COMINCO COPPER DIVISION
VALLEY OPERATIONS

G.A.C., M.A.C. & C.G.U.
TOUR
MAY 17, 1983

W A R N I N G

THAWING AND FREEZING COMBINED WITH THE ATTITUDE OF SHEARS IN THE PIT WALLS HAVE RENDERED CERTAIN AREAS OF THE PIT HAZARDOUS. ON THE 1270 BENCH A RED RIBBON DESIGNATES THE AREA TO THE SOUTH OF THIS POINT AS OFF LIMITS. IN AREAS WHICH APPEAR TO BE RELATIVELY SAFE THERE IS STILL A CHANCE OF FALLING ROCK SO PLEASE BE OBSERVANT FOR LOOSE ROCK AND BE ON GUARD AT ALL TIMES.

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Welcome to Canada's newest open pit porphyry copper mine. Stock-piling of ore commenced October 29, 1982 and the mill start-up was January 16, 1983.

To-date the milling rate has averaged 20,650 metric tonnes per day. Recoveries are in the 90 percent range and the concentrate grades average 45 percent copper. The cut off grade to the mill is 0.40 percent copper. At the present time there is a stockpile of 500,000 tonnes of .37 percent copper.

Ore from the Valley Operations is trucked to the former Bethlehem Mill. The haulage distance is 6.8 Km. From the valley bottom to the millsite the elevation difference is 270 metres. A "live" ore stockpile of 70,000 tonnes is located at the millsite.

All blast holes are assayed as a part of the grade control program. The data are computerized, kriged and various grade boundaries are computer generated.

You will observe molybdenite mineralization associated with shear zones and late stage quartz veins. The combination of grade and low metal prices does not justify the start-up of the moly circuit in the mill.

Reserves, etc.

Figure #1 is a plan of the orebody and indicates the area presently being mined. The indicated reserve is 453.5 million tonnes with an average grade of 0.475 percent copper. The inferred ore is 272.1 million tonnes at 0.475 percent copper.

Figure #2 is a NE-SW section of the orebody. You will note that it has not been closed off at depth. Ore grade mineralization was intersected to a depth of 762 metres (2,500 ft.) when the hole was stopped in ore.

The Fringe Zone of the orebody is an assay boundary approximately 90 metres wide. The outer boundary represents a grade drop of below 0.30 percent copper.

Figure #3 illustrates the various zones of alteration based on diamond drilling.

Figure #4 is a plan of the benches developed to-date. Production is presently from the 1240 and 1250 benches. The tour will be restricted to the 1270 and 1260 benches where you will have an opportunity to observe the mineralization, alteration and dykes. The triangles with reference numbers are control points for pit wall mapping and they will aid you in locating your position in the pit.

Photography

You are free to take pictures for your own use. Photos are not to be used for publication or advertisement.

PIT STOPS

Stop #1 1270 Bench.

At this stop you will have the opportunity to observe several lamprophyre dykes, fault zones, different degrees of alteration and mineralization. Directly above, on the 1280 bench, is an oxide zone developed within a highly faulted area. The copper oxides noted are malachite and minor azurite. To the south as far as the red ribbon the face will have good examples of mineralization associated with quartz veining.

At 15 m north of station 2 is a fault exposed in the pit face. The extension of this fault has been traced along the 1260 bench. It strikes approximately N40°W.

About 14,000 structural measurements of faults, fractures and quartz veins were made in the exploratory decline. Faults comprise four distinct sets represented by the following orientations: N07°W/75°E, N04°E/90 N72°W/84°S and N00°/16°E. Quartz veinlets show well developed sets at N19°W/80°E and N69°W/79°S. The main structural orientations that occur in the declines are parallel to the Lornex and Highland Valley faults.

The most critical set of shears exposed in the pit walls strike N20°W, dip 45° and 60° east. As the pit wall roughly parallels this orientation there have been localized pit wall failures where double benching was attempted.

