ASSESSMENT REPORT FOR THE
WORK DONE ON THE LAKE GROUP CLAIMS - B.C. MINING RECEIPT # 218731J
(Diamond Drilling and Reclamation Trenching)

Claims: LAKE GROUP - ML 135, DI 5, DI 6, HS 3, HS 4, LINDA 1, 2, 17, 18, 38, LAKE 10 - 12.

Mining Division: Omineca M.D.

NTS Location: 93M/1E, 93L/16E

Latitude: 55 deg.N Longitude: 126 deg. 14 min. W

Owners: Maclaren Forest Products Inc.

Free Miners License:299652 MACFOP

Operators: Bell Mine, Noranda Minerals Inc.

Consultants: Peter O'Gryzlo - Geologist
Anthony L'Orsa - Geologist

Author: Brian Anderson (BSc.-Mine Engineering)

Date Submitted: Feb. 16, 1988

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1.0 INTRODUCTION

The Bell Copper Mine, owned and operated by Noranda Inc., is located on the Newman Peninsula, in Babine Lake, British Columbia. This open pit mine-mill complex is approximately 55 degrees North Latitude and 126.23 degrees West Longitude (NTS 93M/1E - 93L/16E) at an elevation of 2390 feet (728 m) A.S.L. Babine Lake is located on the Nechako Plateau which is part of the Interior Plateau physiographic region of the province. Climatic conditions are typical of the interior of British Columbia despite the moderating effects of Babine Lake.

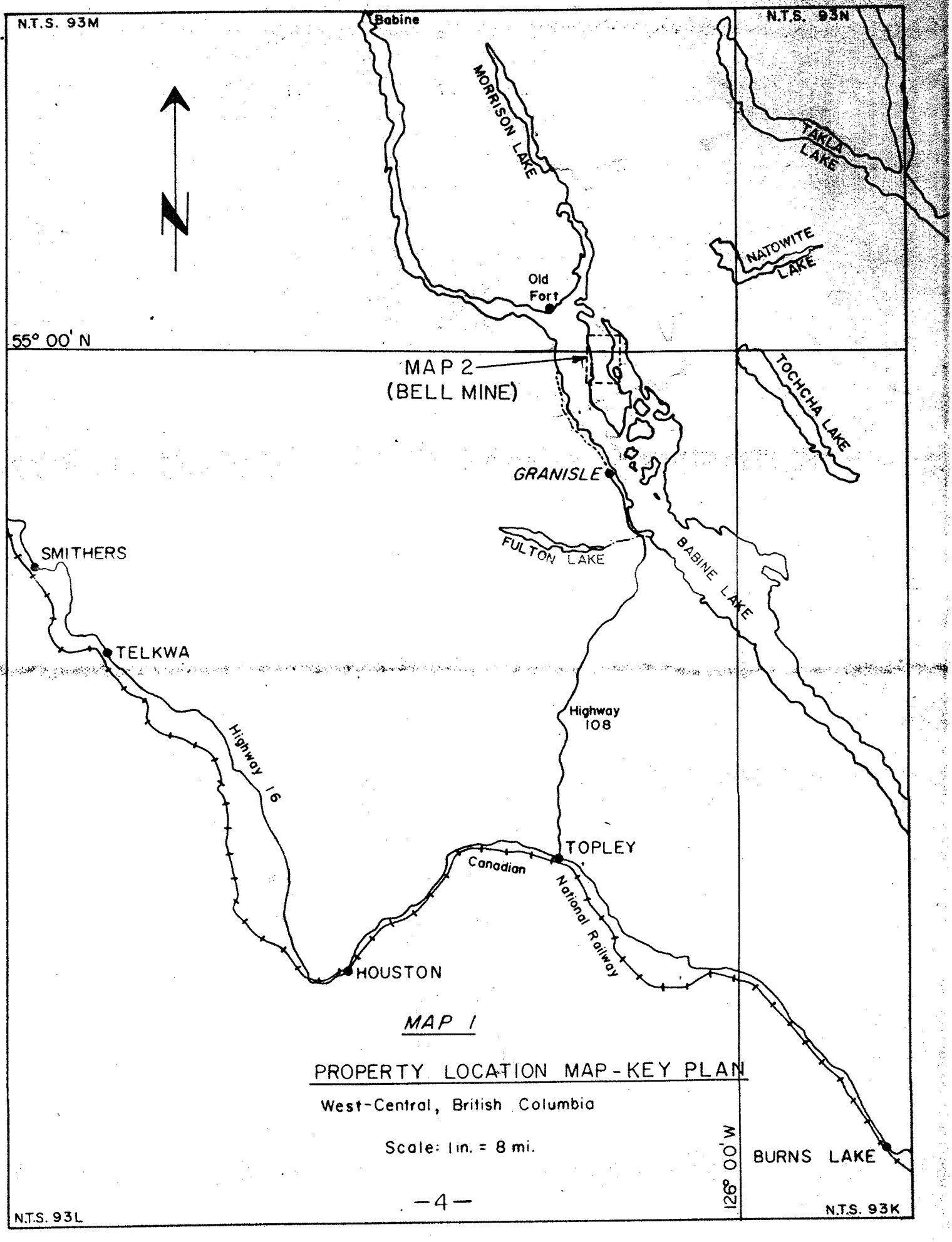
The minesite is located approximately 8 miles (13 km) north-east of the Village of Granisle which is at the north end of Highway 118. This highway is a 30 mile (48 km) paved road travelling north from Highway 16 (Yellowhead Route) at Topley, B.C. Access from Granisle to the minesite is by an 8 mile (13 km) all season gravel road along the west shore of and a 2.5 mile (4 km) tug-barge route across Babine Lake (see Map 1).

The Bell Mine mineral deposit was originally examined by C. Newman during the mid 1920's. After years of intermittent prospecting the property was staked by Noranda Mines Ltd. in 1962. Geochemical and geophysical surveys established anomalous targets for drilling. Drilling results provided sufficient reserves to justify the construction of the Bell Mine and mill. Pre-production stripping commenced in 1970 and milling started in 1972 at 10,000 Short Tons per Day. In 1979 and 1980 Bell expanded the dimensions of the original open pit limits and upgraded milling capacity to what exists today. Milling tonnages at this time were increased to 16,500 Short Tons per Day which continued regularly until the mine closure in October 1982. At this closure approximately 38 million tons of sub-economic mineralized material, with a near equal amount of waste material, were available for mining.

In October of 1983 an 8 month, 4.1 million ton pre-stripping program was undertaken. The mine-mill operations resumed in August 1985 using a restricted ore reserve which reduced the mine life to three years. This ore reserve optimized the amount of readily available ore and minimized the amount of associated waste material.

In 1986 a 2,285 m diamond drilling program defined sufficient reserves to extend the mine life by one year. In 1987 drilling of 16 N.Q diamond drill holes totaling 1589 m was undertaken. **The costs of one 76 m hole (87-13) is being applied for as assessment work due to it's location on claim ML 135.**

During the summer of 1987,88 hours of reclamation ditching was also udertaken. The location of the ditch is shown in map 2.



MAP 1

PROPERTY LOCATION MAP - KEY PLAN

West-Central, British Columbia

Scale: 1 in. = 8 mi.

