

DATE: March 26th, 1992
A TO: Ray Dujardin
COPIES A COPIES TO: John Purkis, Alex Davidson
DE FROM: Ian Pirie
SUJET SUBJECT: **Curragh Resources' Stronsay Project**

SUMMARY

Underground exploration by Curragh has outlined a proven and probable reserve for the northern half of the North Cirque deposit of 10,790,000 tonnes grading 10.29% Zn, 2.98% Pb and 62.8 g/t Ag using a 9% Pb+Zn cutoff. This is part of a geological reserve of 17,240,000 tonnes grading 8.76% Zn, 2.38% Pb and 51.6 g/t Ag.

Combining this data with surface drilling done by Cyprus Anvil between 1978 and 1982, a total reserve for the North Cirque deposit of 30,160,000 tonnes grading 8.1% Zn, 2.2% Pb and 47.8 g/t Ag may be inferred.

Similar mineralization and host rocks have been intersected in an area about 1 kilometer south of North Cirque, however due to depth and terrain problems only 6 holes have actually penetrated it. A geological reserve of some 20 million tonnes of similar grade may be inferred. Other exploration potential also exists on the property.

An audit of Curragh's reserve calculations suggests that improvements could be made, especially if a better idea of a cutoff grade can be established. Block modelling and kriging would probably work well given the deposit geometry. However the calculation done is quite reasonable and does take account of minability criteria. Thus no significant surprises are likely to occur at least in the area detailed by the underground program. Substantial zones of higher grades are present to provide a "jump start" for any operation.

INTRODUCTION

Curragh Resources are seeking a partner to aid in the development of their Stronsay project in NE BC. A combination of accumulated debts, a \$100m loss in 1991 and the urgent need for capital to carry out stripping on their Grum deposit at Faro make it impossible for them to proceed alone.

On March 19th and 20th I reviewed their geological and environmental data in Whitehorse. All other pertinent data is available in Curragh's Toronto office (contact - Marvin Pelly).

GENERAL

The Stronsay project is located 800 km north of Vancouver (Figure 1). Access is available by +350 kms of gravel roads from Mackenzie or by fixed wing to the Finbow strip, some 54km from the site (Figure 2).

The project is owned by the Stronsay Corporation, a 100% owned subsidiary of Curragh Resources. It was purchased in 1985 from Cyprus Anvil who, between 1978 and 1982, had outlined two mineralized zones - the North and South Cirque deposits.

Curragh's current mining plan calls for a 3500 tpd underground operation, milling on site, trucking of concentrates to Williston Lake (63km), barge concentrates down Williston to Mackenzie and thence by rail to tide water at Squamish. At least some of their concentrate is believed to be committed to the Spanish smelter of Asturiana de Zinc.

Approval-in-Principle has been received from the BC Mines Steering Committee for their mining plan but Federal Fisheries still have to provide their endorsement. There do not appear to be any unusual environmental problems.