Stop #2 1260 Bench

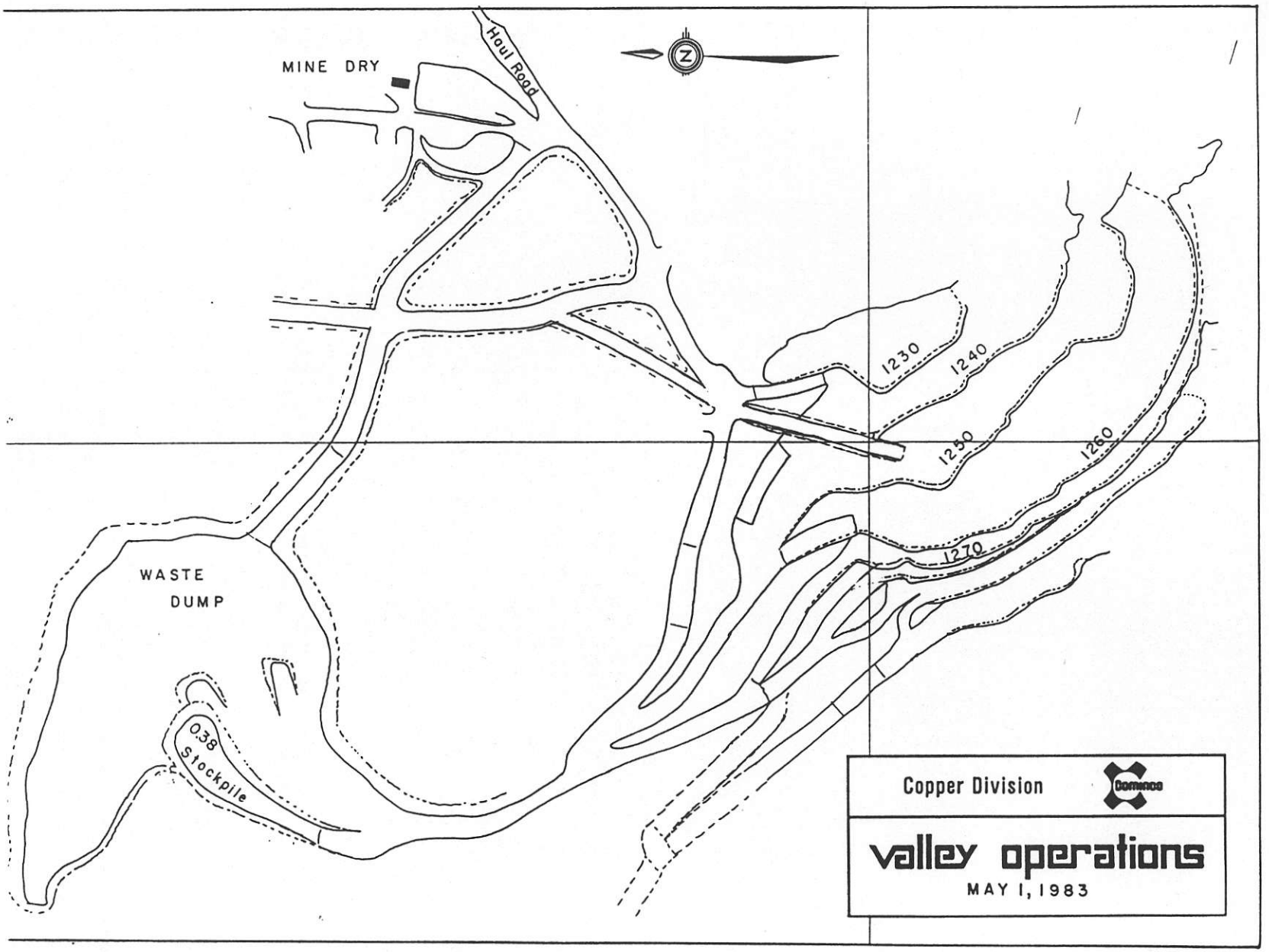
Here again you will have an opportunity to observe the lamprophyre dyke swarm which have an average strike of N20°E. One of the lamprophyre dykes has intruded a Bethsaida type dyke. The exact attitude of the Bethsaida dyke and its contacts have not been established due to an unsafe bench face.

At 65 m. north of station 2 and 60 m. to the south there are two excellent examples of late stage quartz veining which are mineralized with chalcopyrite, pyrite and molybdenite. These veins have been traced on three benches.

Proceeding south to station 1 you will see the fault zone noted on the 1280 bench. At station No. 1 there is a good example of a stockwork of mineralized quartz veins.

