

GM 55764

TECHNICAL SUMMARY, NORANDA AREA BASE METALS PROJECT, ALDERMAC PROPERTY

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Québec 

**Deak Resources Corporation
Noranda Area Base Metals Project**

Aldermac Property

Technical Summary

MRN - GÉOINFORMATION

1998

GM 55764

November, 1989

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1. INTRODUCTION

The Aldermac property consists of several groups of claims situated in the Noranda-Rouyn area of Quebec, surrounding the site of the Aldermac Copper Mine, a past producer from 1931 to 1943. They produced over 2 million tons of ore grading 1.78% copper, 0.2 opt silver, and 0.02 opt gold. The zinc was not recovered, and so the grade is not known.

During the mid 1980's, a drilling campaign by Seadrift International Exploration Ltd led to the discovery of 3 previously unknown mineralized zones in close proximity to the mine. Together, the Upper, No. 7, and No. 8 zones have been estimated by Wright Engineers Ltd. to have a tonnage of 1.15 million tons grading 1.54% copper, 4.43% zinc, .91 opt silver, and .014 opt gold.

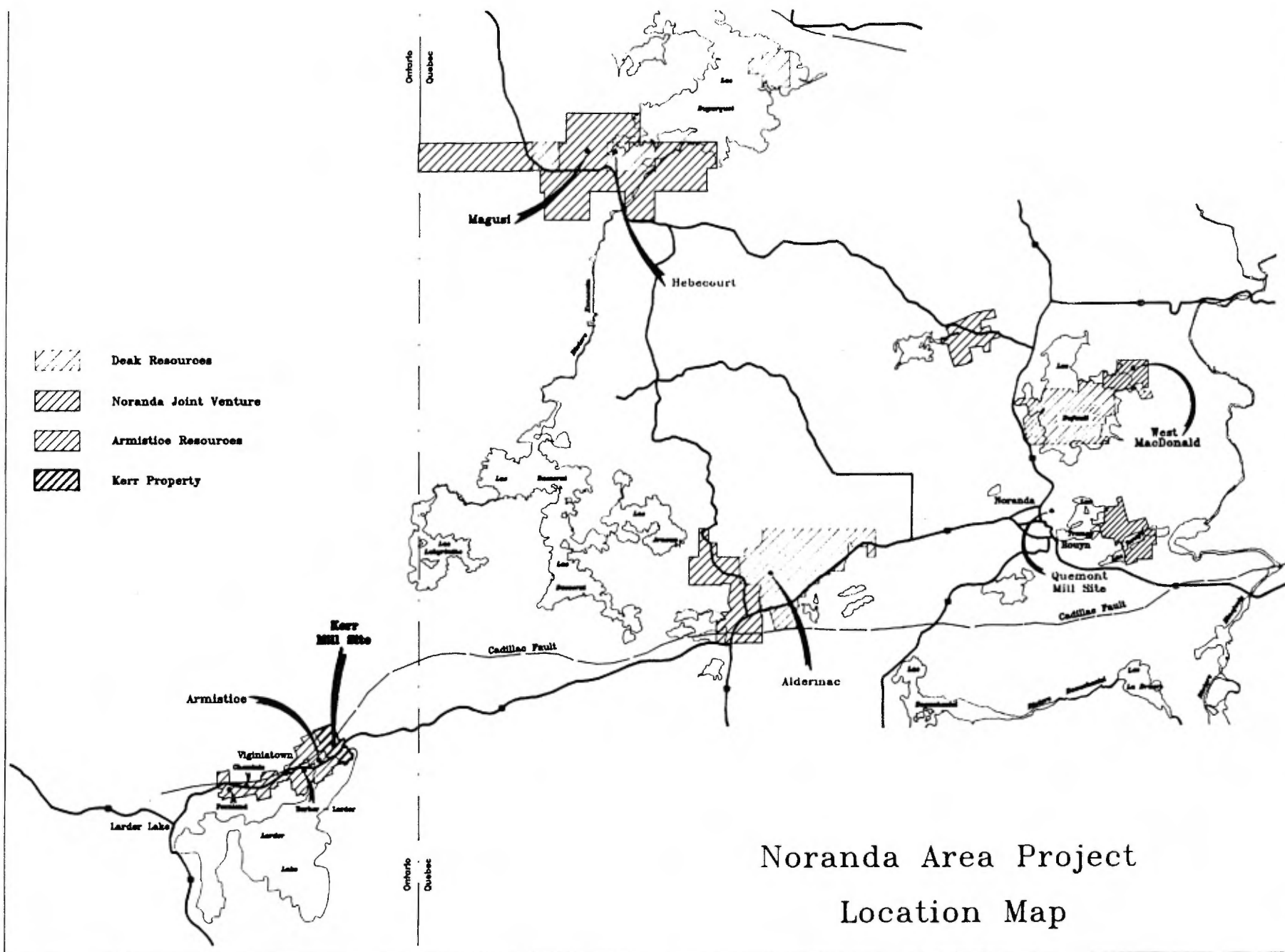
In 1988, the report "Geological Appraisal of the Aldermac Project" was prepared by Curtis & Assoc. Inc. for Deak Ariadne Limited, now Deak Resources Corporation. Much of this report is taken from the Curtis report.

2. LOCATION, ACCESS

The Aldermac project lies within the Noranda mining camp, Northwest Quebec approximately 300 miles north of Montreal or 10 miles west of the twin towns of Noranda-Rouyn. The entire claim group is situated within the west-central part of Beauchastel Township and is easily accessible off highway #117 which connects Kirkland Lake with Rouyn-Noranda. Two gravel roads built during the time of mining of the Aldermac Copper Mine connect with the main highway. The Ontario Northland Railway is less than one half mile away from the mine shaft. Water is available from MacKay Lake in the central part of the property while power is available from a Quebec Hydro line which crosses the southern part of the property.

The physiography of the area is that typical for other Precambrian shield areas of Northwest Quebec, that is, gently rolling topography, combined with low lying swampy ground or glacial features (gravel and clay deposits). Numerous old gravel drill roads and logging access roads cross the claims, so that access to all portions of the property is excellent.

The location map on the following page shows the Aldermac property in relation to the other Noranda Area Base Metal project entities.



Noranda Area Project
Location Map

3. PROPERTY DESCRIPTION

During 1986 and 1987 Seadrift International Exploration Ltd. (Seadrift) negotiated several option agreements and put together a large land package referred to as the "Aldermac Project". This grouping of claims consists of about 2,261 hectares and was acquired by the company in order to protect the prime exploration target, the old Aldermac mine site which was previously owned by Nuinsco Resources Ltd. (Nuinsco). By a series of trades and land swaps between Seadrift and Nuinsco, Seadrift acquired a 100% ownership of a large portion of the Aldermac property as well as other interests in the Noranda area. At about the same time Seadrift bought control of Macanda Mine Exploration Inc. which had an earlier option with Nuinsco on a portion of the Aldermac property (see Figure 2 on following page) and the adjoining Noranda (Norex) ground to the north. Through this acquisition Seadrift gained control of the northeast portion of the Aldermac property and assumed Macanda's obligations on the Norex ground. By late 1987, Seadrift had effective control of the Aldermac property and had options on the Teck, Dickenson, Charlim and Kidd Creek groups whereby certain interests could be earned prior to the forming of a joint venture with each vendor. In 1989, Seadrift and Nuinsco amalgamated with Deak Ariadne Limited into Deak Resources Corporation.

On the second page following is the mineral occurrence map for the Aldermac and adjoining properties.

