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CYPRUS EXPLORATION CORPORATION LTD
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Date: December 16, 1971

To: C. A. Mark

Ref. 1499-CVL

From: J. G. Simpson

104 P/5

J.G.

Subject: Storie Moly Project - Tonnage and Grade Calculations

I enclose a copy of the New Jersey Zinc report incorporating the 1971 drilling program and showing revised tonnage and grade calculations. As a check Mel Swanson re-calculated the mineralized blocks within the designated pit area using simple geometrical shapes instead of planimetric treatment of curved geological surfaces as favoured by New Jersey Zinc. It should be noted that the pit outline chosen is somewhat arbitrary and, based on an incomplete knowledge of the mineralization, does not constitute an optimum design. The northern pit slope at 55° is somewhat excessive and a standard 45° slope may be required in practice.

The classification used by Swanson was: (a) drill indicated reserves, where the area of lateral influence of a borehole is less than 200 feet, (b) probable reserves, where boreholes indicate a mineralized zone but had poor recovery and good values where core was available, or extrapolation below holes bottoming in good values, and (c) possible reserves, beyond the area of 200 foot lateral influence of any given hole, but on a marked trend with zones of drill indicated reserves.

The following table compares the results of the two calculations within the selected pit area, both of which should be regarded as highly tentative in the light of the patchy data available. A cut-off grade of .07 MoS₂ and the assumption 12 cu. ft. = one short ton, were used in both calculations.

.07

COMPARATIVE VALUES

Tonnage* & Grade** within Proposed Storie Moly Pit

Classification	Cyprus	New Jersey Zinc
Drill indicated ore	37,000,000 @ .120	33,800,000 @ .130
Probable ore	9,000,000 @ .121	16,800,000 @ .108
Possible ore	<u>10,000,000 @ .106</u>	<u>none within pit</u>
Total Ore	56,000,000 @ .118	50,600,000 @ <u>.123</u>
Waste	47,000,000	59,400,000
Total Pit Tonnage	103,000,000 tons	110,000,000 tons
Stripping Ratio Waste to Ore	0.84/1.00	1.14/1.00

.123
.6
 .0738

* Short tons
 ** Grade Values are for MoS₂

Both methods utilised relatively simple calculation methods and the discrepancies between the two sets of figures are well within the expected margin of error. As Ariz used a gross calculation of pit volume to determine waste tonnage Swanson's overall figures might be considered slightly more accurate.

Using either set of figures it is evident that only 50-60 million short tons of reserves with a possible grade of 0.12% MoS₂ can be estimated within the proposed pit outline with the present data. The grade and tonnage will almost certainly be improved by redrilling of areas in which very poor recovery was obtained initially, i. e. EX boreholes 1-14, and some further improvement in overall grade may be anticipated when considering an ore block rather than borehole sections, although this could not realistically be expected to exceed 20%.

The 60 m.s.t. of "possible ore" quoted by Ariz, is given as lying mainly outside the pit area. It is apparent that the mineralized zones dip off to the northwest, so that any expansion of the pit to the north or west

*Should be
 by core size?*

to take in this material would generate prohibitive stripping ratios. However, further possible reserves immediately adjacent to the present pit outline, which might be obtained without affecting the stripping ratio, may be anticipated below the pit bottom and on the south and eastern margins particularly along strike in the C and B ore zones. The south-west extension of the C zone is cut by only one borehole (D.H. 22), which intersected good mineralization in the lower 250' and bottomed in material above cut-off grade. To the north-east BX boreholes 5 and 9, and B.Q. hole D.H. 19, all suffered from very poor core recovery and almost certainly do not reflect a true picture of the ore potential. A feature of this area is the presence of a topographic low or saddle which may coincide with a zone of intensive shearing, which might explain the low core recoveries and also suggest a suitable locus for relatively good mineralization. A conservative total of 26-30 m.s.t. of possible reserves at present outside the pit area could be available as additional reserves without affecting the indicated stripping ratio or potential grade estimates.

