

November 5, 1982

Preliminary Grum Ore Reserve CalculationOpen Pit Reserve ("Olk Pit)

	<u>Tonnes</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Ag</u>
Calculated:				
Sec. 62-80	14,092,994	3.66	6.24	62
Estimated:				
Sec. 82 (pending S.G.'s)	925,000	2.50	4.25	50
Guesstimated:				
Sec. 84-86 (pending final cross section, S.G.'s)	500,000	2.30	4.20	50
	<u>15,517,994</u>	<u>3.55</u>	<u>6.06</u>	<u>61</u>

Stripping Ratio (volumes calculated Sec. 58-82, estimated Sec. 84-90)

$$\frac{\text{Total waste vol. m}^3}{\text{tonnes ore}} = \frac{45,923,306}{15,517,994} = 2.96 \text{ Bm}^3/\text{tonne}$$

Note: Tonnages are undiluted open pit reserves with a 4% combined Pb+Zn mining cut-off grade.

Underground Mining Reserve (Sec. 70-82)

	<u>Tonnes</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Ag</u>
Upper Panel	1,915,139	5.09	9.26	88
Lower Panel	3,632,158	4.30	7.25	75
Upper + Lower Panels	5,547,297	4.57	7.94	79

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December 1, 1982

Grum Reserve Estimate - Underground Mining; Secs. 62W - 86W

Note: - Tonnage and grade are undiluted, with an 8% combined Pb+Zn mining cut-off grade and with 100% mining extraction.

- Assay blocks in the underground mining reserve are shown on the attached, coloured, section by section assay block/grade/S.G. tabulations and also on the corresponding coloured assay block cross-section maps.
- S.G.'s are estimated from ore facies for Sections 82W - 86W. Actual values will be available by year end.
- "Underground Reserve" and "Open Pit Reserve (Olk Pit)" are not additive. Much of the calculated underground minable reserve falls within the plotted limits of the "Olk Pit" (i.e. 4,900,000 tonnes @ 4.72% Pb, 8.62% Zn, 81 gms/MT Ag within pit limits).

	<u>Tonnes</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Ag</u>
A. Upper Panel, Sec. 70-82W (yellow)	1,915,139	5.09	9.26	88
Lower Panel, Sec. 70-86W (green)	<u>4,186,130</u>	4.22	7.19	74
Upper + Lower Panels	6,101,269	4.49	7.84	78
B. Sec. 62-68 East Extension to Upper/Lower Panel (orange)	956,046	5.35	10.03	89
C. Section 70-86W (orange)	2,480,851	4.10	7.60	72
D. Section 64-70W "Upright Panel" (orange stripe)	<u>1,422,073</u>	5.09	6.37	78
TOTAL	10,960,239	4.55	7.79	78

If the highest grade "plums" (attached tabulation) are extracted first in the early mining years, as follows:

	2,351,266	5.72	10.80	98
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then the tonnage/grade of the remaining underground reserve is:

	8,608,973	4.23	6.97	73
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Attach.

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December 6, 1982

Grum Reserve Estimate - "01k Pit" Reserve

Note: Tonnage and grade are undiluted, with a 4% Pb+Zn mining cut-off grade.

	<u>Tonnes</u>	<u>Pb %</u>	<u>Zn %</u>	<u>Ag</u>
Calculated: Sec. 62-80	14,092,994	3.66	6.24	62
Estimated: Sec. 82-86 (pending S.G.'s)	2,961,581	2.31	4.23	42
	<u>17,054,575</u>	3.43	5.89	59

$$\text{Stripping Ratio: } \frac{\text{Total waste vol. m}^3}{\text{tonnes ore}} = \frac{49,655,652}{17,054,575}$$

$$= 2.91 \text{ Bm}^3/\text{tonne}$$

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