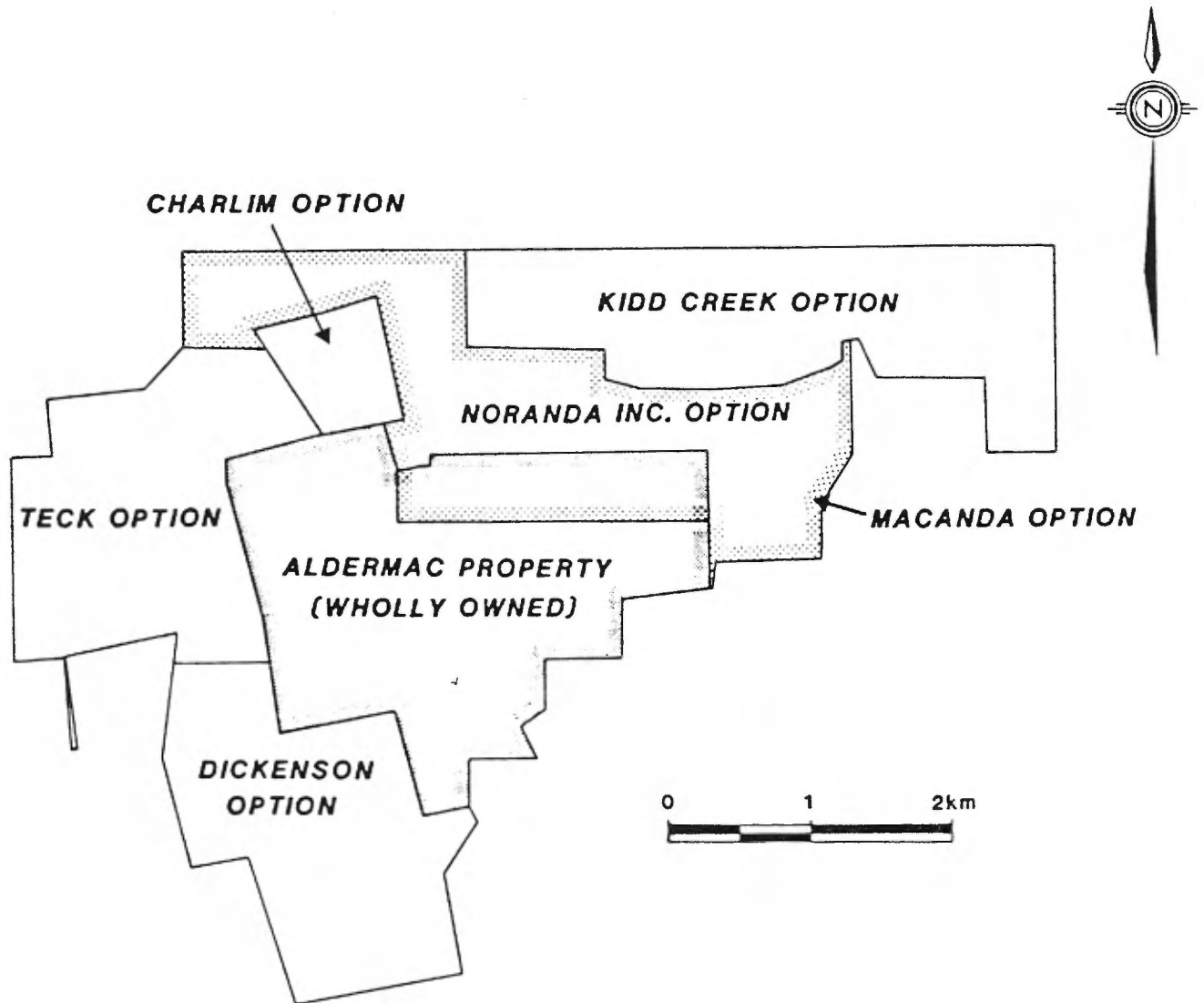


Figure 2
Aldermac Project
Property Ownership

Microfilm

PAGE DE DIMENSION HORS STANDARD

**MICROFILMÉE SUR 35 MM ET
POSITIONNÉE À LA SUITE DES
PRÉSENTES PAGES STANDARDS**

Numérique

PAGE DE DIMENSION HORS STANDARD

**NUMÉRISÉE ET POSITIONNÉE À LA
SUITE DES PRÉSENTES PAGES STANDARDS**

4. PROPERTY GEOLOGY

The geology of the immediate mine area has been best studied by A.D. Hunter, who in 1979 wrote a M.Sc. thesis on the geological setting of the Aldermac copper deposit. The geology of the mining license has since been revised several times by Hunter with his 1986 revision used as a guide to prepare the geological maps for this study. Due to more recent changes in geological thought regarding some of the silicified rocks, the geology is again undergoing further revision. The overall geology of the entire Aldermac Project area was simplified from regional compilation maps prepared by the Government of Quebec (1982), modified accordingly to fit Hunter's (1986) interpretation (refer to Map 1).

The stratigraphic succession of rocks within the Aldermac Project area comprises a chemically bimodal suite of intercalated mafic (basaltic to andesitic) and rhyolite flows, pyroclastics and related subvolcanic rocks. These are cut by major gabbro and syenite intrusions and by sills and dykes of diorite, diabase and lamprophyric rocks.

The mafic volcanic rocks are texturally and structurally well preserved, and are weakly plagioclase-phyric with the original cooling cracks still evident. The mafic flows are both massive to highly amygdaloidal and pillowed. In some areas, pillow breccia, hyaloclastite, tuff and tuff breccia and debris flow have been mapped, however none of these horizons can be traced more than 500 feet. No significant marker horizons have been recognized except possibly the North Contact tuff which is exposed about a half mile west of the Aldermac shaft. This tuff, which may be an analogue to the 'C contact' and the main contact tuffs of the Central Noranda camp marks the base of a mafic volcanic unit and has a strike length of at least one half mile.

Felsic rocks at Aldermac are represented by aphyric and quartz feldspar - phyric flows, domes and dykes and are accompanied by felsic breccia and tuffaceous beds. In addition to these extrusive and subvolcanic rocks quartz- feldspar porphyry (QFP) has been mapped as laterally extensive (1500-2600 feet) sill-like bodies. This rock is believed to be the equivalent to the Noranda QFP felsic volcanic and is quite distinct from the other silicified, felsic looking flows.

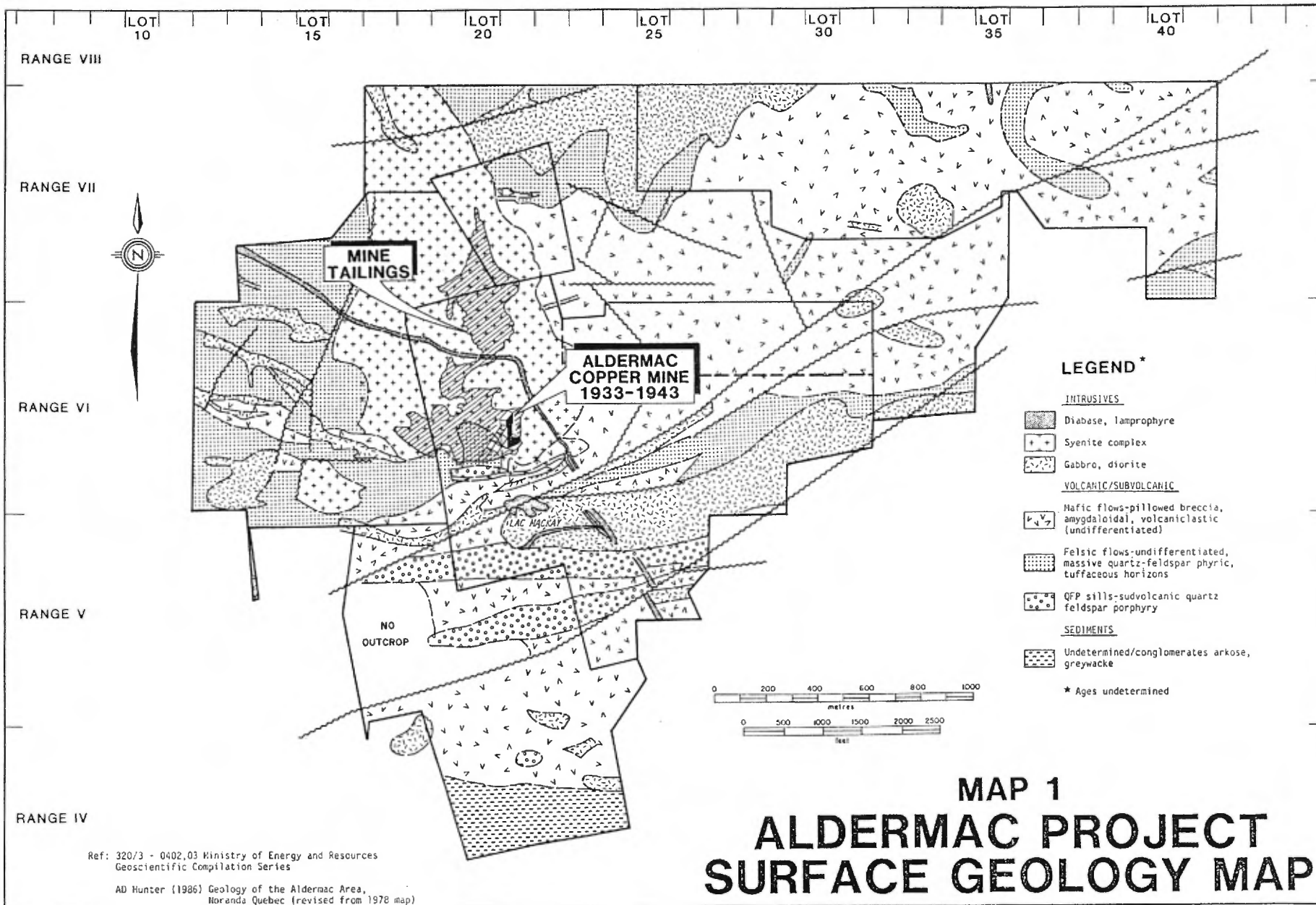
As Figure 4B illustrates, some of the siliceous volcanics have been mapped as distinct units but their origin, as either primary felsic or silicified mafic flows, remains obscure. With extensive detailed lithogeochemical rock studies now available many of the units previously interpreted as rhyolites have been reinterpreted to be silicified basalts and/or andesites. As previously mentioned, the origin of some of the siliceous volcanic exposures is still unresolved. The importance of differentiation of such rock units cannot be over-stated, since silicified mafic volcanics have a close spatial relationship to ore bodies in the Noranda camp, e.g. the Amulet and Millenbach deposits. It is also noteworthy that both chloritic and sericitic alteration within the silicified volcanics is even more diagnostic of the passage of hydrothermal fluids associated with ore emplacement.