2.0 DESCRIPTION AND RESULTS OF 1987 EXPLORATION PROGRAM

In March of 1987 a former Bell Mine geologist, Mr. P. O'Gryzlo outlined his views in a report entitled 'Exploration and Mineral Potential - Bell Mine and Area'. (See Appendix A). Based on this report a 1987 exploration program was undertaken with as one of it's goals to better define and test the extent of ore in the pit trending to the southeast.

2.1 ORE DEFINITION IN THE PIT

Blast hole data from mining activities have revealed that the ore in the south east corner of the pit was dipping to the south east and that some low grade ore was present in this area which was previously thought to be barren(see figure 1). This occurrence lead to the belief that there was a potential for increasing ore reserves. Nine holes (87-11, 87-4, 87-12, 87-5, 87-7, 87-8, 87-9, 87-10 and 87-13) totaling 883 m. were drilled to test these trends(see map 2) .
Mr. T. L'Orsa was contracted to log core and analyze results. The results are recorded in appendix B. Holes 87-11, 87-4 and 87-13 encountered high grade material and confirmed the vertical extension of known ore zones. Hole 87-9 indicated a medium grade ore zone in the south wall. The remaining holes indicated that the southeast dip is unfortunately not continuous and the ore/waste contact steepens to near vertical. The conclusion is that in general the ore and waste zones will continue at depth in a vertical fashion and hence no significant increase in reserves is warranted. However the known ore body combined with the vertical extensions identified in holes 87-11, 87-4 and 87-13 are being evaluated for a one to one and a half year mine life extension.

2.4. Conclusion

In general the exploration goals were achieved with negative results. However the ore reserves at Bell are more clearly defined and these reserves are the basis of an evaluation study to extend the mine life by one to one and a half years. This work has also allowed Bell personnel to now focus on other mine life extension projects having more potential.

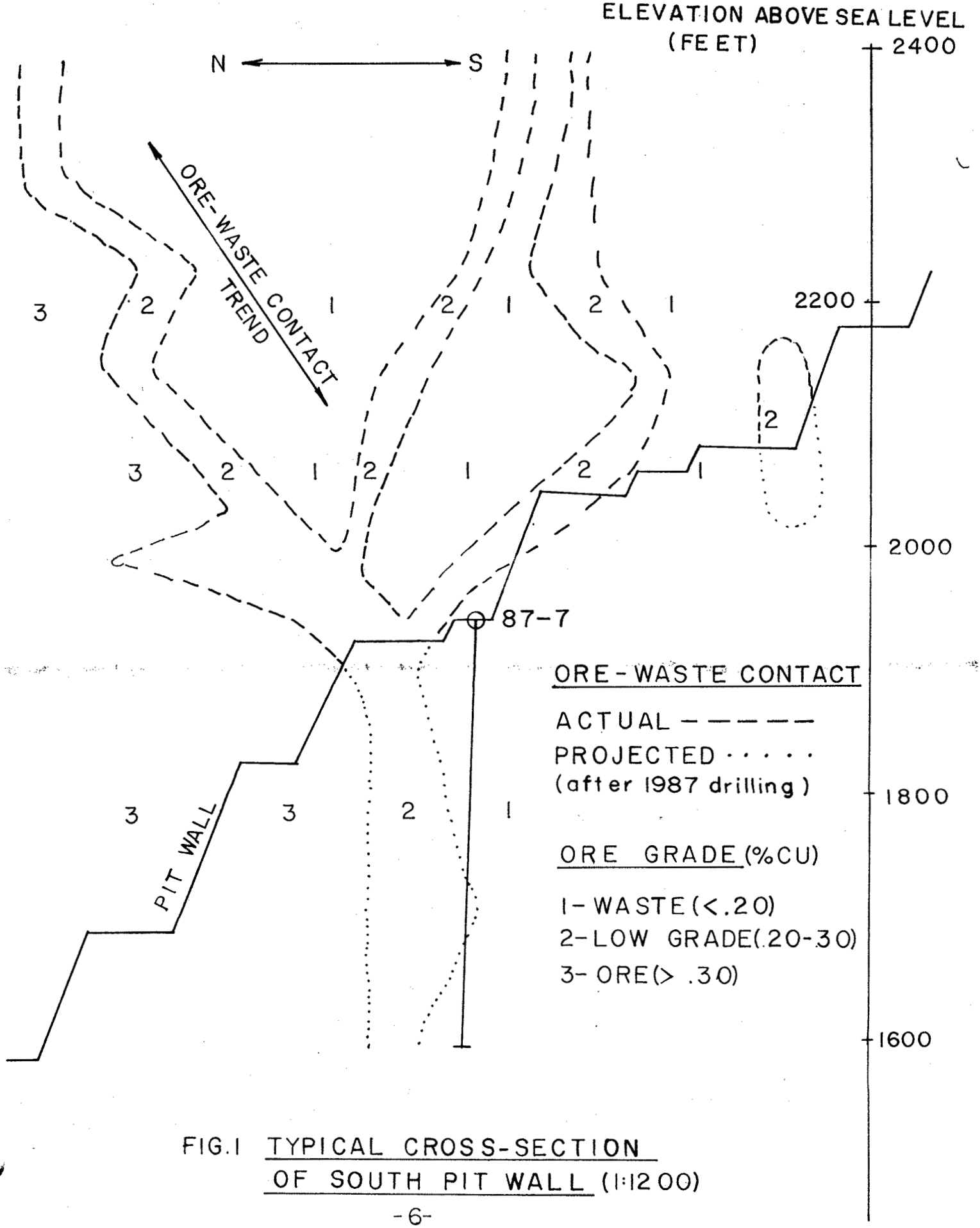


FIG.1 TYPICAL CROSS-SECTION OF SOUTH PIT WALL (1:1200)

3.0 Itemized Cost Statement

1. Wages

Core Logging- (7.59 hours x $40/hour)	$304
Core Crushing and Splitting-(9.43hours x $10.97)	$104
	$408

2. Food and Accommodations

No Charges Applied

3. Transportation

No Charges Applied

4. Instrument Rental

No Charges applied

5. Surveys

No Charges applied

6. Analyses

24 Cu determinations x $3.67 =	$88
12 Cu & Au determinations x $8.49 =	$102
	$190

7. Report Preparation

No Charges Applied

8. Other

Diamond Drilling (76.2m x$63.58/m) =	$4845

9. Total Expenses	$5443
10 Reclamation	7040
	12483

TK

4.0 Author's Qualifications

Brian Anderson is the Pit Engineer at the Bell Mine. He is a graduate of Queen's University (BSc - Mine Engineering, 1979). The author has been actively employed in the mining industry since graduation at several locations in Canada and the United States. During this time the author was involved in all aspects of mining including ore reserves and mine feasibility studies.

17/02/88
BEA/EE

APPENDIX "A"

MEMORANDUM

To: Ross MacArthur
Brian Anderson
Noranda Minerals- Bell Mine

From: Peter Ogryzlo

Date: 24/03/87

Subject: Exploration and Mineral Potential- Bell Mine and Area

Prior to a brief geological survey of the Bell Mine for the purposes of structural mapping, a request was made by Brian Anderson if a review of the mineral potential around Bell could be done at the same time.

