

MYRA FALLS OPERATION - PRE-MINING GEOLOGICAL RESOURCE ESTIMATES (after Chong et al, 2003) and 1966-2003 PRODUCTION

Deposit	Tonnes(000	s)Gold (g/t)	Silver (g/t)	Copper (%)	Lead (%)	Zinc (%)	Deposit Typ	eTonnes Milled (000s)	Years
Lynx-Myra-P	rice (LMP) Ho	rizon							
Lynx Myra Price	5809.1 1037 380	2.5 3 2.1	90.4 160 73.2	1.6 1 1.4	1 1.5 1.1	7.5 9.5 7.9	Zn-Cu-Pb Zn-Cu-Pb Zn-Cu-Pb	5305 (22%) 1049 (4%)	1966-1993;2000-2003 1972-1981
LMP Total	7226.7	2.6	99.5	1.5	1.1	7.9	Zn-Cu-Pb		
(Average size	e 2408.9 tonne	es)							
H-W Horizon	1								
H-W 43 Block Trumpeter Extension	22137.3 971.4 211.4 1156.2	2.2 2.6 2.4	27 52.8 57.7 28.7	2 1.7 3.4 1.4	0.3 0.5 0.3 0.3	3.7 5.8 3.9 4.5	Zn-Cu Zn-Cu Zn-Cu Zn-Cu	14537 (61%)	1982-2003
Battle Gap Ridge East Ridge West Marshall	5965.3 778 326.5 982.7 1210.4	1.4 2 0.8 2 1.6	53.2 121.3 41.1 71.8 80.3	1.8 2 0.7 0.9 0.5	0.7 1 0.8 0.8 0.6	12.5 13.8 4.7 6.8 5.3	Zn-Cu Zn-Cu Zn-Cu-Pb Zn-Cu-Pb Zn-Cu-Pb	2992 (13%) (includes Gap)	1995-2003
H-W Total	33739.2	2	38.2	1.8	0.4	6.7	Zn-Cu		
(Average size	e 3748.8 tonne	es - 55% large	rthan LMP Hor	rizon deposits)				Com	Production Tonness
Grand Total	40965.9	2.1	49	1.8	0.5	6.1		23883 / 403.2	2. Production Tonnes) 2n 1955,9 (8.2%)

Table 2

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## Measured and Indicated Mineral Resources

As of December 31, 2003 (including Mineral Reserves)

Area S	Status	NSR	Tonnes (000s)	Zinc (%) Copper (%) Lead (%) Gold (g/t) Silver (g/t)					
43 Block M	1easured	\$71	633	5.4	1.6	0.4	1.9	37.4	
Battle		\$104	3,000	11.6	1.4	0.9	1.0	51.8	
Extension		\$67	261	5.4	1.7	0.4	1.2	28.9	
Gap		\$142	515	14.1	2.0	1.0	2.4	129.2	
H-W-Mine		\$76	1,727	5.7	1.6	0.5	2.1	49.5	
S	ub-Total	\$94	6,136	9.2	1.6	0.7	1.6	55.2	
43 Block Ir	ndicated	\$34	150	2.6	0.8	0.3	0.8	18.7	
6-Level		\$69	114	6.9	0.4	1.2	1.6	122.9	
Battle		\$70	372	7.4	0.9	0.7	0.9	56.0	
Extension		\$60	349	4.6	1.5	0.4	0.9	54.4	
Gap		\$114	41	12.5	1.3	1.5	1.5	94.9	
H-W		\$48	1,581	2.7	1.3	0.3	1.8	26.4	
Lynx		\$130	241	11.5	2.0	1.2	3.3	105.0	
Marshall		\$65	589	5.8	0.6	0.8	2.0	98.8	
Price		\$99	399	9.4	1.4	1.3	2.3	74.9	
Ridge-West \$		\$88	416	8.4	1.1	0.9	2.3	76.5	
S	ub-Total	\$67	4,252	5.6	1.1	0.6	1.8	58.2	
Total Measured and Indicated \$83			10,388	7.8	1.4	0.7	1.7	56.4	

(includes Proven and Probable Reserves)