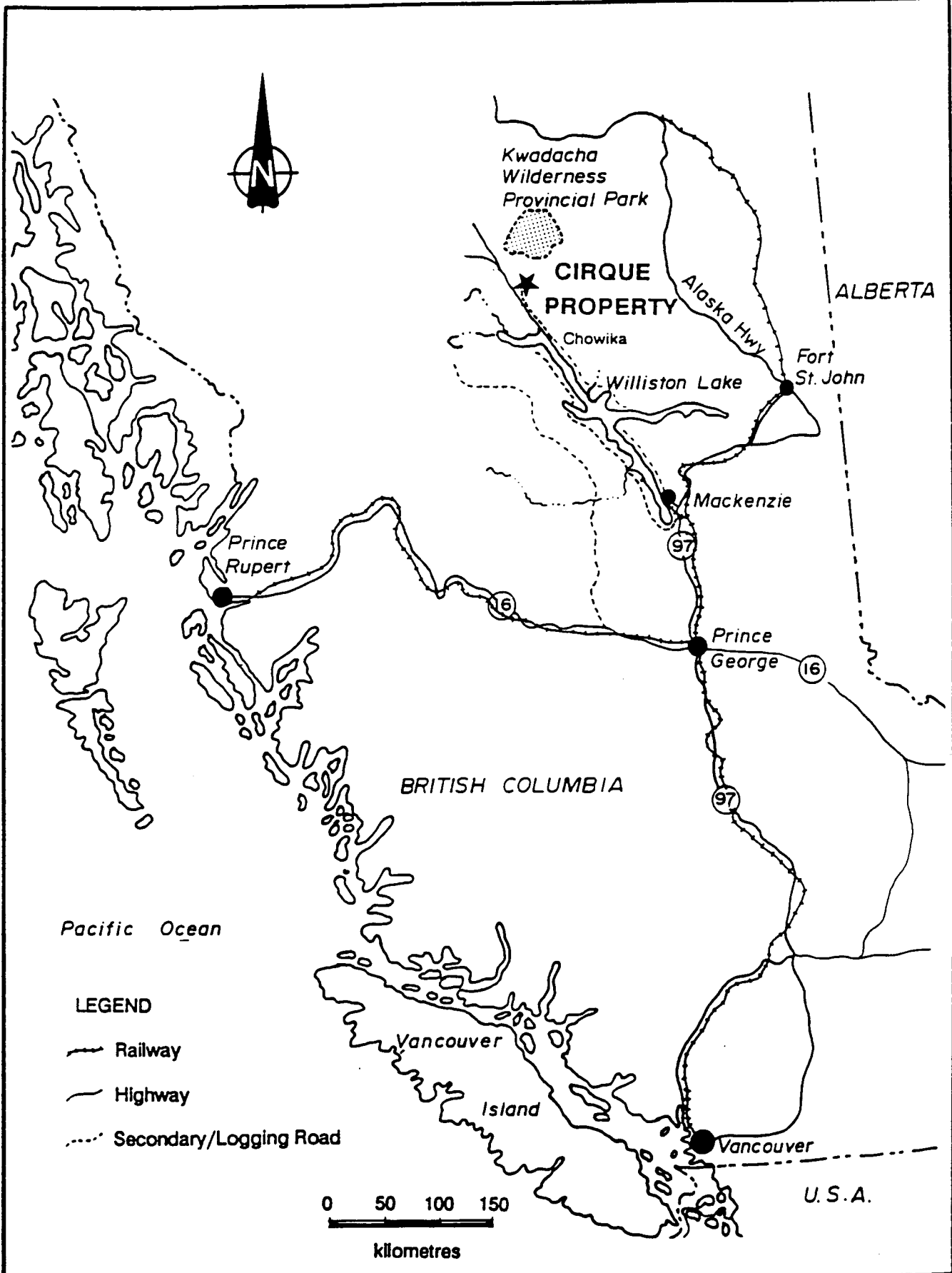


Figure 1: Location Map

Rescan
Rescan Environmental Services Ltd.

Scale	Date 01/1991	Project Cirque
Designed	Dwg No.	

