

L. J. MANNING & ASSOCIATES LTD.

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Ruth Vermont
823652

November 20, 1982

Mr. R.A. Dujardin
Kerr Addison Mines Ltd.
703-1112 West Pender Street
Vancouver, B. C. V6E 2S1

Dear Sir:

Subsequent work has revealed two errors in the original estimates dated September 15, 1982:-

(1) The silver head grade required to produce the concentrate grades of silver used in the 15 September study (P:41 & 42) would have been 8.507 o.p.t. in lieu of the reserve grade 6.85 o.p.t. stated on P:6. Thus concentrate grades have been revised downwards from those achieved in the 1981 campaign as follows:- Pb conc. 106 - 84.539, and Zn. conc. from 8.83 - 7.069.

(2) The exchange rate between U.S. and Canadian \$ was not applied in Table 7. Thus Table 8 and the discussion of Table 8 in the skeleton report is incorrect.

Therefore enclosed are revised P:41R, 42R, 43R, 55R, 56R and 57R as well as P:1R, 2R, 3R of the skeleton report. These will correct the historical analysis of the quality of ore developed to date.

In addition, as the Copperline campaign was under the best control of the three attempts to date, the recorded history of that operation, which exclusively mined replacement ore, has been included as appendix 11, P:3R, 57A, 57B, 57C, & 57D. Please note the recoveries, quality of concentrates, and the relationship between mill heads, and replacement reserve grades used in the recent study.

Yours truly

L. J. Manning, P. Eng.

TABLE A

DILUTED RESERVES

TYPE OF ORE	QUANTITY SILVER		LEAD	ZINC	LENGTH	TONS	WIDTH*
	tons	troy oz/T	%	%	feet	feet	feet
VEIN	144 000	9.00	6.30	6.10	1175	123	6
REPLACEMENT	158 000	4.90	3.50	4.90	1175	134	38
TOTAL	302 000	6.85	4.84	5.47	1175	257	23

* Est. only

As can be seen, present reserves are sufficient for only 3.6 years at 84,000 TPY or 1.7 years at 180,000 TPY. Three previous attempts at operating have all been lacking in sufficient capital to provide time to properly establish normal operations. Numerous shortcomings were evidenced in every attempt. At no time have both time and money been available to establish reserves basically beyond those established by 1969 prior to mill construction and the first mining attempt completed in June 1971. The avalanche hazard exhibited in the early years after mill construction in 1970 appears to have been alleviated by the construction in 1981 of avalanche berms. Slides generated by the "normal" heavy snowfall this last winter were deflected west of the old powerhouse site. If sufficient reserves could have been developed in the belt, it has always been felt that the mill might be better relocated in Vowel Creek Valley.

Little regional geology and prospecting have been done since the late 1800's and the 1920's when some underground development openings were driven on both the Ruth Vermont and the McMurdo Creek property located twelve miles to the north. The difficulty of access, plus the short exploration season for the high-country may be blamed for this. Recently, logging roads have opened up much of the country and a Calgary oil company subjected claims south of the Ruth Vermont Mine to modern prospecting methods with some follow up diamond drilling. Work from previous years has exposed various showings of vein and replacement ores. This year's work on these south claims has more firmly established geophysical methods suitable to the area and

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has extended previous showings by these methods so that a comprehensive drill program has been laid out for 1983. On the north side of Vermont Creek several vein deposits and one replacement deposit, though undeveloped, have been knowwn and were reported on years ago.

Unquestionably, the 12 mile long Ruth Vermont belt is capable of containing much larger reserves. The usual experience, if encountering ore in the same geological belt, is to find more material of the same quality, as well, it may be expected to find more deposits of the same general size and configuration.

The present deposit, before the three mining campaigns, contained at least 450,000 tons in a strike length of 1175 feet resulting in 383 tons per strike foot. After allowing for the 148,000 tons mined, 302,000 tons result in 257 tons per foot remaining in the 1175 feet. This ore is contained in two type of intersecting deposits called replacement and vein. Because of its wider width and amenability to lower cost mechanical underground mining, the lower grade replacement reserves have provided most of the mill feed to date. Thus the original deposit may be reconstructed as follows:-

	TONS MILLFEED			Strike Length	Tons Per	
	Mined	Remaining	Original		Strike	Ft. Width*
V	5,000	144,000	149,000	1175	127	6
R	143,000	158,000	301,000		256	51**
Total	148,000	302,000	450,000	1175	383	36

* Assumes 10 cu. ft. per ton

** Assumes square x-sect. to replacement reserves; if 3/4 square, then W=38' and Avg.W.=28'

Because it is felt that metal prices are presently below normal and because it is also felt that history will repeat itself, the mill feed reserves outlined on the Ruth Vermont property have been evaluated on an historical basis.