65%= 6752 t M4I

**Inferred Mineral Resources** 

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\$87	11				(8,0)	Silver (g/t)
	11	6.7	1.4	2.0	3.4	69.7
\$61	57	5.9	0.3	0.9	1.8	102.7
\$70	34	9.5	2.2	1.2	1.5	110.9
\$56	440	4.1	1.6	0.4	0.8	36.2
\$83	16	8.4	0.9	1.3	1.7	90.2
\$49	621	4.7	0.4	0.5	1.3	62.8
\$113	0.6	6.1	0.7	1.9	8.9	129.6
\$48	326	4.7	0.7	0.8	0.8	41.1
\$62	567	5.6	0.8	0.7	1.8	68.4
\$90	211	3.9	3.4	0.3	2.4	57.7
\$59	2,284	4.9	1.1	0.6	1.4	57.4
	\$70 \$56 \$83 \$49 \$113 \$48 \$62 \$90	\$70 34 \$56 440 \$83 16 \$49 621 \$113 0.6 \$48 326 \$62 567 \$90 211	\$70 34 9.5 \$56 440 4.1 \$83 16 8.4 \$49 621 4.7 \$113 0.6 6.1 \$48 326 4.7 \$62 567 5.6 \$90 211 3.9	\$70 34 9.5 2.2 \$56 440 4.1 1.6 \$83 16 8.4 0.9 \$49 621 4.7 0.4 \$113 0.6 6.1 0.7 \$48 326 4.7 0.7 \$62 567 5.6 0.8 \$90 211 3.9 3.4	\$70 34 9.5 2.2 1.2 \$56 440 4.1 1.6 0.4 \$83 16 8.4 0.9 1.3 \$49 621 4.7 0.4 0.5 \$113 0.6 6.1 0.7 1.9 \$48 326 4.7 0.7 0.8 \$62 567 5.6 0.8 0.7 \$90 211 3.9 3.4 0.3	\$70 34 9.5 2.2 1.2 1.5 \$56 440 4.1 1.6 0.4 0.8 \$83 16 8.4 0.9 1.3 1.7 \$49 621 4.7 0.4 0.5 1.3 \$113 0.6 6.1 0.7 1.9 8.9 \$48 326 4.7 0.7 0.8 0.8 \$62 567 5.6 0.8 0.7 1.8 \$90 211 3.9 3.4 0.3 2.4

Inferred. 50 % = 1142 t.

Mineral reserves, as reported in Table 15-3 below, comprise mineralized areas which:

(a) have been drilled and/or otherwise sampled to the knowledge level of measured or indicated resources:

(b) are considered accessible and extractable from currently-active mine workings and are included in the current mining plan; and -Ch45Honne

(c) have an NSR value equal to or exceeding a predetermined cut-off value.

A separate extraction factor and dilution rate is applied to each mining area to calculate mineral reserve tonnages and grades. The result is regarded as a mineable mineral reserve with proven and probable status.

(Deluted + owness + deluted grades)

**Mineral Reserves** 

As of December 31, 2003

Area S	Status	Extraction Factor	Dilution	Diluted Tonnes(000s)	NSR	Zinc(%)	Copper(%)	Lead(%)	Gold(g/t)	Silver(g/t)
43 Block I	Proven	72%	28%	583	\$55	4.2	1.2	0.3	1.5	29.2
Battle		69%	33%	2,764	\$79	8.8	1.1	0.6	0.8	38.3
Extension		72%	31%	247	\$51	4.1	1.3	0.3	0.9	22.1
Gap		71%	30%	477	\$110	10.8	1.6	0.8	1.8	99.4
H-W-Mine		71%	25%	1,529	\$61	4.7	1.3	0.5	1.7	40.5
Sub-Total P	roven	70%	30%	5,600	\$73	7.2	1.2	0.6	1.2	42.5
43 Block F				106	\$23	1.9	0.5	0.2	0.5	12.7
Battle		60%	31%	291	\$52	5.4	0.7	0.6	0.7	46.9
Extension		72%	31%	330	\$46	3.6	1.1	0.3	0.7	41.6
Gap		15%	30%	8	\$89	8.1	1.6	0.4	0.7	133.2
H-W-Mine		43%	22%	832	\$35	1.9	1.0	0.1	1.4	13.3
Lynx		5%	115%	28	\$68	6.2	1.3	0.6	1.0	53.8
Marshall										
Price		61%	30%	318	\$76	7.5	1.1	1.0	1.5	44.8
Ridge-West		43%	31%	234	\$78	7.6	0.9	0.8	2.0	65.3
Sub-Total P	Probable	52%	29%	2,147	\$50	4.1	1.0	0.4	1.2	33.5
Total Prove & Probable		65%	29%	7,747	67	6.3	1.2	0.5	1.2	40.0

### 15.0 Mineral Resource and Mineral Reserve Estimates

The mineral resource and reserve estimates were prepared by the following employee of the Company under the supervision of Torben Jensen, Vice President, Engineering of Breakwater: F. Bakker, P. Geo, Project Geologist

The mineral resource and mineral reserve estimates have been classified in accordance with the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by the CIM Council on August 20, 2000, that classifies the mineral resources into measured, indicated and inferred categories and mineral reserves into proven and probable categories. Reported mineral reserve and resource estimates are as follows:

### Reported Mineral Reserves and Resources (31 December, 2003)

	<b>Tonnes</b> (000s)	<b>Z</b> n(%)	<b>Cu(%)</b>	Au(g/t)	Ag(g/t)
Proven and Probable Reserves	7,747	6.3	1.2	1.2	40
Measured and Indicated Resources*	10,388	7.8	1.4	1.7	56
Inferred Resources	2,284	4.9	1.1	1.4	57

<sup>\*</sup>Measured and Indicated Resources include Proven and Probable Reserves.