Cad no

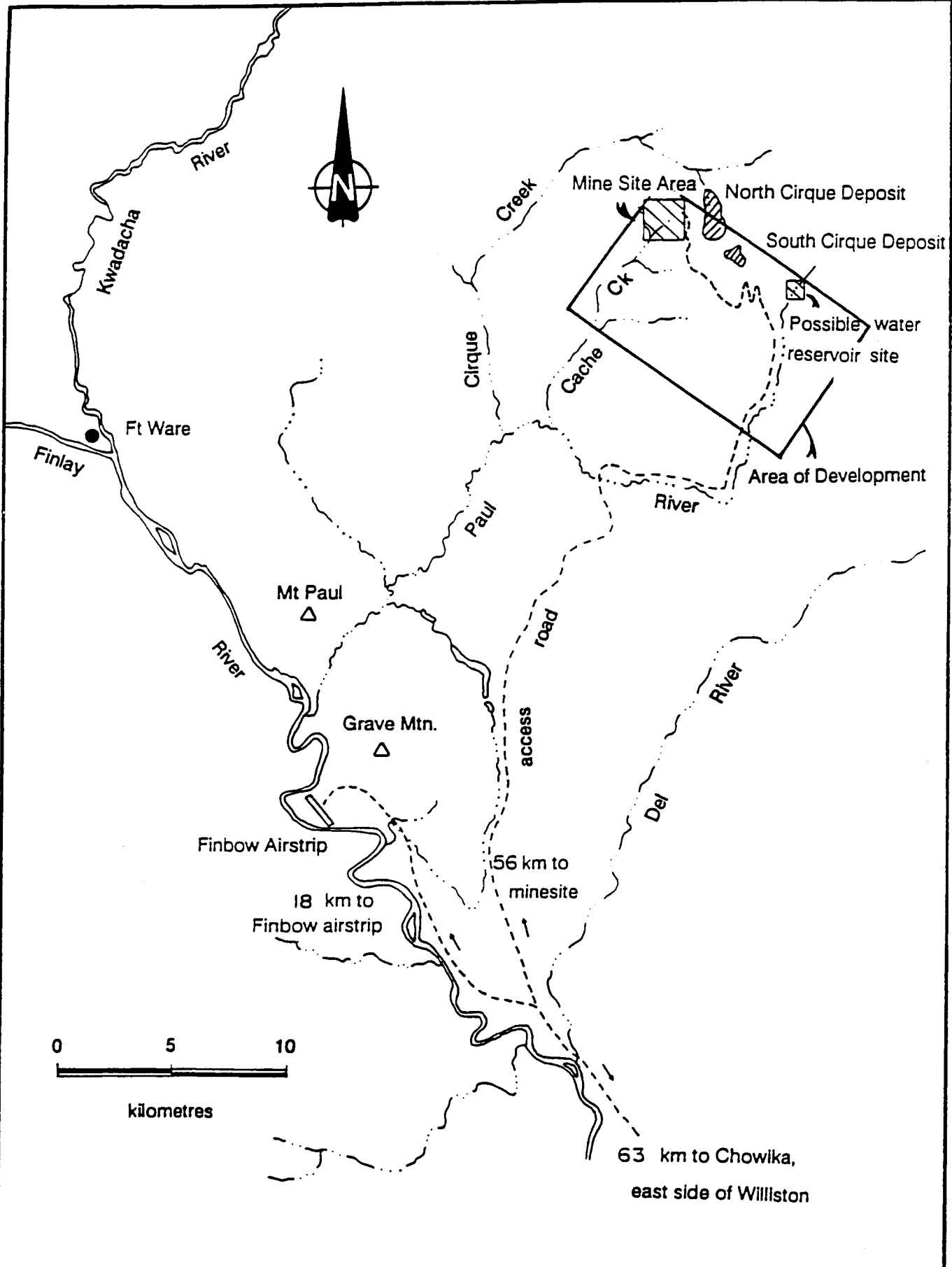


Figure 32: Project Area



Scale	Date 01/1991	Project Cirque
Designed	Dwg No.	

