

Mineral Industry Surveys

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ZINC IN AUGUST 2003

Domestic mine production in August, at 62,000 metric tons (t), was about 7% less than in July and about 11% less than in August 2002. Smelter production, at 23,500 t, was about 6% more than in July and about 45% less than in August 2002.

Apparent consumption, at 85,000 t, was slightly lower than in July and about 15% lower than in August 2002.

The Platts Metals Week average monthly composite price for North American Special High Grade zinc decreased by about 1%, to 40.10 cents per pound in August. Compared with August 2002, the average zinc price was about 8% higher.

According to the International Lead and Zinc Study Group (ILZSG), total world zinc production exceeded consumption by about 26,000 t between January and July, compared with 1,000 t during the same period in 2002. World zinc mine production for January-July rose to 5.3 million metric tons (Mt) from 5.1 Mt during the first 7 months in 2002. Of world refined zinc consumption, Western consumption fell to 4.2 Mt. The overall Western zinc market, including imports from east European countries, had a 90,000 t surplus in the first half of 2003, down from a surplus of 190,000 t in the first half of 2002 (Platts Metals Week, 2003b).

At the Annual Conference of Metallurgists held by the Canadian Institute of Mining, Metallurgy and Petroleum in August, Teck Cominco Ltd. unveiled and demonstrated its HydroZinc™ process of producing zinc directly from ore. The new process has 5 main components: bacterial heap leaching, neutralization, solvent extraction, electrowinning, and bleed treatment (Mining Journal, 2003).

One year after its recommissioning, the Broken Hill zinc-lead-silver mine in New South Wales, Australia, has begun demonstrating its potential to deliver substantial profit for Perilya Ltd. In the second half of Perilya's 2003 fiscal year, the mine achieved an after tax profit of more than \$4 million, thereby offsetting earlier losses. In 6 months, Broken Hill processed ore at levels approaching the annual target of 2.4 Mt, and at higher head grades than under the previous ownership of Pasmaenco Ltd. Perilya's successful merger with Ranger Minerals Ltd., the recommissioning of Broken Hill, and the company's extensive property holdings will do much to make

Perilya a significant diversified resource company (Metal-Pages, 2003b§¹).

Arcon International Resources plc of Ireland has identified a measured resource in the vicinity of its Galmoy Mine amounting to 2.3 Mt grading 19.8% zinc, 7.6% lead, and 65 grams per metric ton silver. The company has applied for a licence to develop the deposit. If commercial production commences, Arcon expects to maximize concentrate production by blending a portion of ore from the new deposit with that from remaining reserves to process 750,000 metric tons per year (t/yr) at a blended grade of 13.3% zinc in 2004 and 14.4% zinc in 2005 (Metal-Pages, 2003a§).

Officials at the Portovesme SrL lead and zinc complex in Italy continued negotiations with the local energy supplier and the state government concerning high energy costs. The company remains optimistic that an agreement will be reached to prevent closure of the complex. Portovesme is owned by Swiss trading company Glencore International AG, and it consists of two zinc smelters with a 200,000-t/yr combined capacity and two lead smelters with a total capacity of 120,000 t/yr. Portovesme also may build a dedicated coal-fired power plant (Metal-Pages, 2003c§).

Xstrata plc of Switzerland posted a turnover of \$1.2 billion for the first 6 months of 2003, an increase of 21% compared with the first half of 2002. Its Asturiana de Zinc San Juan de Nieva zinc smelter in Spain produced 234,000 t during the first half of 2003, and it is expected to produce about 479,000 t of zinc in 2003, up from 460,000 t in 2002. Total production of zinc by Xstrata during the first half of 2003 increased to 310,000 t, mainly due to the acquisition of the Nordenham zinc smelter in Germany, which produced 75,800 t of zinc during the first 6 months of 2003. Xstrata now accounts for more than 20% of European zinc metal production and about 6.5% of world production (Platts Metals Week, 2003a).

Hindustan Zinc Ltd. (HZL) of India is in the process of increasing the capacity of its Chanderiya smelter at Chittaurgarh

¹References that include a section twist (§) are found in the Internet References Cited section.

in Rajasthan State from the current 70,000 t/yr to 170,000 t/yr. To feed the additional capacity, production at the HZL's Rampura Agucha Mine will be increased from 2 million metric tons per year (Mt/yr) to 3.75 Mt/yr, and a coal-based power plant of 154 megawatts will also be built near the smelter. The mine expansion likely will be completed by July 2004, followed by completion of the smelter addition by September of 2004. The Chanderiya zinc smelter project is the largest zinc smelter expansion in the history of Indian metallurgy. With the new addition, HZL's total capacity will reach nearly 300,000 t/yr. Because more than 70% of zinc in India is used for galvanizing, the expansion project would effectively complement the ongoing steel expansion projects by India's primary steel producers (Projects Today, 2003).