The results of mining ore of the quality developed at the

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Ruth Vermont Mine have been studied at the operating rates of 250 tons per day at 28 days per month, and at 500TPD at 30 days per month, i.e., at 84,000 and 180,000 tons per year respectively. These studies show, (Table 8), that since World War II continuous operations at the low or the high rates would have provided, respectively, annual operating in 78% and 100% of the 36 years, and annual profits would have averaged \$1,897,000 and \$7,058,000. If during this same period, the mine had been operated intermittently when it was profitable, then after allowing one year's loss of time for start up and one year's loss of profit for shut down, the low and high rates would have been maintained respectively for 80% and 100% of these 36 years; it would have been profitable for 93% and 100% of the operating years, and it would have produced annual profits of \$2,392,000 and \$7,059,000.

Thus, operating with care, the low rate of mining could have earned \$69 million and would have consumed 2,436,000 tons of ore. (Eight times the present reserves).

The higher rate of mining could have earned \$254 million and would have consumed 6,480,000 tons of ore. (21 times the present reserves).

The existing camp is large enough for only the low rate of mining, but the mine and mill are large enough for the higher rate.

Prices and U.S. exchange quoted in C. M. Oliver's letter dated 16 November, 1982 indicate that Ag = 9.48, Pb = 21.3, Zn = 32.1 (All \$U.S.) and that \$ Can.1.00 = \$ U.S. 0.8147; furthermore since August, smelter costs have been increased due to labour increment from \$14.70113 to \$17.62558 per ton. At these prices and under these conditions, the ore has a N.S.R. value of \$80.79 resulting in annual operating profits of Can.\$955,260 at 84,000 t.p.y. and Can.\$5,040,386 at 180,000 t.p.y.

The writer recommends that development of the belt include the following considerations in approximately the following sequence and order of priority.

1. Consumate agreements for most of the showings in the belt including control of Ruth Vermont

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Mine Ltd. N.P.L.

2. Complete development of the underground vein ore, and complete the few repairs necessary to the mill and plant, so that the mine may be operated on fairly short notice during periods of favourable metal markets.

3. Map the underground.

4. Extend and extrapolate surface work and methods completed on the southern claims into the Ruth Vermont Property and consolidate with underground mapping.

5. Extend underground development to enable expansion of existing underground reserves.

6. Increase camp to accomodate 130 men for a 500 TPD crew.

6. Extend surface methods to northern properties.

8. Follow up surface methods with underground development on all properties as soon as targets are delineated.

9. Depending on reserves from the above, move mill to Vowel Creek Valley, and supply with ore from the southern claims all year long, and with ore from all other claims with a summer road haul.

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APPENDIX I - 5A - 1

RUTH VERMONT
LEAD CONCENTRATE (0.06532 TONS/TON ORE MILLED)
AS PER COMINCO LEAD SMELTER QUOTE 6 APRIL, 1982

Pb Conc. Analysis	% H ₂ O	Troy oz		% Cu	% Pb	% Zn	% SiO ₂	% Al ₂ O ₃	% Fe	% CaO	% Sb	% As
(Avg. Lot=88Tons)	6.39	0.43	84.539	1.49	65.0	5.1	2.3	0.6	4.0	0.5	1.10	0.50

Metal Payment for 1 Ton Conc.		Metal Paid for	Credits From Other Metals	Pb,Zn,Ag Equivalents
Pb	= [65 - 0.1(1.49 - 0.75)] 92% = [64.9260]0.92 = 59.73193% = 1194.63840# + 29.8(Cu)			1,224.4384 lb
Zn	= [[(5.1 - 0.7[4.0 - 1.44(5.1)])]] 60% = [5.1]0.60 = 3.06 = 61.20000#			61.2000 lb
[¶ applies if ≥ 0]				
Ag	= [84.539 - (0.2)(1.49)]0.93 = [84.241]93% = 78.34416oz + 0.65(Au)			78.9941 oz
Au	= [0.043] - [0.07(0.043) ≥ 0.03] = 0.043 - 0.030 = 0.013 oz Au = 0.01300 oz			
0.013 oz Au & @ 50:1 = 0.65/oz Ag				
Cu	= (1.49)40% = 0.596% = 11.92# & @ 2.5:1 = 29.8#Pb = 11.92000#			