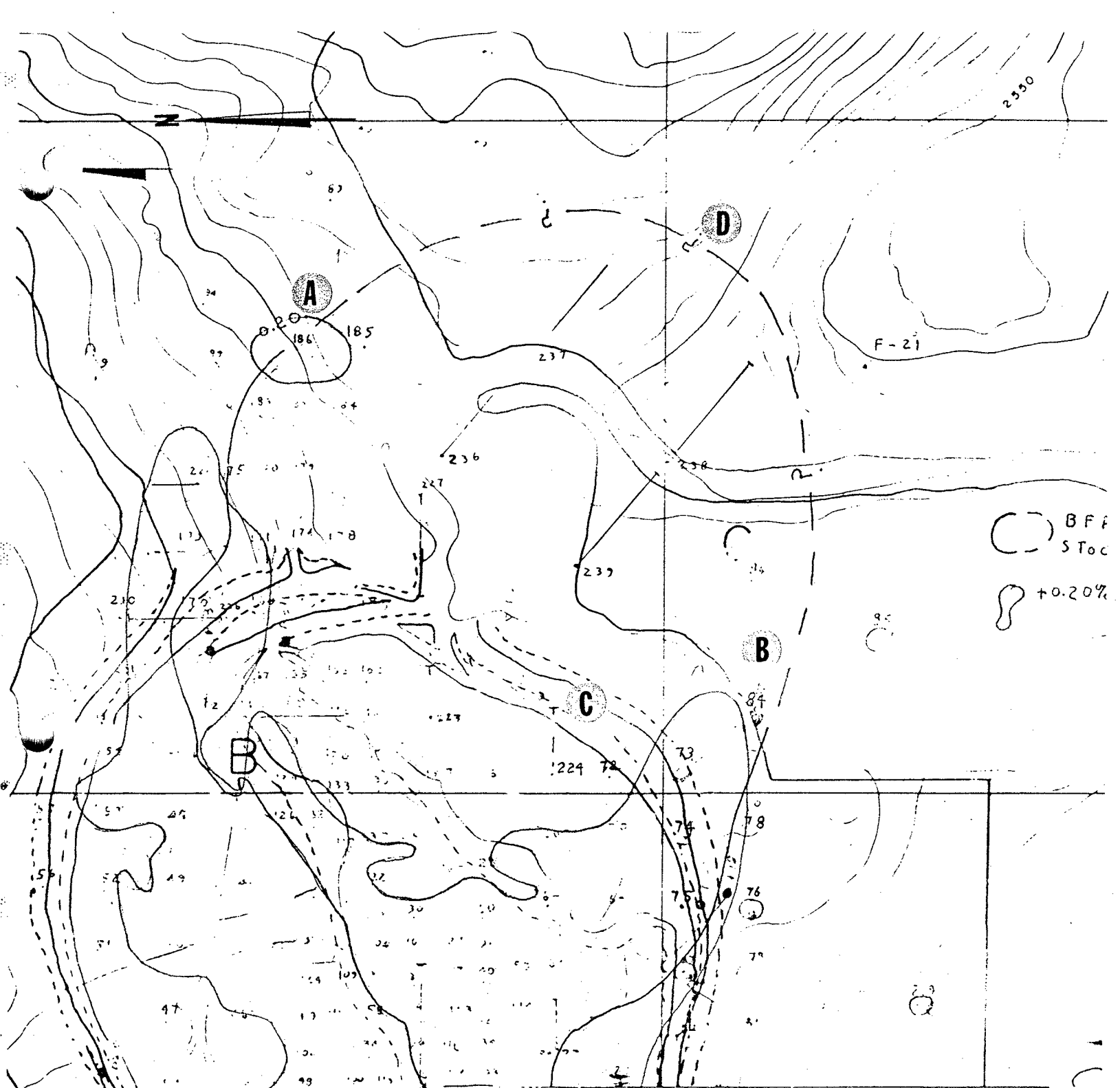
The results of this review may be summarized as follows. Targets are listed in order of priority as to the probability of success.

1.Bell Mine east of pit 2c.
2.Bell Mine south of pit 2c.
3.Bell Mine within pit 2c.
4.Bell Mine -contact of BFP stock to south and east.
5.Bell Mine - below and around pit 2c.
6.Granisle Copper.
7.Ketza prospect between Bell and Granisle.
8.North Newman.

Each of these will be discussed in detail below.

1. Bell Mine east of pit 2c. Fig. 1, "A".

The singular characteristic of porphyry copper deposits is their annular symmetry. In plan, they are commonly doughnut shaped, with concentric zones of mineralization and alteration.
The Bell orebody straddles the western and northern contact of the stock and has been extensively explored. Grade and tonnage seem to diminish to the south and east, so exploration was limited in these areas. At present, approximately one third of this contact is unexplored, and the southeastern contact has not been found. This represents the most interesting target. The reasoning behind this is straightforward. The conditions of temperature, pressure, and structure that prevailed on one side of the stock are most likely to be found on the other side of the stock.
The first recommendation is to diamond drill across this contact between DDH 185 and DDH 186. DDH 186 was in low grade ore, averaging around 0.30% Cu. DDH 185 averaged around 0.05% Cu, typical of the barren core of the deposit.



NORANDA MINES LIMITED

BABINE DIVISION – BELL MINE
BOX 2000, GRANISLE, B.C

EXPLORATION PROPOSAL

SCALE: 1" = 400'	DATE 21/03/87
DRAWN: PLO	DWG. NO **Fig. 1**

Experience at Bell has shown how sharp the inner contact of the barren core is with the ore zone, with grades going from 0.05 to 0.50 within a few meters. Vertical holes drilled on 200 foot centers can easily straddle this contact. Once the contact is found, it should be projected eastward and explored with more diamond drilling. Holes should be inclined -45 and azimuths should be designed to cross the projected contact at right angles. They should be spotted to begin in barren BFP and should be continued until they cross into the country rock, which appear to be greenish tuffs with some siltstone. If the holes do not cross the contact by the time a reasonable depth of around 400 feet is reached, they should be stepped out to cross the contact at a higher elevation.

The mineralization in DDH 186 is of further interest. Now that abundant blasthole assay data is available, the mineralization on 2420 bench can be seen trailing off in a northeasterly direction. DDH 186 is considerably south of this trend, and shows no connection with it at this elevation. This is also worth further study, as the possibility of fault displacement, either vertical or lateral, should not be ignored.

2.Bell Mine -south of pit 2c. Fig. 1, "B".