The absolute minimum target potential of the Storie deposit is suggested as 50 m.s.t. of .12 MoS₂ at a stripping ratio of about 1:1, which would be entirely within the present pit configuration. Considering the factors outlined above an optimistic but not necessarily maximum potential would be, 80-90 m.s.t. of .15 MoS₂, in a slightly modified pit outline, with a reduced stripping ratio. While even this optimistic estimate does not constitute an orebody at this time considering the location and extant metal price, the Storie deposit must be considered as a valuable mineral deposit, which may well represent a viable mining situation in the future. Factors affecting this would be (a) Cyprus entering the molybdenum market with the Thompson Creek deposit with a requirement for long-term back-up reserves, (b) increase of product price, (c) further improvement of open-pit methods with consequent decrease in mining costs, (d) completion of the railroad at present under construction to Dease Lake and (e) the possibility of higher grade zones being discovered by further work within a logical pit outline.

There is a strong possibility that N.J.Z. would be willing to modify the present agreement so that after a further expenditure of \$100,000 over the next two years, in which the possible and probable reserves might be upgraded to drill indicated reserves, the joint venture project could be allowed to lie dormant until such time that Cyprus consider a deposit of the indicated size and grade could be mined at a profit. This would be possible in that N.J.Z. have virtually clear title to the ground, which is at present in good standing to 1980. If this can be achieved there are good grounds for considering Cyprus may eventually be able to increase its percentage ownership in the venture, and I consider that there is a strong case for a continued exploration effort at this location.

JGS:JF
Enc.

A handwritten signature in dark ink, appearing to read "Thompson", is written over the typed name "JGS:JF". The signature is slanted and written in a cursive style.

NEW JERSEY ZINC EXPLORATION COMPANY (CANADA) LTD.

Cyprus Exploration Corp. Ltd.,
1010 - 510 West Hastings St.,
Vancouver 2, B.C.

Attn: J.B.P. Sawyer.

PLEASE ADDRESS REPLY TO
905 - 525 Seymour St.
Vancouver 2, B.C.

Re: STORIE MOLYBDENITE

The Storie molybdenite property is being submitted as a possible joint venture for further exploration and development. It is located 4 miles south of Cassiar, at an elevation of about 5,000 ft., and is accessible by a four wheel drive or truck road.

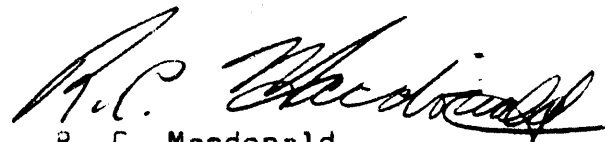
Molybdenite occurs mostly in and along quartz veins and veinlets within the host intrusives near the east side of the Cassiar batholith. We recognize three types of intrusive, all in the quartz-monzonite to quartz feldspar porphyry range. Steep northerly dipping fractures are dominant, and it has been suggested that the most favorable locus for ore is where these fractures intersect the contact area between two certain phases of the intrusive.

Since 1963 our company has done 22,415 ft. of AX & BQ diamond drilling in 48 holes. Most of these are vertical holes spaced at or near the corners of a 400 ft. grid pattern. They explored an area about 2500 ft. by 3500 ft. wherein we estimate some 27 million tons of 0.115% MoS₂ with a waste to ore ratio of 0.88. Our core recovery was variable, and often not very good in the better mineralization. We believe that additional drilling at 200 ft. centers with N core is warranted, and might result in a substantial increase in the indicated overall grade. The 3 north-south vertical sections enclosed show the assay results in 22 of the drill holes, and provide a partial picture of the main mineralized areas,

The mineralized zone is cut off to the south by the valley of Lang Creek, and weakens markedly to the east (towards the nearby sedimentary contact) as well as to the west. It is still open to the northwest for possible further exploration, as well as at depth below 500 to 700 ft. The drill sites are readily accessible by trucks or dozer in this gently sloping saddle area. A drill camp and good water supply are available within the drill area and generally within sight of each hole.

Our total expenditures to date on this prospect have been about \$400,000. We are suggesting a joint venturer should spend an equal amount over a period of years to acquire 50% of our 95% interest. The new participant could withdraw at any time without retaining any interest, but the minimum commitment for participation is an expenditure of \$50,000. during 1971 on drilling and/or tunnel work.

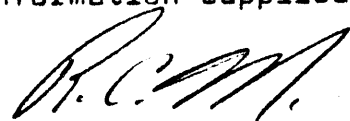
Would you please advise us of your possible interest at your earliest convenience so we may submit this same proposition to another party if you don't wish to participate.



R. C. Macdonald
Assistant Manager

P.S.

We would be happy to discuss this proposition and property with you in more detail if you give us a firm indication of serious interest and intent. If you don't have such interest would you please be good enough to return the maps & sections to us, and hold the information supplied as confidential.



