~~093E026~~
082FSW024

862600

Red Bird Lead-Zinc Project:

An Exploration Review

Salmo Area, Nelson Mining District
British Columbia

For:
Annex Exploration Corp.

By:
D.S. Jennings, Ph.D.
September, 1991

Murray
Here's latest & final draft for your review
Hope all's OK
Dave

P-779 © 1978 United Feature Syndicate, Inc.

I'M SO HAPPY I COULD JUST BARF

Table of Contents

Figures

Tables

Appendices

Summary

The regional stratigraphic and structural setting for lead-zinc deposits of the Kootenay Arc is presented and a brief review of the metallogenic models for the Salmo and Metaline area deposits is given. H.B., Jersey and Reeves MacDonald/Red Bird appear to be carbonate-hosted, synsedimentary-exhalative lead-zinc deposits that accumulated in a relatively deep water, euxinic, shale-starved basin whereas the Metaline area deposits appear to be classic Mississippi Valley-type deposits developed in carbonate rocks at basin margins.

The local structural-stratigraphic setting of the Reeves MacDonald/Red Bird deposit is summarized and a model involving ductile dismemberment of a 20 to 30 million ton massive sulphide deposit into remarkably continuous, linear "megamullions" or ore zones during first phase folding is proposed.

Two recent drill holes intersected the fault-offset Annex ore zone on the Red Bird property. The two holes, 400 feet apart cut highly encouraging grades of 8% zinc, 1% lead and 1.5 ounces per ton silver over 30 and 54 feet respectively. It is concluded that the sulphide resource on the Red Bird property can probably be doubled from 5 to 10 million tons with continued drilling. The Red Bird portion of the deposit contains about half of the oxide and sulphide pre-mining geological resource for a reconstructed deposit that may have aggregated 28 million tons.

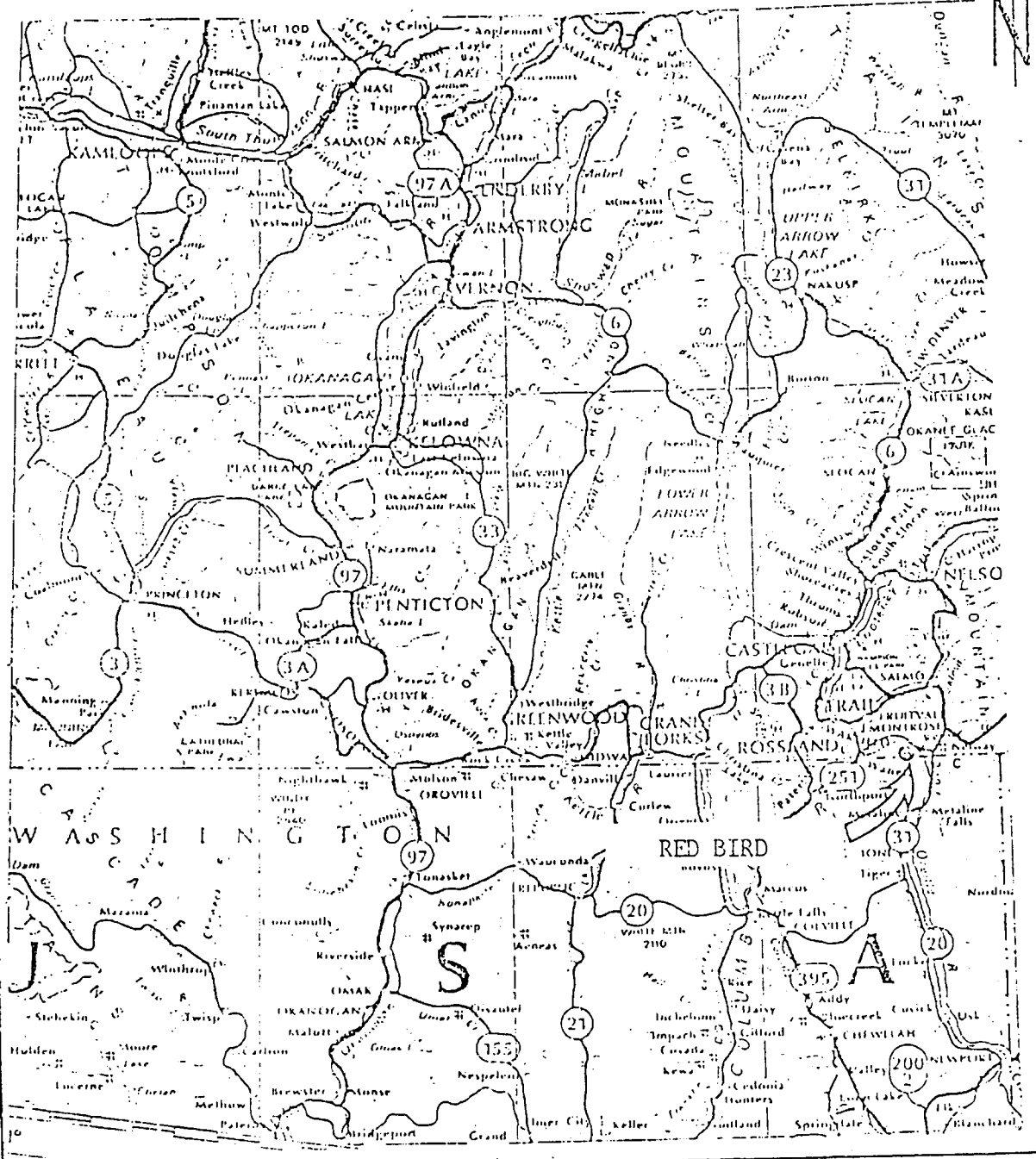
A deep drilling program is recommended to:
a) expand and develop a significant, recent discovery of shallow lead-zinc sulphides in the Prospect dolomite; b) at the same time, expand sulphide mineralization in the deeper Annex and Annex West zones with the same holes and, c) explore possible fault repetitions of the highly productive Reeves Limestone recently recognized to be present beneath relatively thin overthrust cover west of the Red Bird deposit area.

Research into oxide ore extraction techniques may lead the way to rapid production from the 7,000,000 ton oxide resource currently identified on the Red Bird and Reeves MacDonald properties.

Introduction

Annex Exploration Corp. of Vancouver has commissioned a review of previous exploration programs, their results and implications for further work on the Red Bird property immediately west of and adjacent to the Reeves MacDonald mine, Salmo area, Nelson Mining District, B.C. (Figure 1). This report provides a synoptic overview of the regional geology of the Kootenay Arc, its contained stratiform ("Remac-type") and stratabound ("Mississippi Valley-type") lead-zinc deposits as a background to the structural/stratigraphic setting of the Red Bird and Reeves MacDonald deposits.

As the literature on the lead-zinc deposits of the Kootenay Arc is voluminous, this report will not extensively review the geological settings and genetic models of these deposits, but will focus on the structural history of the deposits in the Reeves syncline (Red Bird and Reeves MacDonald). This history may involve dismemberment of an originally more aerially extensive carbonate-hosted, exhalative (?), stratiform, lead-zinc deposit now seen as an array of brittle fault offset, "megamullions" along both limbs of the syncline. The implications of this model and structural complications in the central portion of the Annex claim block will be reviewed as they apply to the evaluation of the Red Bird property. Several exploration and development strategies will be discussed.



Annex Exploration Corp.

RED BIRD PROJECT

LOCATION MAP

July, 1991.

FIG. 1

This report relies heavily on the literature and the author's world-wide experience with lead-zinc deposits. The Red Bird property has not been visited during the preparation of this report and property title matters are outside of its scope.

Location and Access

The Red Bird property is 30 km. south-southwest of Salmo and 35 km. southeast of Trail, B.C. and is centered approximately 1.5 km. southwest of Remac or 7.5 km. west of the international border crossing at Nelway, B.C. (Figure 2). It is reached by crossing B.C. Hydro's Seven Mile dam at Church creek then following logging roads through the western part of the property. A property history and description is provided by Price (1987).