Update

Compañía Minera Volcán of Peru accepted the financial investment proposal submitted by Glencore International AG of Switzerland. According to the proposal, Volcán is to receive \$40 million in working capital to be repaid over 7 years with a 2-year grace period. The proposal also includes a marketing agreement, under which Glencore has the right to purchase up to 50% of Volcán's zinc concentrate production. During 2003, Glencore has become a major player in the zinc concentrate market as a trader and also through direct investment, mostly in Peruvian mining. Early in 2003, Empresa Minera Yauliyacu S.A., in which Glencore had a controlling interest, merged with Glencore-owned Empresa Minera Iscaycruz S.A. In the first half of the year, Glencore exported 266,000 t of Peruvian zinc concentrate, representing about 30% of that country's total exports (CRU International Ltd., 2003c).

Pasminco Ltd. of Australia announced that it has agreed to sell its Gordonsville and Clinch Valley Mines (both in Tennessee) to Tennessee Valley Resources (TVR). The Gordonsville Mine was placed on care and maintenance last May. The Clinch Valley Mine will continue to be operated by Pasminco until reserves are exhausted in mid-2004. It appears that TVR has no zinc mining plans, but wants to use stockpiles at both mines as a source of agricultural limes for Mossy Creek Mining LLC, a company associated with TVR. In addition to Pasminco's mines, TVR also bought New Market and Young Mines in Tennessee, previously owned by Asarco Inc. (CRU International Ltd., 2003b).

Boliden Ltd. of Sweden and Outokumpu Oy of Finland have signed a Letter of Intent whereby Boliden proposes to acquire Outokumpu's copper and zinc mining and smelting operations for \$810 million and also sell its fabrication and Contech divisions to Outokumpu for \$5 million. The new company will be called New Boliden Ltd. After acquiring Outokumpu's Kokkola smelter (Finland), Odda smelter (Norway), and Tara Mine (Ireland), New Boliden will become the fifth largest zinc producer in the world behind Pasminco Ltd., Korea Zinc Co. Ltd., Umicore, and Xstrata plc. Final agreement is expected by November 2003 when all terms and financing of the transaction have been settled (CRU International Ltd., 2003a).

Anglo American plc announced that its Skorpion zinc mine in Namibia is now officially open and is expected to reach full capacity by the end of 2004. The mine, which started production in May, will produce 150,000 t/yr of special high-grade zinc over a mine life of at least 15 years. When it reaches full production, Skorpion will employ about 600 people and contribute about 4% to the Gross National Product of Namibia (Metal-Pages, 2003d).

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TABLE 1
SALIENT ZINC STATISTICS¹

(Metric tons, unless otherwise specified)

	2002	2003			
	January- December	June	July	August	January- August
Production:					
Mine, zinc content of concentrate	780,000	66,500	67,000	62,000	515,000
Mine, recoverable zinc	754,000	64,000	64,500	59,600	495,000
Smelter, refined zinc	259,000	24,200	22,100	23,500	185,000
Consumption:					
Refined zinc, reported	421,000	38,200	34,200 ^r	35,300	278,000
Ores ^e (zinc content)	727	61	61	61	485
Zinc-base scrap ^e (zinc content)	189,000	15,900	15,900	15,900	127,000
Copper-base scrap ^e (zinc content)	176,000	14,700	14,700	14,700	117,000
Aluminum-and magnesium-base scrap ^e (zinc content)	1,430	120	120	120	956
Total ^e	789,000	68,900	64,900	66,000	524,000
Apparent consumption, metal ²	1,150,000	83,000	85,400	85,000	700,000 ³
Stocks of refined (slab) zinc, end of period:					
Producer ⁴	XX	7,770	8,360	8,230	XX
Consumer ⁵	XX	55,600	56,100	54,900	XX
Merchant	XX	9,990	10,100 ^r	9,810	XX
Total	XX	73,300	74,500	73,000	XX
Shipments of zinc metal from Government stockpile	5,040	--	3,530	712	5,950
Imports for consumption:					
Refined (slab) zinc	874,000	61,000	59,300	NA	437,000 ⁶
Oxide (gross weight)	69,700	7,540	13,000	NA	57,300 ⁶
Ore and concentrate (zinc content)	122,000	20,200	23,000	NA	88,900 ⁶
Exports:					
Refined (slab) zinc	1,160	134	95	NA	748 ⁶
Oxide (gross weight)	10,800	960	1,240	NA	7,020 ⁶
Ore and concentrate (zinc content)	822,000	11,500	88,000	NA	216,000 ⁶
Waste and scrap (gross weight)	47,700	3,890	4,070	NA	26,000 ⁶
Price:					
London Metal Exchange, average, dollars per metric ton	778.38	790.31	827.19	817.48	790.13
Platts Metals Week North American Special High Grade, average, cents per pound	38.64	38.87	40.54	40.10	38.90