R. C. Macdonald

STORIE MOLY PROSPECT

SUMMARY OF DISCUSSION WITH J. ARIZ (Project Geologist-
New Jersey Zinc)

INTRODUCTION

On the basis of data submitted there did not seem to be the kind of potential in this prospect which would be of interest to Cyprus. However, it was felt that a discussion with the project geologist might clarify several areas of doubt.

DRILLING AND ASSAY DATA

It was established that all boreholes and borehole data south of line 52N was carried out with BX equipment and that average overall recovery in boreholes with mineralized sections was 33% only as opposed to BQ sections to the north of the line which averaged 85% overall recovery with 70% in mineralized sections.

Sludge samples were only taken on BQ holes and these, using a somewhat inefficient spiral settling device. Only sections showing estimable molybdenite were assayed.

The usual difficulty in obtaining consistent and precise molybdenum assays was experienced and results from three laboratories varied widely. From descriptions of splitting and crushing procedures, it seems likely that pulps were never properly ground to a suitably small mesh size before splits were taken. No tests were made for either possible deleterious material such as lead or for credits in precious metals, bismuth, etc., which is commonly associated with molybdenum and base metals in the general area.

TONNAGE AND GRADE CALCULATIONS

Tonnage Calculations were based on observed and extrapolated data from surface and borehole geology in which an ore band concept was utilized. Data from both BX and BQ drilling was used in calculations and no credit given for sludge assays obtained in the BQ drilling.

A minimum 27 m.s.t. containing 0.115% MoS₂ was estimated within the open pit limits shown, with a waste to ore ratio of 1:0.88. Ariz believes that a best estimate for the mineralized area outlined by drilling and assuming improved grades from NQ drilling would be in the order of 65 m.s.t. at 0.15% MoS₂, with a probability of extensions into the undrilled area, a total of up to 10 m.s.t. at the same grade could be considered.

*only include
at all*

good!

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.6

.090*

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GENERAL OBSERVATIONS ON GEOLOGY

The general geological observations as to dip of structures, etc., appear valid. It is considered by Ariz that the down plunge extension of the antiformal crest zone to the northwest, in which the major mineralization has been located to date, is most prospective outside of the area already delineated by drilling. This would be complimented by a sharp drop in slope in this direction. Similarly, the relatively poorly explored southern half of the drilled area could produce vastly better grades and tonnage with some room for lateral extension to the west. These observations appear to be reasonable.

A leached zone to 100' depth was apparent both from a visual inspection of the core and from assay results.

OTHER FACTORS

The area is prospective for molybdenum with occurrences being investigated both north and south of the Storie deposit, and further mineralization occurs at the southern end of a late porphyry stock, within the Storie claim area. The proposed railway via Dease Lake some thirty miles to the east, and a possible spur to Cassiar will improve the logistics of any orebody outlined.

PROPOSED DIAMOND DRILLING

Ariz proposes 7 boreholes totalling about 5,000' of NQ drilling to test the possibility of increased grade and tonnage in the main mineralized area. An inspection of the sections indicates that with the possible exception of DDH #54, the locations are well chosen.

Suggested drilling order based on accessibility and relative value of data is as follows:-

- (a) DDH 49 and 50 (See sections 22E and 26E)
- (b) DDH 52 and 53 (Mainly to verify grade and width of known mineralized zones)
- (c) DDH 51 (To test extension of ore zone to west)
- (d) DDH 55 (To test area previously considered as waste on basis of insufficient data)

Rather than DDH 54 as shown, a couple of wildcat holes to depth on the northwest extension of the axial structure would probably be more profitable. All holes should be vertical and at least 1,000' in depth.

SUMMARY AND CONCLUSIONS

Considering the above points, there appears to be a fair possibility of 100 m.s.t. grading 0.15 MoS₂ or better within and

extending from the main area of mineralization so far indicated by New Jersey Zinc. A total of 5-6,000 ft. of NQ drilling combined with a reappraisal of previous results by comparative methods should be sufficient to substantiate this possibility or otherwise within a single season.

Testing of existing samples for possible deleterious and beneficial elements should be undertaken before any further work is carried out. Field work for 1971 should include provision for detailed mapping, sampling and possibly one or two exploratory holes of 500' length in the south porphyry showing not yet investigated.

Handwritten signature inside an oval:
Glen Simpson

Handwritten signature below the oval:
Glen Simpson