Willa
Stage I, April '88

889522

EXECUTIVE SUMMARY

Introduction

The Willa Project is a joint venture of Northair Mines Ltd. (70 percent) and BP Resources Canada Limited/Rio Algom Exploration Inc. (together 30 percent). As operator, Northair has completed an ambitious geological exploration, environmental and engineering program with the objective of achieving mill production by late 1988. Over $10 million has been spent on the project to date, an expenditure which has significantly benefitted Slocan Valley residents and businesses. Throughout the predevelopment program, a high priority has been given to environmental design in order to address the concerns of area residents and regulatory agencies.

The minesite is located near Aylwin Creek on the east side of Slocan Lake within a short distance of the communities of Silverton, Slocan and New Denver. The larger communities of Nelson and Castlegar to the south are accessible via Highway 6 within approximately one hour's drive.

Mineralization at Willa is found within several distinct zones of volcanic and metamorphic rocks associated with intrusive heterolithic breccias and porphyrys. West Zone reserves, which constitute the initially mineable orebody, are estimated at 544,000 tonnes grading 7.5 g/t gold, 1.04 percent copper and 9.5 g/t silver. Considerable potential also exists for developing additional reserves based on Main Zone and East Zone mineralization. Current West Zone reserves provide an initial mine life of approximately 3 years, however, a 5-year operation is nominally planned.

The gold, copper and silver values in the ore are amenable to recovery by simple gravity and flotation operations, and use of cyanide is not proposed. Ore will be processed at 450 tonnes per day, using mill equipment already on site. Mill tailings will be discharged to a tailings impoundment, with pond water returned to the mill for reuse.

PROJECT DESCRIPTION

Project History

Early Activity

entire region along the eastern side of the Slocan Basin is scattered with doned gold and silver mine workings. The oldest claims at Aylwin Creek were d in 1893, and by 1898 three tunnels had been driven into zones showing gold ciated with chalcopyrite. Granby Consolidated inspected the property in 1901 and in 1912, but turned it down because of apparently low ore grades. In 1955, Egil rgesen sampled the tunnels but only traces of gold were found.

naco optioned the property in 1964 and conducted bulldozer trenching, geological pping and diamond drilling of four holes. Only minor copper-gold mineralization intersected.

1967 and 1969, Amax Exploration Inc. conducted trenching and geochemical veying. Surface chip samples with gold, silver and copper values as well as copper molybdenum geochemical anomalies led to a 5-hole diamond drill program to test Willa-Rockland Zone. All holes intersected the zone, including two which showed mineralization. From these results, it was postulated that a large mineable zone ld exist. Other companies looked at the property but did not take options because that generally low grades.

The key claims of the present Willa property were assembled by Peter Leontowicz and Wingert in 1978 and 1979. In 1979, Rio Algom Exploration optioned these and staked additional claims. BP Minerals Ltd. staked ground at the same time and the interlocking holdings were combined by agreement in late 1979.

Between 1980 and 1984, BP and Rio Algom conducted geochemical surveying, 14301 m surface diamond drilling in 46 holes and geological evaluation of the resultant data. The work identified two principal bodies of gold and copper mineralization; a near-

surface, low-grade Main Zone estimated to contain about 3.4 million tonnes and a deeper, higher-grade West Zone containing in excess of 0.5 million tonnes.

In 1985, Northair Mines Ltd. became a member of the joint venture and undertook the driving of an adit into the zone of the best gold mineralization known at that time. Drifting consisted of an 883 m adit at 1025 m elevation and a crosscut 92 m long. The adit is tracked and suitable for 7-ton cars. Northair also commissioned additional diamond drilling from the underground workings. Between May 1985 and June 1986, 8421 m were drilled in 65 holes to better define the West Zone and to continue to explore the potentially mineralized area. One hole intersected the previously undiscovered East Zone which showed good gold values.

3.1.2 1987 Program

During the winter of 1986/87, an extensive program was launched to systematically sample and drill the West Zone and to drill selected targets in the East and Main Zones. A ramp was driven from the 1025 level down to the 992 elevation. The ramp was constructed at a grade of -15 percent for a distance of 272 m at a nominal cross-section of 3 m by 4 m.