^eEstimated. ^rRevised. NA Not available. XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; except prices; may not add to totals shown.

²Smelter production plus imports minus exports plus shipments from Government stockpile plus stock change.

³Data based on reported consumption, stocks, and estimated trade data.

⁴Data from U.S. Geological Survey and American Bureau of Metal Statistics.

⁵Includes an estimate for companies that report annually.

⁶Includes data through July only.

TABLE 2
REFINED ZINC PRODUCED IN THE UNITED STATES¹

(Metric tons)

Month	Beginning stocks ²	Production	Shipments	Ending stocks ²
2002:				
August	6,830	16,200	16,000	7,010
September	7,010	17,900	17,400	7,470
October	7,470	16,100	16,600	7,020
November	7,020	21,800	20,800	7,970
December	7,970	23,500	22,900	8,550
Year	XX	259,000	257,000	XX
2003:				
January	8,550	24,900	21,500	11,900
February	11,900	22,800	25,800	8,930
March	8,930	21,700	24,500	6,110
April	6,110	23,000	20,700	8,340
May	8,340	22,400	23,500	7,300
June	7,300	24,200	23,700	7,770
July	7,770	22,100	21,500	8,360
August	8,360	23,500	23,600	8,230
January-August	XX	185,000	185,000	XX

XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes stocks held at locations other than smelters.

Sources: U.S. Geological Survey and American Bureau of Metal Statistics.

TABLE 3
APPARENT CONSUMPTION OF REFINED ZINC ACCORDING TO INDUSTRY USE AND PRODUCT¹

(Metric tons)

Industry and product	2002	2003			January-August
	January-December	June	July	August ²	
Galvanizing:					
Sheet and strip	477,000	35,400	36,100	35,900	297,000
Other	175,000	10,500	12,000	11,600	98,600
Total	652,000	46,000	48,000 ^r	47,500	396,000
Brass and bronze	189,000	13,600	12,200 ^r	12,800	111,000
Zinc-base alloy	233,000	17,000	18,400 ^r	18,000	149,000
Other uses ³	71,700	6,500	6,800	6,600	44,400
Grand total	1,150,000	83,000	85,400	85,000	700,000

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Data based on reported consumption, stocks and estimated trade data.

³Includes zinc used in making zinc dust, desilvering lead, powder, alloys, anodes, chemicals, castings, light metal alloys, rolled zinc, and miscellaneous uses not elsewhere specified.

TABLE 4
AVERAGE MONTHLY ZINC PRICES¹

Period	North	LME cash	
	American ¢/lb.	¢/lb.	\$/t
2002:			
August	37.27	33.89	747.24
September	37.81	34.29	755.88
October	37.71	34.21	754.30
November	38.09	34.70	764.91
December	39.69	36.17	797.36
Year	38.64	35.31	778.38
2003:			
January	38.72	35.43	781.01
February	38.68	35.60	784.80
March	38.88	35.86	790.60
April	37.23	34.21	754.30
May	38.18	35.17	775.33
June	38.87	35.85	790.31
July	40.54	37.52	827.19
August	40.10	37.08	817.48
January-August	38.90	35.84	790.13

¹Special High Grade.

Source: Platts Metals Week.

TABLE 5
U.S. EXPORTS OF ZINC¹

Material	2002		2003 ²			
	Quantity (metric tons)	Value (thousands)	July		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	1,160	\$1,210	95	\$97	748	\$772
Ore and concentrate (zinc content)	822,000	322,000	88,000	35,300	216,000	70,400
Waste and scrap (gross weight)	47,700	23,000	4,070	4,210	26,000	16,300
Powders, flakes, dust (zinc content)	5,660	8,120	518	765	3,800	4,940
Oxide (gross weight)	10,800	14,600	1,240	1,210	7,020	8,660
Chloride (gross weight)	1,950	1,930	191	177	886	910
Sulfate (gross weight)	2,900	1,760	187	115	1,540	926
Compounds, other (gross weight)	217	600	27	31	101	278

¹Data are rounded to no more than three significant digits.