Regional Geological Setting

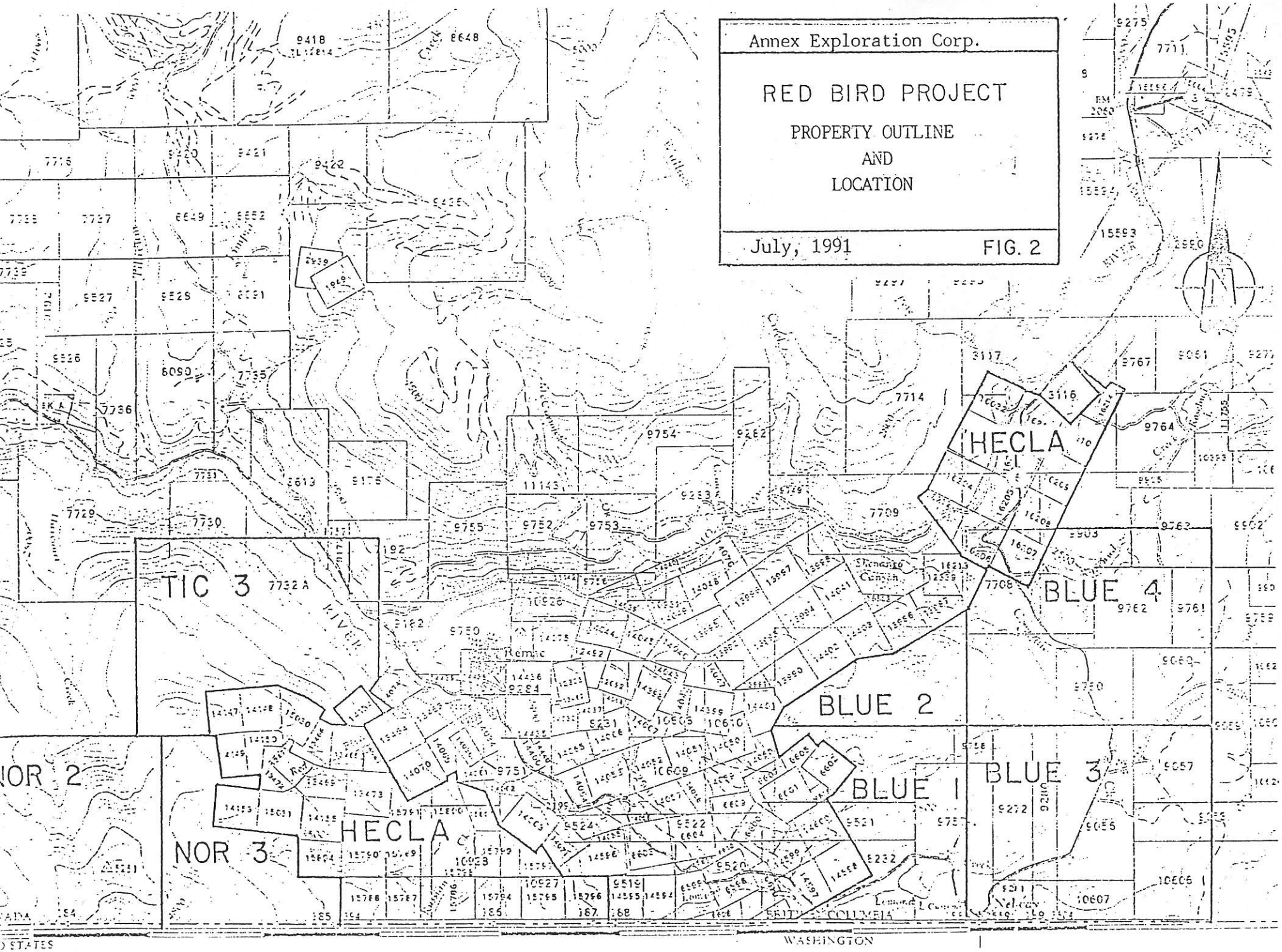
Stratigraphy:

The Kootenay Arc is a curvilinear, north-south trending belt of complexly deformed sedimentary, volcanic and metamorphic rocks extending from northeast Washington state some 400 km. (250 mi) to near Revelstoke, B.C. In British Columbia, the Arc lies between the Purcell-Belt anticlinorium on the east and gneisses of the Shuswap Metamorphic Complex on the west (Figure 3). The Kootenay Arc is a broadly conformable, thick succession of sedimentary and volcanic rocks ranging in age from the earliest Cambrian in the east to late Mesozoic in the west. Definitive studies of the structure, stratigraphy and ore deposits of the Kootenay Arc and its extensions have been completed by Fyles (1970), Yates (1970) and Hoy (1982).

Structure:

Rocks of the Kootenay Arc have a complex structural history involving at least three phases of folding (Fyles, 1970; Fyles and Hewlitt, 1957; Fyles and Hewlitt, 1959; Addie, 1970; MacDonald, 1973; Hoy, 1982). The first two phases are regionally penetrative and broadly associated with regional dynamothermal metamorphic events and resultant fabrics. The effects of these superposed deformational episodes are shown by structural cross sections through the Arc (Figure 4).

In addition to a complex folding history, rocks of the southern portion of the Kootenay Arc are separated into three lithologic packages bounded by regional thrust faults (Fyles and Hewlitt, 1959; Fyles, 1970). These faults probably originated during the first deformational event and continued to be active through the second (Fyles and Hewlitt, 1959). The three faults recognized are the Waneta, Argillite and Black Bluff faults (Figure 4). The Waneta fault separates a Mesozoic volcanic and intrusive terrane on the west from the quartzite-carbonate sequence of the Mine Belt. The Argillite fault forms the eastern boundary of the Mine Belt and separates Ordovician black argillites and phyllites of the Active Formation on the south and east from Cambrian or older quartzite-carbonate rocks of the Quartzite Range, Laib and Nelway Formations on the north and west. Rocks of the Black Argillite Belt are bounded on the east by the Black Bluff fault which juxtaposes lower Palezoic rocks of the Laib and Nelway Formations of the Eastern Belt against the Active Formation.


Annex Exploration Corp.
RED BIRD PROJECT
PROPERTY OUTLINE
AND
LOCATION
July, 1991
FIG. 2
HECLA
TIC 3
BLUE 4
BLUE 2
BLUE 1
BLUE 3
NOR 3
NOR 2
HECLA
WASHINGTON

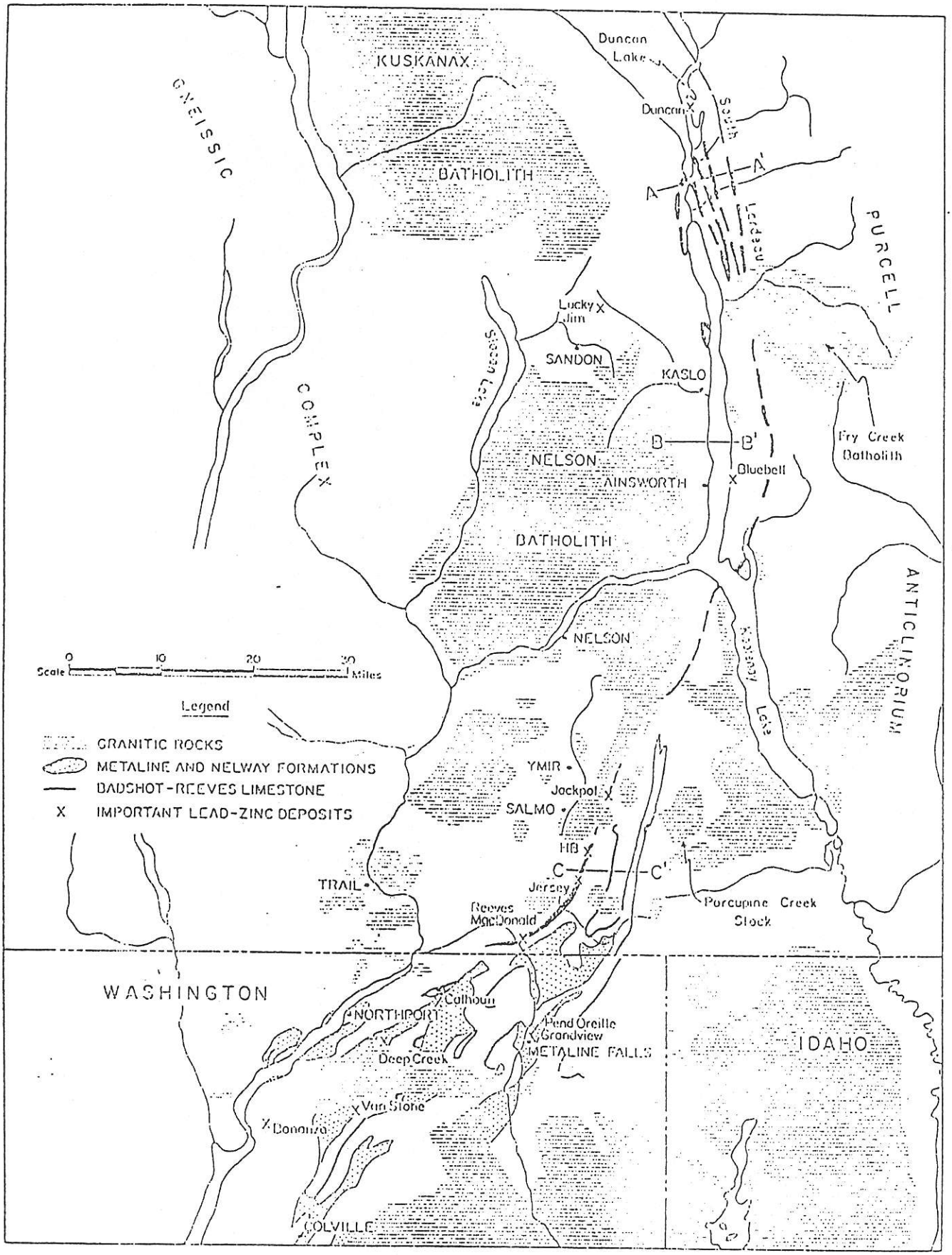


FIGURE 3.—Geological map of the southern part of the Kootenay Arc.