At the 1015 m elevation of the ramp, an intermediate level was driven north for 50 m and south for 11.5 m to provide for diamond drilling. Development work carried out on the 1025 level consisted of 33 m in the 950 crosscut, 29 m in the 950 drift south and 3.4 m in the 950 drift north along with slashes for diamond drill stations.

A new level was collared at the 1100 m elevation in September 1987 and was advanced for 381 m at a nominal section size of 2.7 m by 3.1 m. Crosscuts were driven north and south from the end of the 1100 level. The crosscut to the north was advanced 43 m while the crosscut to the south was driven 37 m. The south crosscut was extended 107 m in January 1988 for diamond drilling positions.

In 1987, drilling of the West, East and Main Zones totalled 10,441 m in 215 holes. The West Zone was drilled at 25 m (Phase 1) and 12.5 m (Phase 2) in-fill spacings. A prospective area at the south end of the West Zone near the 1080 m elevation was also investigated. Drilling within the West Zone totalled 7201 m in 155 holes in 1987.

Significant intersections of pyrite and epidote mineralization within heterolithic breccia in the Main Zone were tested by additional drilling, especially intersections of 12.5 g/t gold over 8 m in hole 83-25 and 9.8 g/t over 18 m in hole 87-174. Drilling within the Main Zone totalled 1297 m in 41 holes in 1987.

Drilling in the East Zone was performed to test intersections of pyrite and chalcopyrite mineralization in holes 86-78 and 86-13 and to test gold, chalcopyrite and pyrite mineralization intersected in the decline near 9996 N 10140 E within mafic volcanics and a small feldspar porphyry body. Drilling within the East Volcanic Zone in 1987 totalled 1943 m in 19 holes.

In the West Zone, drilling outlined a sub-horizontal, roughly cylindrical gold mineralized body extending over a strike length of 175 m with a vertical interval of up to 150 m. Gold mineralization is within pyrite, pyrrhotite, and chalcopyrite mineralized feldspar porphyry breccia, heterolithic breccia, feldspar porphyry and mafic volcanics.

3.1.3 1988 Program

In January and February of 1988, a total of 4221 m was drilled in 69 holes. The drilling was distributed between the West Zone and the Main Zone.

Drilling on the West Zone was aimed at defining the limits of the mineralization and consisted of deepening 6 pre-existing holes and drilling 30 new holes for a total of 1403 m. Fifteen holes (420 m) remain to be drilled on this zone. The results to date show that the ore is roughly cylindrical. The postulated keel, below the main part of the deposit, has been shown to be limited to two sections, and is therefore narrow, and possibly pipe-like and vertically dipping.

To the south of the West Zone, 18 holes were drilled in four north-south fans for a total of 1784 m. The object was to pursue the mineralization found in late 1987 in holes 87-312, -313 and -314. The results show that two steeply dipping zones are present that probably strike north-south. The larger of the two zones appears to be approximately 30 m long, 11 m wide and has been intersected over a 40 m vertical range. It is open up-dip. The smaller zone is approximately 10 m long and appears to be erratic in distribution.

The lower portion of the Main Zone was tested from the 1100 level by means of 16 holes for a total of 1034 m.

3.2 Geology

3.2.1 Regional Geology

The Willa Project is located within a pendant of volcanic and sedimentary rocks on the western margin of the Nelson Batholith. The rocks in the pendant may be part of the Slocan Group of Triassic or Lower Jurassic age, or possibly those of the Rossland Group of Permian age. The Nelson Batholith comprises predominantly porphyritic granite and granodiorite.

The Slocan Fault extends along the western margin of the Nelson Batholith and separates the Nelson Batholithic rocks from gneisses of the Valhalla complex to the west; the Slocan fault strikes northerly and dips steeply east. The Slocan fault may occupy a broad valley near the western margin of the Willa property.

Several lead-zinc-silver and gold-copper mines or prospects exist within the area of the Willa Project, between Enterprise Creek to the south and Silverton Creek to the north. The Hewitt and Van Roi Mines, located 6 km northeasterly from Willa were mined between 1893 and 1955. The L.H. gold-copper prospect adjoins Willa to the north; exploration including diamond drilling has been performed on this property during 1986 and 1987.

3.2.2 Property Geology

Lithologies within the mineralized area at Willa comprise volcanics, quartz latite porphyry, feldspar porphyry, heterolithic breccia and lamprophyre dykes. These rocks are part of a 15 km^2 pendant within the Nelson Batholith. Figure 3-1 shows the main features of property geology at Willa.