Prices to be Paid: Pb = Quote (¢/lb) - [10¢ + (0.25)(Quote - 40) ¶] ¶[...] Applies if (Quote - 40¢) ≥ 0
 Zn = Quote (¢/lb) - 15¢
 Ag = Quote (\$/oz) 97%

Charges for 1 ton Concentrate:

Treatment	= \$120.00	\$120.000
Sb + As	= (\$1.75) [(1.1+0.5)-0.5] = 1.75[1.6 - 0.5] = (1.75)(1.1) = 1.9250	1.925
Al ₂ O ₃	= (\$0.90)[0.6-0.5] = 0.90[0.1]	.090
H ₂ O	= \$0.40[6.39 - 8.0] = 0	.000
SiO ₂	= -\$0.27[(.023)(88)-3] = 0	.000
CaO	= -\$0.145[(0.005)(88)-3] = 0	.000
Labour	= 0?	.000
Charges Smelter		122.015
Extra Handling & Freight Lots 38-42 1981 Inc. 1981	= \$1569.28/439.996 = 3.567	3.567
Total Charges by Cominco on Pb Conc.		\$125.582
		=====

APPENDIX 1 - 5A2

RUTH VERMONT
ZINC CONCENTRATE
(0.09045 TONS/TON ORE MILLED)
As Per COMINCO ZINC SMELTER QUOTE
1 MAY, 1982

Zn Conc. Analysis	% H ₂ O	Troy Oz		% Cu	% Pb	% Zn	% Fe	% Cd
Avg Lot = 70 tons	8.02	Au	Ag	0.50	3.3	49.7	8.9	0.38

<u>Metal Payment for 1 Ton Conc.</u>		Metal Paid For	Credits From Other Metals	Pb, Zn, Ag Equivalents
Pb	[3.3] 80% = 2.64%	52.8000#		52.8000 lbs
Zn	[49.7 - (0.15)(8.9)] 85% = [49.56650] 85% = 42.13153%	842.6305#	+13.8000(Cd)	856.4305 lbs
Ag	[7.069 - (0.2)(0.50)] 93% = [6.969] 93%	6.4813 oz		6.4813 oz
Au	[0.0200] - .03	0.0000 oz		
Cd	[0.38 x 20 - 3] 60% = [4.6] 60% = [2.76# x 5 = 13.8 lb Zn]	2.7600#		

<u>Prices To Be Paid</u>	
Pb	= Quote (¢/lb) - 10¢
Zn	= Quote (¢/lb) - 15¢
Ag	= Quote (\$/oz) 97%

Charges For 1 Ton of Concentrate

Treatment	= \$51.00	\$ 51.000
Zn Price	= \$ 3.00 [Zn Price (¢/lb) - 46 (¢/lb)]	
Fe	\$ 1.80 [8.9]	16.020
H ₂ O	\$ 0.50 [8.00 - 6.00] + \$1.50 [8.02 - 8.00] =	1.040
Labour		0.000
Sub Smelter Charges		68.060
Extra Handling and Freight Lots 2 - 6 Incl. 1981 = \$1316.87/348.1910		3.782
Total charges on Zinc Conc.		<u>71.842</u>