The volcanic sequences are intruded by numerous sills and dykes varying in composition and texture from microdiorite to coarse grained diabase and lamprophyric rocks. The most

prominent dyke on the property is a diabase dyke of regional extent which crosses the property in a northwesterly direction just east of the mine shaft. The larger mafic bodies are gabbroic in composition, and are texturally medium grained and equigranular. One such gabbro dyke occupies the MacKay fault zone along a one mile strike length.

In addition to the volcanic pile, a large syenite intrusive body is the single most prominent geological unit on the property. The syenite is an elongate body extending for 3 miles north of the Aldermac Project area and, in detail, is actually a complex intrusion comprising a maze of dykes and plugs of highly variable textures and colours. Gunning (1927) noted that the earliest phase has a very mafic character whereas successively younger phases are lighter in colour with more abundant feldspar. The youngest phases are leucocratic, composed essentially of potassic feldspar, albite and quartz. The main body has associated with it numerous apophyses of radial dykes and plug-like satellites. It has been suggested by Hunter (1982) that the syenite might represent a subvolcanic pluton.

The structural complexity of the Aldermac area has complicated resolution of the stratigraphic record. The dominant structural control on the property was previously thought to be an east-west trending syncline, with an axis located just south of the mine site. A reinterpretation of the rock contacts by Hunter has resulted in removal of this fold, and instead a series of complex 'block faults' have been substituted. Faulting is now much more common than previously thought, with many of these faults now occupied with dykes of a wide variety of lithologies. Similar phenomena are recognized in other parts of the camp, for example in the vicinity of the Corbet mine.



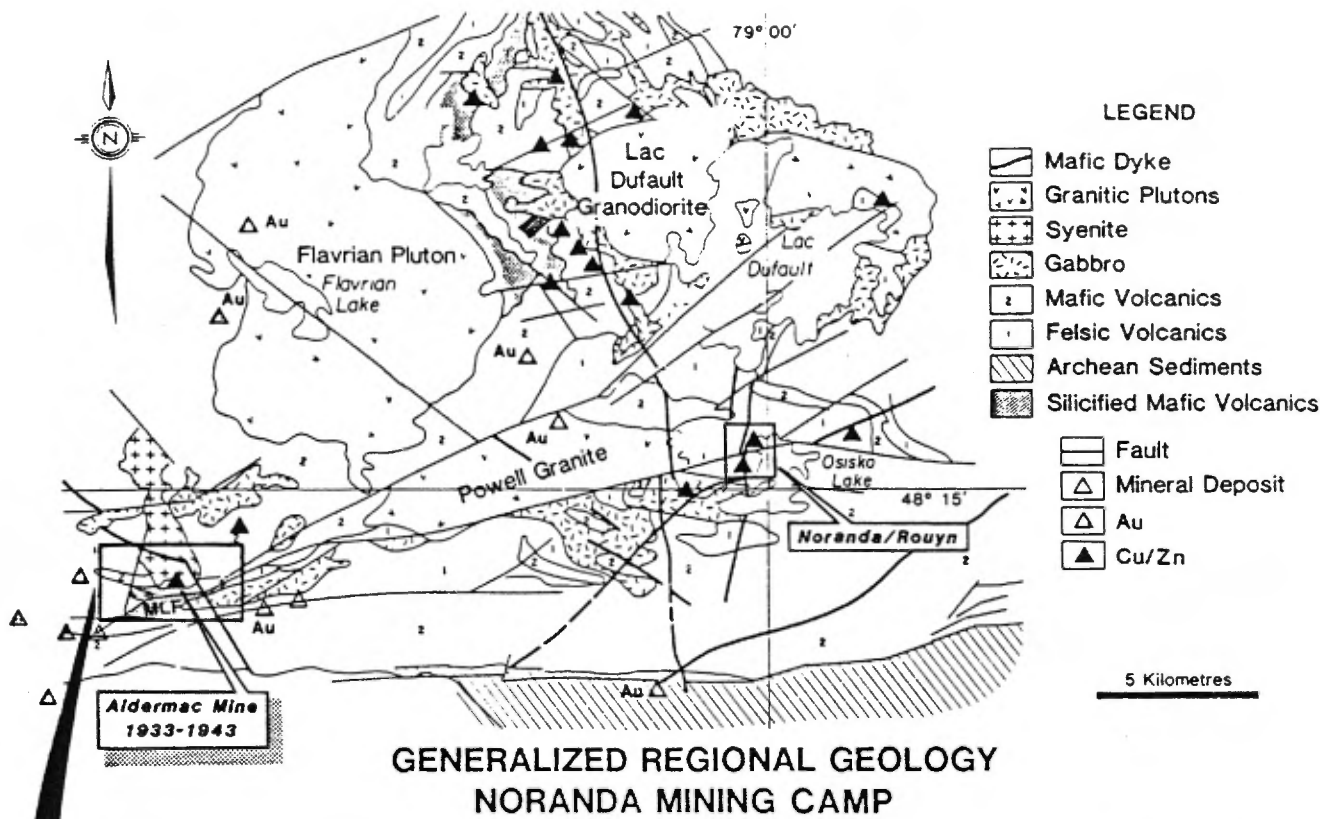
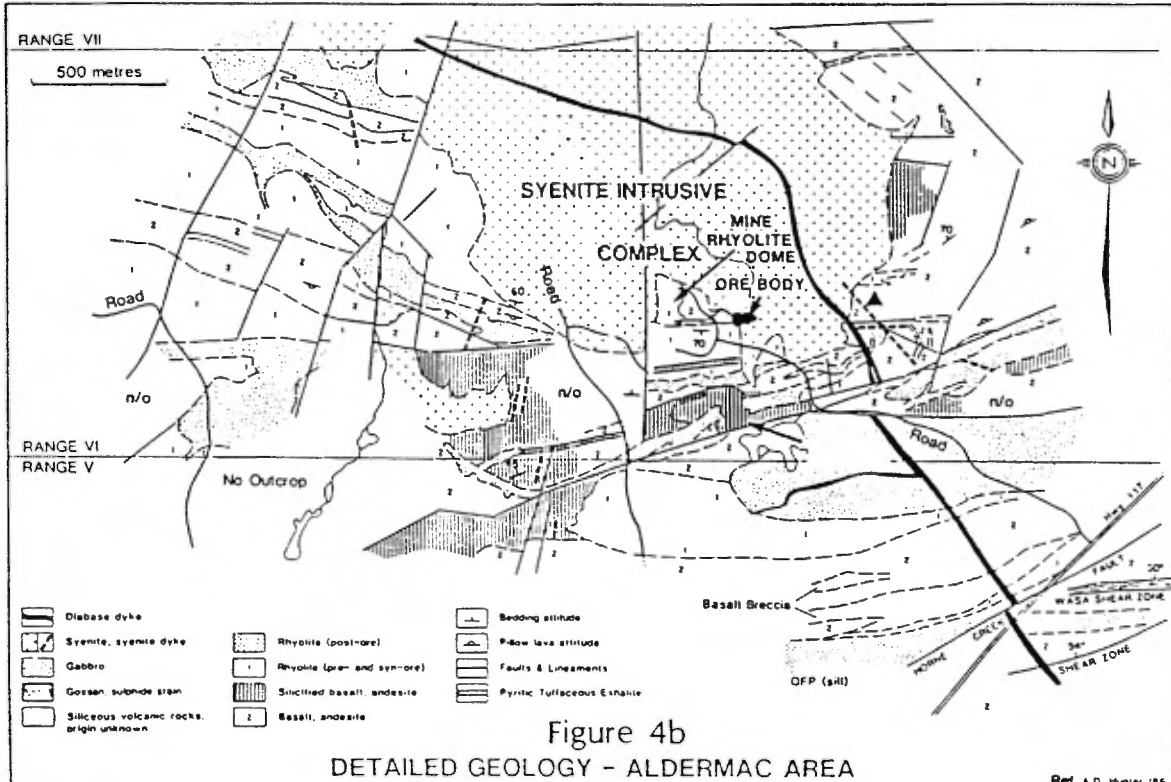
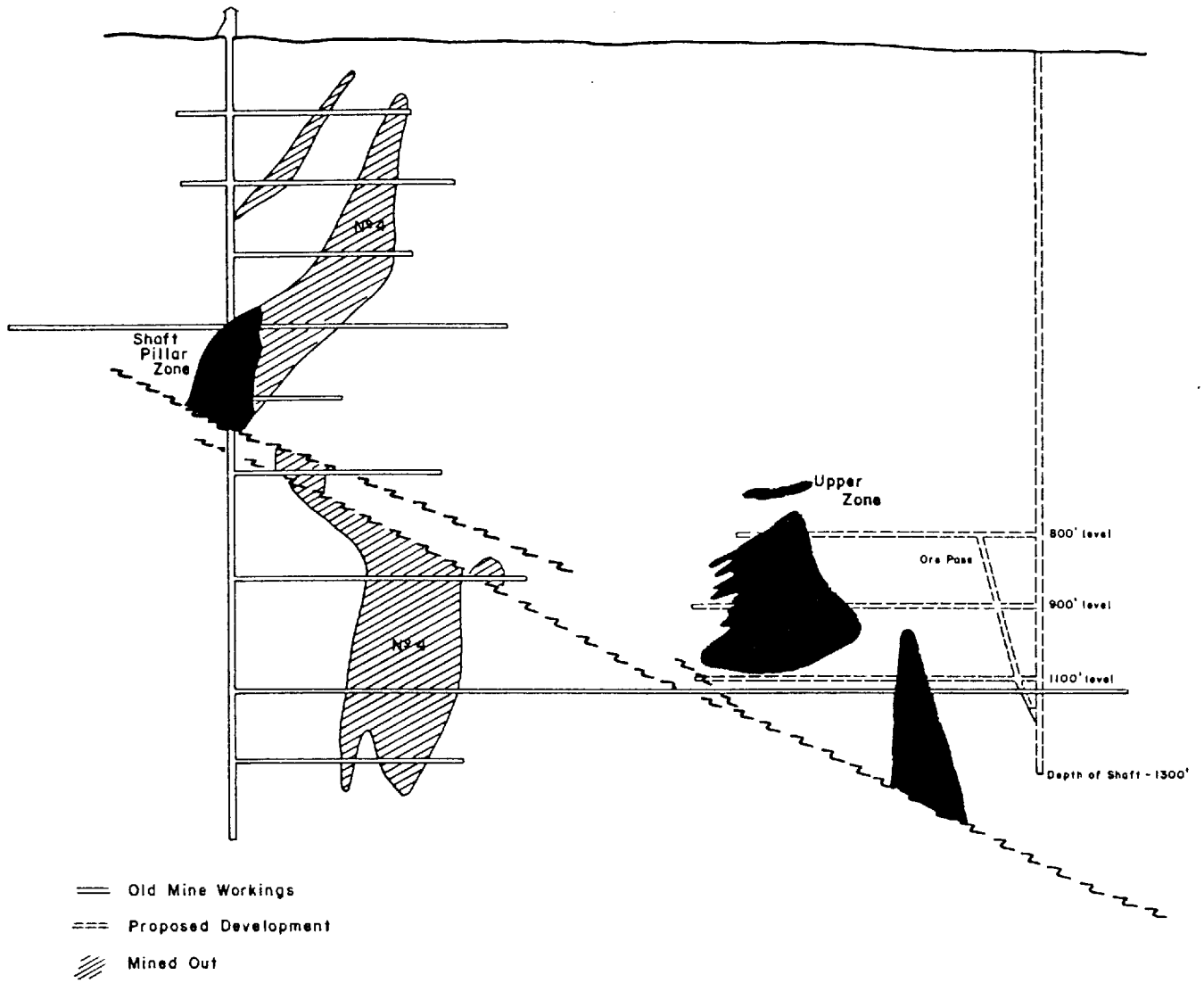