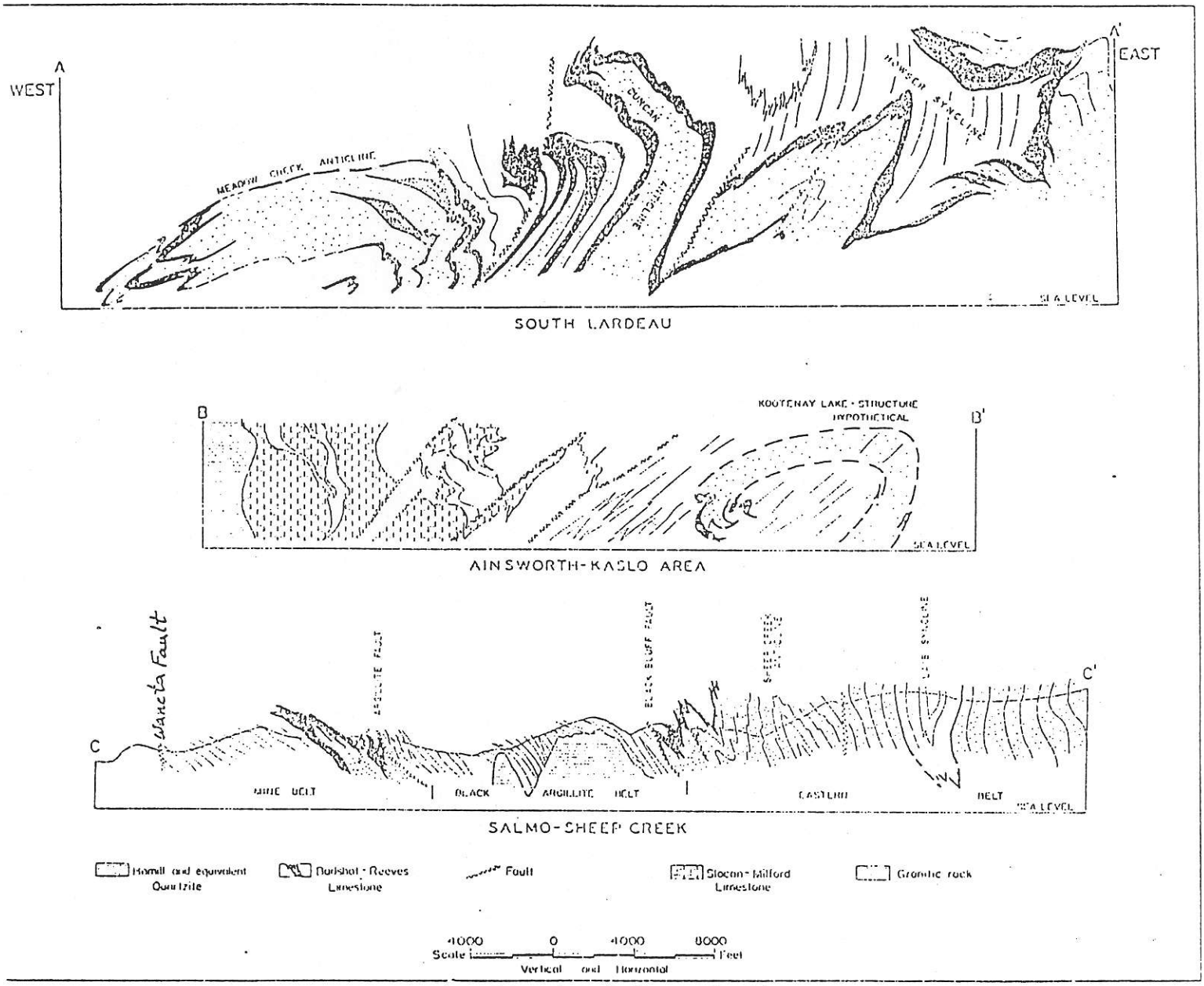


FIGURE 4: Structural Cross Sections Through The Kootenay Arc (after Fyles, 1970)

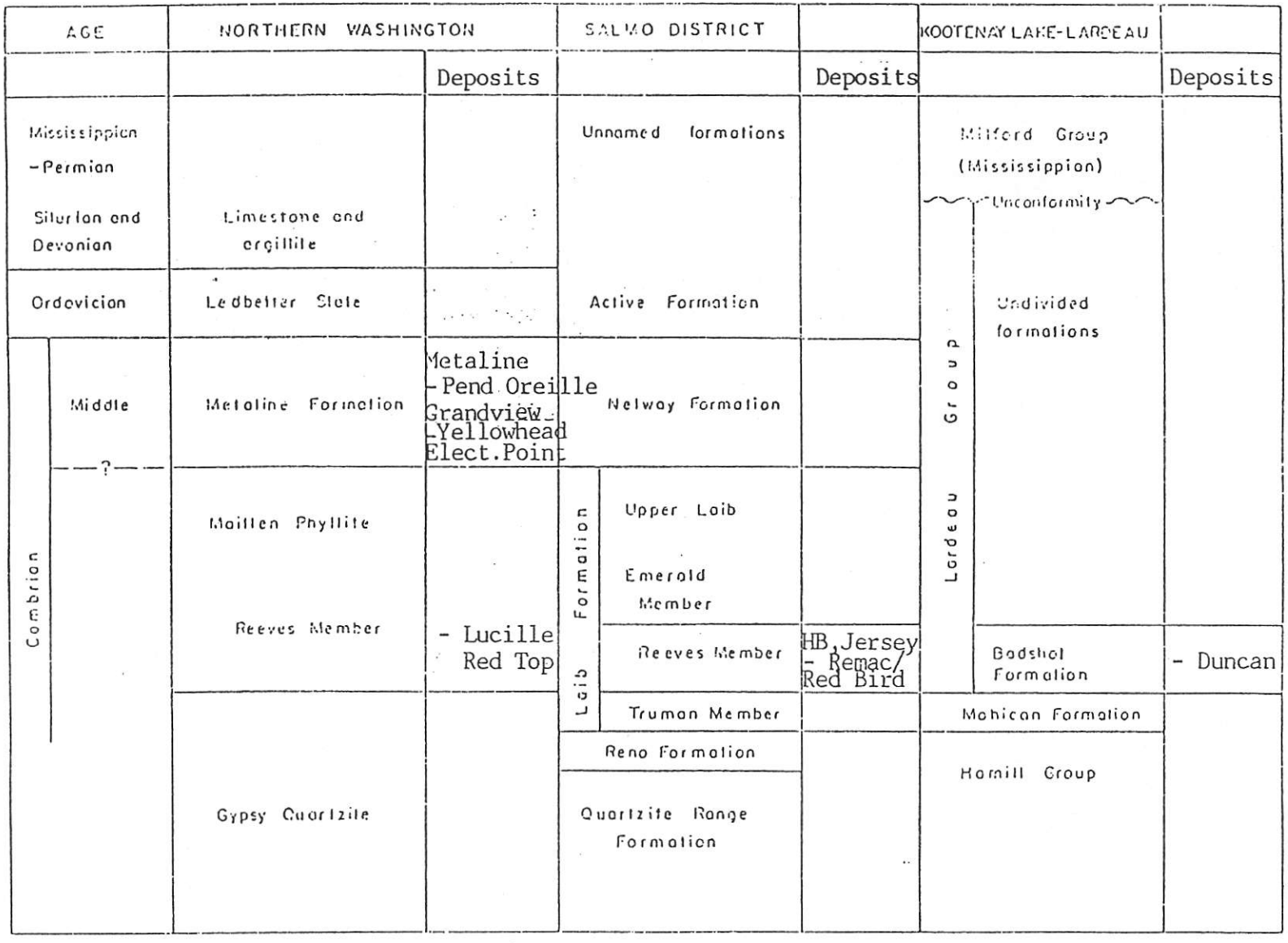


Figure 5: Stratigraphy and Mineral Deposits
of the Kootenay Arc
(after Yates, 1970; Fyles, 1970)

Lead-Zinc Deposits:

Carbonate-hosted lead-zinc deposits of the Kootenay Arc occur in the Reeves Member of the Laib Formation (and its equivalents) and the Nelway Formation (and its equivalents) in the Mine Belt (Figure 3 and 5). The Reeves and its equivalent to the north, the Badshot limestone, also act as a regional stratigraphic marker in the polydeformed Arc terrane (Figures 3, 4 and 5). At least two types of deposits have been recognized in the Mine Belt, stratabound and vein-type (Sangster, 1970). Considerable controversy exists as to whether the stratabound deposits are synsedimentary-exhalative ("SEDEX"), diagenetic replacement, or epigenetic cavity fillings of Mississippi Valley-type ("MVT") origin.

Metallogensis:

Because of space and time limitations, only a brief review of this topic will be presented. From north to south, the major carbonate-hosted lead-zinc deposits of the Kootenay Arc include the Duncan, HB, Jersey, Reeves MacDonald/Red Bird, Pend D'Oreille, Grandview, and Metaline deposits. The Metaline District deposits (Pend D'Oreille, Grandview and Metaline) seem to be the least controversial and are generally accepted to be ""MVT" deposits (Ohle, 1970; Yates, 1970; Addie, 1970; Sangster, 1970). The origin or metallogensis of the Salmo area deposits is less certain. Are these deposits "SEDEX" or tectonically overprinted and modified "MVT" deposits? Early studies of the Salmo deposits suggested an epigenetic replacement model for their formation (Fyles and Hewlitt, 1957 and 1959). On the basis of his detailed studies of the Duncan deposit, (Muraro 1966) concluded that "some of the deposits in northern Washington offer the closest approach to the original nature of all the deposits". Addie (1970) maintained that "the obvious stratigraphic control.....argues for the possibility of syngenetic origin". On the basis of their banded character, interbanded chert + (exhalites?) with euxinic, graphitic carbonates, and position in the central portion of a carbonate basin as opposed to being located at a "shale-out", Sangster (1970) coined the term "Remac-type" deposit for the Salmo area deposits which he considered to form by synsedimentary processes in a deep water, shale-starved, carbonate, basinal environment. MacDonald (1973) suggested a variation on the model of Jackson and Beales (1967) for the origin of the Salmo area ores. Hoy (1982) provides an excellent capsulization of metallogenic arguments for deposits of the Kootenay Arc and suggests "these deposits may span the syngenetic-diagenetic interval and account for the conflicting features of these ores that are characteristic of both stratiform ..... and the so-called "Mississippi Valley type deposit."

