

# THE MINERAL INDUSTRY OF

# CUBA

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In 1997, Cuba's gross domestic product increased by 2.5% (J. Oramas, *Granma International*, February 3, 1998, Sustained recovery in basic industry, accessed March 3, 1998, at URL <http://www.granma.cu/1998/98feb3/7feb4i.html>). The growth took place despite the decrease in the agricultural sector. The Government planned to focus on four areas to improve the economic situation of the island. Emphasis would be given to expansion of the electricity sector, investment, funding for development, and increased efficiency.

The most important mineral commodity to the Cuban economy is nickel. Cuba is also among the top producers of cobalt, with an output of about 8% of the total world mine production. In addition, Cuba produces moderate amounts of ammonia, cement, chromite, gypsum, petroleum and petroleum products, salt, silica sand, steel, and sulfur as a byproduct of petroleum. (*See table 1.*) In 1994, Cuba began producing small quantities of gold.

The Ministerio de Industria Básica (Ministry of Basic Industry) is the Government entity responsible for the mineral and petroleum sectors in Cuba. Although mineral production is dominated by the Government, changes in mining and foreign investment legislation in recent years have changed the nature of the industry. In 1993, Geominera S.A. was formed as a private company operating with Government capital. Geominera has worked with the foreign sector in joint ventures or with association agreements to prospect and explore for metals other than nickel. The company's involvement also includes technical research, feasibility studies, and all other aspects of the projects. Geominera's main interest is gold, followed by copper and other metals. Most of the foreign investment in Cuba is by Canadian companies.

Cuba is a producer of very modest amounts of copper. In 1997, the Government announced that it planned to close the Matahambre copper mine in Pinar del Río (Metals & Minerals Latin America, 1997a). Copper production in Cuba was planned for the near future from the Mantúa mine, also in Pinar del Río, a joint-venture between Northern Orion Explorations Ltd. (Northern Orion) and Geominera. In March, the company began prestripping the Mantúa deposit, a high-grade secondary enriched copper deposit with an overlying gossan cap (Northern Orion Explorations Ltd., 1997a). The gossan cap reserves totaled 2 million metric tons of ore with a grade of 1.44 grams of gold per ton and 11 grams of silver per ton with a 5:1 stripping ratio. Reserves of the enriched copper body totaled 6.2 million tons with a grade of 2.8% copper. The company planned to begin the first phase of the project with the production of gold from the gossan cap. Construction of phase 1 of the Mantúa gold leaching operation began in April. Production from phase 1, a "heap leach gold operation to recover approximately 80,000 oz of gold" (2,500 kilograms) in the first 2 years of production, was scheduled to begin in the first quarter of 1998 (Northern Orion Explorations Ltd., 1997b). Production of copper was scheduled for 1999. In 1997,

Northern Orion, 53% owned by Miramar Mining Corp. of Canada, was also in association with Geominera in the Delita project in the Isla de Juventud.

In 1997, other Canadian companies were doing exploration work in Cuba. Holmer Gold Mines Ltd. completed a prefeasibility study at its Loma de Hierro Project in the west side of Cuba. The drilling program at Loma de Hierro "revealed a shallow resource of 15.5 million ounces of silver" (482,000 kilograms) (Holmer Gold Mines Limited, August 29, 1997, press release, accessed May 20, 1998, at URL <http://www.augenc.com/holmer.html>). According to the prefeasibility study, the capital cost for an open pit operation of 800 tons of ore per day and heap-leaching facility would total \$6 million. "At the projected annual production rate of production was 1.5 million ounces" (46,700 kilograms) "and a cash operating cost of \$1.85 U.S. per ounce" (\$59 per kilogram), the company expected to recover capital outlays in about a year (Holmer Gold Mines Limited, August 29, 1997, press release, accessed May 20, 1998, at URL <http://www.augenc.com/holmer.html>). Holmer was also working on two other concessions, the Matahambre West in Pinar del Río Province and the San Fernando concession in central Cuba.

MacDonald Mines Exploration Ltd. was carrying out exploration work in its Florencia-Jobabo concession in the vicinity of Camagüey-Las Tunas. McDonald with its joint-venture partners, Geominera and Golden Hill Mining Corp. (42% owned by Mill City Gold Mining), "reportedly identified a resource of some 219,000 oz gold" (6,800 kilograms) "and 50 million lb of copper" (22,700 tons) at Golden Hills (Metals & Minerals Latin America, 1997b), a 7.2-square-kilometer exploration area in their 2,000-square-kilometer concession, in addition to "some 160,000 oz of gold resources" (5,000 kilograms) in the partially developed Florencia deposit. In August, MacDonald was given approval to take over its joint-venture partner Golden Hill Mining. In December, MacDonald announced the filing of the take-over bid (MacDonald Mines Exploration Ltd., January 7, 1998, press release, accessed on May 18, 1998, at URL <http://www.macmines.com/9801pr.html>).

In June, MacDonald reached an agreement in principle to acquire Minería Siboney Goldfields A.V.V. (MacDonald Miners Exploration Ltd, June 18, 1997, press release, accessed on May 18, 1998, at URL <http://www.macmines.com/9712pr.html>). Bolívar's 7,912-square-kilometer concession surrounds MacDonald's concession in east-central Cuba.

