## THE MINERAL INDUSTRY OF

## **CUBA**

## By Ivette E. Torres

Cuba continued to produce a modest amount of most mineral commodities in 1995. Metal commodities produced in Cuba included chromite, cobalt, copper, crude steel, and nickel. By far, the most important metal to the Cuban economy continued to be nickel. Cuba was the sixth leading producer of nickel in the world, producing about 5% of the total nickel mine production in 1995. Cuba's industrial mineral products included cement, gypsum, lime, ammonia, salt, silica sand, and sulfur. Marble and other construction materials were also produced in Cuba. Production of oil continued to be modest, and a significant portion of the island's oil requirements needed to be imported.

In 1995, Cuba, once highly dependent on the former Soviet Union, continued to adjust and change as a means to survive without the many subsidies that benefited its economy under the former Soviet Union. In recent years, the Government of Cuba has been cultivating various forms of foreign investment with mainly Canadian, European, and Latin American countries in areas such as tourism in an effort to stimulate its economy and increase its earnings of hard currency. In September 1995, the National Assembly approved the Foreign Investment Act (Law No. 77) an investment law to facilitate further investment by international corporations.<sup>1</sup> The new law, which supersedes Law No. 50 of 1982, opened all sectors of the economy to foreign investment.<sup>2</sup> The law covers joint ventures with domestic private and Government participation, contracts of international economic associations, and full participation of foreign capital without Cuban partners. The law also includes the term "Administrative concession" defined as a unilateral action on the part of the Government of the Republic granting an entity "the right to exploit a service or a natural resource, or to build or utilize public works under terms and conditions to be determined." The Government has only 60 days to approve or deny a request for foreign investment. The law offers a number of guarantees including (1) the possibility of requesting a time extension when the term of the joint venture or the foreign investment entity expires, (2) upon denial of extension, the liquidation of the joint venture or foreign investment entity and payment made in full convertible currency, (3) protection against claims from third parties and (4) free transference abroad of net profits or dividends, and moneys resulting from an expropriation (for reasons of national security only), expiration of the joint venture, and the sale or transfer of the

foreign investor's share of the company.

The taxation in the law is not applicable to the payment obligations under the Mining Act of December 21, 1994 (chapter III of Law No. 77). Income taxes, which are levied at 30%, can be raised as high as 50% by the Executive Committee of Council of Ministers for the exploitation of renewable and nonrenewable resources (Chapter XII Law No. 77).

The Government, however, has indicated that the goal of joint ventures was not to privatize Cuba but to stimulate its economy, to improve existing technology and to create new sources of employment, and to gain better access to third markets.<sup>3</sup> At yearnend 1995, foreign investment in Cuba was \$2.1 billion.<sup>4</sup>

According to the Government, the Cuban economy was expected to grow by 2.5% from that of 1994. In 1994 the economy grew 0.7% after 4 years of sharp decreases.<sup>5</sup>

Trade with Latin America and the Caribbean totals about 40% of Cuba's total trade.<sup>6</sup> About 50% of Cuba's exports in 1994 went to Russia, Canada, China, Egypt, Spain, Japan, and Morocco, in that order. In descending order, Spain, Mexico, France, China and Venezuela were the main suppliers of imports to Cuba during the same period.<sup>7</sup>

Output of nickel, the most important mineral commodity to the Cuban economy, increased significantly in 1995 after a 10% decrease in 1994. Activity in the industry was encouraged by high nickel prices and foreign participation that began at yearend 1994 when Sherritt Inc., of Canada, formed a 50-50 joint venture with Compañía General del Níquel S.A. through its subsidiary Sherritt International Corp. The agreement included mineral concessions and the operation of the nickel-processing plant in Moa. It also included the cobalt refinery in Fort Saskatchewan and International Cobalt Co., Sherritt's marketing and sales company. The Moa Bay plant, built in 1958 by Freeport Nickel Co., uses the acid-leaching process, which produces a nickel-cobalt sulfide. The operation is reportedly the most profitable of the nickel plants in Cuba because it requires low fuel input and higher cobalt in the sulfide.<sup>8</sup> Production from Moa in 1995 increased by 74% to 20,652 tons. However, at yearend, Sherritt disposed of its entire investment in Sherritt International Corp. In June, the U.S. Department of the Treasury had included Sherritt Inc's. Cobalt Refinery Co. Inc. and International Cobalt Co. Inc. in Saskatchewan as "specially designated nationals of Cuba"

and added them to the list of blocked persons and specially designated nationals. Because of this designation, Sherritt Inc. became subject to the same U.S. sanctions that apply to Cuba. 10 At the same time, the U.S. Congress was considering legislation to tighten the U.S. embargo against Cuba. No action had been taken by Congress at yearend.