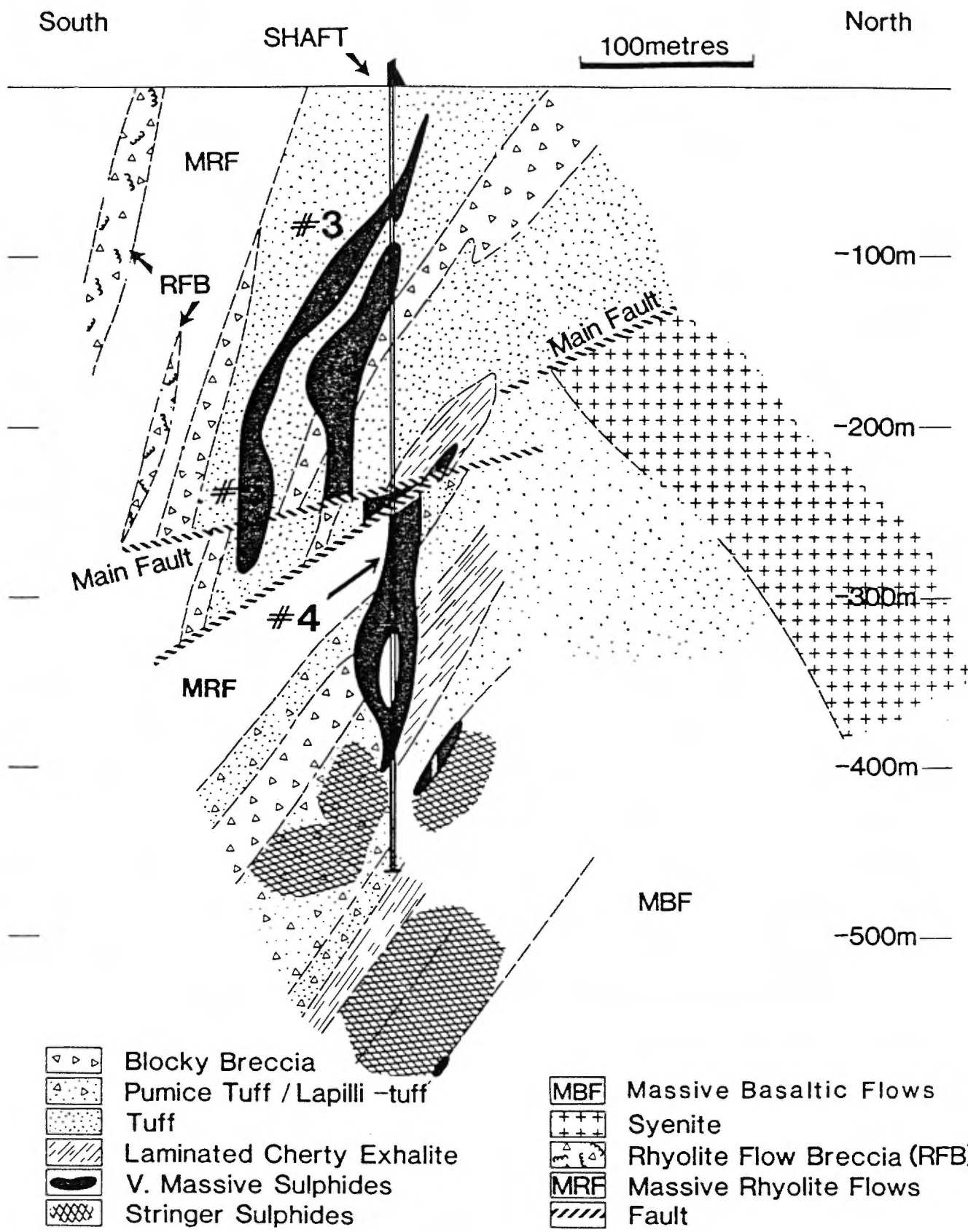
Figure 4a

Ref. Boldy (1963)
Ref. Hunter (1986)



ALDERMAC LONGITUDINAL





- | | | | |
|--|----------------------------|--|-----------------------------|
| | Blocky Breccia | | Massive Basaltic Flows |
| | Pumice Tuff / Lapilli-tuff | | Syenite |
| | Tuff | | Rhyolite Flow Breccia (RFB) |
| | Laminated Cherty Exhalite | | Massive Rhyolite Flows |
| | V. Massive Sulphides | | Fault |
| | Stringer Sulphides | | |