d no

GEOLOGY AND EXPLORATION HISTORY

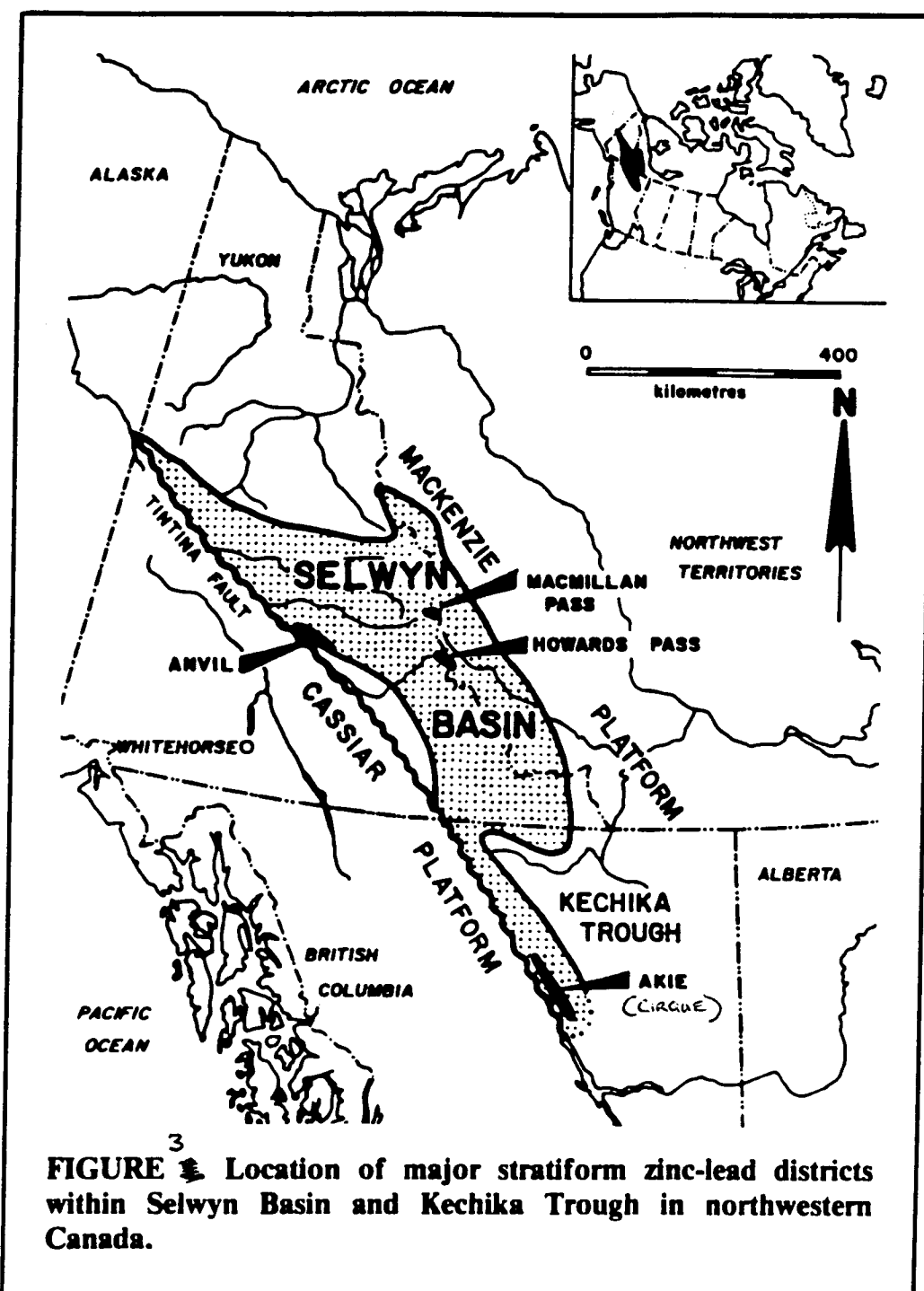
The Cirque deposits occur within the Kechika Trough of the Lower Paleozoic Selwyn Basin, a sedimentary basin that stretches from NE BC through the Yukon and adjacent NWT to the Alaska border. In the Yukon, deposits within the Selwyn Basin are being mined at Faro and Sa Dena Hes (Mt. Hundere) while other significant deposits occur in the Howards Pass area (Figure 3). The deposits are classified as sedimentary - exhalative and are comparable to Mt Isa, Meggen and Rammelsberg.

Interest in the Kechika Trough began in the early 1970's with the discovery of bedded barite - sulphide occurrences at Driftpile. Subsequent activity by companies such as Cyprus Anvil, HBOG and Rio Algom resulted in the discovery of several more occurrences, the most significant of which is Cirque.

Between its discovery in 1977 and 1982, Cyprus Anvil drilled over 41,000 meters on the Cirque property, built an airstrip, provided road access and carried out other exploration and environmental studies to the tune of some \$21 million (unadjusted). However, with the demise of Cyprus starting in 1983, work on the property was abandoned and the area became dormant.

In 1985 Curragh purchased the project as part of the assets of Cyprus Anvil. No work was done, however, until 1989 when an underground program was initiated to provide access for detailed delineation drilling of the North Cirque deposit.

The Cirque deposits occur in a thrust bounded wedge of black shales, siltstones and limestones of Devonian-Mississippian age known as the Earn Group. Several other wedges of the Earn Group are known in the area. Mineralization occurs as bedded, tabular bodies of mixed barite and sulphides which can vary from 100% barite to 100% sulphide. Footwall rocks are generally black carbonaceous shales while the host rocks and immediate hangingwall are often



3
FIGURE 3 Location of major stratiform zinc-lead districts within Selwyn Basin and Kechika Trough in northwestern Canada.

silicified shales.