South of station No. 1 the group will note low angle fault and shear zones. These zones are best observed away from the face where their extensions can be seen in the 1270 and 1280 benches.

The last stop will be at the south end of the bench where the fringe of the oxide zone can be observed. This area is the fringe of a broad oxide capping which is present at sub-crop in the valley bottom.


MINE DRY
Haul Road
N
1230
1240
1250
1260
1270
WASTE
DUMP
038
Stockpile
Copper Division
valley operations
MAY 1, 1983

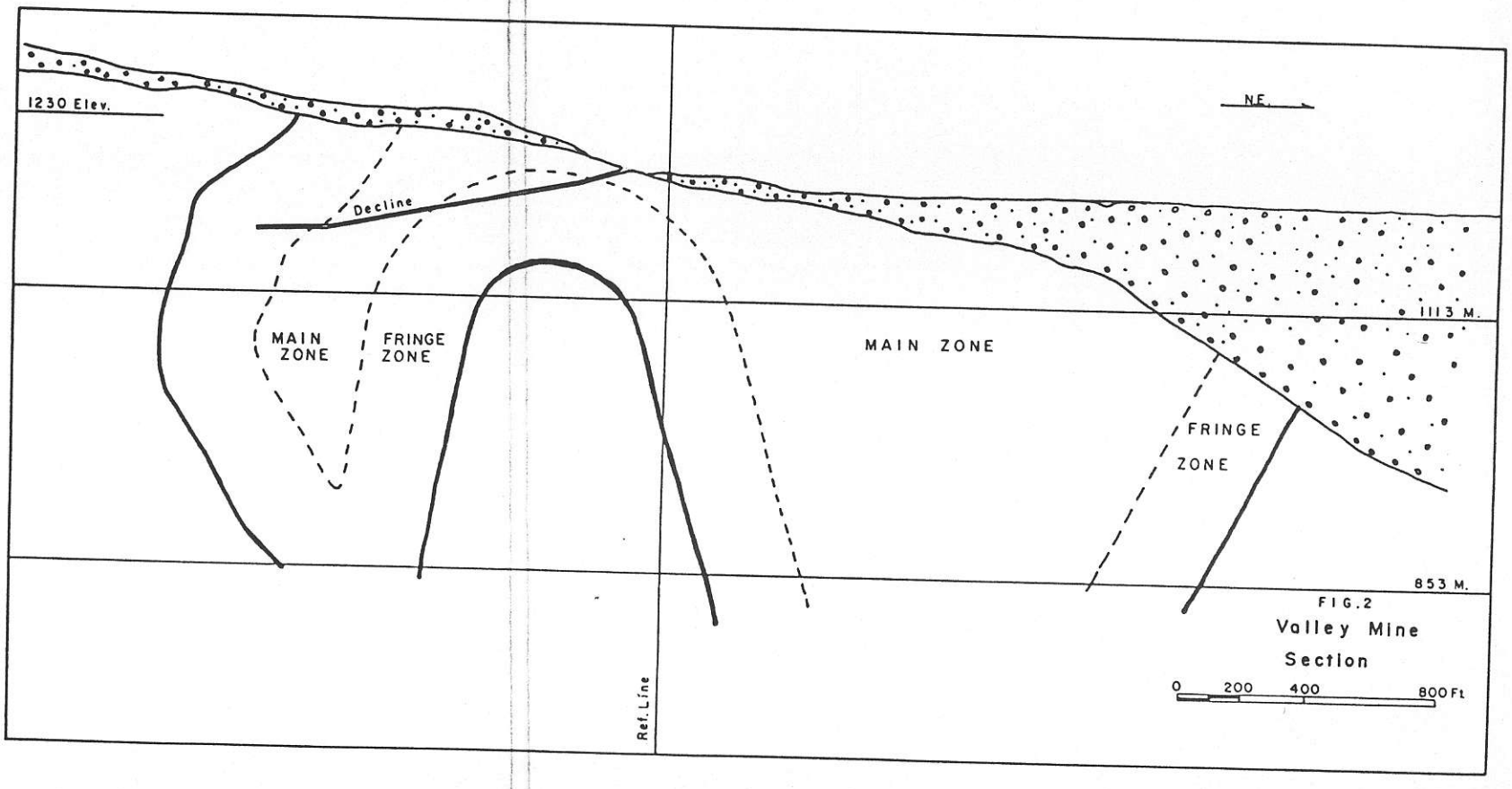


FIG. 2
Valley Mine
Section

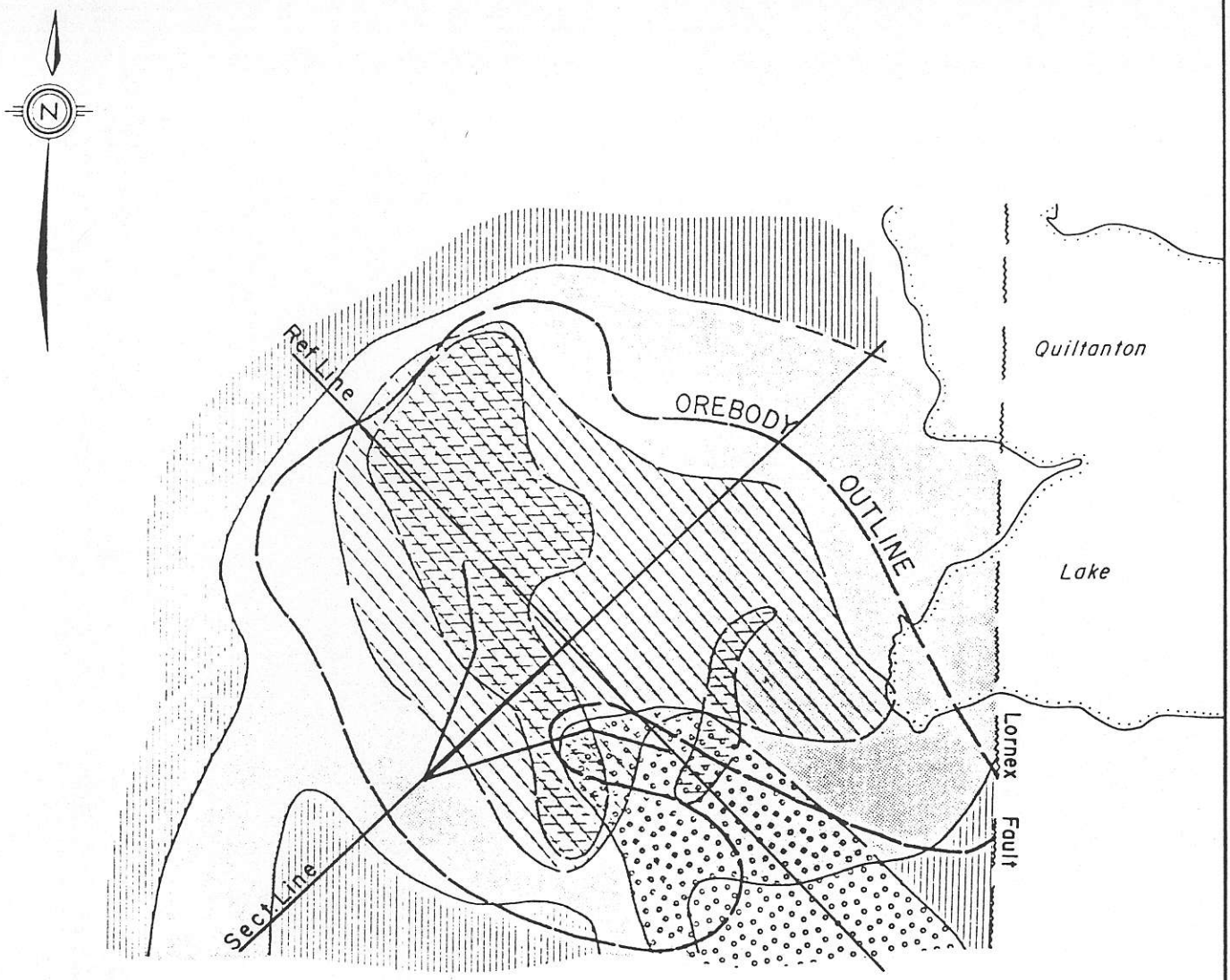


FIG. 3

VALLEY COPPER MINES LTD.

DISTRIBUTION OF DOMINANT ALTERATION TYPES

Propylitic ; weak pervasive sericitic and kaolinitic, vein sericitic and silicic.