Figure 6
COMPOSITE SECTION - ALDERMAC MINE
 (Looking West)
 (Depth of Section 175 metres)

5. HISTORY OF WORK ON PROPERTIES

5.1 Aldermac Copper Mine Ltd.

The discovery of this deposit followed an initial discovery in 1923, of a large gossanous 'stain zone' on the north side of MacKay Lake, by two prospectors (W. Alderson and A.A. Mackay) which led to the outlining of two small mineralized zones; the No. 1 and the No. 2 showings. These two prospects, however, carried only uneconomic copper values even though the outcrops were heavily fractured and carried disseminated and narrow massive lenses of sulfides. Further prospecting two years later located a large magnetic anomaly 600 feet north of these original showings and subsequent diamond drilling of this anomaly led to the discovery of the No. 3 zone buried 30 feet below the surface. In 1927, Aldermac Mines Ltd. in order to develop the property, sunk a 2 compartment shaft to 1125' and in the process, discovered the No. 4 zone. The discovery of both the No. 3 and the No. 4 sulfide masses constituted the bulk of ore which was later mined continuously from 1936 to 1943.

During these years about two million tons of massive sulfides containing copper, zinc and precious metals were extracted. As was usual for this time period a zinc concentrate was not made and the zinc content of the ore was discarded in the tailings. At the closure of the mine the company estimated that 470,000 tons averaging 1.75% copper was left in the pillars to the 950' level and in zones adjacent to the former workings. While the No. 4 lens extended below the 9th level (-1242') to about -1400 feet, this mineralization, which averaged about 1.6%, was not considered economic. Figure 5 illustrates the location of the various mined ore lenses.

The exploration on the Aldermac property from the initial discovery in 1923 up to and including the discovery and outlining of the No. 7 and No. 8 lenses in 1987, is summarized in Table 4. Note that the mine has been flooded since operations ceased and none of the surface and underground drill core has been preserved. In fact, the only drill core which is presently available begins with the work started in 1974 by New InSCO Mines and includes all core drilled since that time.

The Aldermac deposit is one of the most poorly understood of the volcanogenic massive sulfide deposits in the Noranda camp. At the time that the Aldermac was in production, the ore body was classified as an epigenetic, replacement deposit and drilling was predicated using that concept. Much of the drilling therefore (up to 1974) was concentrated in the proximity of the north-trending diabase dyke as this dyke was believed to be associated with ore emplacement. In the late 1970's Hunter (1979) reinterpreted the genesis of the Aldermac ore lenses to that of a proximal massive sulfide deposit of volcanogenic affinity. Since his work, even with the considerable drilling which has been carried out, a clear understanding of the stratigraphic and structural control for this deposit has yet to be fully worked out.

The Aldermac ore bodies were comprised of three major lenses (No. 3, 4, 5) accompanied by several small uneconomic pods. The ore lenses strike roughly east, dip steeply to the south and are only roughly conformable with the enclosing rocks. The contact of the

massive ore with the underlying stringer-type mineralization and host tuffaceous units suggest that the ore formed dome-like features. The entire ore body measures 180 feet in thickness, 300 feet along strike and 1400 feet in the down-dip direction.

The ore is mineralogically quite simple, being comprised principally of pyrite with lesser pyrrhotite and carrying minor chalcopyrite, sphalerite and magnetite in a gangue of quartz. A modal analysis of the ore in 1938 broke the ore into 45.8% pyrite, 24.80% pyrrhotite, 23.22% quartz gangue, 5.76% chalcopyrite and 0.42% sphalerite. From this ore two concentrates were produced; a copper concentrate which ran 22% copper, 40% zinc, 0.06 oz/t gold and 3.5 oz/t silver and a pyrite concentrate assaying 46% sulphur (Northern Miner; Nov. 5, 1936). One hundred tons of ore produced 8.18 tons of copper concentrate and 55 tons of pyrite concentrate.

The No. 4 lens was a one million ton massive pyrite body containing an average content of 1.75% copper and 1.23% zinc with marginal vein-like bodies of pyrrhotite-chalcopyrite rich material. A small amount of the present dump material on the property consists of significant amounts of visible banded sphalerite with the zinc rich layers averaging 1-2 cm in thickness alternating with pyrite layering up to 10 cm thick. This type of mineralization was either ignored by the miners and left as uneconomic pods of massive sulfides or discarded in the tailings as smelter charges penalized concentrates with a high zinc content. The majority of the massive ore in the dump is fine grained showing no visible structures, with chalcopyrite present as disseminated grains interstitial to pyrite. Magnetite is also mentioned to be associated with the ore lenses and, in the dump material, occurs as disseminations throughout the massive sulfides or in the wall rocks where no sulfides are present. Whether the ore in the No. 4 lens was zoned or not is difficult to determine as the old records make no mention of any zonation, or of high grade pockets in the ore lenses. One surface hole, however, (#21) intersected 14.55% copper over 4 feet at a 1130 foot vertical depth therefore it would seem reasonable that pockets of high grade copper and gold ore were mined. Underground hole No. 90 cut 91 feet of 0.1 oz/t gold below the fault which separates the upper and lower No. 4 orebodies whereas the entire lens averaged only 0.01 oz/t gold.

Below the 9th level the massive ore of the No. 4 zone passed into disseminated sulfides contained within a highly chloritic alteration zone.

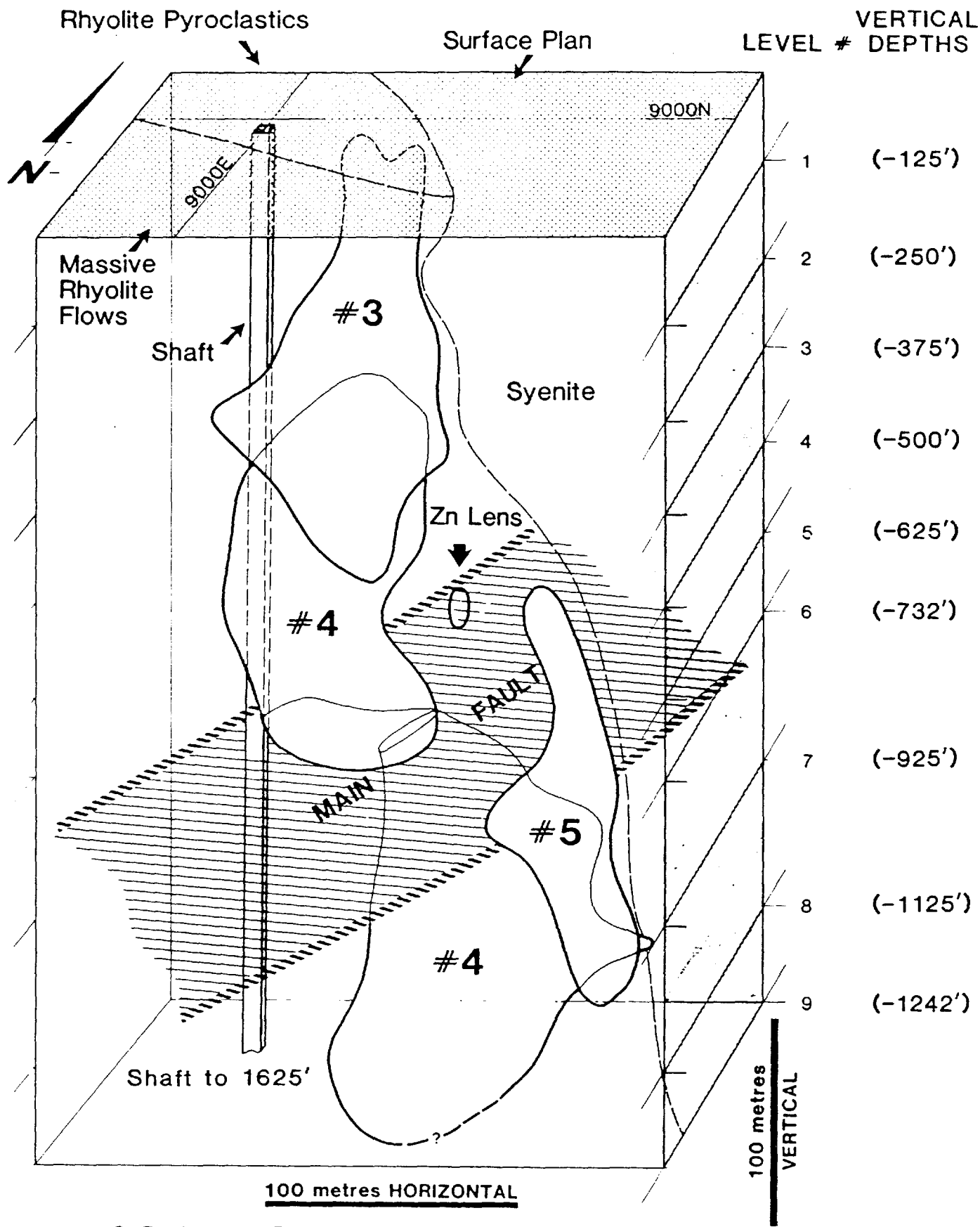
In contrast to the No. 4 zone, the No. 3 lens measured 260' along strike, 30' in thickness and extended 470 feet down-dip. This lens contained about 220,000 tons of massive pyrrhotite averaging 2.68% copper and 2% zinc. This ore was zoned; massive pyrrhotite formed the bulk of the actual part of the mass while pyrite occupied the margins and graded into pyritiferous-siliceous fragmental rocks.