Empirical Genetic Considerations:

Whatever their mode of origin, the Salmo area deposits have provided substantial production and are of substantial size (Table 1). In the case of at least the Reeves MacDonald/Red Bird deposit(s), as will be shown in the following section, it is difficult to imagine the extreme continuity of the plunge of the various ore zones arising from a metamorphosed and tectonically-overprinted "MVT" deposit.

+ - Klein (pers. comm., 1991) notes an absence of chert in these deposits and McClaren (pers. comm., 1991) notes an absence of both silica and barite.

Conversely, this plunge and grade continuity would be expected in a dismembered stratiform "SEDEX" or diagenetic replacement deposit. This is an inverse line of reasoning to suggest an exhalative, or diagenetic mode of origin for this deposit. Inspection of Table 1 reveals other interesting comparisons between the Salmo and Metaline area deposits. In general, the middle to upper Cambrian Metaline deposits (Figure 5) have higher Pb/Zn ratios (higher Pb contents) and dramatically lower Ag and Cd contents in keeping with their generally accepted "MVT" lineage. On this basis, it might be suggested the Duncan deposit has metal ratios more akin to the Metaline deposits despite its occurrence in the lower Cambrian Badshot limestone like the other Salmo deposits.

In short, the HB, Jersey and Reeves MacDonald/Red Bird deposits seem to be compositionally distinct from the Metaline and Duncan deposits. It is interesting to note, the Monarch-Kicking Horse deposits near Field, B.C. (east of Kootenay Arc), which are considered to be "MVT" (Sangster, 1970; Hoy, 1982), also have a Pb/Zn ratio of .636 similar to Metaline/Duncan. While these empirical lines of reasoning are not definitive as to deposit origin, they suggest the HB, Jersey and Reeves MacDonald/Red Bird deposits may be more compatible with a syngenetic, or diagenetic, stratiform model of origin similar to that proposed by Sangster (1970).

Table 1: Comparison of Selected Salmo and Metaline Area Carbonate-Hosted Lead-Zinc Deposits
(After Price, 1987; Hoy, 1982)

Salmo Area Deposits

Deposit	Production tonnage	Zn%	Pb%	Pb/Zn	Ag oz/ton	Cd%
Duncan (Reserves)	8,165,000	2.90	2.70	.931	--	--
HB	7,283,000	4.45	0.93	.209	0.120	0.013
Jersey	6,256,000	7.19	1.85	.257	0.096	0.030
Reeves MacDonald (Red/Bird)	7,232,000	3.74	0.98	.262	0.210	0.020

Metaline Area Deposits

Deposit	Production tonnage to 1956	Zn%	Pb%	Pb/Zn	Ag oz/ton	Cd%
Pend D'Oreille	5,451,000	2.58	1.33	.516	0.047	0.002
Grandview	2,348,000	2.96	1.37	.463	0.032	0.003
Metaline	431,500	4.28	1.20	.280	0.022	0.0005
Monarch-Kicking Horse	744,000	8.85	5.63	.636	--	--

Geological Setting of the Reeves MacDonald/ Red Bird Deposit(s)

Stratigraphy:

Within the Mine Belt in the vicinity of the Reeves MacDonald/Red Bird deposit area, lowermost Cambrian quartzites of the Quartzite Range and Reno Formations are succeeded by vari-colored phyllites, limestones and argillites of the Laib

Formation	Member	Sheep Creek Anticline, South Side of South Salmo River: Approximate Thickness (Feet)	Sheep Creek Anticline, South Side of South Salmo River: Lithology	Truman Hill-Emerald Mine Area, Composite Section: Approximate Thickness (Feet)	Truman Hill-Emerald Mine Area, Composite Section: Lithology	Reeves MacDonald Mine Area, Composite Section: Approximate Thickness (Feet)	Reeves MacDonald Mine Area, Composite Section: Lithology
Nelway.		Top not exposed.	Grey dolomite containing distinctive black masses with small white spots.				
		500 (?)	Dark blue-grey fine-grained limestone with thin argillaceous beds.				
Gradational contact.							
Laib.	Upper Laib.	3,000	Grey calcareous phyllite, grey brown and green phyllite; thin calcareous lenses.	Top not exposed.	Grey and brown micaceous quartzite; minor green phyllite, black argillite, and limestone.	Top not exposed.	Green and grey phyllite, grey and brown micaceous quartzite, minor limestone lenses.
	Emerald.		Brown-weathering grey siliceous argillite.	200–300	Black calcareous argillite.	500	Black, crenulated calcareous phyllite.
	Reeves.	450	Grey, poorly banded limestone.	350	Interbanded white grey and black crystalline limestone.	130	Banded grey and white limestone.
	Truman.	350	Green phyllite.	100	Brown skarny calcareous argillite.	60	Green and brown phyllite, white limestone.
			Grey-green and brown phyllite, with calcareous lenses most common near the base.		Brown micaceous argillite.		
					Brown argillite with thin calcareous beds.		
					10–20 feet of white crystalline argillaceous limestone.		
Conformable contact.							
Reno.	Upper Reno.	60	Blocky grey quartzite, of which the upper 30 feet contains coarse calcareous quartzite; cross-bedded.	40–50	Blocky grey quartzite with lenses of calcareous quartzite, micaceous quartzite, and minor limestone.	5–10	Blocky grey quartzite.
	Lower Reno.	560	Grey micaceous quartzite and dark-grey to black phyllite.	500	Grey-brown to grey micaceous quartzite with grey blocky beds near the base	230	Dark-grey micaceous quartzite interbedded with dark-grey to black phyllite.
Conformable contact.							
Quartzite Range.	Upper Nevada.	250	White quartzite beds as much as 2 feet thick.	135	White quartzite, beds less than 1 foot thick.	35	Thin-bedded white quartzite.
	Lower Nevada.	400	Thin-bedded greyish-white quartzite and dark grey-brown micaceous quartzite, some greenish-grey phyllite.	100	Brown micaceous quartzite with greyish-white beds.	100	White grey and brown quartzite interbedded with grey and green phyllite.
						65	Greenish phyllite and grey-brown quartzite.
						20	Interbedded grey and white limestone and greyish-brown phyllite.
						100	Greyish-brown phyllite and quartzite.
	Nugget.	Base not exposed.	Massive white quartzite.	Base not exposed.	Nugget (?) massive white quartzite.	Base not exposed.	Massive white quartzite.

Figure 6: Stratigraphy of the Cambrian Rocks of the Reeves MacDonald/ Red Bird Mine Area (after Fyles and Hewlitt, 1959)

Formation (Figure 6). The Laib Formation is subdivided into the Truman member (green and brown phyllite), the Reeves Member (banded grey and white limestone and dolomite), Emerald Member (black phyllite) and the Upper Laib Member (green and grey phyllite and quartzite) (Fyles and Hewlitt, 1959).

The Reeves MacDonald/Red Bird lead-zinc deposits occur within the Reeves Member. These deposits occur within a distinctive "tweedy" dolomite alteration envelope within the Reeves (Fyles and Hewlitt, 1959; Green, 1954; Fyles, 1970).

Structure:

Lower Cambrian stratigraphy hosting the Reeves MacDonald/Red Bird deposit(s) is folded into a series of first phase isoclinal folds whose axes trend 240° and plunge 50°-55° SW. Axial planes of these folds strike 070° to 080° and dip 50° to 60° S (Fyles and Hewlitt, 1959; Addie, 1970; MacDonald, 1973). Principal among these first phase folds are the Salmo River anticline and Reeves syncline (Figures 7 and 8) which appear to have a direct bearing on the form and distribution of the known lead-zinc deposits.

Two major bedding plane and/or thrust faults (the Emerald and Argillite Faults), appear to complicate the southwestern extension of the Reeves syncline on the Red Bird property (Fyles and Hewlitt, 1959; Vangulf, 1971). New structural models which resolve these apparent problems are considered below.

Geometric Analysis of the Reeves MacDonald/Red Bird Deposit(s):

Four distinct ore zones (Figure 7) were mined at the Reeves MacDonald mine, the Reeves, Annex, Annex West and Point (Red Bird). The Reeves zone occupies the keel of the Reeves syncline+ (Fyles and Hewlitt, 1959; Addie, 1970; MacDonald, 1973) while the Annex and Annex West zones lie on the overturned southern limb of this fold. The Point (Red Bird) zone lies on the upright northern limb. These zones are repeated by roughly north-south striking, normal faults dipping approximately 35° to 45° east. These late stage faults include the #4, O'Donnell, B.L., Reeves, MacDonald, Point and Red Bird. Their effects are shown in Figures 7 and 9. Detailed relations suggest these normal faults are younger than and offset the Argillite Fault (Figure 10).