Pervasive sericitic and kaolinitic

Vein sericitic

K-Feldspathic

Silicic (Barren quartz veinlets)

FEET
0 1000 2000
200 0 200 400 600
METRES

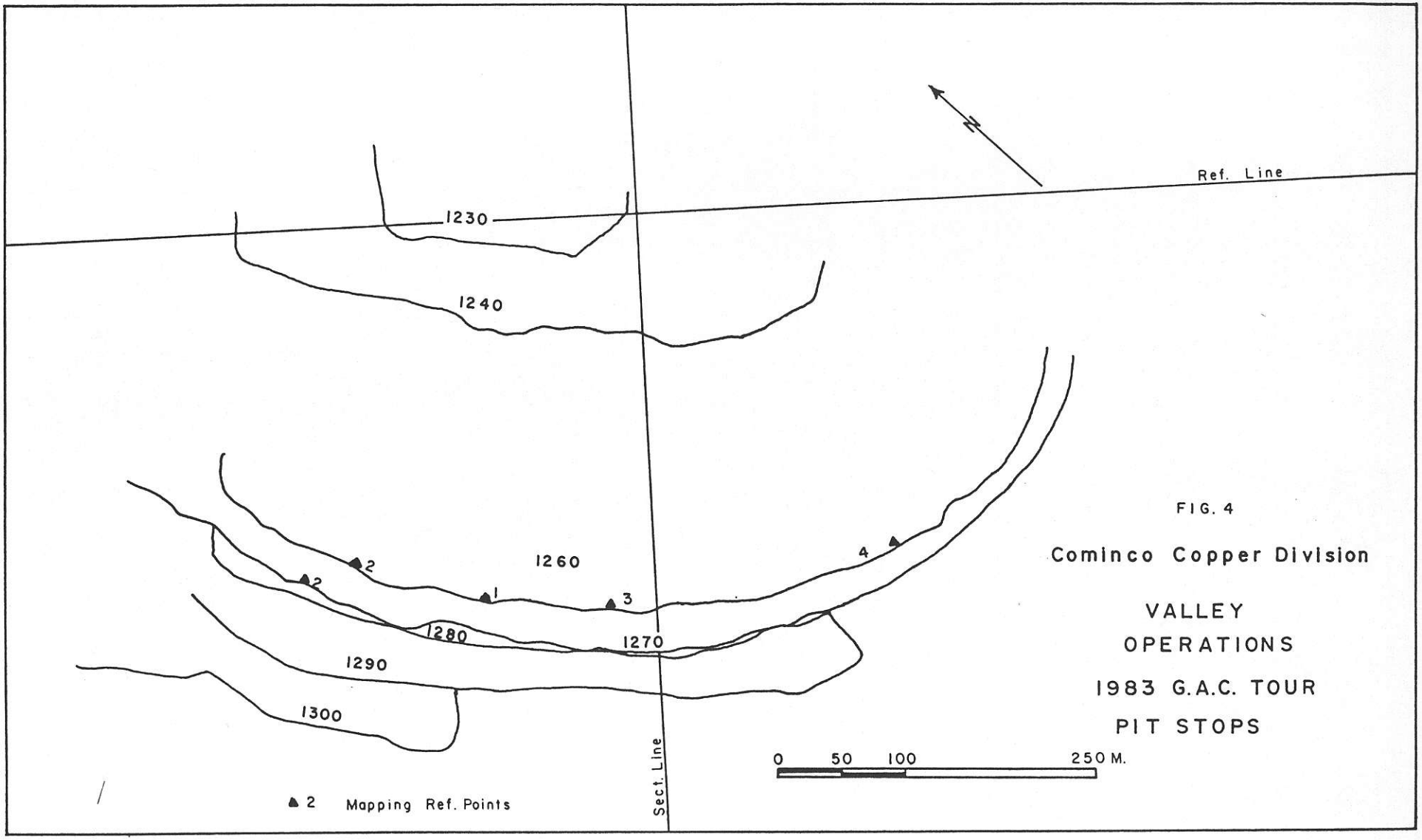


FIG. 4

Cominco Copper Division

VALLEY
OPERATIONS
1983 G.A.C. TOUR
PIT STOPS