No information could be found on the No. 5 lens which reportedly contained around 100,000 tons of ore.

Extreme wall rock alteration accompanies both the stringer-type mineralization and the massive ore. Zones of pervasive silicification and sericitization and locally, strong chloritization and dalmatianite spotting are associated with the stringer sulfides included.

Dalmatianite, while often associated with other sulfide deposits in the Noranda camp, is only sporadically present in the area around the Aldermac mine as biotite-rich spots in sericitized rocks and magnesium enriched chlorite in chloritized rocks. It is speculated that the syenite stock was responsible for the overall hornfelsic texture and coarsening of the groundmass plus albitization of plagioclase in the rocks adjacent to this stock and the development of dalmatianite. Alteration of the footwall rocks adjacent to the massive ore, on the other hand, was previously described in the old records as 'quartzite-ore' but now identified by Hunter (1982) as intensely silicified, featureless rock cut by a complex network of sulfide bearing veins.

Figure 7 summarizes the ore reserve calculations made prior to the discovery of the No. 7 and No. 8 zones by Seadrift in 1987.

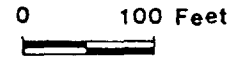
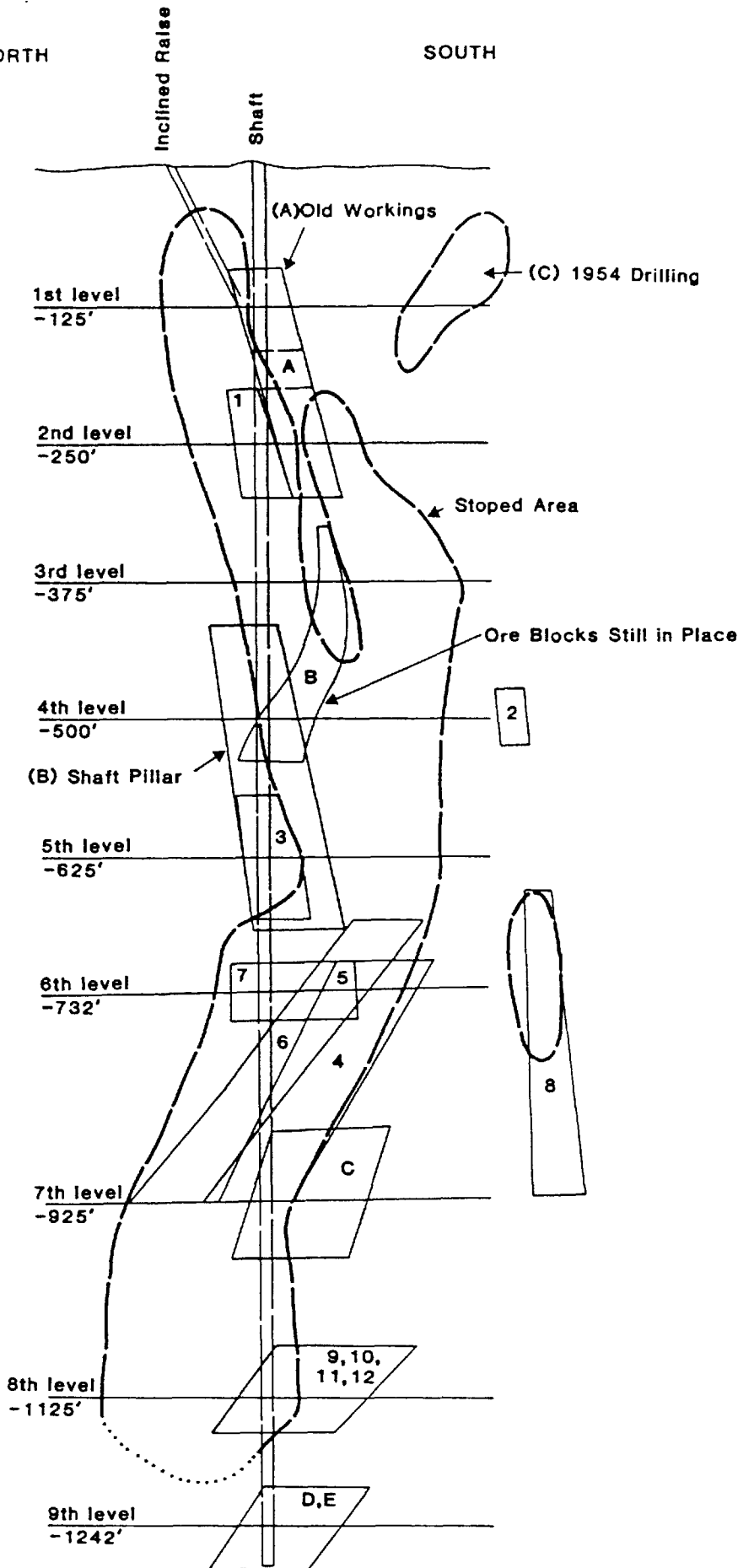


**BLOCK DIAGRAM - ALDERMAC MINE
MASSIVE SULPHIDE
ORE BODIES**

Figure 5
Ref. Buxton (1982)

NORTH

SOUTH



(A) OLD WORKINGS 412 to 698'

BLOCK	TONS	GRADE(%Cu)
A	26,200	2.71
B	39,000	1.59
C	60,000	2.2
D	26,000	1.4
E	13,200	1.2
1	30,000	1.97
2	2,000	1.2
3	14,400	1.55
4	32,000	1.65
5	12,000	1.47
6	40,800	1.64
7	4,880	1.2
8	52,200	1.64
9	4,800	1.26
10	4,000	1.2
11	2,400	1.2
12	9,600	1.2

TOTAL 373,480 TONS 1.76% Cu

(B) SHAFT PILLAR 1st to 9th LEVEL
TOTAL 100,000 TONS 1.5 to 2.0% Cu

(C) 1954 DRILLING -732' to -1125'
TOTAL 150,000 TONS 1.11% Cu,
3.59% Zn

Figure 7
Aldermac Mine
LOCATION OF ORE BLOCKS

5.2 Seadrift International Exploration Ltd.

Detailed stratigraphic drilling during 1987 and 1988 to the east of the Aldermac mine site resulted in the discovery of three mineralized massive sulfide lenses less than 100 feet from an exploration shaft off the 9th level of the old Aldermac Copper Mine. Since the initial discovery hole in August of 1987 a total of 25 drill holes totalling some 41,400 feet of diamond drilling have been collared to delineate these lenses. A recent ore reserve calculation has estimated that the present proven and probable reserves of the sulfide zones is in the order of 1.15 million short tons of 1.54% copper, 4.13% zinc, 0.9 oz/t silver and 0.014 oz/t gold with additional possible reserves of 23,000 short tons grading 1.42% copper, 4.43% zinc, 0.74 oz/t silver and 0.006 oz/t gold.

The No. 8 sulfide zone lies approximately 1000 feet east of the Aldermac shaft at about a vertical depth of 1000 feet. The No. 7 zone, which may be the faulted extension of the No. 8 lens lies about 200 feet to the south. Detailed core logging by Seadrift geologists (principally Paul Jones) indicates that the new mineralization clearly represents a classical Noranda type massive sulfide deposit, as evidenced by the crude metal zoning between the copper and zinc mineralization as well as the presence of an underlying hydrothermal vent containing stringer-type copper mineralization.