Restoration of the composite offsets caused by these normal faults shows the ore zones have incredible plunge continuity. In the case of the Reeves zone, a 6,000 to 8,000 foot plunge distance is indicated. Additionally, grade continuity appears good as well, as evidenced by the nearly complete stoping of the sulphide portions of the zones (Hecla, 1977). This continuity would be very unlikely in the case of a classic, cavity infilled "MVT" deposit.

Taken together with the arguments previously given for a "SEDEX" or diagenetic replacement origin for the Reeves MacDonald/Red Bird deposit, it is compelling to suggest the four zones may represent large rods or "megamullions" formed by boudinage of a relatively competent, dolomite enveloped, larger sulphide horizon or stacked sulphide horizons during first phase folding. Dismemberment of a larger, zoned exhalative deposit could give rise to zones (mullions) that have

+ - Klein (pers. comm., 1991) disputes the existence of this fold suggesting the four sulphide zones were originally distinct deposits "feathering out" into the host units.

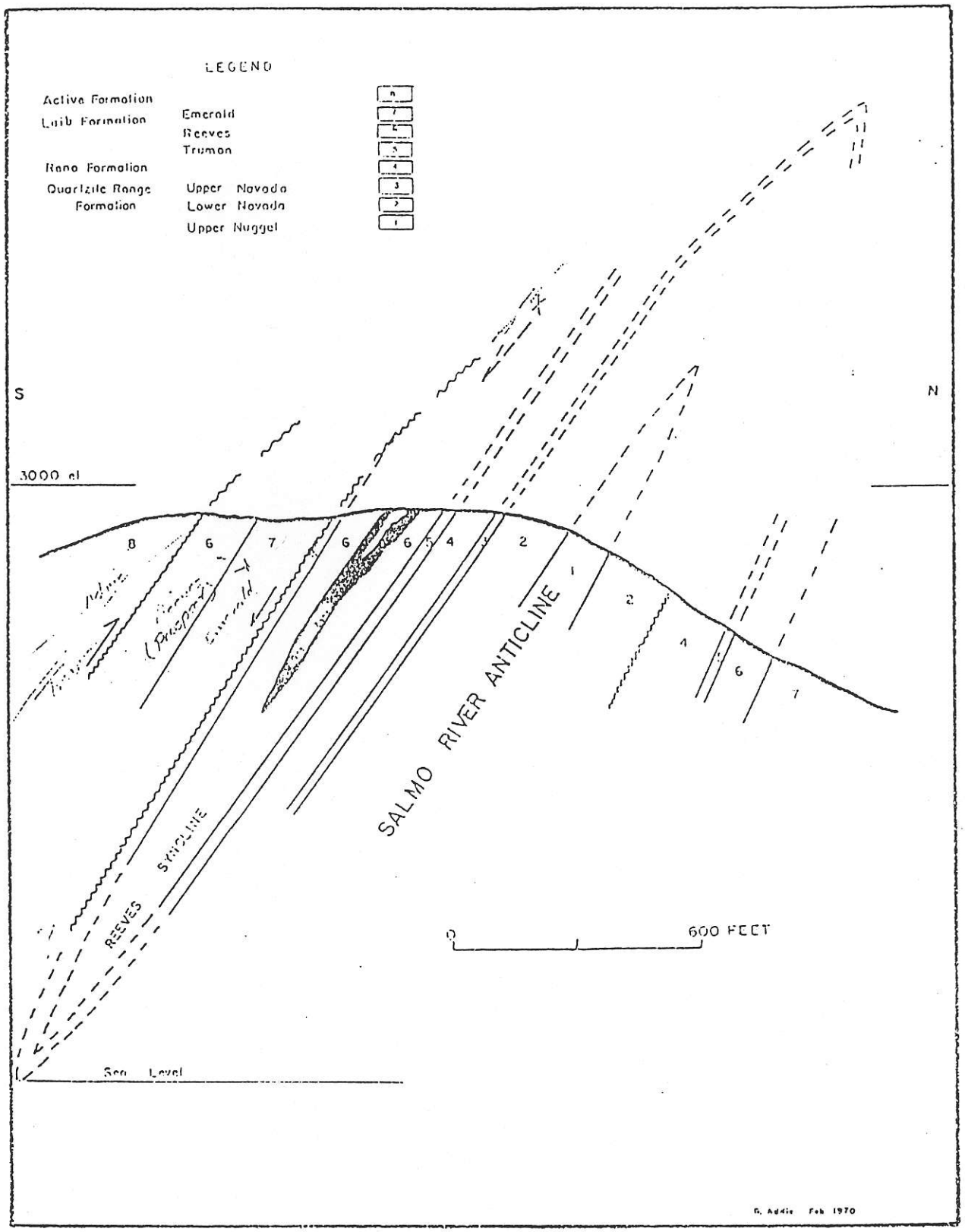


Figure 8 --Diagrammatic north-south section 6000 E., looking west.

distinctive mineralogies, grades and metal ratios as reported by Price (1987), Klein (1988) and Bailes (1989).

On the basis of the preliminary data in Table 2, if the Annex West, Annex and Reeves zones are restored to their inferred, original, contiguous positions a crude zoning pattern emerges.

Table 2: Average In-Place Grades For the Reeves MacDonald Ore Zones (McClaren, pers. comm., 1991)

	Annex West	Annex (bulk) (samples)	Reeves
Pb	5.0%	4.3%	1.6%
Zn	5.0%	12.9%	6.2%
Pb/Zn	1.00	0.33	0.26
Ag	--	3.6 oz/ton	0.5 oz/ton

By analogy to lead-zinc deposits worldwide, the Reeves zone might be interpreted as being a "slice" (megamullion) of the more zinc-rich basal or distal facies, the Annex a "slice" of the main or central facies; and the Annex West a "slice" of the most lead-rich, upper, evolved exhalite facies. Clearly, this is highly speculative.

Several practical considerations stem from this concept. First, it may be possible to "reconstruct" the original deposit and use grade and lithofacies distributions to predict the location of higher grade zones in the dismembered deposit. Secondly, reconstruction of the deposit in three dimensions may lead to an approximation of its long axis orientation relative to the axis of the Reeves syncline thereby revealing further blind drilling targets. It should be kept in mind that the Point/Red Bird zone lies on the north limb of the syncline while the Reeves, Annex and Annex West lie on the south limb. Therefore, the four zones are not truly co-planer as might be suggested by current projections on long section.

Lead-Zinc Zones on the Red Bird Property:

Red Bird Zone

There are three surface showings in the Reeves limestone on the Red Bird property (Figure 7). The main showing, the Red Bird, was explored by Cominco between 1924 to 1929 and between 1944 to 1962 with underground drifting and drilling programs. A strike length of oxide mineralization 600 feet long and 20 feet wide ran 18.5% Zn and 6.5% Pb on the 2,650 level (Hecla, 1977). Uphill, a faulted equivalent of the Red Bird zone, the Beer Bottle zone, was trenched to reveal a 31 foot width of oxide mineralization grading 18.5% Zn and 2.2% Pb (Bailes, 1989). Further uphill beneath the overthrust Active Formation (Argillite fault), another and possibly separate (?) oxide zone is exposed in the No. 4 adit which grades 10.9% Zn across 11.5 feet (Bailes, 1989). While considerable work has been done in the Red Bird showing area, no oxide ore reserves of proven or probable status have been developed nor has any significant sulphide mineralization been found. Nonetheless, a 1,500,000 ton oxide geological resource is indicated but insufficient drilling has been completed to define a reserve estimate. Drifting and drilling have tested a strongly mineralized oxide zone through an underground length of 1,600 feet.

It has been pointed out above that the Red Bird zone is the normal fault offset of the Point zone across the Red Bird fault on the northwest limb of the Reeves syncline (Figure 9). While the entire Red Bird zone is oxidized and may be subject to secondary enrichment, the small tonnage of sulphide ore mined at the Point zone grading about 10% Zn may provide a grade estimate for the sulphide facies equivalent of the Red Bird zone.+

The down plunge sulphide ore potential of the Red Bird zone has been investigated by a predecessor company of Annex Exploration Corp. in two drilling programs which are detailed in reports by Price (1987), Klein (1988) and Bailes (1989). Of the five holes drilled to test this potential (86-2, 86-3, 86-5, 86-6 and 87-2), only 86-5 was successful in hitting the zone (Figure 9 & 10). It returned a mixed oxide and sulphide intercept totalling 59 feet in length. Poor recovery precluded calculation of a meaningful average grade. This intercept is interpreted as being in the oxide/sulphide transition zone. Holes 86-6 and 87-2, below 86-5 intersected "tweedy" dolomite and minor associated sulfides characteristic of the dolomite alteration envelope around sulphide mineralization and it is concluded the Red Bird sulphide zone passes between these holes (Bailes, 1989, Figure 9). If this interpretation is correct, a 1,450,000 ton geological resource of lead-zinc sulphide mineralization is implied below hole 86-5. Continued drill testing of this worthwhile target from surface would be costly requiring 3,500 - 5,000 foot holes. This drilling could be done and it might offer some cost benefits over an underground rehabilitation and drilling program.