APPENDIX 1 - 5B

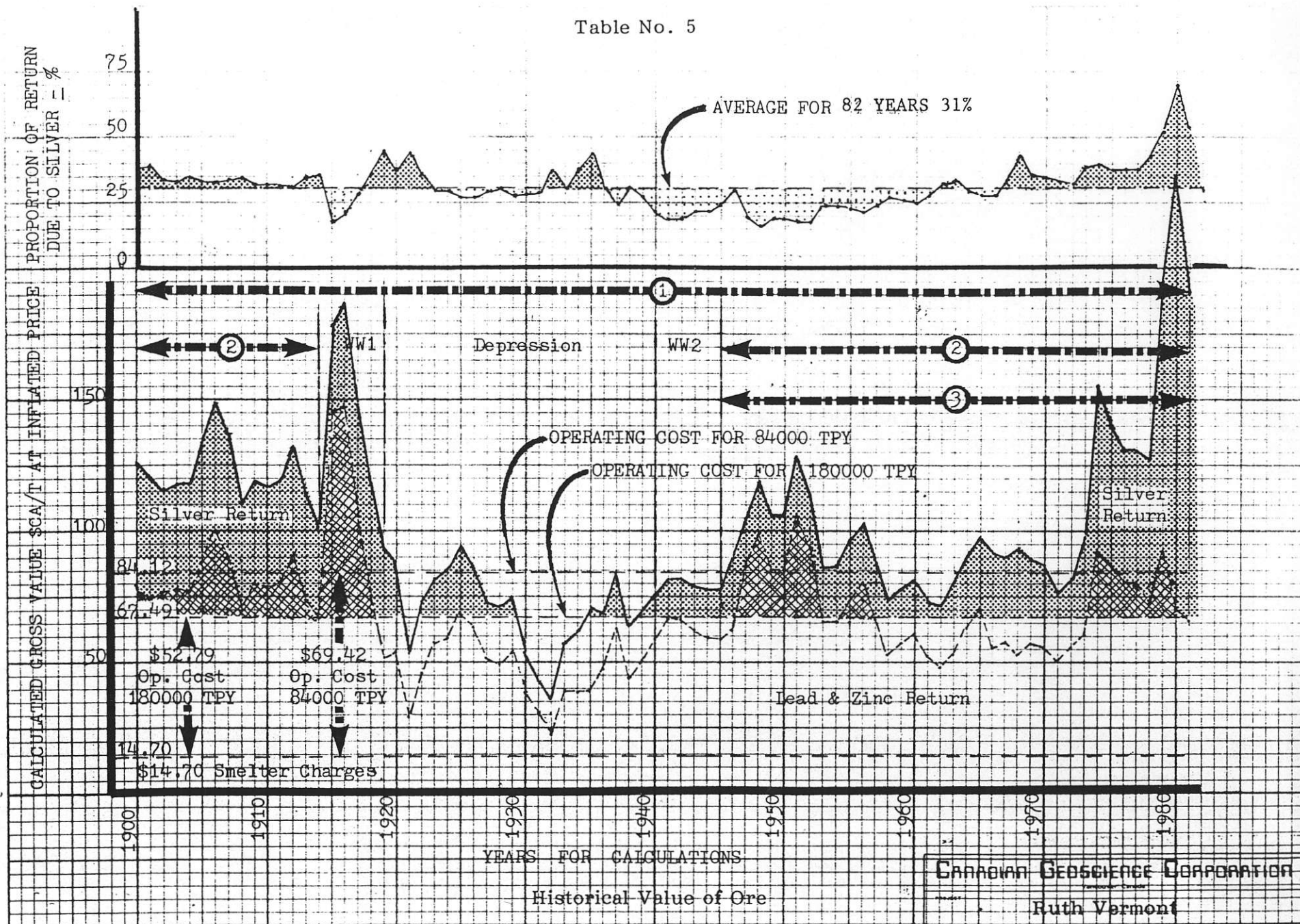
TABLE 4

TOTAL PROBABLE NET SMELTER RETURN

Per Ton Conc.	-----P A Y M E N T S -----			S M E L T E R Charges	Truck Costs
	S I L V E R	L E A D	Z I N C		
Pb Conc.	(78,9941)(0.97) =76.624(Quote)	[1,224.4384] [Quote-[0.10+(0.25)(Quote-40)]]	[61.2000] [Quote-0.15]	125.582	42.00
Zn Conc.	(6.48132oz)(0.97)=6.287(Quote)	[52.8000][Quote-0.10]	[Quote-0.15][856.4305]	71.842	42.00
Per Ton Ore					
0.06532 Pb	5.00510	[79.98032][Quote-[0.10+(0.25)(Q-.40)]	[3.99758][Quote-0.15]	8.20302	2.7344
0.09045 Zn	<u>0.56861</u>	[4.77576][Quote-0.10]	[77.46414][Quote-0.15]	<u>6.49811</u>	<u>3.79890</u>
<u>Total/ton Ore</u>	<u>5.57371(Quote)</u>	<u>[84.75608][Quote-10]-[19.99508][Q-.4]</u> †	<u>[81.46172][Quote-0.15]</u>	<u>14.70113</u>	<u>6.54234</u>

† [19.99508][Q - .4] applies if Pb Quote ≥ 40¢/lb.