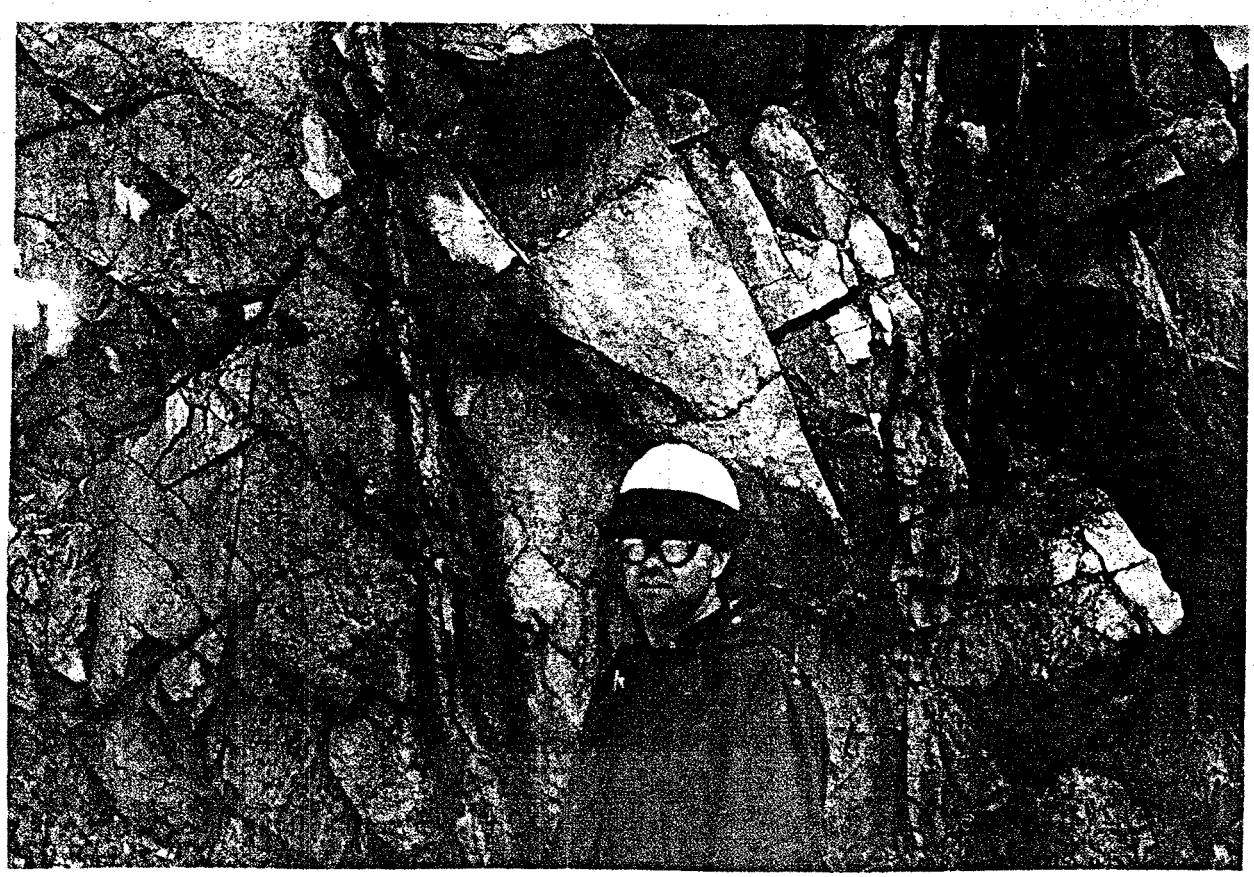
The same comments and reasoning apply to the southern contact of the stock. The contact should be defined between DDH 84 and DDH 78 and between DDH 86 and DDH 85.

3.Bell Mine - within pit 2c. Fig. 1 "C".

Blasthole assays have revealed a zone of mineralization within the pit on the south side grading 0.10% to 0.30% that is some 400 feet wide by 500 feet long. This is a low grade, but it is in an area that was not sampled by any diamond drilling. The only hole that came close was DDH 224. A review of the log shows the closing comment that the degree of alteration and the number of fractures mineralized with chalcopyrite indicate a nearby zone of mineralization. This zone is entirely within the BFP in what has always been considered the "barren" core, and could be easily sampled by diamond drilling from within the pit boundaries.
In addition, the style of mineralization appears to be changing with depth. Erratic high grade blasthole assays are appearing, some as high as 1.00% Cu within the "barren" core. These are usually averaged in with the surrounding waste assays and mined as waste.
This deserves more examination.

Vertical mineralized fractures are appearing that are unlike the stockwork mineralization of the ore zone. Sampling to date has been extremely simple, with almost any sample of blasthole cuttings being more than adequate due to the even distribution of mineralization among the dense network of quartz veins.
This is clearly not the case in sampling vertical fractures with vertical holes. Grade distribution is far more erratic. Once again this is in areas where sampling by diamond drill was scarce or absent. As most drill holes were vertical, they would easily suffer from the same bias.
See photo 1.
There is not sufficient information on these zones to plan any diamond drilling. A detailed study of the blast holes should be done, accompanied by geological mapping to better understand this mineralization.

Photo 1: Vertical mineralized fractures with alteration envelopes in "barren" BFP core.



4.Bell Mine to the southeast. Fig 1 "D".

Once the trend of the contact is clarified at "A" and "B", there should be enough information to plan the further exploration of the Bell stock to the south and east. Four holes were drilled looking for this contact, DDH 236,237,238 and 239. All four holes were within the stock for their entire length, and the contact was not found. A new exposure on the ramp from 2460 to 2420 on the south side of the pit has clarified the geology in this area. The rocks are an intrusion breccia, with boulders of altered BFP enclosed within altered BFP and fresh dykes. Grades are low, but are characteristic of the barren core.
This area should be systematically drilled until the contact with the country rock is crossed. There is no outcrop to give any evidence of the location of this contact. This need not be an elaborate program. Six to ten holes, each 400 to 500 feet in length should provide enough initial information to pursue this further or abandon it.
A number of geophysical maps were taken from the file at Bell and given in a separate file to Brian Anderson. All of these provide some information in assessing this project. Of particular interest is
BABINE MORRISON AREA
HELICOPTER VLF EM
DECEMBER 1974.
This survey shows the ore zone and the pyrite halo clearly. There is an apparent anomaly to the southeast that is ambiguous in that it may be part of the halo or may indicate another ore zone. The scale is too large to use to plan any diamond drilling.
Also of interest is
NEWMAN PROPERTY
J.E.M. PROFILES
This shows the southeast area to be expressionless in comparison to the ore zone. This survey dates from the early 1960's.
In addition, an ASKANIA magnetometer survey shows annular symmetry over the deposit.
A later Induced Polarization survey could not be found in the file. If you need additional information on any of these, Mr. Gavin Dirom of Noranda Exploration has experience and knowledge of all of them.

5.Bell Mine- below and surrounding pit 2c. Fig. 1.

It should never be over looked that despite years of mining the proven geological reserves at Bell remain large, and that probable and possible reserves at a lower cutoff of 0.20% Cu are in the hundreds of millions of tons, although at a lower average grade. This material is little explored as there was never a strong reason to explore it. The operations have achieved remarkable success with milling rates of up to 20,000 TPD with few alterations to a mill with a design capacity of 10,000 TPD. With an idle mill facility 5 miles away, Bell could be re-examined at milling rates of 30,000 to 40,000 TPD.
These are engineering considerations and I hesitate to comment on them further, other than to restate that large reserves at a lower cut-off may be predicted with a high degree of confidence at Bell. Another factor that should not be over looked is the presence and continuity of the high grade zone. It has been drilled to a depth of 2000 feet and is consistently present. This has always been a positive factor, as this zone can often be selectively mined during periods of adverse economic conditions to raise cash flows.

6.Granisle Copper- Fig. 2.

The comments on annular symmetry apply to the Granisle deposit as well. My own knowledge of the deposit is limited to technical papers and several site visits. Fig. 2 suggests a possibility of mineralization to the north and west. This may already have been tested. A review of the diamond drill data and the blasthole assays should be done before planning any further exploration.