Annex and Annex West Zones

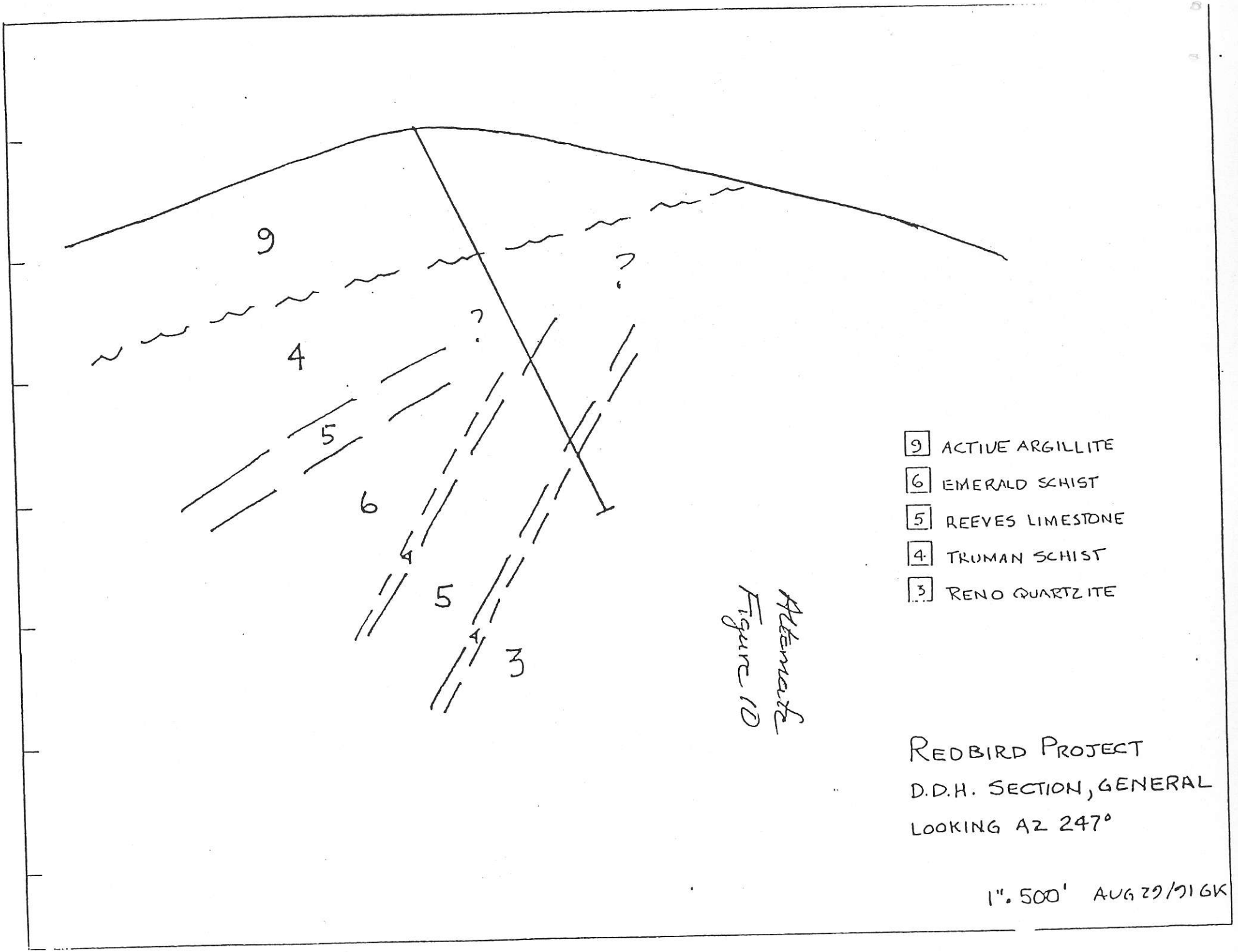
In 1973 and 1974, Reeves MacDonald Mines, under contract with Hecla (the underlying owner of the Red Bird property), advanced their 800 level about 700 feet west into Red Bird ground in search of the Annex zone thought to be offset across the Red Bird fault. Drilling in the offset Annex zone disclosed four separate bands of lead-zinc sulphide mineralization each about 20 feet in width. Ore in the zone averaged 4.18% Zn, 0.12% Pb, 0.56 oz/ton Ag and 0.04% Cd (Hecla, 1977). Intercepts in the four holes indicated a possible reserve above the 800 level of about 850,000 tons of the above grade (Hecla, 1977). If this mineralization is projected to the 240 level (deepest level in the Reeves MacDonald mine), 2,900,000 tons are indicated (Hecla, 1977).

Recent drilling by Annex Exploration Corp. has extended the Reeves MacDonald results to depth toward the 240 level and has conclusively proven that massive sulphide facies of the Annex zone occurs on the Red Bird property (Figures 9 & 11) at grades similar to those mined by Reeves MacDonald (Price, 1987; Klein, 1988; Bailes, 1989). While drilling density is insufficient to define reserves in the Annex zone, an approximate resource of 2,400,000 tons is indicated between the 240 and 800 levels in good agreement with the Hecla estimates. The zone is completely open to depth. Grades in 87-1 (8.0% Zn, 0.88% Pb and 1.6 ounces per ton Ag over 54 feet)* and 88-1 (7.53% Zn, 0.39% Pb and 3.1 ounces per ton Ag over 30 feet) are economically very interesting and significantly improved over the Hecla values cut higher up in the zone. Drilling should be continued to depth.

Little is known about the Annex West zone on the Red Bird property. It's presence is implied between holes 86-6 and 87-3 and a resource of approximately 1,200,000 tons of indeterminate grade is implied. This zone should be drill tested.

+ - An Abermin Resources Ltd. surface character sample of the Point ores ran 15.9% Zn, 0.58% Pb, 0.42 oz/ton Ag and 0.21% Cd

* - Including 26ft of 10% Zn, 1.2% Pb, 2.20z/T Ag and .11% Cd.