Despite intense thrust related folding and faulting of all rocks in the area, the Cirque deposits show remarkable continuity. North Cirque (Figure 4) is 1km long, between 200 and 500m in the dip direction and ranges up to 60m thick. It is elongate in a NW-SE direction, dips at 20 to 30 degrees to the SW and rakes at about 30 degrees to the south. South Cirque lies 1km south of North Cirque and is much less defined but shows similar dimensions. The area between the two has yet to be drill tested.

RESERVES

The reserves at Cirque may be divided into three categories. The north half of the North Cirque deposit has been ring drilled from underground on 30m sections and reserves may be regarded as proven and probable. The south half of North Cirque is drilled from surface with an irregular distribution of holes that are roughly on 60m centres but locally +100m. Reserves here may be classified as geological or possible. The South Cirque deposit has been hit by only 6 holes and reserves should thus be considered only geologically inferred.

Table 1 lists the reserves. The area detailed by the underground program is shown in Figure 5 and the first three reserve figures shown refer to that.

In calculating the reserves Curragh subdivided the mineralization into three lithologic categories with characteristics as follows:-

Massive Sulphides < 15% barite
fg, pyritic with tan sphalerite
high Pb+Zn (mean = 16.9%)
Zn:Pb = 3.68:1

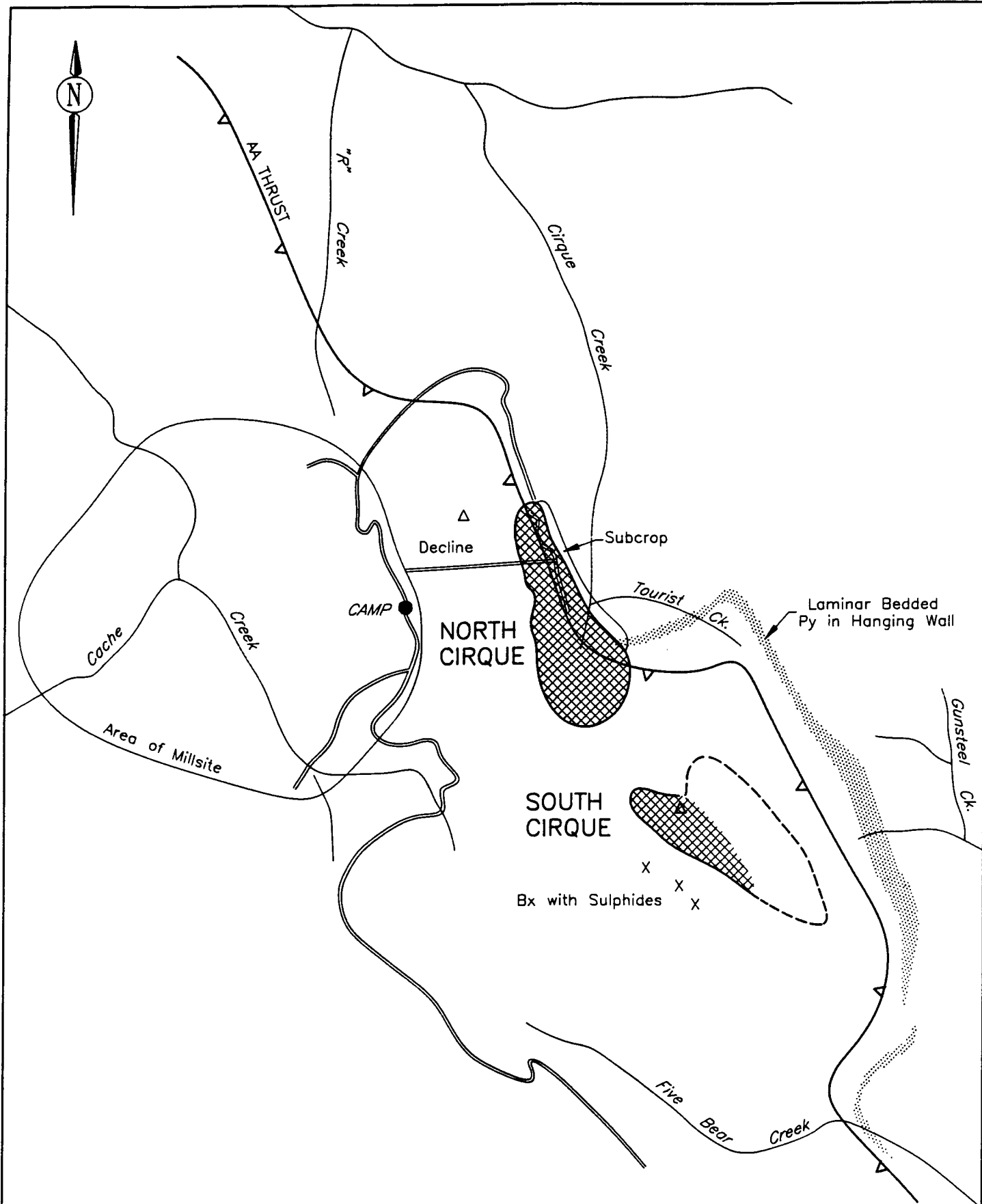


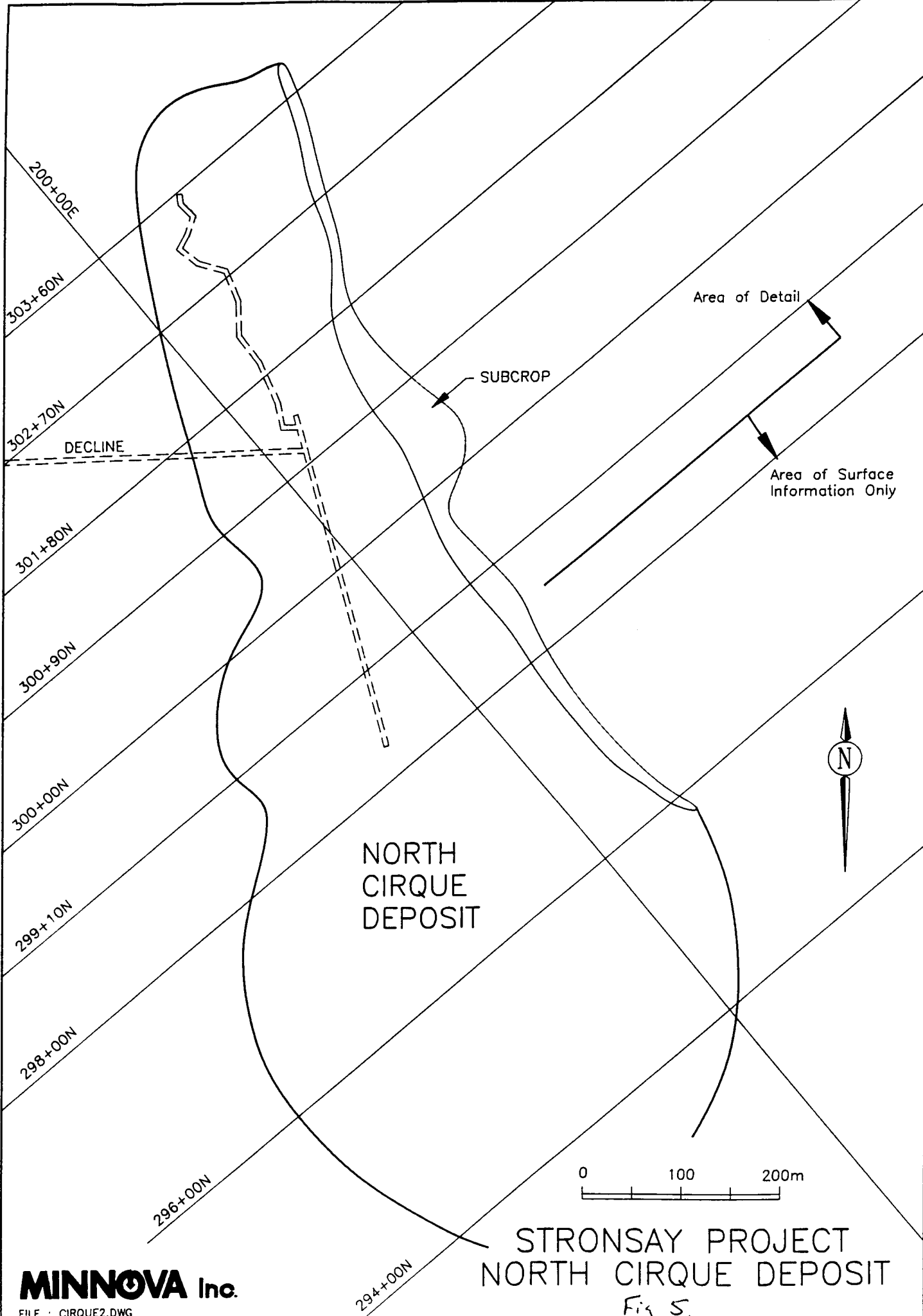
Fig. 4.