The No. 8 zone is currently understood to be an irregularly shaped pod or lens, dipping at 45° north along an east-west axis on strike with the mine series hosting the old Aldermac Mine ore lenses. The easternmost extension of the No. 4 zone, in fact, is situated less than 350 feet to the west of this new zone. The 9th level at a 1125 foot vertical depth actually extended to within 100 feet of this zone. The dimensions of the No. 8 lens has been established to be 300 feet along strike, 350 feet down-dip with a thickness of 60 feet. In addition to the main (No. 8) lens, an 'upper zone' occurs 100 feet up-dip from the No. 8 pod. The No. 7 zone, which was actually intersected first, lies 200 feet to the south and east of the main No. 8 zone.

The massive sulfide mineralization in these lenses ranges in drill core intersections from 25 to 161 feet with grades varying from 1 to 2% copper, 1 to 5% zinc, 0.5 to 1.5 oz/t silver and trace to 0.04 oz/t gold. Individual assays ranged up to 7.4% copper, 21.05% Zn and 0.15 oz Au/ton. A crude zonation from a copper rich base to zinc enriched upper level within the massive sulfides has been noted, but detailed Cu:Zn ratios have revealed numerous exceptions which perhaps may be related to several pulses or mineralizing events. The massive sulfides grade laterally from massive, unbanded pyrrhotite/pyrite through banded sulfides to finely laminated, sulfidic and siliceous tuffs.

In part, the No. 8 massive sulfide pod is in contact with a discordant, irregular pipe-shaped zone of intense chloritic alteration and copper sulfide, stringer-type mineralization. As this stringer zone lies up-hole or to the north of the massive sulfides the deposit is therefore interpreted to be overturned. The best intersection of a stringer - massive sulfide contact was noted in drill hole 87-17 where 52' of dark green, soft core with 10-30% pyrite-chalcopyrite filled fractures assayed 3.14% copper, 0.21% zinc, 0.046 oz/t gold and 1.32 oz/t silver. This was followed by 36 feet of massive sulfides assaying 1.74% copper, 6.81% zinc, 0.008 oz/t gold and 1.08 oz/t silver. Stringer sulfides, however, were also noted

in the absence of massive sulfide. The stringer zone can best be described as an intensely chloritized rock showing no primary textures with sulfides occurring in the chlorite groundmass as disseminations and fracture fillings. An odd characteristic of this ore-type which differs from that of other Archean Noranda-type ores, is that the stringer sulfide zone is dominantly pyrite, not pyrrhotite. The contacts between the stringer sulfides and massive sulfide or fragmental rocks has been observed to be gradational over one to several feet while the contact of the massive sulfide and felsic fragments is usually knife-edge sharp.

The No. 7 zone differs from the No. 8 zone in that no chloritic alteration pipe is present. The syenite intrusive complex, which 'abuts' the sulfides has either engulfed and destroyed the footwall rocks or displaced the alteration zone, and perhaps, additional massive sulfides. Further drilling may yet enlarge the No. 7 zone. The ore reserves of the No. 7 and No. 8 zones, as calculated by Wright Engineers currently include 1.15 million tons of proven and probable reserves grading 1.5% copper, 4.13% zinc, 0.91 opt silver and 0.014 opt gold.

Outside of the immediate mine area, the majority of the recent drill holes drilled since 1986 tested surface showings such as the MacKay Lake Prospect or drill core intersections such as those intersected at the Archibald Prospect. The remainder of the drilling was carried out to test geological targets in order to obtain stratigraphic information, considered to be the key for further discoveries.

ALDERMAC MINE PROPERTY EXPLORATION HISTORY

<u>Year</u>	<u>Company</u>	<u>Details</u>
1922	-	Staking of Aldermac area.
1923	A.A. MacKay W.P. Alderson	Prospecting discovery of the No. 1, No. 2 zones (MacKay Lake gossan zone).
1925	Aldermac Mines Ltd.	Discovery of the Aldermac No. 3 zone 30' below the surface; shaft sinking to 500 feet. (Aldermac Mines controlled by Towagmac Expl. Co. Ltd. and Noranda Mines.)
1927-1929	Aldermac Mines Ltd.	Aldermac Mining Co. deepened the 2 compartment shaft to 1147' and cut stations for the 125, 375, 500, 730 and 1125 foot levels. During sinking of the shaft discovered the No. 4 lens. Up to 1929 3,300 feet of drifts were cut, primarily on the 8th level.
1931	Aldermac Mines Ltd.	Construction of a 250 tpd mill plus limited production (no records) from development of levels. Ore reserves in 1936 stood at 1,743,760 million tons of 2% copper, 0.02 oz/t gold, 0.75 oz/t silver, 37% sulphur and 38% iron.
1936-1943	Aldermac Copper Mines Ltd.	Removal of 2.09 million tons of ore producing 30,845 tons of copper, 10,675 ounces of gold, 389,100 ounces of silver and 557,400 long tons of pyrite. A zinc concentrate was not produced as the smelter at Noranda penalized concentrates with a high zinc content. In 1937 the mill was enlarged to 1000 tpd and the shaft enlarged to 3 compartments. In 1940 the shaft was deepened to 1625'. Two concentrates were prepared; a high grade copper concentrate (28% copper, 90% recovery) and a pyrite concentrate (50% sulfur, 46% iron). Name change in 1936 to Aldermac Copper Mines Ltd.
1940's	West Wasa Mines Ltd.	Purchase of the bankrupt Aldermac Copper Mines by West Wasa Mines Ltd.
1954	Ventures Ltd.	Several holes (Y series, Map 3) were drilled into the shaft pillar and near the margins of mined out stopes which outlined reserves of 150,000 tons of 1.1% copper and 3.59% zinc north of the Shaft Area. Seven additional holes (Series 61-73) up to 250' deep were drilled NW of the shaft.
mid to late 1960's	Noranda	Concentrated drill effort on MacKay Lake gossan (Series 74-90, holes B24, 25, 1-60, 3-60, 4-60).
1974-1982	New Inesco Mines (Nuinsco Resources Ltd.)	In 1974 New Inesco (now Nuinsco Res. Ltd.) optioned the combined properties of Macanda Copper Mines, West Wasa Mines and Chance Mines Ltd. In 1977 West Wasa purchased Macanda to form West Macanda Res. Ltd. In 1980 Nuinsco Res. amalgamated with Macanda Res. Ltd. and retained ownership of the property under the Nuinsco name. Exploration by New Inesco included detailed mapped (Hunter, 1979) lithochemical rock sampling, and diamond drilling of 18 AQ holes (17,838'); W1 to W6, deepening of Noranda's holes B24, B25.
1986-(1988)	Seadrift Inter. Expl. Ltd.	In 1986 Seadrift optioned the property from Nuinsco in order to earn a 49% working interest by expending \$1.0 million by Feb. 28, 1991. In 1987 Seadrift purchased outright several mining properties from Nuinsco, of which the Aldermac property was one. Exploration work included (to July 1988): 57 ddh (BQ) 109,241 feet, PEM surveys of all drill holes with the exception of those drilled into the No. 7, No. 8 zones, 5 miles of surface PEM and gravity surveys over the No. 8 zone, SAMT (4 miles) on the No. 8 zone, revision of the Hunter (1979) geology map, ore reserve calculations by Wright Engineers Ltd. for the No. 7 and No. 8 sulfide lenses.

6. EXPLORATION POTENTIAL

6.1 Aldermac Property - Aldermac Mine

In spite of the considerable amount of drilling in the vicinity of the old mine there are several unexplored holes adjacent to and below the mine stratigraphy yet to be probed. For instance, the 1929 annual report of Aldermac Copper Mines reported that one drill hole intersected a 30 foot zone of 2.4% copper only 100 feet east of the shaft at a vertical depth of 1315 feet while a second hole, No. 1124 intersected a 90 foot section of massive sulfides 1300 feet southeast of the shaft drilled from the 8th level (1125' vertical depth). A more recent hole, W5 (1975) drilled by New Inco was later wedged and deepened to test the stratigraphy at about 650 feet below the lowest workings. At an approximate vertical depth of 1900 feet a rhyolite-massive basalt contact was intersected and a 5.2 foot section of core assayed 0.45% copper and 2.28% zinc. This newly discovered rock contact combined with the fact that there has been no deep drilling below 2000 feet, is adequate proof that the depth potential below the mine sequence remains wide open.