²Data for August 2003 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF ZINC¹

Material	2002		2003 ²			
	Quantity (metric tons)	Value (thousands)	July		Year to date	
			Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
Refined (slab) zinc	874,000	\$716,000	59,300	\$50,200	437,000	\$361,000
Ore and concentrate (zinc content)	122,000	44,600	23,000	7,960	88,900	27,400
Waste and scrap (gross weight)	31,200	9,530	1,270	545	6,420	3,260
Powders, flakes, dust (zinc content)	30,900	47,800	2,480	3,760	16,700	25,200
Oxide (gross weight)	69,700	57,600	13,000	9,870	57,300	43,200
Chloride (gross weight)	716	775	73	132	386	487
Sulfate (gross weight)	20,100	10,300	2,920	1,180	17,100	7,820
Compounds, other (gross weight)	1,030	1,180	72	65	426	468

¹Data are rounded to no more than three significant digits.

²Data for August 2003 were not available at time of publication.

Source: U.S. Census Bureau.

TABLE 7
SHIPMENTS OF ZINC METAL FROM THE NATIONAL DEFENSE
STOCKPILE¹

(Metric tons)

Period	Beginning inventory	Shipments	Ending inventory
2002:			
August	110,000	445	110,000
September	110,000	--	110,000
October	110,000	1,130	109,000
November	109,000	--	109,000
December	109,000	--	109,000
Year	XX	5,040	XX
2003:			
January	109,000	516	108,000
February	108,000	--	108,000
March	108,000	--	108,000
April	108,000	200	108,000
May	108,000	997	107,000
June	107,000	--	107,000
July	107,000	3,530	104,000
August	104,000	712	103,000
January-August	XX	5,950	XX

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Defense Logistics Agency.

TABLE 8
U.S. IMPORTS OF ZINC, BY TYPE OF MATERIAL AND COUNTRY^{1,2}

(Metric tons)

Material and country	General imports			Imports for consumption		
	2002	2003		2002	2003	
		July	Year to date		July	Year to date
Ore and concentrate (zinc content):						
Australia	41,800	--	20,200	41,800	--	20,200
Ireland	6,570	7,680	25,700	6,570	7,680	25,700
Mexico	12,700	1,460	1,460	12,700	1,460	1,460
Peru	61,100	13,800	41,600	61,100	13,800	41,600
Other	118	--	--	118	--	--
Total	122,000	23,000	88,900	122,000	23,000	88,900
Blocks, pigs, or slab:						
Australia	35,000	--	14,000	21,000	--	14,000
Brazil	30,200	2,340	14,500	30,200	2,340	14,500
Canada	523,000	39,400	296,000	523,000	39,400	296,000
China	39,700	1,920	23,800	1,040	--	22
Japan	10,500	50	50	--	--	--
Kazakhstan	93,200	--	12,000	93,200	--	12,000
Korea, Republic of	76,200	15,000	34,000	2,480	--	17
Mexico	136,000	15,200	78,500	136,000	15,200	78,500
Peru	36,000	3,650	25,700	34,300	3,400	25,200
Poland	9,340	--	1,600	9,340	--	1,600
Russia	10,700	--	--	10,700	--	--
Other	25,200	51	51	13,100	--	--
Total	1,020,000	77,600	500,000	874,000	59,300	437,000
Dross, ashes, fume (zinc content)	15,500	929	8,110	15,500	929	8,110
Grand total	1,160,000	102,000	597,000	1,010,000	83,200	534,000
Oxide (gross weight):						
Canada	44,800	3,840	27,900	44,800	3,840	27,900
China	838	62	364	838	62	364
Japan	869	13	568	869	13	568
Mexico	19,900	5,800	22,500	19,900	5,800	22,500
Netherlands	2,640	399	2,830	2,640	399	2,830
Other	760	2,910	3,090	760	2,910	3,090
Total	69,700	13,000	57,300	69,700	13,000	57,300
Other (gross weight):						
Waste and scrap	31,200	1,270	6,420	31,200	1,270	6,420
Sheets	1,640	274	1,220	1,640	274	1,220
Powders, flakes, dust (zinc content)	30,900	2,480	16,700	30,900	2,480	16,700

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Data for August 2003 were not available at time of publication.

Source: U.S. Census Bureau.