The mineral reserve and resource estimates are developed using the Minesight/Compass (referred to as Medsystem in previous years) modelling software. Separate block models are maintained for the H-W mine and the Battle-Gap mine. The drill hole databases, from which these models were built, are constantly being updated, and intermediate resources are calculated periodically. The mineral reserves and resources are estimated as at year end and published once per year unless there is a material change in such mineral reserve or resource necessitating additional public disclosure.

The H-W and Battle-Gap block models are oriented along the mine grid and have a block size of five metres north by five metres east by four metres vertically. The grade estimation of blocks is accomplished by an inverse-distance-to-the-third power algorithm. The grade of a given block is estimated using only composites with the same lens code as the block's lens code. The maximum number of composites used to estimate a block is ten, the minimum is two and the maximum number from any one drill hole is three. The search ellipse, whose major and intermediate axes are oriented horizontally, is 50 metres along strike (x direction), 25 metres along the dip plane (y direction), and 15 metres vertically (z direction). Block partials for mineralized lenses, mine openings, and material removed from the mining reserve for technical reasons are determined from cross section boundaries.

The block model mineral resources are classified into measured, indicated and inferred categories based on the distance of a block from its nearest composite:

- Measured = Highest degree of confidence (0-20 percent error in contained metal) a maximum of 15 metres from a given diamond drill hole.
- Indicated = Lower degree of confidence (20-70 percent error in contained metal) a maximum of 30 metres from a given diamond drill hole.
- Inferred = Low confidence (70-100 percent error in contained metal) maximum of 50 metres from a given diamond drill hole.

# 16.0 Additional Requirements for Technical Reports on Development Properties and Production Properties

### 16.1 Mining Operations

Myra Falls currently operates two underground mines: the H-W mine which commenced production in 1985 and the Battle-Gap mine that commenced significant production in 1997. The H-W mine is accessed by a 716 metre deep, six-compartment vertical shaft serviced by a 49 metre high headframe. The shaft is linked to the production areas by 14 kilometres of ramps and lateral development. The Battle-Gap mine is linked to the H-W shaft by a 1.8 kilometre long drift on the 18 level (Fig. 6-1). All men and materials are transported to and from both mines via the H-W shaft.

Mining in the H-W mine is now mainly restricted to the recovery of pillars. Most primary stopes have been mined out and backfilled with cement-stabilised hydraulic backfill material. A recent mine planning reassessment has identified future production opportunities in the H-W mine. The main production method in the H-W mine is sub-level stoping with longhole drilling. Mining in the Battle-Gap zone applies sub-level stoping and drift-and-fill mining techniques according to the ground conditions. Opened in 1997, this mine is still focused on primary production. Hydraulic backfilling is applied here as well. Up to 55 percent of tailings generated by the mill is returned underground as fill material in H-W and Battle-Gap zones. Loaded by rnbber-tired diesel scoop-trams and hauled to ore passes, the blasted material falls by gravity to the Main Haulage Level (24-level). Mineralized material is transported by electric locomotives to the primary jaw crusher located underground on the 25-level in the H-W mine. Trains are loaded and sent to the crusher according to specific tramming schedules designed to even out grade variations. Mineralized material is crushed to less than 150 millimetres (6 inches) in a 1.2 metre by 1.1 metre (48 inch by 42 inch) jaw crusher and hoisted to the surface in two counterbalanced 11.5-tonne-capacity skips to a 100-tonne storage bin in the headframe. From there the mineralized material is transported by a 1,400 metre long conveyor to a 3,600 tonne coarse ore storage bin at the concentrator.

Ground control is achieved by means of rockbolts, screening, shotcreting and tight filling of voids. In the Battle-Gap zone, high rock pressures arising from the mine's location under Mount Phillips, demands vigilance.

The operation currently employs 358 employees. All of the hourly employees are represented by the Canadian Auto Workers Union – Local 3019. The collective agreement was a seven-year contract expiring on June 30, 2004. The Company is currently in negotiations with the union, regarding the terms of a new collective agreement. The mill operates 24 hours per day, year round. The mine operates on two 10 hour shifts per day. Haulage is run on a continuous basis while other mining activities operate five days per week.

#### 16.2 Recoverability

The Myra Falls mill has been producing zinc and copper/precious metals concentrates for several years. Table 16-1 indicates the recoverability of the various metals.

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