9 ACTIVE ARGILLITE
6 EMERALD SCHIST
5 REEVES LIMESTONE
4 TRUMAN SCHIST
3 RENO QUARTZITE

Attached Figure 10

REDBIRD PROJECT
D.D.H. SECTION, GENERAL
LOOKING AZ 247°

1". 500' AUG 29/91 GK

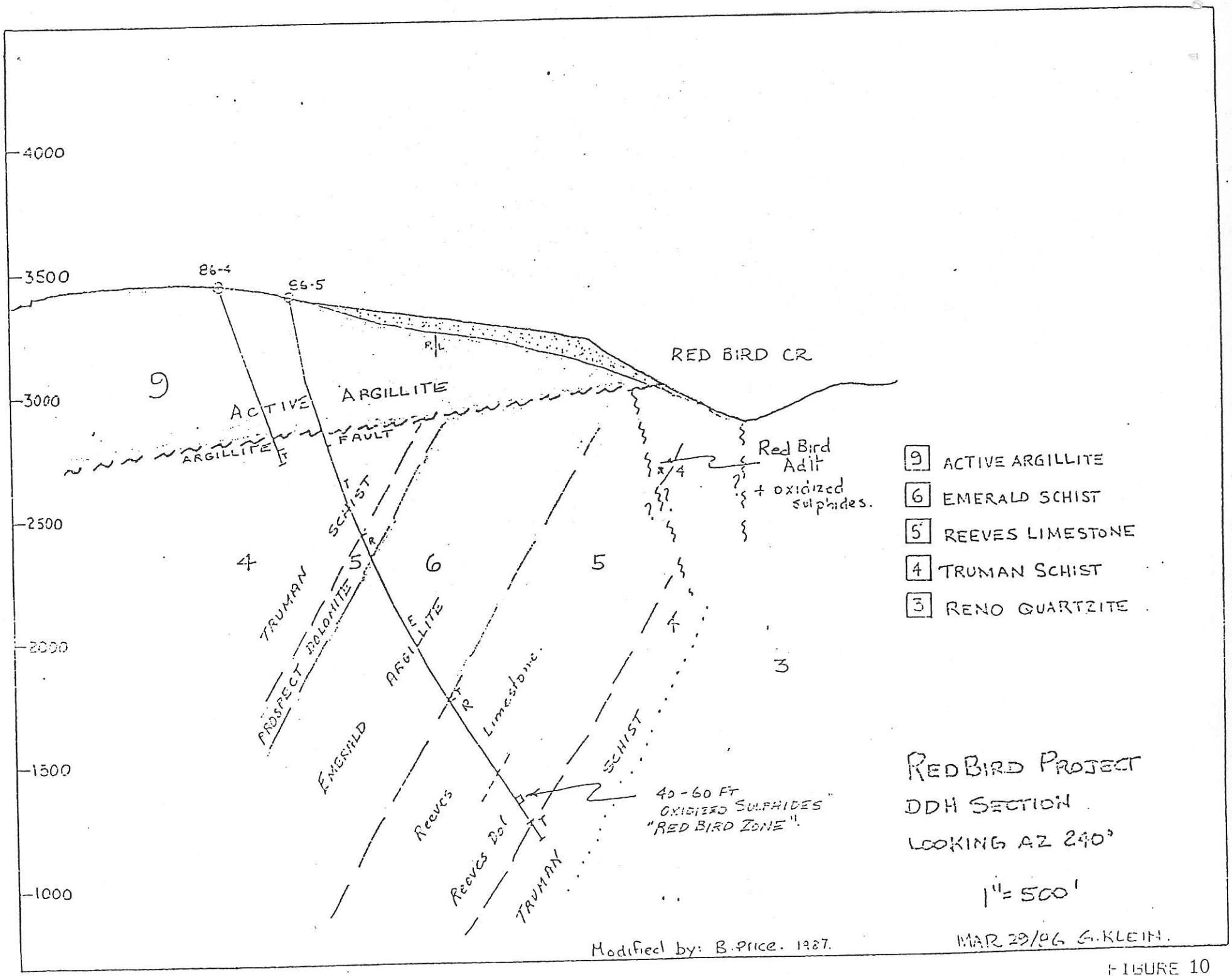
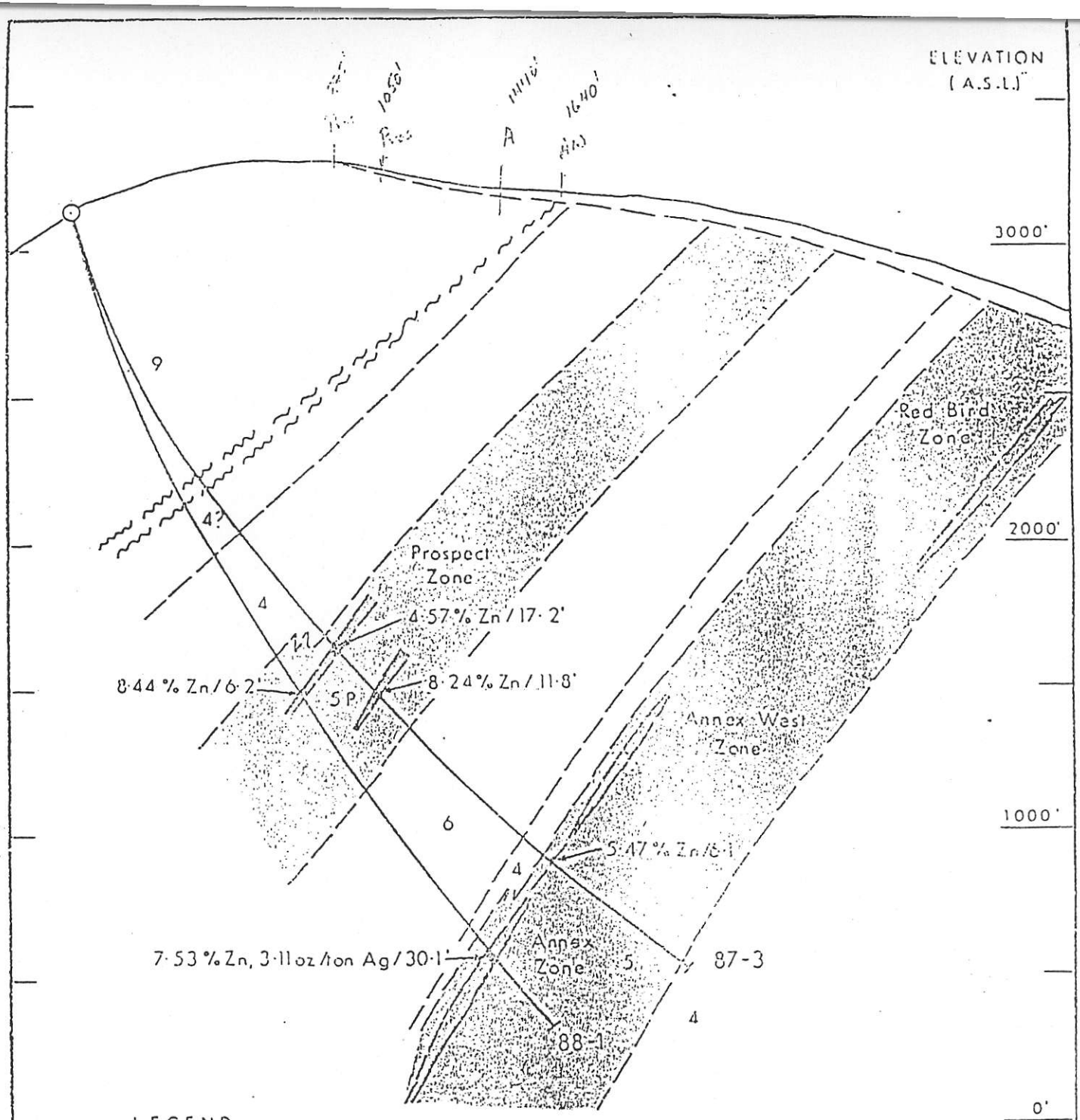

4000
3500
3000
2500
2000
1500
1000
86-4
86-5
RED BIRD CR
9
ACTIVE ARGILLITE
FAULT
ARGILLITE
SCHIST
TRUMAN
PROSPECT DOLOMITE
4
5
6
5
3
EMERALD
ARGILLITE
Limestone
Reeves
Reeves Dol
TRUMAN
SCHIST
Red Bird Adit
+ oxidized sulphides.
40-60 FT OXIDIZED SULPHIDES "RED BIRD ZONE".
9 ACTIVE ARGILLITE
6 EMERALD SCHIST
5 REEVES LIMESTONE
4 TRUMAN SCHIST
3 RENO QUARTZITE
RED BIRD PROJECT
DDH SECTION
LOOKING AZ 240°
1" = 500'
Modified by: B. Price. 1987.
MAR 29/96 G. KLEIN.

FIGURE 10



LEGEND

- 9 Active argillite
- 6 Emerald schist
- 5 Reeves limestone
- SP Prospect dolomite
- 4 Truman schist
- Diamond drill hole
- Fault, major
- Geological contact
- Mineralized intercept

Annex Exploration Corp.

RED BIRD PROJECT
DIAGRAMMATIC SECTION
DDH S 87-3, 88-1
LOOKING WEST

Date: July, 1991 FIGURE 11

After Bailles (1989)

Prospect Zone

The Prospect dolomite, a stratigraphic equivalent of the Reeves limestone, lies in a fault bounded package (Emerald and Argillite faults) on the overturned, southeast limb of the Reeves syncline (Fyles and Hewlitt, 1957 and 1959; Addie, 1970). It has long been known to host lead-zinc mineralization at the Prospect showings and adits southeast of the O'Donnell ore zone (Fyles and Hewlitt, 1959).

Drilling on the Red Bird property (Price, 1987; Klein, 1988; Bailes, 1989) has cut significant mineralization in the Prospect dolomite in drill holes 87-1, 87-3 and 88-1 as summarized in Table 3:

Table 3: Drill Intercepts in the Prospect Dolomite (after Bailes, 1989)

DDH	Intercept	Zn%
87-1	54 feet	2.1%
	5 feet	11.2%
87-3	17 feet	4.6%
	12 feet	8.2%
88-1	6 feet	8.4%

These intercepts in the Prospect are much nearer surface where drill testing is quite practical. Drilling of the Prospect dolomite in the vicinity of these holes should be a high priority.

Exploration Potential:

Extension of the Annex, Annex West and Red Bird zones down plunge affords the most obvious exploration potential on the Red Bird property. Results of the drilling programs outlined above confirm the southwest plunging array of ore zones (megamullions) and indicate an approximate sulphide resource of some 5,000,000 tons down to the 240 level in the Annex, Annex West and Red Bird zones. Given that the Reeves zone continues 6,000 feet down plunge, it is reasonable to suggest a combined sulphide tonnage potential in the above three zones of 10,000,000 tons by simply doubling their plunge lengths. Based on the known and inferred ore zones on Figure 9, the total original tonnage (oxide and sulphide) of the Reeves MacDonald/Red Bird deposit can be estimated at roughly 21,000,000 tons (Appendix 1). If the plunge extensions of the Annex, Annex West and Red Bird and the K zone are included, the tonnage potential increases to about 28,000,000 tons. Clearly, the original deposit before dismemberment (?) was of significant proportions.

It remains to be decided whether surface drilling or underground rehabilitation followed by drilling is the most effective way to explore the plunge extensions of the known zones. To this end, Annex Exploration Corp. commissioned Fluor Daniel Wright (1991) to cost out a re-access and underground exploration program on the Red Bird property through the 1750 level Annex access adit on the Reeves MacDonald mine property. Their estimate came to $2,800,000 including $300,000 for exploration drilling (12,000 ft). If this rehabilitation program is undertaken, drillholes will be shorter and of greater density and long term access to the deposit(s) will be maintained. In addition, exploration headings would be

driven through the sulphide zones allowing direct observation and sampling for metallurgical purposes.

The best near-surface sulphide exploration potential is afforded by the discovery holes in the Prospect dolomite as reviewed above. Since the Prospect Formation lies on the southeast, overturned limb of the Reeves Syncline and has been subjected to the same strain history as the mineralized zones in the syncline, the Prospect mineralization probably occurs in steeply southwest plunging mullions or zones as well. Therefore, a moderate drilling program is recommended to test the up and down plunge extent of the zone centered around holes 87-1, 87-3 and 88-1.