Exploration to date at Willa has identified economically significant gold and copper mineralization in two main bodies (identified as the West and Main Zones) within and adjacent to a plug of intrusive heterolithic breccia. A third possible body (identified as the East Zone) has been intersected within volcanics, 30 m east of the heterolithic breccia volcanic contact. The present program has predominantly explored the West Zone. Plans and sections of the West Zone are shown in Figures 3-2 to 3-4.

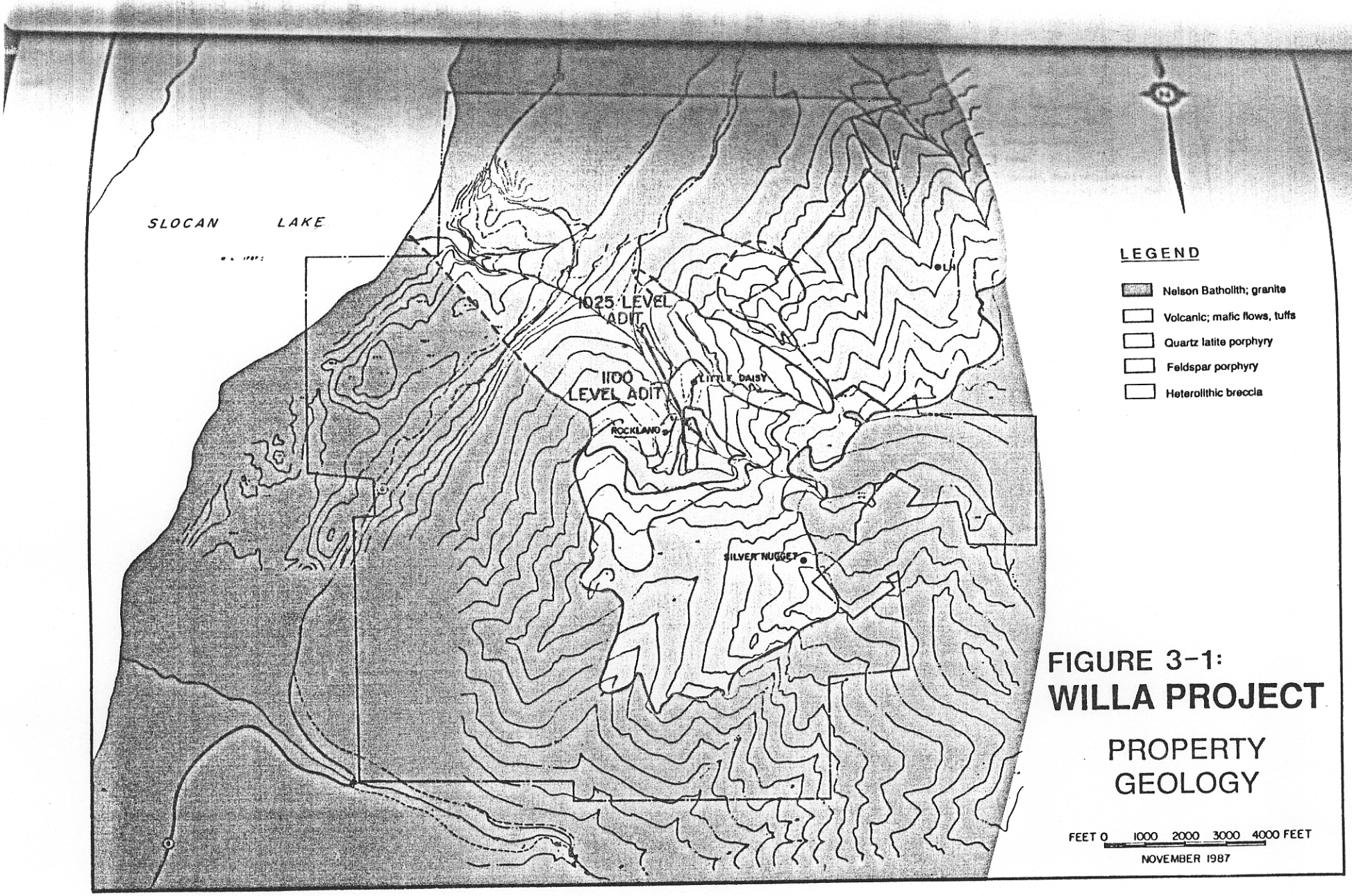

FIGURE 3-1:
WILLA PROJECT
PROPERTY GEOLOGY

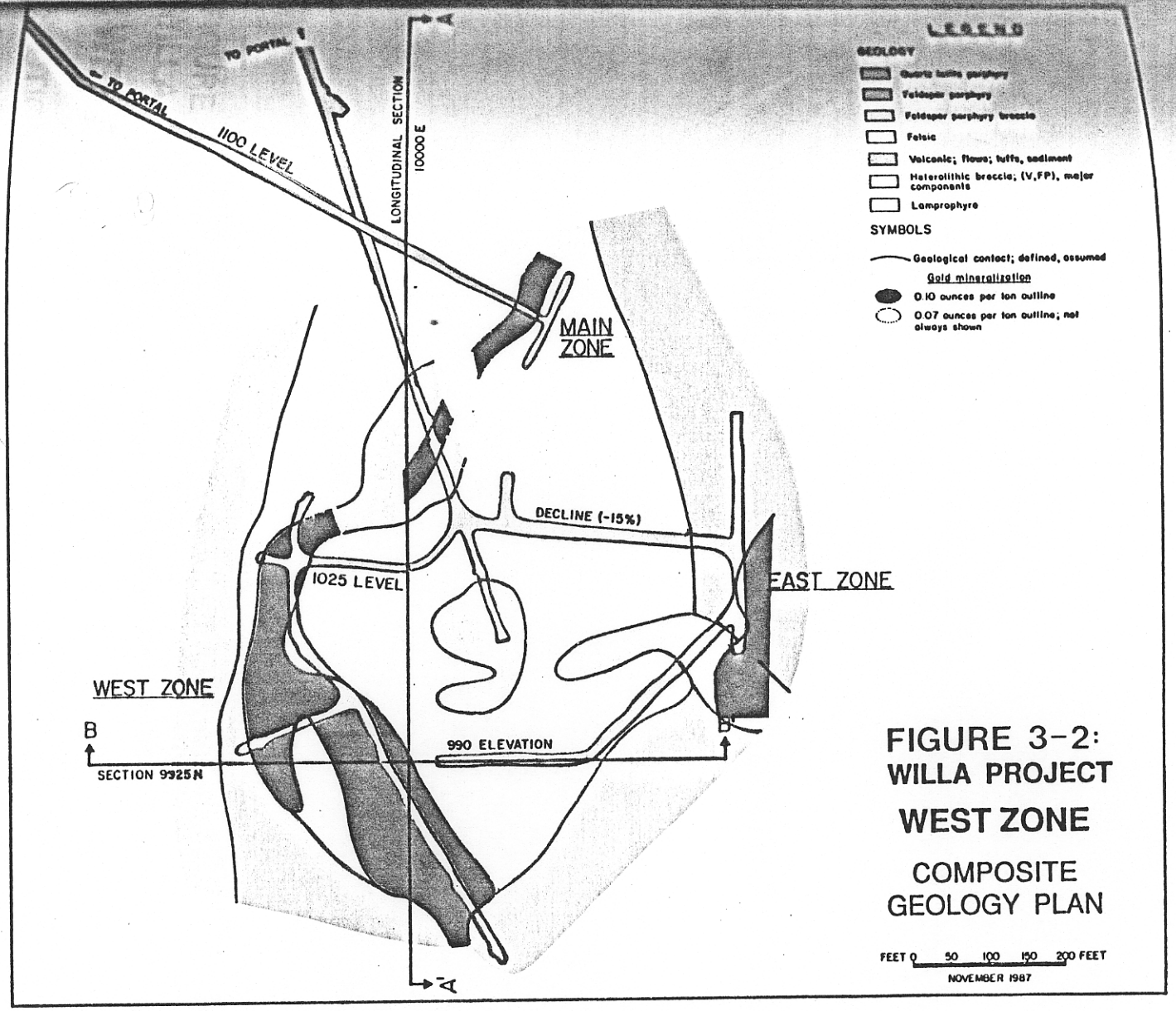

FIGURE 3-2:
WILLA PROJECT
WEST ZONE
COMPOSITE
GEOLOGY PLAN

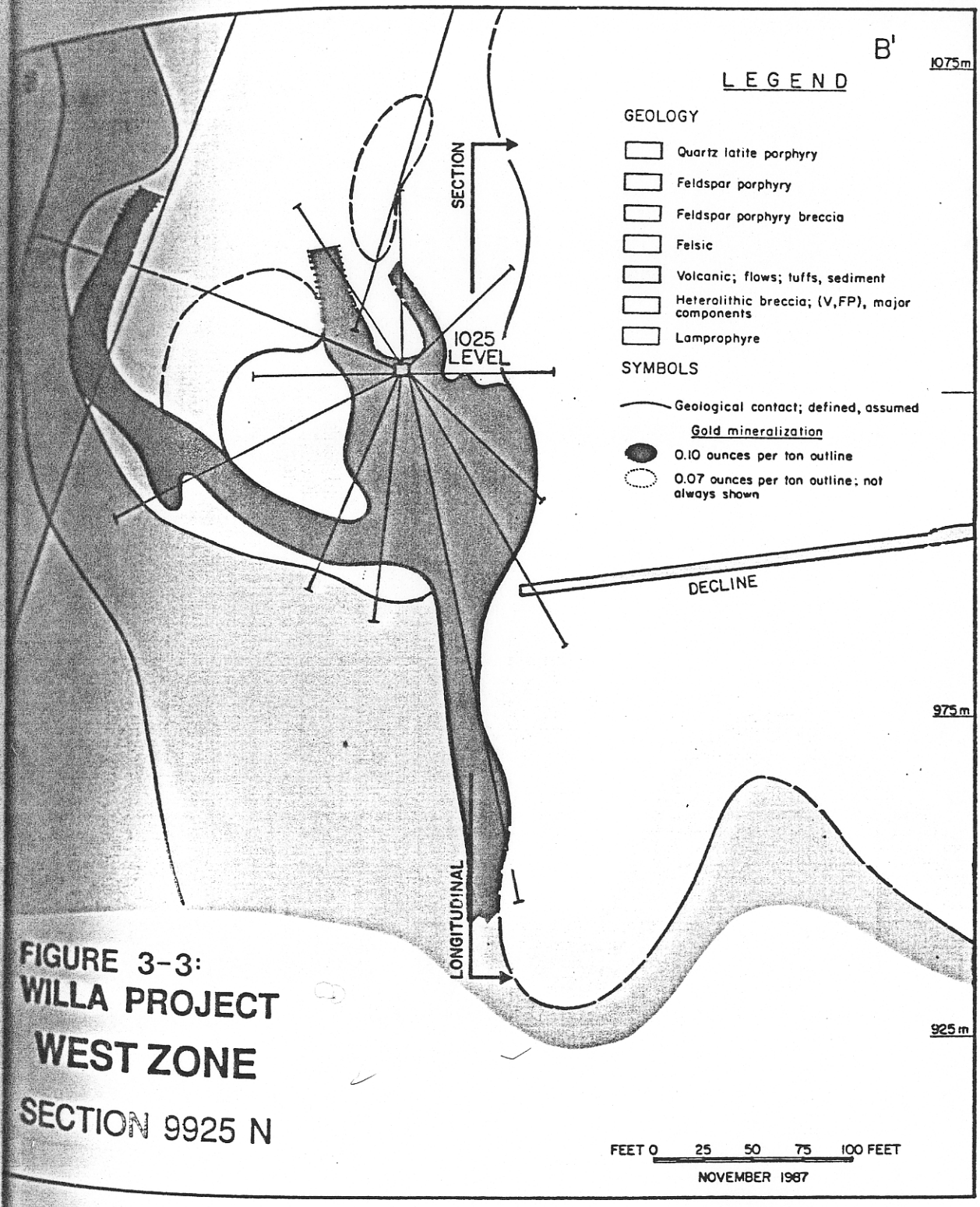

FIGURE 3-3:
WILLA PROJECT
WEST ZONE
SECTION 9925 N

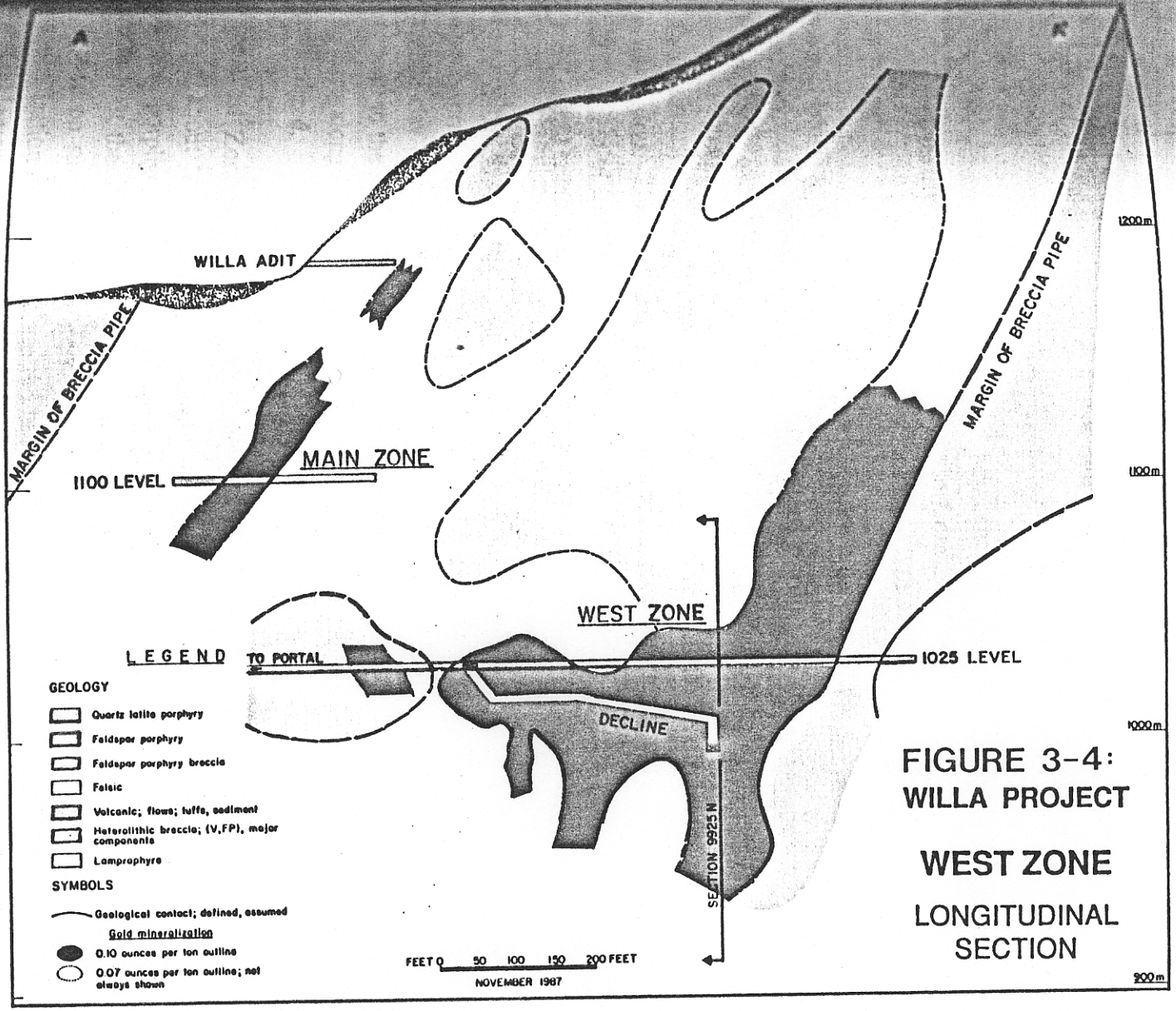

FIGURE 3-4:
WILLA PROJECT

WEST ZONE

LONGITUDINAL SECTION

The heterolithic breccia plug has a roughly elliptical outline and is about 160 m by 300 m in plan. At surface, the plug is bounded by volcanics to the east and quartz latite porphyry to the west; at the 1025 m (main adit) level, the plug is bounded by a thick sequence of volcanics to the east and a thin (5 to 10 m) sequence of volcanics to the west.

The breccia comprises fragments of all adjacent lithologies; fragments are generally subrounded, matrix supported and comprise from 30 to 40 percent of the rock. The matrix is fine grained and generally contains from 2 to 5 percent pyrite.

Irregular bodies of feldspar porphyry exist within and at the margin of the heterolithic breccia, especially in the southern and western portions of the plug. Some of these bodies may be quartz latite porphyry.