In addition to this target area several drill holes from surface and underground intersected massive sulfides in the area northwest of the mine. This drilling includes drill hole #25 from surface which cut a 20 foot section of massive sulfides grading 7.76% zinc, 0.73% copper, 0.02 oz/t gold and 0.38 oz/t silver and two underground drill holes; hole U-72 off the 8th level 700 feet north from the shaft which cut 50 feet of massive sulfides and hole U-283 which cut bands of massive sulfides over a core width of 100 feet. A third hole, directed towards this area drilled from a station on the 3rd level (-375') cut a 14 foot zone of massive sulfides and 11 feet of disseminated sulfides. Unfortunately, there are no assays for these three holes however it is suspected that a high visual zinc content was the reason the company rejected further exploration and development in these areas. In 1982 New Inco, in an attempt to follow-up these old holes, drilled hole N-1A-82 in the area north of the shaft. This hole hit, at a vertical depth of 650 feet below the lowest level, a 20 foot section of massive sulfides which assayed 1.07% copper, 3.2% zinc, 0.075 oz/t gold and 0.9 oz/t silver. This area clearly requires a closely spaced drill programme such as that which was carried out and led to the discovery of the No. 7 and 8 lenses.

A similar situation exists for an area due northeast of the shaft. Here, in the late 1950's several holes were drilled near the margins of the mined out stopes and an estimated 150,000 tons of 1.1% copper and 3.09% zinc were outlined between the 6th and 8th levels. Additional drilling would be required to re-define this block of mineralization.

In 1936 a news release promoting further development of the Aldermac Copper Mine and the possibility of discovery of new ore stated that "with the exception of work east along the 1125 foot level a 500 foot circle would encompass the rest of the work on the mine". The recent discovery of the No. 8 massive sulfide lens literally within 100 feet of an exploration drift from the old workings is proof that the area has, by no means, been "over-drilled". It is anticipated that further drilling near the Aldermac mine site will lead to further new discoveries.

6.2 Massive Sulfide Targets - Aldermac Project Area

Two target areas which also merit a considerable exploration effort are the Macanda alteration zone, which is the subject of on-going work, and the North Chance tuff horizon.

The Macanda alteration zone, as discussed previously, is a classical hydrothermal pipe-like system of altered rock comparable to those known to be spatially associated with a near-ore environment elsewhere in the Noranda camp. It is recommended that prior to commencement of further drilling a complete review of all the data be carried out. This should lead to a better understanding of the geology and structure and be used as a tool to direct further drilling. This zone, if in fact proves to be ore-bearing, is thought to offer the company its highest priority drill target at present.

The North Chance tuff is a favourable stratigraphic horizon typical of those in other locations in the Noranda camp which have guided exploration geologists towards discovery of massive sulfides. This contact has not been fully evaluated due to necessary pre-occupation, to date, of proving reserves within the immediate mine area. Stratigraphic drill testing of this contact should be considered part of the necessary future exploration work. Other parts of the project area, e.g. the Teck and Kidd Creek Option claim groups must be explored but need a more grass roots style of approach, as the majority of the early work was concentrated on minor sulfide occurrences. Since the near surface environment has been prospected, a deeper penetrating geological survey should be run over the entire claim group in order to select drill targets.

6.3 Gold Targets - Aldermac Project Area

In the 1930's and 1940's gold exploration and mining was quite active on the adjoining properties. The shear zones, which host the gold ores, have been exploited as recently as 1971 but have never (as best as can be determined) been the focus of attention within the Aldermac project area. A recent programme which has begun to examine the gold potential on the claims, in particular in the area of heavy till cover on the Dickenson ground has led to moderate success and should be continued. A second area where gold mineralization is already known to exist lies at, and north of, the Horne Fault Mines on the Norex/Kidd Creek boundary. An evaluation of this northwest trending fault is highly warranted. It is recommended that a photo study including conventional photography in addition to satellite images be conducted in order to locate all structural and topographic lineaments prior to implementing a grass roots style examination of the entire property. In summary, for gold, the property is considered to be virgin ground and thought to be highly prospective.

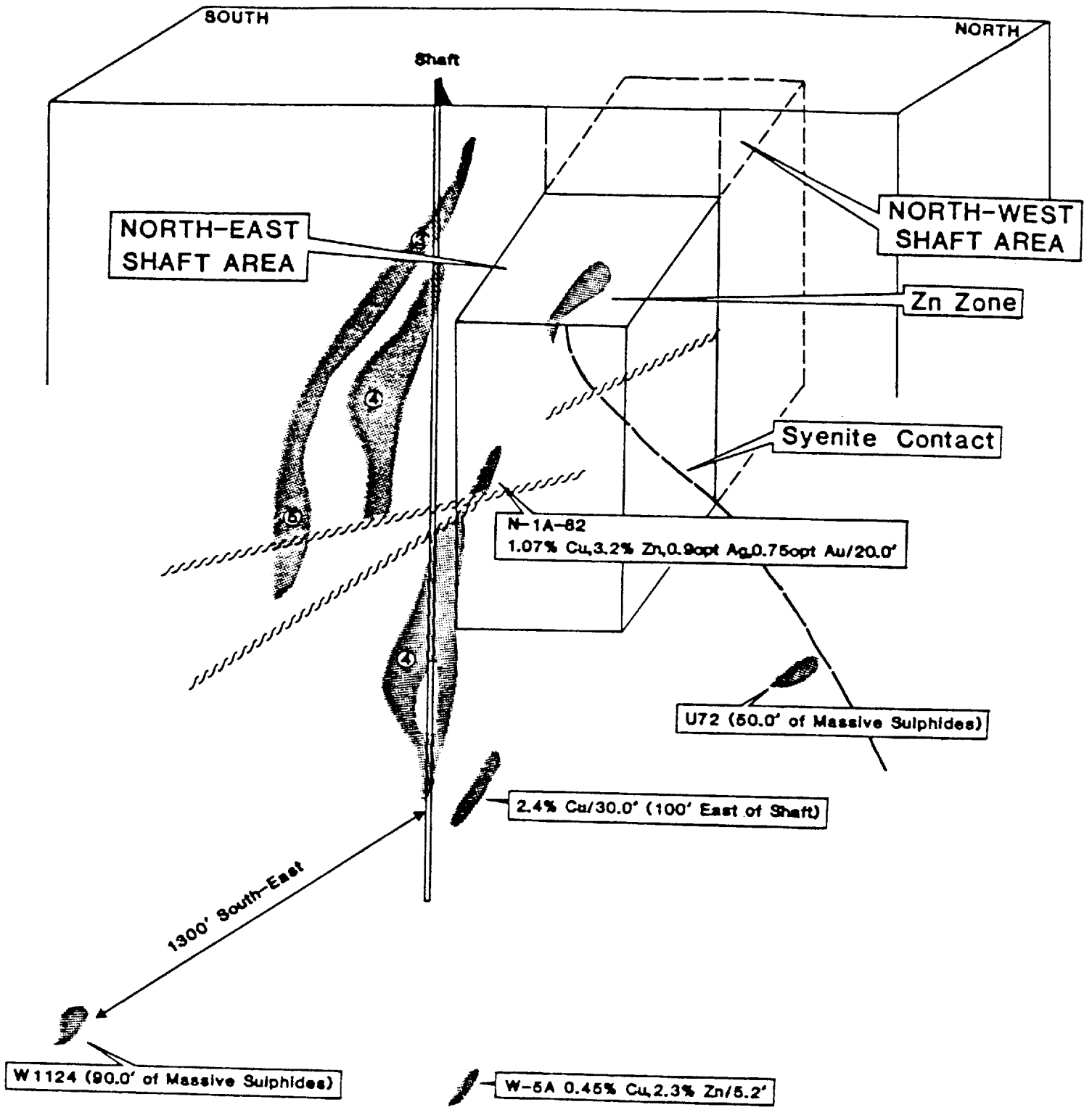


Figure 8
Aldermac Mine Site Exploration Areas

7. CONCLUSIONS

The ore reserves currently defined for the Aldermac property are as follows:

	<u>Tons</u>	<u>Cu %</u>	<u>Zn %</u>	<u>Ag opt</u>	<u>Au opt</u>
Upper, No.7 & No.8 zones (Proven & Probable)	1,110,500	1.54	4.12	0.91	0.014
Upper, No.7 & No.8 zones (Possible)	46,900	1.34	2.83	0.48	0.004
Old workings 412' to 698'	373,480	1.76	?	?	?
Shaft pillar 1st to 9th level	100,000	1.75	?	?	?
1954 drilling, 732'-1125'	150,000	1.11	3.59	?	?
Totals	1,780,880	1.56	4.01	0.89	0.014

The ore reserve calculations for the recently discovered Upper, No. 7, and No. 8 zones was done by Wright Engineers in Vancouver. Other reserves were calculated by West Wasa Mines Ltd and Aldermac Copper Mines Ltd.

Outside of the mine area the exploration potential of the property as a whole is deemed to be excellent, both for base metals and for gold. It is believed that the recent success to date is just a prelude of better discoveries yet to be made.