To date, the sulphide exploration strategy on the Red Bird property has been to drill plunging ore zones to depth progressively west along the southwest striking projection of the Reeves limestone beneath the overthrust Active Formation (Klein, 1987; Price, 1988; Bailes, 1989). Inspection of mapped relationships between the Reeves syncline, the Emerald fault and the Argillite fault as shown by Vangulf (1971) and Cominco (1969) strongly suggests that the Reeves syncline is truncated and/or offset by these two faults some three to four thousand feet west southwest of the Beer Bottle surface showings (Cominco, 1969). This relationship was recognized by Fyles and Hewlitt (1959 p. 144) as well.

Recent work by Klein (pers. comm., 1991) has developed important, alternative, geological interpretations for this area. With respect to the Vangulf (1971) interpretation of the geology of the Red Bird deposit area, Klein points out that the siliceous argillite unit mapped in plan and cross section by Vangulf as the Emerald formation in and immediately south of the Red Bird underground workings is, in fact, not Emerald but a distinctive siliceous argillite unit probably within the Reeves formation in the keel of the Reeves Syncline. The significance of this is that the Emerald fault truncating the northwest limb of the Reeves Syncline as shown by Vangulf is not the Emerald fault and that the highly productive, overturned, southeast limb of the Reeves Syncline is probably preserved to the southeast beneath the Active Argillite overthrust affording an excellent "blind" drilling target in this area.

In addition, reconnaissance mapping and prospecting by Klein and others (Klein, pers. comm., 1991) some 10,000 feet west-southwest of the Red Bird workings strongly suggests the Active Argillite overthrust may not be very thick over much of its broad outcrop area. Moreover, the active Argillite may be cut by numerous northwest-southeast trending, east-dipping normal faults of the same set that progressively offset the known deposits with east side down movement resulting in "fensters" or windows through the Active Argillite into the underlying Cambrian section. One such window appears to expose Emerald formation and/or Reeves limestone float on the flanks of the height of land in the central portion of the NOR2 claim (Figures 2 and 9). These observations have profound exploration significance in that the highly productive Reeves limestone (and/or Prospect dolomite) may be more shallowly buried beneath the Active Argillite than the previous Cominco and Vangulf studies suggest. The area between the Red Bird prospect and Church Creek to the southwest should be mapped in sufficient detail to understand these important relationships preparatory to a major exploration drilling program in this area.

In addition to the abundance of sulphide exploration targets, there is great potential to develop the oxide ores of the Red Bird and Reeves MacDonald properties if a treatment scheme can be devised. As shown in Appendix 1 and Figure 9, some 7,000,000 tons of oxide ores, often with highly elevated grades occur on the two properties. Because of their near surface locations, mining by open pit methods followed by solvent extraction-electrowinning (SXEW) or direct smelting (Appendix 2) may present an attractive alternative for early production.

Conclusions and Recommendations

An analysis of the Red Bird portion of the Reeves MacDonald/Red Bird deposit has shown that there is significant potential to easily double the current underground sulphide resource from 5 to 10 million tons with a carefully implemented deep, surface drilling or conventional underground rehabilitation and underground drilling program. If this resource is defined, it would represent over 35% of what is postulated to be a structurally dismembered, carbonate-hosted, sedimentary-exhalative lead-zinc deposit of some 28 million tons prior to mining. The Red Bird portion of the deposit also contains roughly 3 to 4 million tons of oxide mineralization. The oxide plus sulphide resources on the Red Bird property represent about half of this estimated 28 million ton pre-mining tonnage.

It is recommended that a surface drilling program test the up and down plunge of recently discovered sulphide mineralization in the Prospect dolomite in holes 87-1, 87-3 and 88-1 as well as up and down plunge of sulphide mineralization in the Annex and Annex West zones in these same holes (Figure 11). A very careful assessment of the geometry of the raking ore zones must be completed before drilling. Consideration should be given to "piloting" these holes with a Navi Drill or equivalent.

Recent geological modelling of the NOR claims west of the Red Bird deposit has developed a compelling and extremely encouraging rationale to continue deep exploration drilling for sulphide mineralization in the highly productive, overturned, southeast limb of the Reeves Syncline beneath an overthrust argillite package in this area. This area should be mapped in detail as a prelude to a major drilling program. The project database should be upgraded and all data compiled on common base maps. Particular effort should be paid to "reviving" the Vangulf (1971) mapping. All drillholes, claim outlines, roads, workings, surface surveys should be compiled and evaluated. A serious investigation of oxide ore extraction techniques should be initiated.

References

Addie, G.G. (1970 a) The Reeves MacDonlad Mine, Nelway, B.C.: Wash. Div. Mines and Geol., Bull. 61, pp. 79-88.

_____ (1970 b) The Metaline District, Pend Oreille Co., WA.: Wash. Div. Mines and Geol., Bull. 61, pp. 69-78.

Bailes, R.J. (1989) Red Bird Project, B.C.: Priv. Rpt. to Golden Eye Minerals Ltd., 5 pp. + figs.

Cominco Staff (1969) Bar Group, Geological Map with Cross and Long Sections: Priv. Doc. 1'=1000'.

Fluor Daniel Wright (1991) Cost Estimate to Re-Access the Annex Mine and Perform Underground Exploration on the Red Bird Property: Priv. Rpt. to Annex Explor. Corp., 9 pp. + figs.

Fyles, J.T. and Hewlitt C.G. (1957) Lead-Zinc Deposits of the Salmo Area, B.C.: Can. Inst. Min., Structural Geol. of Canadian Ore Deposits, v. II, pp. 104 - 110

_____ (1959) Stratigraphy and Structure of the Salmo Lead-Zinc Area: B.C. Dept. Mines Bull. 41, 162 pp. + figs.

Fyles J.T. (1970) Geological setting of the Lead-Zinc Deposits in the Kootenay Lake and Salmo Areas of B.C.: Wash. Div. Mines and Geol., Bull. 61, pp. 45-53.

Green, L.H. (1954) Wall Rock Alteration at Certain Lead-Zinc Replacement Deposits in Limestone, Salmo Map - Area, B.C.: Geol. Surv., Canada, Bull. 29, 37 pp.

Hecla Mining Co. Staff (1977) Report on the Red Bird Lead-Zinc Property, Remac, Nelson M.D., B.C.: Priv. Rpt., 4 pp. + figs.

Hoy, T. (1982) Stratigraphic and Structural Setting of Stratabound Lead-Zinc Deposits in Southeastern B.C.: Can. Inst. Min. Met. Bull., v. 75, no. 84, pp.114 - 134.

Jackson, S.A. and Beales, F.W. (1967) An Aspect of Sedimentary Basin Evolution The Concentration of Mississippi Valley Type ore During Late Stages of Diagenesis: Bull. Can. Pet. Geol., v. 15 pp. 383 - 438.

Klein, G.H. (1988) Red Bird Project, Diamond Drilling Report, Feb. 1987 - Feb. 1988, Nelson M.D., B.C.: Priv. Rpt. to Golden Eye Minerals Ltd., 5 pp. + figs.

MacDonald, A.S. (1973) The Salmo Lead-Zinc Deposits: A Study of Their Deformation and Metamorphic Features, Ph.D. Thesis, Univ. of B.C., 224 pp.

Muraro, T.W. (1966) Metamorphism of Zinc-Lead Deposits in Southeastern British Columbia. In: Tectonic History and Mineral Deposits of the Western Cordillera, Can. Inst. Min. Met. Spec. Vol. 8, pp. 239 - 247.

Ohle, E.L. (1970) Mississippi Valley Type Ore Deposits A General Review: Wash. Div. Mines and Geol., Bull. 61, pp. 5 - 15.

Price, B.J. (1987) Geological Summary, Red Bird Exploration Project, Salmo, B.C.,
Nelson M.D.: Priv. Rpt. to Golden Eye Minerals Ltd., 22 pp. + figs.

Sangster, D.F. (1970) Metallogenesis of Some Canadian Lead-Zinc Deposits in Carbonate Rocks: Proc. Geol. Assoc. Can., v. 22, pp. 27 - 36.

Vangulf Exploration Co., Staff (1971) Reeves MacDonald and Red Bird properties, Surface and Underground Geological Maps with Cross Section: Priv. Docs., 1" = 500' and 1" =100'.

Yates, R.G. (1970) Geological Background of the Metaline and Northport Mining Districts, WA: Wash. Div. and Geol., Bull. 61, pp. 17 - 39.

May 29/92

→ DARYL HAWSON
EQUITY SILVER

RE: RED BIRD ZINC PROJECT

Enclosed are two reports on the Red Bird — one — an overview by Jennings who has captured the potential of the project — and the other one by me which is a summary of work to 88, the last date when any serious work was done.

The RED BIRD property proper is owned by (Hecla), under option to (Annex) Exploration Corp ~~Ltd~~ (formerly Golden Eye Minerals Ltd.), the ~~NOR~~ claims are mine and the TIC claims are owned by Annex.

The NOR and TIC I claims cover ground where faulting, if present as at the Reeves mine, would bring potential ore zones to a relatively shallow depth under the thrusted Active Argillite. Recent mapping and geochem suggest this is the case.

A relatively modest starter program of mapping and geochemistry in the northern contact area of the Active Argillite could lead to the discovery of another mine for that area. New logging activity greatly enhances access.

Larry Klein.