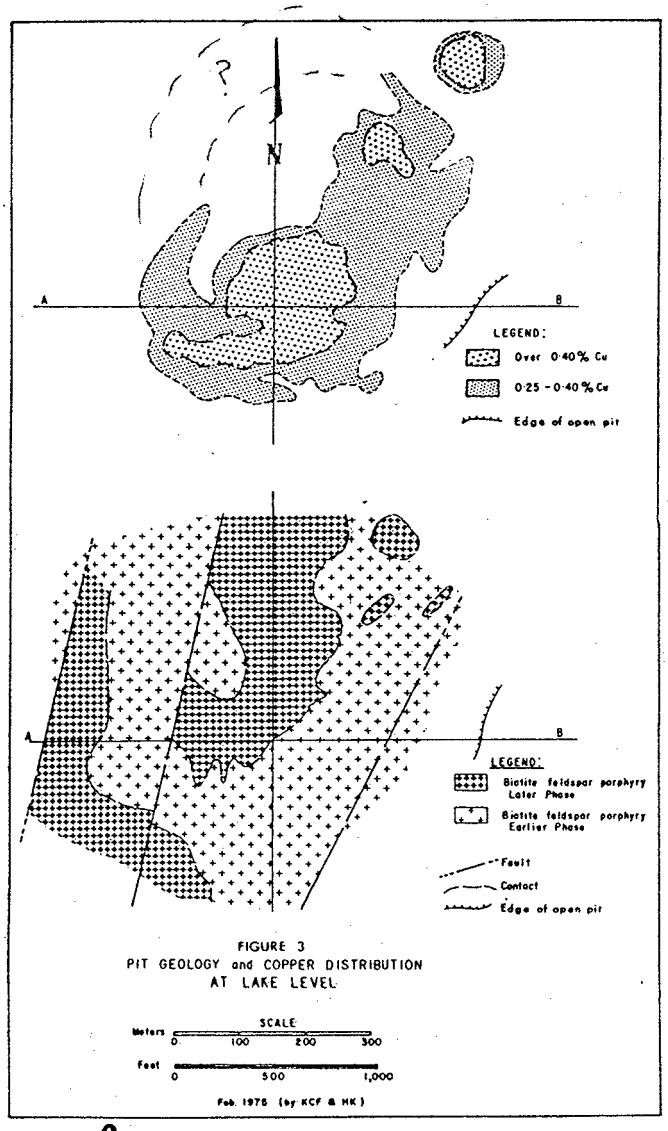


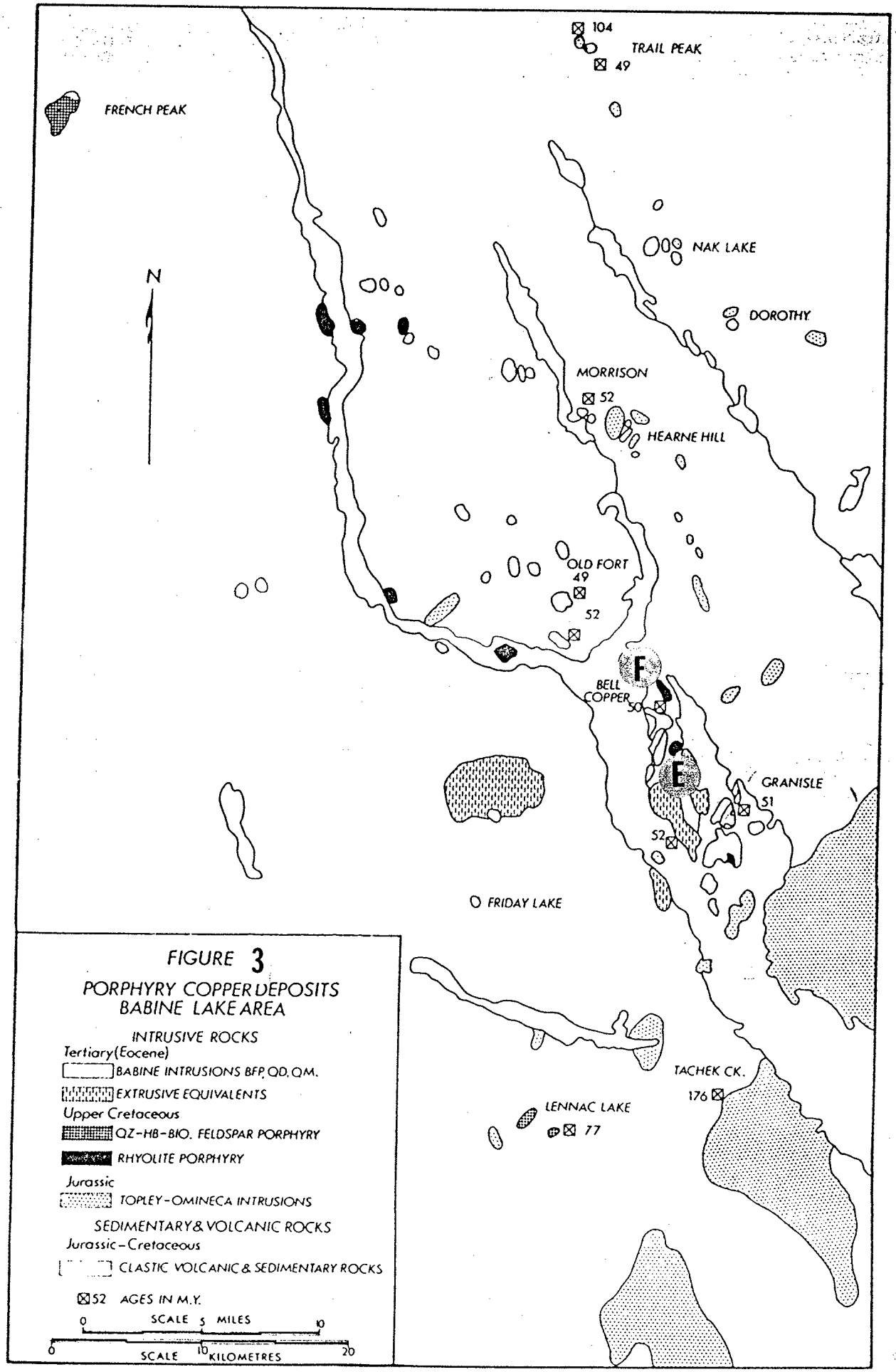
FIGURE 2 – Pit geology and copper distribution at Granisle.

7.Ketza prospect. Fig. 3, "E".

This prospect is on the eastern side of a small lake on Newman peninsula south of the Bell tailings pond. Exploration in the 1960's revealed a geochemical anomaly near the Babine lakeshore. Assessment reports are on file in the Ministry of mines in Smithers and are listed below. In addition, the 1974 helicopter VLF EM survey mentioned above showed an anomaly over a rounded point on the north eastern shore of the small lake. Air photos support this circular structure, which suggest a plug or subvolcanic structure.
Another feature of interest is the regional fault pattern. The Newman fault has always been taken as the fault which localized the Granisle, Bell, North Newman, and possibly the Old Fort deposits. This fault crosses Bell and into the ravine east of no. 5 tailings dam and dissappears into Hagan arm. See Fig. 4. Mapping at Bell, however, revealed that this is not the fault with the greatest throw, or vertical displacement. Another fault splays off from the Bell deposit and passes under the tailings pond and continues south east into the next lake on the peninsula beside the Ketza showing. This fault places Jurassic and Cretaceous rocks in juxtaposition and would require a throw of at least 3000 feet. This is most likely the fault which preceded the Bell intrusion. An exploration program here would be more involved than for the targets outlined above. Initial work would involve at least geological mapping and a geophysical survey. A liason should be made with Mr. Ron MacArthur of the Noranda Exploration office in Prince George, who may have some knowledge of the property. A Mr. P. McCarter of Noranda Exploration made an excellent map of the claims immediately to the south in 1981.
The claims over the Ketza showing forfiet in 1990, so some work should be planned at least by next season. Maurice Ethier at Bell should read these recommendations as well, as in a personal communication he queried the possibilty of mineralization in this area as the lake was being considered for additional tailings storage.

