# KERR ADDISON MINES LIMITED

### (FOR INTER-OFFICE USE ONLY)

To P.M. Kavanagh     From W.M. Sirola     **820048**

B.C. MOLYBDENITE PROPERTY
Subject Alice Arm, B.C.     Date February 2, 1971.

If I read the Northern Miner Handbook correctly, there would now be 80,000,000 tons averaging less than 0.23% $MOS_2$. When John Lund and I visited the property on June 18, 1969, the estimate of grade we got from Eldon Bray, the mine Geologist, was 0.20% $MOS_2$, but they were only talking about 40,000,000 tons. Presumably, additional drilling that year has virtually doubled the tonnage.

The four ore zones occur in a donut shaped ring at the contact of a quartz monzonite porphyry which intrudes quartz-diorite. The diorite in turn is surrounded by hornfelsed argillite. The highest grades of molybdenite occur where northeast trending swarms of quartz veins are found. The width of the ore zones in plan is approximately 250 feet. The intrusive is heavily altered adjacent to fault zones.

The quartz monzonite porphyry contains sufficient magnetite to be anomalous in contrast with the argillites.

In keeping with the rumored lead problem in the concentrates, galena and minor sphalerite are conspicuous in the open pit.

The original find was made in the bed of Lime Creek which cuts through part of the ore zone, and both fresh molybdenite and yellow molybdic oxide are visible in sufficient quantity to make the prospect attractive.

Probably the tonnages and grades at Adanac and B.C. Molybdenite are comparable, but of course the environments are quite different. It is rather surprising, in view of the reserves at B.C. Molybdenite, that they would have designed a 6,000 ton per day plant.

W.M. Sirola.

WMS/jm     W.M. Sirola.

103P/06

KERR ADDISON MINES LIMITED
44 KING STREET WEST
TORONTO 1, ONTARIO

**MEMORANDUM**                                                    March 31, 1971

**TO:**      Mr. J. H. Stovel

**FROM:**    P. M. Kavanagh

### B.C. Molybdenum

Last Friday, March 26th, I gave the following request by phone to Mr. Bill Dow's secretary at Ritchie Developments:

"We would like one 25 lb. sample of molybdenite concentrate containing not less than 0.24% Pb to be delivered to Britton Research in Vancouver and a similar sample to be air-expressed to the Noranda Research Centre, Hymus Blvd., Pointe Claire, Quebec to the attention of Dr. W. H. Gauvin."

On Monday I phoned Bill Dow who advised that he had already arranged for the samples.   I then phoned Lyall Ames who said that he would get in touch with both Britton and Noranda Research.

Paul M. Kavanagh

PMK:lfr

cc:  L. Ames

# KERR ADDISON MINES LIMITED
### (FOR INTER-OFFICE USE ONLY)

To  P.M. Kavanagh                    From  W.M. Sirola

Subject  B.C. Molybdenite, Alice Arm, B.C.
High Lead Areas in Open Pit                    Date  March 29, 1971.

A study of the lead content of the B.C. Moly ore was apparently made by Dick Woodcock in the early years of the operation, and the only information we have from Woodcock's report is in the form of four crudely pencilled outlines on the 1" = 100' plan map. These outlines were put on the map by John Lund.

By far the largest high lead area (160 to 1,370 ppm Pb) is in the southwest corner of the present pit. To a depth of 500' there could be 8,000,000 tons of ore with a high lead content.

The area may be approximated by drawing a circle of 300' radius using the collar of DDH 16 as a centre. Apparently the lead decreases with depth in this location, but we do not have the details.

A second area may be indicated by drawing a line to the collars of DDH 49 and 50 and then extending the line to the edge of the ore midway between DDH 69-6 and DDH 6. From this point the line runs north 45° east to the inner edge of the ore outline. This area would involve 1,900,000 tons to a depth of 500 feet.

A third area could be approximated by drawing a 150' radius circle about DDH 67-29 on the east edge of the pit. This area would involve 590,000 tons to a depth of 500'.

The fourth area could be approximated by drawing a 100' radius circle around the collar on DDH 67-30. This area would involve 260,000 tons to a depth of 500'.

Total tons of high lead ore to elevation 1,500' would be:

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         8,000,000
         1,900,000
           590,000
           260,000
         ─────────
        10,750,000   tons
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The large high lead area in the southwest corner of the pit appears to coincide with rocks of dioritic composition.

W.M. Sirola.

WMS/jm

# KERR ADDISON MINES LIMITED

### (FOR INTER-OFFICE USE ONLY)

| | | | |
|---|---|---|---|
| *To* | P.M. Kavanagh | *From* | W.M. Sirola |
| *Subject* | B.C. MOLYBDENITE, Alice Arm, B.C. | *Date* | March 29, 1971. |

At your request I have calculated the ore reserves on this property by two methods.