In late 1995, Australia's Western Mining Corp. also entered into a joint-venture agreement with the Government-owned Commercial Caribbean Nickel S.A. to explore and develop the Pinares de Mayarí nickel deposit in Holguín Province, formalizing an agreement in principle that had been reached in September 1994. Funding of further infill drilling and the feasibility study for a mine would give Western Mining a 65% share of the joint venture. Western Mining would manage the project. Drilling was scheduled for early 1996, followed by metallurgical testing and possibly a pilot plant based on Sherritt Inc.'s high-pressure leach process, already being used at the Moa Bay plant. During the year, two South African companies, GENCOR and Anglo American Corp. were also discussing with Cuban Government entities opportunities in the nickel industry.<sup>11</sup>

Foreign companies were actively exploring Cuba in 1995. Joutel Resources Ltd. was carrying out several exploration projects for precious and base metals in the Sierra Maestra, Camagüey, and Santa Clara areas. Northern Orion Exploration was exploring two areas in Cuba. The Delita gold property in the Isla de Juventud was drilled to confirm the grade and thickness of the deposit. Estimates from a prefeasibility study indicated geological resources of 18.9 million tons grading 2.87 grams of gold and 33 grams of silver per ton. Within this resource, 4.7 million tons grading 4.1 grams and 22 grams of silver per ton could be mined by open pit methods and 1.9 million tons grading 5.4 grams of

gold and 25 grams of silver could be mined by underground methods. A feasibility study was scheduled for 1996. Northern Orion also had a 50% interest in the Mantúa copper-gold deposit in Pinar del Río. The deposit consists of a gossan with 1.44 grams of gold and 11.65 grams of silver per ton and an underlying minable copper zone with 15.2 million tons grading 1.35% copper, within it 6.2 million tons of the reserves graded 2.8% copper. Results of a feasibility study were being evaluated by the company at yearend.

CaribGold Resources and MacDonald Mines Exploration Ltd. together with Golden Hill Mining Corp. were among other companies exploring on the island.

<sup>&</sup>lt;sup>1</sup>Law Number 77 Foreign Investment Act. Ministry for Foreign Investment and Economic Cooperation, 1995.

The Cuban Investment Letter (Canada). Winter 1995, p. 1.

<sup>&</sup>lt;sup>2</sup>Granma International (Havana). Doors Open to Foreign Investment. Y. 30, No. 35, Sept. 6, 1995, p. 6.

<sup>&</sup>lt;sup>3</sup>Work cited in footnote 2.

<sup>&</sup>lt;sup>4</sup>Granma International (Havana). Sherritt Incorporated Will Make New Investments. Y. 30, No. 44, Nov. 8, 1995, p. 1.

<sup>&</sup>lt;sup>5</sup>The Journal of Commerce. Cuba Releases Details of Its External Debt. Nov. 20, 1995, p. 8A.

<sup>6</sup>Work cited in footnote 2.

<sup>&</sup>lt;sup>7</sup>Central Intelligence Agency. The World Factbook 1995, p. 109.

<sup>\*</sup>Cuba Turns to the Pragmatists. Sec. in 1995 E&MJ International Directory of Mining. Engineering and Mining Journal, 1994, pp. 172-175.

<sup>&</sup>lt;sup>9</sup>Sherritt Inc's. 1995 Annual Report, p. 33.

<sup>&</sup>lt;sup>10</sup>Federal Register. Dep. of the Treasury (Office of Foreign Assessment). Change to the List of Specially Designated Nationals of Cuba. V. 60, No. 122, June 26, 1995, pp. 33029-33030.

<sup>&</sup>lt;sup>11</sup>Mining Journal, London. Odd Man Out. V. 321, No. 8333, June 30, 1995, p. 485.

<sup>&</sup>lt;sup>12</sup>Northern Miner. Northern Orion Firms Up Property Holdings in Cuba and Argentina. V. 81, No. 48, Jan. 29, 1996, p. 1.

<sup>&</sup>lt;sup>13</sup>Metals & Minerals Latin America. Northern Orion Close to Cuban Mine Decision. V.1, No. 6, Jan. 24, 1996, pp. 1,8.