A northeasterly striking fault is exposed in the adit near 10100 N; dip is steep southerly to sub-vertical. The fault is comprised of several zones of clay gouge with slickensides and several m of fractured rock. Displacement, if any, is not known. The fault can be traced in drill holes over a strike length of about 150 m.

Lamprophyre dykes cut all other rock types in the area; the dykes strike northerly and dip sub-vertically to steeply east. Margins of some of the dykes are strongly sheared to a white clay or talc. Two sets of dykes exist: one set strikes northerly through and adjacent to the West Zone; the other extends from near the southern end of 950 drift, northerly along the eastern margin of the breccia pipe. The lamprophyre dykes are not mineralized.

The West Zone, as presently defined, has an irregular, sub-horizontal pipe shape striking about 150 degrees. It lies at or near the lower margin of an irregular lense of feldspar porphyry. The feldspar porphyry extends from about the 1010 m elevation up to at least the 1100 m elevation and may connect with a body of feldspar porphyry mapped on surface and centered near 9900 N 10000 E. In part, gold and copper mineralization extends well into the heterolithic breccia and volcanics in a narrow, sub-vertical lense below the main body.

3.2.3 Mineralization

3.2.3.1 *West and Main Zones*

Within the West Zone, gold mineralization is generally associated with sulphide mineralized, crackle brecciated feldspar porphyry and to a lesser extent with sulphide mineralized heterolithic breccia and volcanics. Within the Main Zone, gold mineralization is associated with pyritic heterolithic breccia. The sulphides exist both within the breccia matrix or may form the matrix completely. The sulphides also exist as irregular veinlets and blebs within and rimming fragments.

Fragments are sub-angular and predominantly 10 to 50 cm in diameter. There is a gradation from crackle brecciated feldspar porphyry to heterolithic breccia with fragments composed predominantly of feldspar porphyry.

Sulphides, veins and pods within the breccia are occasionally rimmed with magnetite, epidote or chlorite. Occasionally, pods and irregular veinlets of light purple anhydrite exist within the matrix.

Sulphides consist predominantly of pyrite with lesser chalcopyrite. In certain sections, pyrrhotite may be in equal proportion to pyrite. In part, the pyrite may be crystallographically continuous over several centimeters even within irregular blebs and veinlets.

At least some of the gold occurs as grains and veinlets of native gold or electrum. The grains and veinlets range from a few microns to 20 microns in maximum dimension and occur on the margins or in fractures in pyrite and chalcopyrite. Grains of gold were seen in core at a few locations. In general, higher gold content is closely related to higher chalcopyrite content.

3.2.3.2 *East Zone*

In the East Zone, gold mineralization exists within both mafic volcanic and feldspar porphyry or quartz latite porphyry within a northerly to northeasterly striking belt 10 to 30 m east of the eastern margin of the heterolithic breccia pipe. This belt has a strike length of 45 m and is open.

Mineralization is comprised of coarse-grained pyrite with lesser chalcopyrite and, in part, pyrrhotite. Vugs lined and filled with zeolite and pyrite occur in and adjacent to gold mineralized sections in both mafic volcanic and feldspar porphyry. In hole 268, massive chalcopyrite and pyrrhotite contained 10 g/t gold over 8.0 m within feldspar porphyry.

3.2.4 Ore Reserves

West Zone ore reserves at Willa are presently estimated to be 600,000 tons (544,000 tonnes) grading 0.22 oz/ton (7.5 g/t) gold, 1.04 percent copper, and 0.277 oz/ton (9.5 g/t) silver. These are uncut, undiluted figures classified as "drill indicated probable" reserves based on drilling results. These reserves do not include gold mineralization that is being drilled in the East Zone which lies in volcanics east of the breccia pipe, the Main Zone or the low-copper, gold-bearing breccia area in the centre of the breccia zone.

Reserve estimates were calculated by Dr. P.W. Richardson, P.Eng. from a series of cross sections at 25 m spacings. Areas for each cross section grading over 0.1 oz/ton (3.43 g/t) gold were determined and multiplied by the cross section spacing (25 m) to give a volume which was then converted to tonnage, based on a specific gravity of 3.0.

The grade of each block was determined by calculating the weighted average of the ore intersections in each block. Most of the holes were on sections, but off-section (usually) surface holes were used if they passed through a block.

Further work is presently underway to confirm estimates prepared in this way.