Method One involved taking the ore outline as shown on the plan map and dividing it into ten unequal sections. These sections were then planimetered and a vertical height given to each section in accordance with information derived from north-south and east-west cross sections prepared by B.C. Moly. All of the depth estimates were limited to elevation 1,500, which is approximately 500 feet below the present pit bottom or below the collars of the drill holes in the unmined sections.

All of the assays on the B.C. Moly plans are shown only in ranges rather than in actual assay figures. These ranges are:

1. - .000 to .099
2. - .100 to .159
3. - .160 to .239
4. - .240 to .319
5. - > .320

The calculations below include everything in categories 3 to 5, or .160 to > .320.

| Area | Square Footage | Volume | Tons |
|---|---|---|---|
| 1 | 126,500 | 63,400,000 | 5,275,000 |
| 2 | 197,000 | 98,500,000 | 8,200,000 |
| 3 | 147,000 | 73,500,000 | 6,100,000 |
| 4 | 61,350 | 25,000,000 | 2,080,000 |
| 5 | 100,800 | 50,500,000 | 4,200,000 |
| 6 | 287,500 | 144,500,000 | 12,050,000 |
| 7 | 173,500 | 86,750,000 | 7,240,000 |
| 8 | 99,100 | 49,500,000 | 4,140,000 |
| 9 | 145,000 | 72,500,000 | 6,040,000 |
| 10 | 164,000 | 82,000,000 | 6,825,000 |
| Totals | 1,501,750 | 746,150,000 | 62,150,000 |

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# KERR ADDISON MINES LIMITED

### (FOR INTER-OFFICE USE ONLY)

To    P.M. Kavanagh        *From*  W.M. Sirola

Subject    B.C. Molybdenite – PAGE TWO      *Date*  March 29, 1971.

The second tonnage calculation was made from the B.C. Moly vertical sections, the results are as follows:

| Section | Area | Width | Volume | Tons |
|---|---|---|---|---|
| E103,800 | 800 X 500 | 50' | 20,000,000 | 1,670,000 |
| E104,000 | 1,000 X 500 | 200' | 100,000,000 | 8,325,000 |
| E104,200 | 1,200 X 500 | 200' | 120,000,000 | 10,000,000 |
| E104,400 | 150 X 500<br>400 X 500<br>300 X 300 | 200' | 73,000,000 | 6,075,000 |
| E104,600 | 250 X 600<br>400 X 400 | 200' | 62,000,000 | 5,160,000 |
| E104,800 | 150 X 450<br>200 X 350 | 200' | 29,900,000 | 2,490,000 |
| E105,000 | 200 X 400<br>200 X 300 | 200' | 28,000,000 | 2,330,000 |
| E105,200 | 300 X 500<br>300 X 350 | 200' | 51,000,000 | 4,250,000 |
| E105,400 | 300 X 450<br>300 X 400 | 200' | 51,000,000 | 4,250,000 |
| E105,600 | 450 X 550<br>400 X 450 | 200' | 85,560,000 | 7,125,000 |
| E105,800 | 300 X 550<br>350 X 500 | 200' | 68,000,000 | 5,640,000 |
| E106,000 | 700 X 700 | 100' | 49,000,000 | 4,075,000 |
| E of 106,000 | 300 X 500<br>100 X 500 | 30'<br>40' | 6,500,000 | 540,000 |
| | | | Total | 61,930,000 |

Again the grade for this tonnage is in the range of 0.16% $MoS_2$ to > 0.320%.

*Bill*

W.M. Sirola.

WMS/jm

# KERR ADDISON MINES LIMITED
## (FOR INTER-OFFICE USE ONLY)

To........Mr. J. H. Stovel.............................. From............Peter Stym..............................

Subject......Appropriation of B.C. Moly from Kennecott by............Date........**April 2, 1971**............
Kerr Addison Mines Limited

Attached hereto are shown the economics of appropriating B.C. Moly with a capital outlay by Kerr Addison amounting to $8,700,000 at the outset and a projected 7000 tons per day, 8000 tons per day, and 9000 tons per day treatment.

The operating costs shown for each of the three cases include a leaching cost of $.07 per ton.

For the 7000 and 8000-ton a day plant, the operating costs shown are to be considered very close to what we can expect from our observations at site. For the 9000-ton a day plant, the costs shown are slightly higher than can be anticipated but they were left, however, unchanged.

A 5% dilution factor is utilized in arriving at the average grade provision. The mineable reserves, it should be noted, have been increased by 3,000,000 tons over the projected economical pit calculated by engineers at site; 1,500,000 tons is accountable by dilution, 1,500,000 tons is additional tonnage that it is anticipated can be mined with an unchanged waste-to-ore ratio.

I inadvertently went through almost the whole exercise with an original outlay of $8,700,000 before it was realized that $8,800,000 was the final consideration. The former figure was left, as a result, unchanged for this exercise.

The rest of the analysis shown, I believe, is self-explanatory.

As you can see, it is crucial to determine accurately what is the optimum maximum treatment of the present plant with a balanced processing of the west and east pit ores, amounting to roughly 58% and 42% of the volumes respectively from our planimeter exercise.