penticton. The population of Keremeos in 1981 was approximately 830, while the population of Hedley was about 500. The focus of this community profile and social impact assessment is the City of Penticton and the villages of Keremeos and Hedley. The discussions that take place in Sections 5.2 to 5.10 also relates principally to these communities.

The total labour force in the Regional District of Okanagan-Similkameen stood at 26,115 persons, according to the 1981 census figures for the region. The unemployment rate for the regional district as of June, 1984 was reported to be 18.3% of the labour force, based upon the number of U.I.C. claimants registered with the Employment and Immigration office. It should be noted that this figure does not include those persons who are no longer eligible to claim unemployment insurance. The 1984 rate of unemployment in the region was 2.8% higher than the provincial average, and 6.6% higher than the national average. The highest unemployment rates in the region occur in the forestry and logging, construction and farming and horticulture sector. Noting that there is a major under-employment problem in the construction sector, it is apparent the area will be able to supply the manpower and equipment necessary to undertake construction activities on-site during 1986. In fact, the Mascot project will make a major contribution to the economy of the area.

5.2 EMPLOYMENT

This subject has been discussed in general terms in Section 5.1 and in this section discussion will address specific employment factors as they reflect the Nickel Plate Mine development. This subject is addressed in terms of both direct employment with Mascot (i.e. particularly during the operating life of the mine) and contractor activities (i.e. particularly during the development phase of the mine). During the construction phase of this project, an average of approximately 210 construction employees will be required on-site to carry out various phases of construction activities. Contractors will be heavily utilized to provide skilled and unskilled labour requirements. Construction equipment will also be required and is generally available within the regional district. Based on a review of the capabilities and backgrounds of individuals and firms in the Okanagan-Similkameen Regional District, it is apparent that most of the labour and equipment requirements can be obtained from within the Okanagan-Similkameen Regional District. In particular, most of the construction phase jobs are expected to be filled by workers from the communities of Penticton, Keremeos and Hedley. This should not be interpreted to mean that workers from other nearby communities such as

SECTION 7

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