Table No. 5



-56R-

APPENDIX I -10

TABLE 8

ANALYSIS OF TABLE NO. 7

DESCRIPTION OF PERIOD	CONTINUOUS OPERATIONS											INTERMITTENT OPERATIONS										
	AGGREGATE											AGGREGATE										
	NO. OF YEARS FOR 100%	OPERATING PROFIT(+) OR LOSS(-) 000'S		NO. OF OPERATING YEARS @				NO. OF YRS WHEN				OPERATING PROFIT OR LOSS 000'S		NO. OF OPERATING YEARS @				NO. OF YRS WHEN				
	84,000TPY	180,000TPY	84,000T	180,000T	NO. YRS	%	NO. YRS	%	NO. YRS	%	NO. YRS	%	84,000TPY	180,000TPY	NO. YRS	%	NO. YRS	%	NO. YRS	%	NO. YRS	%
1981-1900 (1)	+ 82	148,019	510,188	52	63	75	91	5	6	18	22	145,771	508,672	52	93	72	96	5	9	18	24	
TOTAL PERIOD	82	33,111	18,497	30	37	7	9					4,973	5,546	4	7	3	4					
PERIOD AVG.	82	114,908	491,691	82	100	82	100					1,078	503,126	56	100	75	100					
OP. PROFIT/T	-	1,401	5,996									20.44	6,136	82	68	82	91					
1981-1900 EXCLUDING 2 WORLD WARS AND THE DEPRESSION = 1945 - 1915 = 31 YEARS. THIS												LEAVES 51 YEARS OF "NORMAL" METAL MARKETS										
1914-1900 (2)	+ 51	120,864	401,654	43	84	51	100	3	6	15	29	118,705	401,654	42	95	51	100	3	7	15	29	
TOTAL PERIOD	51	4,671	-	8	16	0	0					1,440	-	2	5	0	5					
PERIOD AVG.	51	116,193	401,654	51	100	51	100					117,265	401,654	44	100	51	100					
OP. PROFIT/T	51	2,278	7,876									27.37	7,876	51	86	51	100					
1981-1946 (3)	+ 36	72,968	254,118	28	78	36	100	3	4	9	25	70,809	254,118	27	93	36	100	3	10	9	25	
TOTAL PERIOD	36	4,671	-	8	22	0	0					1,440	-	2	7	0	0					
PERIOD AVG.	36	68,297	254,118	36	100	36	100					69,369	254,118	29	100	36	100					
OP. PROFIT/T	36	1,897	7,059									22.58	7,059	36	81	36	100					
OP. PROFIT/T	-	22.58	39.22									22.94	39.22									

* Intermittent operations are an attempt to duplicate what could have happened with the mill constructed and mine developed on a fully operational standby basis at all times. During periods of operating profit it has been considered that the first year has been lost due to requirements for decision making and start up, and that operations have continued one year into periods of operating loss due to requirements for decision making and shut down.

APPENDIX 11

COPPERLINE RESULTS

FROM

1970 & 1971

MILLING & SMELTING

OPERATIONS

[Replacement Ore Only]

SMELTER RETURNS
ZINC
(British Metal Corp. Contract)

SMELTER RETURNS
ZINC

Table with 45 columns and 48 rows. Columns include MONTH, MINE, WEIGHT (WET, DRY), SHORT DRY TONS, SMELTER ASSAYS (AG, ZN, CD, etc.), METAL PRICES (AG, ZN, CD), SMELTER PRICES (AG, ZN, CD), PAYMENTS (AG, ZN, CD), and DEDUCTIONS (TREATMENT, DUTY, MOISTURE, FREIGHT, NET (U.S.)). Rows cover months from OCT to FEB.

SMELTER RETURNS SUMMARY
LEAD AND ZINC
(British Metal Corp. Contract)