STRONSAY PROJECT OVERVIEW

TABLE 1.

CURRAGH RESOURCES - STRONSAY PROJECT

Deposit	Tonnes	% Pb + Zn	% Zn	% Pb	g/t Ag	
North Cirque (Detailed Part)	17,240,000	11.14	8.76	2.38	51.6	Proven & Probable
Using 9% Pb + Zn Cut Off	10,790,000	13.27	10.29	2.98	62.8	Proven & Probable
Using 12% Pb + Zn Cut Off	6,860,000	14.92	11.55	3.37	70.3	Proven & Probable
North Cirque (Entire Deposit)	30,160,000	10.33	8.10	2.23	47.8	Geological
South Cirque	20,000,000	10.0	8.0	2.0	45.0	Geologically Inferred



NORTH
CIRQUE
DEPOSIT

STRONSAY PROJECT
NORTH CIRQUE DEPOSIT

Fig 5.

MINNOVA Inc.

FILE : CIRQUE2.DWG

Sulphides with barite

20 - 60% barite
moderate Pb+Zn (mean = 10.7%)
Zn:Pb = 3.42:1

Barite with sulphides

> 60% barite
low Pb+Zn (mean = 7.4%)
Zn:Pb = 3.89:1

This classification was used to outline ore block polygons on sections 30 meters apart and each block was given a +/-15m influence. A minimum block thickness of 5m was used. The method is considered appropriate since the lithologies show excellent continuity both in section (see Figure 6 for example) and along the long axis of the deposit.

The use of massive sulphide blocks only turns out, with remarkable consistency, to be equivalent to using a 12% Pb+Zn cutoff grade. Likewise, the exclusion of blocks of barite with sulphides is more or less equivalent to using a 9% Pb+Zn cutoff.