8.North Newman- Fig. 3, "F".

This deposit is some 2 1/2 miles northwest of Bell on a point on the west side of the peninsula. It was discovered and drilled at the same time as the Bell deposit. No mineable reserves were developed, but one hole did have grades of 0.30% Cu to 0.50% Cu. The drill logs are in the same file as the Newman (Bell) logs. The deposit is worth re-examination if it is felt that reserves are dwindling at Bell. The claims forfeit in 1996.


104
TRAIL PEAK
49
FRENCH PEAK
N
NAK LAKE
DOROTHY
MORRISON
52
HEARNE HILL
OLD FORT
49
52
F
BELL
COPPER
50
E
GRANISLE
51
52
FRIDAY LAKE
TACHEK CK.
176
LENNAC LAKE
77
FIGURE 3
PORPHYRY COPPER DEPOSITS
BABINE LAKE AREA
INTRUSIVE ROCKS
Tertiary (Eocene)
BABINE INTRUSIONS BFP, QD, QM.
EXTRUSIVE EQUIVALENTS
Upper Cretaceous
QZ-HB-BIO. FELDSPAR PORPHYRY
RHYOLITE PORPHYRY
Jurassic
TOPLEY-OMINECA INTRUSIONS
SEDIMENTARY & VOLCANIC ROCKS
Jurassic-Cretaceous
CLASTIC VOLCANIC & SEDIMENTARY ROCKS
52 AGES IN M.Y.
0 SCALE 5 MILES 10
0 SCALE 10 KILOMETRES 20

The Babine Igneous Suite was emplaced during the latter stages of major block-fault tectonism, which, in part, formed the prominent north-northwest structural grain in the region. The BFP intrusions and their genetically related copper deposits appear to have been emplaced along faults which have the greatest vertical displacement. Movement on some of these faults, such as the Newman fault at Bell Copper (Figs. 1, 3), ceased after BFP emplacement. However, movement continued on some other faults after the igneous event, as is evident from the juxtaposition of the BFP-related volcanics against older rock units, and from the major offset of the Morrison porphyry copper deposit (Carson and Jambor, this volume).

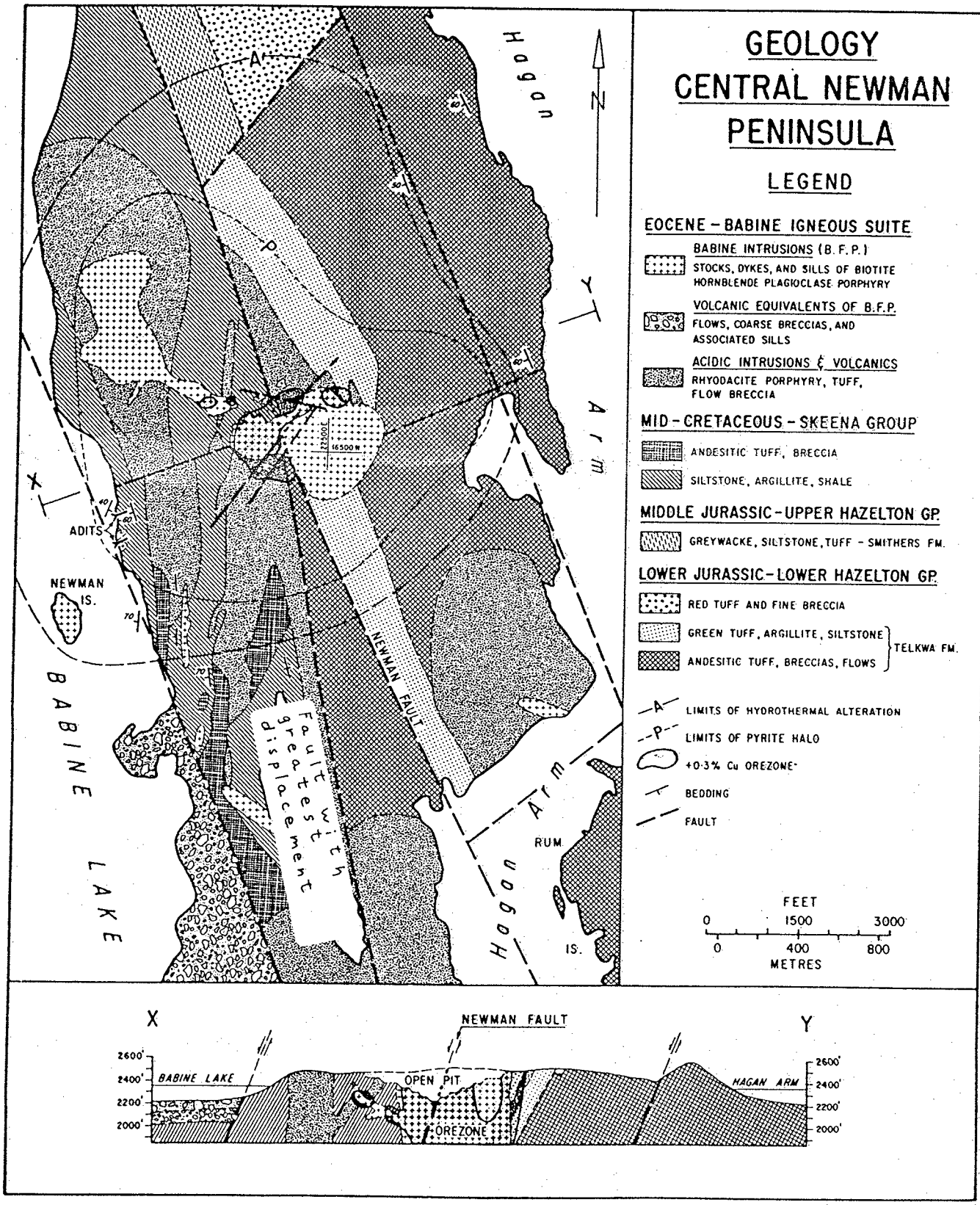


FIGURE 4 - Geology and Cross Section of Central Newman Peninsula.

RECOMMENDATIONS

The cheapest exploration has already been done at Bell, namely the blasthole assays. These hold a wealth of information on metal zoning and trends. A study of these Should reveal more exploration targets.

1.Reduce all 50 scale blast plans to 100 scale, that is 1:1200. This has already been started, with current planning using 100 scale plans. Once all bastholes have been plotted on 100 scale, the results should be contoured with isopleths or lines of equal grade at 0.10, 0.20, 0.30, 0.40, 0.50, 0.75, and 1.00% Cu. This will give a clear picture of both low- grade and high grade trends. The reductions can be done photographically at a very low cost, and the plotting and contouring would involve a few weeks drafting time.

2.Plot all diamond drilling on the latest 500 scale pit topography. The 400 scale diamond drill plan has suffered greatly from neglect, and the topography is out of date. If a diamond drill program is begun, it will be helpful to have a plan with current road and dump locations to plot hole locations and to plan drill moves.