## ${\bf TABLE~1}$ CUBA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Cement, hydraulic         2,000,000         2,000,000         1,048,600         r/3         1,081,100         r/3         1,200,000           Chromite         50,000         50,000         50,000         50,000         50,000         50,000           Cobalt 4/         1,328         r/         1,357         r/         1,255         r/         1,139         r/         1,780           Copper, mine output, Cu content         2,000         1,500         1,500         1,500         1,400         1,700         1,	Commodity 2/	1991	1992	1993	1994	1995
Cobalt 4/         1,328 r/         1,357 r/         1,255 r/         1,139 r/         1,780           Copper, mine output, Cu content         2,000         1,500         1,500         1,400         1,500           Gas, natural:         """>""""""""""""""""""""""""""""""	Cement, hydraulic	2,000,000	2,000,000	1,048,600 r/3	1,081,100 r/ 3	1,200,000
Copper, mine output, Cu content         2,000         1,500         1,500         1,400         1,500           Gas, natural:         Gross         thousand cubic meters         34,000         36,000         36,000         37,000         37,000         37,000         37,000         37,000         37,000         37,000         4,000	Chromite	50,000	50,000	50,000	50,000	50,000
Gas, natural:         Gross         thousand cubic meters         34,000         36,000         36,000         37,000         37,000           Marketed         do.         4,000	Cobalt 4/	1,328 r/	1,357 r/	1,255 r/	1,139 r/	1,780
Gross         thousand cubic meters         34,000         36,000         37,000         37,000           Marketed         do.         4,000         4,000         4,000         4,000         4,000           Gypsum         thousand tons         130         125         125         125         130           Iron and steel, steel, crude         do.         180         160         180         170         180           Nickel:         8         180         160         180         170         180           Metallurgical products, Ni-Co content of oxide and sulfide         33,349         32,190         3/         30,227         3/         26,926         3/         41,000           Metallurgical products, Ni-content: 4/         33,349         3/         32,190         3/         30,227         3/         26,926         3/         41,000           Sulfide         13,490         r/         14,116         r/         12,973         r/         11,857         r/         20,652         3/           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         10         5,150         5,870         7,320<	Copper, mine output, Cu content	2,000	1,500	1,500	1,400	1,500
Marketed         do.         4,000         100         110         1125         125         125         130         130         125         125         125         130         130         125         125         130         135         130         135         130         135         135         130         135         135         135         135         135         135 <t< td=""><td>Gas, natural:</td><td></td><td></td><td></td><td></td><td></td></t<>	Gas, natural:					
Gypsum         thousand tons         130         125         125         125         130           Iron and steel, steel, crude         do.         180 3/         134 3/         91 r/3         131 r/         207 3/           Lime         do.         180         160         180         170         180           Nickel:         Mine output, Ni-Co content of oxide and sulfide         33,349 3/ 32,190 3/ 30,227 3/ 26,926 3/ 41,000           Metallurgical products, Ni content: 4/         Granular oxide, oxide sinter, and powder         18,531 r/         16,717 r/         15,999 r/         13,930 r/         18,500           Sulfide         13,490 r/         14,116 r/         12,973 r/         11,857 r/         20,652 3/           Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000	Gross thousand cubic meters	34,000	36,000	36,000	37,000	37,000
Tron and steel, steel, crude   do.   180 3/   134 3/   91 r/3   131 r/   207 3/	Marketed do.	4,000	4,000	4,000	4,000	4,000
Lime         do.         180         160         180         170         180           Nickel:         Mine output, Ni-Co content of oxide and sulfide         33,349         32,190         3/         30,227         3/         26,926         3/         41,000           Metallurgical products, Ni content: 4/         Granular oxide, oxide sinter, and powder         18,531         r/         16,717         r/         15,999         r/         13,930         r/         18,500           Sulfide         13,490         r/         14,116         r/         12,973         r/         11,857         r/         20,652         3/           Total         32,021         r/         30,833         r/         28,972         r/         25,787         r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Total         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185	Gypsum thousand tons	130	125	125	125	130
Nickel:         33,349 3/ 32,190 3/ 30,227 3/ 26,926 3/ 41,000           Metallurgical products, Ni content: 4/         33,349 3/ 32,190 3/ 30,227 3/ 26,926 3/ 41,000           Granular oxide, oxide sinter, and powder         18,531 r/ 16,717 r/ 15,999 r/ 13,930 r/ 11,857 r/ 20,652 3/ 14,116 r/ 12,973 r/ 11,857 r/ 20,652 3/ 20,201 r/ 30,833 r/ 28,972 r/ 25,787 r/ 39,152           Nitrogen, N content of anhydrous ammonia         thousand tons           Petroleum:         140 135 135 135 130 135           Crude         thousand 42-gallon barrels Refinery products         5,150 5,870 7,320 9,320 10,200           Refinery products         do.         53,000 55,000 55,000 55,000 55,500 60,000           Salt         thousand tons         200 185 185 185 175 180           Silica (industrial sand and gravel)         do.         500 450 400 300 300	Iron and steel, steel, crude do.	180 3/	134 3/	91 r/3.	131 r/	207 3/
Mine output, Ni-Co content of oxide and sulfide         33,349 3/         32,190 3/         30,227 3/         26,926 3/         41,000           Metallurgical products, Ni content: 4/         Image: Granular oxide, oxide sinter, and powder         18,531 r/         16,717 r/         15,999 r/         13,930 r/         18,500           Sulfide         13,490 r/         14,116 r/         12,973 r/         11,857 r/         20,652 3/           Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Lime do.	180	160	180	170	180
Metallurgical products, Ni content: 4/           Granular oxide, oxide sinter, and powder         18,531 r/         16,717 r/         15,999 r/         13,930 r/         18,500           Sulfide         13,490 r/         14,116 r/         12,973 r/         11,857 r/         20,652 3/           Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Nickel:					
Granular oxide, oxide sinter, and powder         18,531 r/         16,717 r/         15,999 r/         13,930 r/         18,500           Sulfide         13,490 r/         14,116 r/         12,973 r/         11,857 r/         20,652 3/           Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Mine output, Ni-Co content of oxide and sulfide	33,349 3/	32,190 3/	30,227 3/	26,926 3/	41,000
Sulfide         13,490 r/         14,116 r/         12,973 r/         11,857 r/         20,652 3/           Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Metallurgical products, Ni content: 4/	•				
Total         32,021 r/         30,833 r/         28,972 r/         25,787 r/         39,152           Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Granular oxide, oxide sinter, and powder	18,531 r/	16,717 r/	15,999 r/	13,930 r/	18,500
Nitrogen, N content of anhydrous ammonia         thousand tons         140         135         135         130         135           Petroleum:         Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Sulfide	13,490 r/	14,116 r/	12,973 r/	11,857 r/	20,652 3/
Petroleum:           Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Total	32,021 r/	30,833 r/	28,972 r/	25,787 r/	39,152
Crude         thousand 42-gallon barrels         5,150         5,870         7,320         9,320         10,200           Refinery products         do.         53,000         55,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Nitrogen, N content of anhydrous ammonia thousand tons	140	135	135	130	135
Refinery products         do.         53,000         55,000         55,500         60,000           Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Petroleum:					
Salt         thousand tons         200         185         185         175         180           Silica (industrial sand and gravel)         do.         500         450         400         300         300	Crude thousand 42-gallon barrels	5,150	5,870	7,320	9,320	10,200
Silica (industrial sand and gravel)         do.         500         450         400         300         300	Refinery products do.	53,000	55,000	55,000	55,500	60,000
	Salt thousand tons	200	185	185	175	180
	Silica (industrial sand and gravel) do.	500	450	400	300	300
Sulfur, byproduct of petroleum do. 4 5 5 4 5	Sulfur, byproduct of petroleum do.	4	5	5	4	5