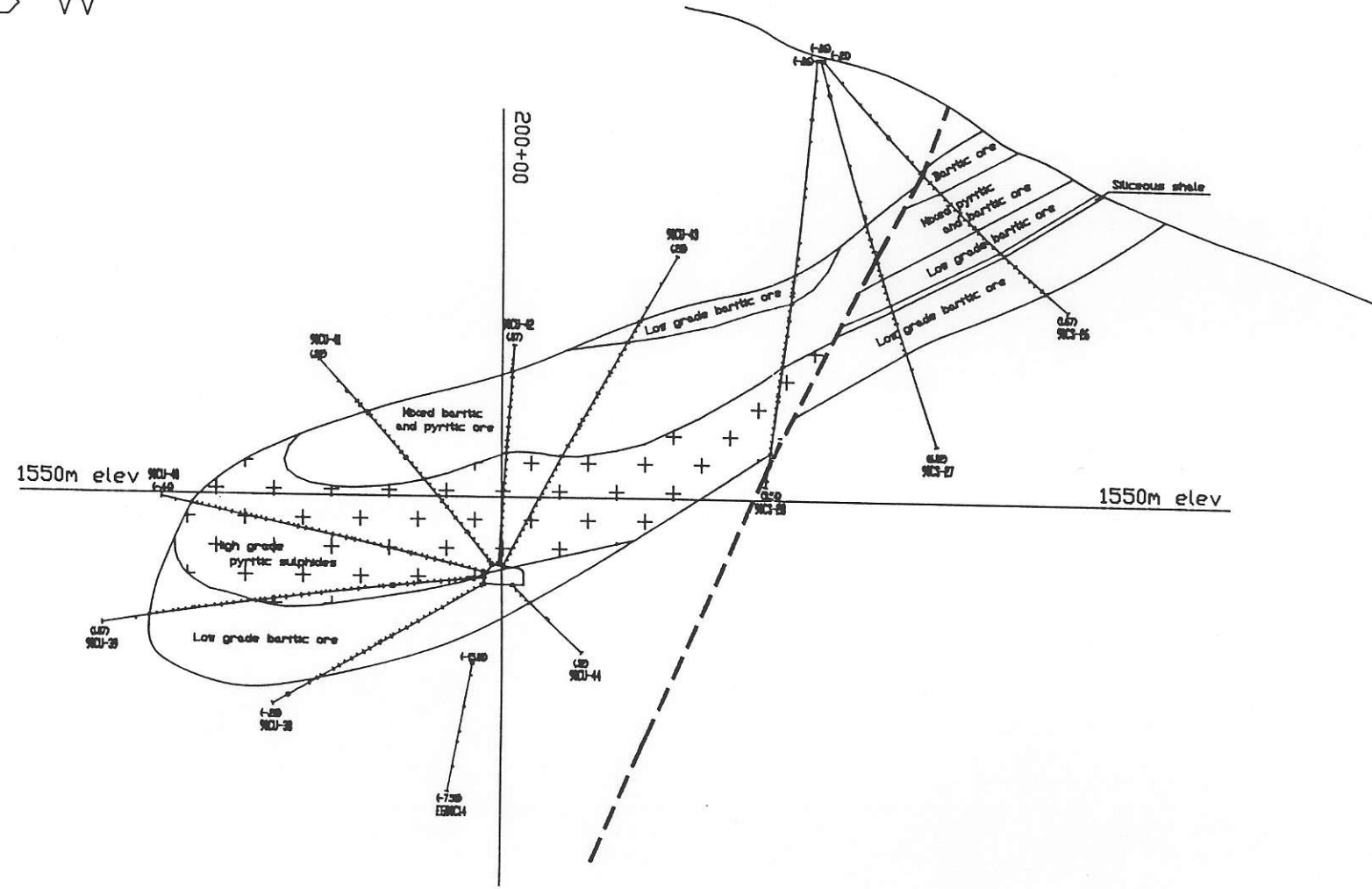
In calculating the grade and tonnage of the detailed area utilizing the 9% and 12% cutoffs no isolated blocks were included. It was assumed that these blocks would not be minable on their own. In some cases, lower grade blocks were included to provide contiguity.

In examining the grades of blocks used in the +12% reserve it is apparent that a substantial tonnage of material is actually above a 15% combined cutoff.

The overall tonnage includes all mineralized blocks. A brief review of the grade of these blocks shows that all blocks are actually +4% Pb+Zn and almost all are +6%. As a result, a grade cutoff of 6% combined would produce almost the same numbers as

SW

NE



SCALE 1 : 1 000



LEGEND	REVISIONS	Carragh Resources Inc.	Figure: Figure 5 6
No Vertical Exaggeration		CIRQUE PROJECT	Date 31/12/1990 Geologist L. Pigage
		Cirque Deposit Section 300+60 N	Drawing No

those given for the entire detailed area.

Although the grade and tonnage calculation will have to be re-done when a firm idea of an economic cutoff grade can be established, I am satisfied that the existing numbers are reasonable and that no surprises are likely within the detailed area. The continuity and geometry of the deposit suggest that it will probably lend itself well to block modelling.

Figures for the entire North Cirque deposit and for the South Cirque deposit were derived by comparing the original Cyprus Anvil calculations based on surface drilling for the north half of the North Cirque deposit with the new reserves and calculating an adjustment factor. This factor was then applied to the Cyprus Anvil calculations for the rest of the known mineralized bodies to arrive at a corrected grade and tonnage. Although the overall drop in grade would appear to suggest a lowering of grade to the south, my impression was that the zinc in particular was fairly consistent throughout within the sulphide rich zones. Rather there is a dilution factor due to increased volume of lower grade barite rich zones.

CONCLUSIONS

From my examination of the Cirque deposit and the reserve calculations that have been carried out, I have no doubts that the tonnages and grades quoted reasonably represent a minable reserve. There is enough mineralized material for a mining life well in excess of Minnova's minimum criteria. Whether it is economic to mine or not can only be established by review of the feasibility data and mining plan which is available in Curragh's Toronto office. This should be the next step in the overall process. Should a more precise grade and/or tonnes turn out to be critical to the viability of the project, I would propose that we obtain the detailed data and calculate our own reserves.