3.An initial diamond drilling program to explore targets at Bell, which are A,B,C, and D on Figure 1 would require 8,000 to 10,000 feet of BQ drilling. Any success would require additional development drilling, which should be planned and budgeted separately.
If any drilling is completed, it is highly recommeded that if the core is not split, but completely crushed and assayed, that a few representative portions from each hole be retained for thin sections. The alteration mineralogy is well known at Bell, and if drill resuls are ambiguous, alteration can serve as a guide to decide the direction of further work.

4.Begin engineering studies to see if the operation would be economic at higher milling rates and lower grades. If the results are positive, plan an exploration program to define reserves at a lower cutoff below and around pit 2c.

5.Review diamond drilling and blasthole assays at the Granisle mine.

6.Do a property examination of the Ketza showing, and follow up with geological mapping and a geophysical survey. This should be begun during the 1987 field season.

7.Review diamond drilling at North Newman. Additional geological mapping would be timely in the light of expertise gained at the Bell Mine.

KETZA PROSPECT

ASSESSMENT REPORT NUMBERS

On file at the Ministry of Mines, Smithers.

Omineca Mining Division Reports

664
844
1072
1115
2646
6780
10333

DISCUSSION

GEOLOGICAL RESERVES AT BELL

Geological reserves below 31 Dec 86 surface at a 0.20% Cu cut-off were (to 1420 elevation):

110,000,000 tons @ 0.43% Cu.

Of this, mineable reserves within pit 2c were:

22,000,000 tons @ 0.48% Cu.

Therefore proven and probable reserves around and below pit 2c are :

88,000,000 tons @ 0.42% Cu.

Since few holes drilled low-grade (+0.20% Cu) for more than 500 feet, between 2000' elevation and 1420 there may be additional potential reserves in the order of 30,000,000 tons at an estimated grade of 0.40% Cu.
The deepest holes bottomed in ore grades around 500' elevation. Assuming that the same distribution of grades as in the upper portion of the deposit, the potential reserves between 1420 and 500 are in the order of 170,000,000 tons at 0.42% Cu. None of this is included in the MIF.

This would give potential reserves around and below pit 2c (to 500' elevation) at a 0.20% Cu cut-off of:

288,000,000 tons at 0.42% Cu.

Contained metal would be 1,210,000 tons Cu
2,900,000 ounces Au

To put these potential reserves in perspective, the contained metals are of the same order of magnitude as the large massive sulphide deposits of the Canadian shield.

If any exploration success is achieved in the outer portions of the stock as outlined in this report, this potential could double.

Obviously most of this will never be mined. Conversely these reserves should not be overlooked. The purpose of this discussion is to demonstrate that there is no shortage of reserves at Bell. The problems are engineering and technical in nature, in planning how to extract these reserves. If expenditures are being contemplated for exploration, a similar amount of time and energy should be given to engineering studies of the deposit.

APPENDIX B

[redacted]

ANTHONY L'ORSA, M.Sc., F.G.A.C., GEOLOGIST

R.R. 2
SMITHERS, B.C.
V0J 2N0
TEL (604) 847-9580

15 Sept. 1987

Ross McArthur
Brian Anderson
Bell Mine
Granisle, B.C.

Dear Ross and Brian:

Enclosed please find diamond drill logs and summaries for 1987 drilling, and my invoice. Below are a few short observations on the drilling.

1. 87-11, in the section 79-110 ft., passed through a breccia that formed early enough to trap some copper mineralization. It is not quite a pre-ore breccia because it carries fragments of chalcopyrite-bearing quartz veins, but there is chalcopyrite in the breccia matrix and there are a few chalcopyrite and quartz veinlets with a little bornite cutting the breccia. I don't want to exaggerate the possible significance of this breccia, but to give you an extreme example of what can happen in an early breccia, consider La Colorada breccia pipe at Cananea which yielded 7 million metric tons grading 6% Cu plus Mo, Au and Ag. No profit sharing there, I suppose.

2. The southeastern contact of the BFP is occupied by an extensive explosion breccia. It would have made a beautiful ore trap - if only ore solutions had found their way into it, which was not the case at the level we investigated. All known explosion breccias at the Bell mine appear to be post-ore, except for the one intersected in 87-11.

3. Quartz-sericite alteration found in the southwestern sector of the pit appears to extend out along the southwestern

contact of the BFP. The alteration is still present at well-silicified 87-15. Some 1300 ft. of contact zone between 87-9 and 87-15 remain virtually (DDH 85 came close) untested, i.e. most of area "B" in Peter Ogryzlo's memorandum dated 24 Mar.87.

Although Dave Carson's alteration studies appear to provide no encouragement in this direction, 87-15 indicates that quartz-sericite alteration occurs much farther out along the south-western BFP contact than is shown in Carson's 1976 figures. My inclination, suject to data review, would be to drill another hole in the DDH 85-86 area, as Peter has recommended. The odds are that you will hit post-ore explosion breccia, but I think it is worth a try.

4. In the drill logs I have not attempted to separate the "barren dyke" found in the pit but, of course, you can spot it by referring to the RQD. This BFP phase tends to show less feldspar alteration than surrounding rocks but it does contain hydrothermal biotite and a little copper, and it exhibits a low RQD. Why? Does the rock occupy a zone of recurrent faulting that earlier served as a conduit for copper-bearing solutions?? It will be interesting to see how Cu assays plot in the vicinity of this rock.

Thank you for giving me the opportunity to help with this interesting project.

Good luck,

Tony

Anthony L'Orsa

cc to PLO

SUMMARIES OF 1987 DIAMOND DRILL HOLES.

87-1 260 ft. at 45° in BFP and explosion breccia. Sericite to quartz-sericite zones. Pyrite halo.

87-2 618 ft. at 45° in explosion breccia, volcanic breccia and tuff. Quartz-sericite zone. Pyrite halo. Intense alteration in much of the hole makes it difficult to determine that the rock is a breccia and impossible to identify the breccia fragments in hand specimen. Somewhat decreasing alteration from 540 ft. to end of hole reveals volcanic breccia and tuff.

87-3 410 ft. at 45° in BFP, explosion breccia in contact zone, and volcanic rocks. Sericite to chlorite-carbonate zones. Pyrite halo.

87-4 297 ft. at 90° in BFP. Biotite zone. Gypsum. Pyrite and chalcopyrite to chalcopyrite dominant zone at depth. Rock tends to break horizontally in sections with gypsum veins.

87-5 350 ft. at 45° in BFP. Biotite zone. Gypsum. Pyrite and chalcopyrite. Anhydrite vein at 304 ft.

87-7 350 ft. at 90° in BFP. Biotite zone with local quartz-sericite alteration. Gypsum. Pyrite and chalcopyrite, including chalcopyrite dominant zones.

87-8 250 ft. at 90° in BFP. Biotite and sericite zones. Gypsum. Both chalcopyrite and pyrite occur in this hole but the total sulphide content is low; generally about 1% or less.

87-9 550 ft. at 62° in BFP, but upper 285 ft. of hole is so altered that original rock type is uncertain. Quartz-sericite to sericite zones. Gypsum at depth suggests early biotitization, now sericitized. Pyrite is generally more abundant than chalcopyrite. Chalcocite and covellite are common in upper parts of hole, and small amounts of chalcocite are present to the end.

87-10 250 ft. at 75° in BFP and explosion breccia. Quartz-sericite zone. Minor gypsum and local sericitized fine-grained biotite suggest an earlier biotitized zone. Much of the core in this hole is so intensely altered that I can only guess at the original rock. Pyrite is more abundant than chalcopyrite. Small amounts of molybdenite are present.