e/ Estimated. r/ Revised.

TABLE 2
CUBA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995
(Thousand metric tons unless otherwise specified)

	Major operating companies		
Commodity	and major equity owners	Location of main facilities	Annual capacity
Cement	Empresa del Cemento (Government, 100%)	Mariel, Pinar del Río Province; Cienfuegos,	3,500
		Ciengfuegos Province	
Chromite	Ministerio de Industria (Government, 100%)	Mercedita Mine and plant, Holguín Province	60
Copper	Empresa Minera de Occidente (Government, 100%)	Mantúa, Matahambre, and Jucrad Mines,	3
		Pinar del Río Province	
		Mina Grande, Santiago de Cuba Province	
Nickel	Metals Enterprise (Government, 50%, Sherritt	Punta Gorda, Holguín Province	30
	International Corporation, 50%)		
Do.	Empresa Niquelífera Comandante Pedro Soto Alba	Moa, Holguín Province	24
	(Government, 100%)		
Do.	Empresa Niquelífera Comandante Rene Ramos	Nicaro, Holguín Province	30
	Latour (Government, 100%)		
Petroleum:			
Crude	Empresa de Perforación y Extracción de Petróleo	Northern coast area between Havana and Cárdenas	12,000 1/
	(Government, 100%)		
Refinery products	Instituto Cubano del Petróleo (Government, 100%)	Refineries at Cienfuegos, Havana, and Santiago de	160 1/
		Cuba	
Steel	Antillana de Acero (Acinox, 100%)	Cotorro, Havana Province	600
Do.	Acinox (Government, 100%)	Las Tunas, Las Tunas Province	150
1 / Th 1 h 1			

<sup>1/</sup> Thousand barrels per year.

<sup>1/</sup> Table includes data available through Apr. 16, 1996.

<sup>2/</sup> In addition to commodities listed, crude construction materials (marble, sand and gravel, stone, etc.) may also be produced. But data on such production are not available, and information is inadequate to make reliable estimates of output levels.

<sup>3/</sup> Reported figure

<sup>4/</sup> Anuario Estadístico de Cuba provides figures of nickel-cobalt content of granular and powder oxide, oxide sinter, and sulfide production. Using an average cobalt content in these products of 0.9% in total granular and powder oxide, 1.1% in total oxide sinter, and 4.5% in total sulfide, the cobalt content of reported Ni-Co production was determined to be 1.16% of granular and powder oxide, 1.21% of oxide sinter, and 7.56% of sulfide. The remainder of reported figures would represent the nickel content.