SMELTER RETURNS SUMMARY
LEAD AND ZINC

2-39

MONTH	TONS MILLED		Head Grade			METAL CONTENT OF HEADS			METAL CONTENT OF LEAD CONC.				METAL CONTENT OF ZINC CONC.				TOTAL METAL TO SMELTER				
	WET	DRY	Ag	Pb	Zn	Ag	Pb	Zn	Ag	Pb	Zn	Cd	Ag	Pb	Zn	Cd	Ag	Pb	Zn	Cd	
SEP	5483	5428				17587	278,999	432,069	0.3860	1.403	31,385	2,371	-	-	-	-	0.3860	1.403	31,385	2,371	
OCT	10578	10472				50,669	712,096	957,141	16,6746	37,770	677,172	38,896	8,052	-	-	-	16,6746	45,822	677,172	924,454	
YTD	16061	15900				68,256	991,095	1,389,210	17,0606	39,173	708,557	41,267	8,052	-	-	-	17,0606	47,225	708,557	928,925	
NOV	10567	10461				46,389	684,149	1,006,348	14,1755	24,752	403,424	19,786	7,004	-	-	-	14,1755	31,756	403,424	712,283	
YTD	26628	26361				114,645	1,675,244	2,395,558	31,2361	63,925	1,111,981	61,053	15,056	-	-	-	31,2361	78,981	1,111,981	1,641,108	
DEC	9600	9504				52,177	805,939	1,007,424	18,4153	38,995	638,837	36,046	6,941	-	-	-	18,4153	45,936	638,837	724,188	
YTD	36228	35865				166,822	2,481,183	3,402,982	49,6514	102,920	1,750,818	97,099	21,997	-	-	-	49,6514	124,917	1,750,818	2,367,296	
JAN	14251	14108				71,810	953,701	1,154,034	30,2692	58,137	848,958	71,717	5,954	-	-	-	30,2692	64,091	848,958	1,014,108	
YTD	50479	49973				238,632	3,434,884	4,557,016	79,9206	161,057	2,599,676	168,816	37,951	-	-	-	79,9206	189,008	2,599,676	2,943,404	
FEB	9416	9520				37,509	582,624	889,168	28,1157	51,327	849,090	68,067	17,064	-	-	-	28,1157	68,391	859,456	1,174,559	
YTD	60095	59493				276,141	4,017,508	5,446,184	109,0363	212,384	3,448,766	236,883	45,015	10,366	-	-	108,0363	257,399	3,459,132	4,738,463	
MAR	7414	7340				40,297	669,408	917,500	19,3752	28,524	534,931	39,922	3,08	-	-	-	19,3752	28,832	534,931	81,173	
YTD	67509	66833				314,438	4,686,916	6,363,684	127,4115	240,908	3,985,697	276,405	45,323	10,366	-	-	127,4115	286,231	3,996,563	4,818,636	
APR	7280	7207				49,080	673,134	938,551	23,0030	40,415	615,865	39,140	-	-	-	-	23,0030	40,415	615,865	39,140	
YTD	74789	74040				365,518	5,360,050	7,302,035	150,4145	281,323	4,601,562	315,545	45,323	10,366	-	-	150,4145	326,646	4,611,928	4,857,776	
MAY	14400	14260				64,170	1,180,728	1,773,394	32,8904	57,060	920,223	52,194	-	-	-	-	32,8904	57,060	920,223	52,194	
YTD	89189	88300				429,688	6,540,778	9,075,429	183,3049	338,383	5,521,785	367,739	45,323	10,366	-	-	183,3049	383,706	5,532,151	4,909,970	
JUN	5140	5084				24,900	434,600	575,057	9,6931	7,645	149,994	7,754	-	-	-	-	9,6931	7,645	149,994	7,754	
YTD	94329	93389				452,588	6,975,378	9,650,486	186,9980	346,028	5,671,779	375,495	45,323	10,366	-	-	186,9980	391,351	5,682,145	4,917,726	
JUL	-	-				-	-	-	-	-	-	-	3,062	-	-	-	-	-	-	-	
YTD	94329	93389				452,588	6,975,378	9,650,486	186,9980	346,028	5,671,779	375,495	48,385	10,366	-	-	186,9980	394,353	5,682,145	5,241,23	
AUG	-	-				-	-	-	-	-	-	-	8,577	-	-	-	-	-	-	-	
YTD	94329	93389				452,588	6,975,378	9,650,486	186,9980	346,028	5,671,779	375,495	56,902	10,366	-	-	186,9980	402,930	5,682,145	6,345,547	
SEP	-	-				-	-	-	-	-	-	-	8,357	-	-	-	-	-	-	-	
YTD	94329	93389				452,588	6,975,378	9,650,486	186,9980	346,028	5,671,779	375,495	65,259	10,366	-	-	186,9980	411,287	5,682,145	7,274,515	
OCT	-	-				-	-	-	-	-	-	-	3,557	-	-	-	-	-	-	-	
YTD	94329	93389	4.85	3.73	5.17	452,588	6,975,378	9,650,486	186,9980	346,028	5,671,779	375,495	68,816	10,366	-	-	186,9980	414,844	5,682,145	7,714,016	
						PERCENT RECOVERY	GOLD	SILVER	LEAD	ZINC	CADMIUM										
						NSRV IN GROUND	?	91.7	81.5	79.9	?										
						NSRV IN CONCENTRATES	32.236	1.500	1.0683	1.0417	1.01										
						AVERAGE FREIGHT PER TON CONCENTRATE	359.71 / 12.07 = \$21.40														
						4.90 3.50 4.90 Replacement Grade Used in Sept. '82 Study															