87-11 300 ft. at 45° in BFP. Biotite zone. Chalcopyrite is much more abundant than pyrite. An explosion breccia cut between 79 and 110 ft. was formed early enough to trap some chalcopyrite and bornite, and it could constitute a significant ore zone. See accompanying letter.

87-12 300 ft. at 51° in BFP. Biotite zone. Gypsum. Chalcopyrite is more abundant than pyrite, but the sulphide content is low.

87-13 250 ft. at 76° in BFP. Biotite zone. Gypsum. Local superimposed quartz-sericite alteration. Chalcopyrite and pyrite. Minor molybdenite.

87-14 160 ft. at 45° in tuff and volcanic breccia. Chlorite-carbonate zone. Pyrite halo.

87-15 530 ft. at 45° in BFP and explosion breccia. Quartz-sericite zone. Pyrite halo. Intense silicification (quartz flooding and quartz stockworks) in much of this hole suggests a possibly significant extension of the hydrothermal system along the BFP contact in a south-easterly direction from the southwestern sector of the pit.

87-16 140 ft. at 90° in andesitic and felsic volcanic rocks. Chlorite-carbonate (propylitized) zone. Pyrite halo.

A. L'Orsa

Anthony L'Orsa, Geologist

Dip test 250' -79.5°

noranda MINES LIMITED BELL COPPER DIVISION

Collared 24 Aug 87	Completed 24 Aug 87	Core Size NQ	Logged by A. LORSA	Project No	Date 27 Aug 87
FIELD COORDINATES			SURVEYED COORDINATES		Sheet 1 of 2
Lat.	Elev.	Dip 76°	Lat. 16,359.8	Elev. 1941.9	Dip 76°	Hole No. 87-13
Dep.	Depth	Bearing	Dep. 21,280.3	Depth 250' MIF	Bearing S 31°30' W	

Footage	Rec'y	Rock Type/Alteration	Mineralization	% Sulp.	Est. Grade	Sample No.	Lt.	% Cu	OPT Au	RQD	Lith
0 - 10		CASING									
20	95%	BFP light grey to med. grey to light olive grey	Chalcopyrite & Pyrite in Qz stockworks, joint coat. & diss. (<1 to < 0.1mm).	2	41			.63	.0110	81	
30	100	Biotite ① Books ② Fine. grained Both gen. sericitized, upper hole	Hematite, common	2	"			.85		87	
40	"	Qz grey to clear. Qz stockworks variable	Bio. books pyritized Qz veins thicker than	3	"			.77	.0098	100	
50	"	47'- slickensides @ 50°	above - e.g. 5mm dia, + @ 15°- 20°	3	"			.77		100	5
60	"	strong Qz stockworks	Few mass. sulphide veins ±4mm @ 10°	3	"			.56	.0062	94	
70	"	dk green Tourmaline (?) clusters radiat. xls	↑ 15 cm brecciated, with sulphide + Qz + calcite	3	"			.38		95	
80	"	Med. light grey to med. dark grey. Hydrothermal biotite		3	"			.43	.0058	89	
90	"		Qz + sulphide vein @ 0°	4	"			.51		96	
100	"	95 - Rock matrix thoroughly seri, but biotite dk green ① Books &	Cp + py in diss. & veinlets	4	"			.70	.0112	67	10
110	"	③ fine grained, including veinlets of ± 0.1mm biotite flakes.	Mi. MoS_2 in Qz vein	3	"			.61		80	
120	"	Feld. wall - sericitized (soft) but matrix much less altered.	Cp > py. Local mag.	3	"			.51		40	
130	"	Qz Stockworks ± gone by 130'	Very mi. MoS_2	3	"			.87	.0122	42	
140	"	Gypsum starts at ± 130' " veinlets ± 1mm,	py + gyp. on joints	2	"	Back up Cu = .25		.31	.0051	95	
150	"	gen. @ 80°-90° to core	Cp + hem. diss. in matrix	3	"			.38		97	

noranda MINES LIMITED BELL COPPER DIVISION

Collared	Completed	Core Size	Logged by	Project No.	Date
					Sheet 2 of 2
FIELD COORDINATES			**SURVEYED COORDINATES**		
Lat.	Elev.	Dip	Lat.	Elev.	Dip
Dep.	Depth	Bearing	Dep.	Depth MIF	Bearing

Hole No. 87-13

Footage	Rec'y	Rock Type/Alteration	Mineralization	% Sulp.	Est. Grade	Sample No.	Lt.	% Cu	OPT Au	RQD	Lith
150-160	% 100	BFP Med. light grey Badly broken 150' ± 172' Some fractures in ± 50°-65° range	cp + py cont. to end diss. & frac. fillings	2	41			.31	.0049	0	
170	"			1	"			.29		0	
180	"	150-172 - Feld. mod. ser. Matrix appears little alt., hard. Bio: ① Coarse books ② fine, dk green		1	"			.25	.0081	82	
190	"	Very pale orange to light olive grey 182-204 Qz Stockworks Rock includes some Qz vein	late stage white Qz + calcy veins cut grey Qz + cp.	2	"			.40		78	
200	"	frags. Prob. xenoliths rather than Bx	MoS2 - incl. Pale purplish Qz + py + cp	2	"			.42	.0091	100	2
210	"	204' irregular contact, base of	FeW ± 1.5 cm Qz veins + sulphides trend down core	4	"			.60		97	
220	"	Stockwork zone @ ± 35°	1.5 cm Q + sulphide vein @ 30°	2	"			.50	.0097	97	
230	"	Medium grey to med.	1 cm sulph. + Qz vein @ 0° for 2'	3	"			.47		100	
240	"	light grey	Sulphide frac. fill. > diss.	2	"			.44	.0101	100	
250	"	Hydrothermal bio. continues	cp diss., Spec. diss.	3	"			.61		100	2

ATTACHED MAP


Hagan Arm
N.T.S. 93M/1E
N.T.S. 93L/16E
HS 15 M.C.
HS 16 M.C.
VIEW 1 Fraction M.C.
Rum Island
Rum Bay
Newman Peninsula
CG 27 M.C.
CG 26 M.C.
CG 25 M.C.
CG 23 M.C.
CG 21 M.C.
CG 19 M.C.
CG 5 M.C.
CG 4 M.C.
CG 3 M.C.
CG 1 M.C.
Wolverton Bay
M 134
M 135
RECLAMATION DITCHING
TAILINGS IMPOUNDMENT AREA
North Dump
Explosives Magazines
87-1
87-2
87-3
87-4
87-5
87-6
87-7
87-8
87-9
87-10
87-11
87-12
87-13
87-14
87-15
87-16
126° 14' W (est)
Newman Island
Babine Lake
GEOLOGICAL BRANCH ASSESSMENT REPORT
16,992
LEGEND
D.D. Holes
O 87-10
Mineral Lease Boundaries
Located Claim Boundaries
Scale: 1 in. = 500 ft.
0 500 1000 1500 2000
maclaren FOREST PRODUCTS INC.
BABINE MINING DIVISION
MAP 2
BELL MINE
General Location Plan Showing Diamond Drill Hole Collars and Mineral Lease and Claim Boundaries
(also shows RECLAMATION DITCHING)
SCALE 1" = 500'
DATE FEB. 9, 1988
DRAWN
DRWG. No.