Sherritt International Corporation (Sherritt) from Canada, holds significant indirect interest in the nickel sector of Cuba through Metals Enterprise, a 50%-50% vertically integrated company with facilities in Cuba and Canada in joint venture with the Cuban Government's General Nickel Co. Metals Enterprise operates the nickel mining and processing operations in Moa (Moa S.A.). The company's geological nickeliferous reserves are approximately 60 million tons, 90% of which are proven (Sherritt International Corp.,

1998, p. 7). Production from Moa's operations totaled 26,512 tons of nickel and cobalt contained in mixed sulfide, the highest production ever achieved at that facility (Sherritt International Corporation, 1998, p. 8).

In addition, the Government produces nickel oxide and sinter from two operations in the nearby area in Punta Gorda and Nicaro in Holguín Province. Production of nickel (nickel content of oxide and sinter) from these two operations was about 33,600 tons in 1997.

Cuba's nickel-cobalt sulfide was refined in Canada by Metals Enterprises, the vertically integrated nickel cobalt company owned jointly by Sherritt and the Cuban company General Nickel Co. Based on 9-month data, about 80% of nickel oxide produced from the other two Cuban nickel operations in Nicaro and Punta Gorda was exported to Europe and 19% was exported to Asia (International Nickel Study Group, 1998).

Importation of Cuban nickel to the United States is prohibited under the Cuban Assets Control Regulations, 31 CFR, part 515. In March, the United States passed The Cuban Liberty and Democratic Solidarity Act of 1996 (Public Law 104-114), also known as the Helms-Burton Law. Title III of this law, designed to discourage foreign investment in Cuba, gives U.S. citizens the right to sue in U.S. courts any foreign companies that use property expropriated by the Cuban Government on or after January 1, 1959. Under the law, officials of such companies may be denied entry into the United States. Two of the three nickel producers, Moa and Nicaro, were expropriated by the Government. The President of the United States continued to postpone enforcement of title III during 1997.

Other companies were interested in developing Cuba's nickel resources. The Australian company WMC Limited was working with the Cuban Government to explore and develop the Pinares de Mayarí nickel deposit. The deposit is estimated to have 200 million tons of ore with a 1.6% nickel content (Metals & Minerals Latin America, 1997c). Another Australian company, QNI Limited, was working to finalize a contract to explore the San Felipe property near Camagüey. The company had a 75% interest in the property (QNI Limited, 1998).

In mid-1997, KWG Resources Inc., a Canadian company signed a "Heads of Agreement" with the Cuban company Commercial Caribbean Nickel S.A. to develop and operate the Cupey (Las Camariocas) nickel-cobalt mine, to complete the processing plant, and to build a refinery in Canada (KWG Resources, July 10, 1997, press release, accessed July 11, 1997, at URL [http://biz.yahoo.com/prnews/97/07/10/kwg\\_kwgd\\_1.html](http://biz.yahoo.com/prnews/97/07/10/kwg_kwgd_1.html)). Construction of the plant began in the 1980's with technical assistance from Hungary and the former Soviet Union (Torres, 1990) but it was never completed. The design capacity of the project is 30,000 tons of nickel and 1,400 tons of cobalt per year. Existing facilities were valued at \$600 million and total cost of the project were estimated at \$300 million. Because of low nickel prices, at yearend KWG terminated its option to acquire an interest in the

project (KWG Resources Inc., November 27, 1997, press release, accessed December 1, 1997, at URL <http://www.kwg.com/commun/97no86a.htm>).

The Government of Cuba's plans for the nickel industry by the year 2001 include modernization to improve international competitiveness and to increase output to 75,000 tons of nickel plus cobalt, a 22% increase from the output level of 1997 (J. Oramas, Granma International, 1998, February 3, 1997, Sustained recovery in basic industry, accessed March 3, 1998, at URL <http://www/granma.cu/1998/98feb3/7feb4i.html>).

In addition to its interest in Cuban nickel and cobalt production, Sherritt International Corporation also has interest in other sectors of the economy. The company continued to explore for petroleum and produced both petroleum and natural gas through four production-sharing contracts with the Government. During 1997, five new wells were drilled, four of which—three in Varadero and one in Block 9—were producing wells. In December, Block 9 began producing at 1,000 barrels per day. The company is also required by the production contracts to provide technical assistance to "rework and enhance" the production from selected wells. In 1997, Sherritt completed workovers in seven wells (Sherritt International Corporation, 1998, p. 13).

Sherritt also completed a natural gas processing plant in Boca de Jaruco and a pipeline to transport the gas to Havana in 1997. The plant and pipeline were completed on a turnkey basis. The plant is part of larger power-generating facilities designed to use natural gas being flared from Varadero and Boca de Jaruco oilfields (Sherritt International Corporation, 1998, p. 15). Sherritt owns a 33% interest in Energas S.A. in a joint venture with the Cuban Government set up for the development of the project. When completed, the Jaruco and the Varadero gas processing plants and power-generating facilities will have a combined capacity of 206 megawatts.

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TABLE 1  
CUBA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/	1993	1994	1995	1996	1997
Cement, hydraulic	1,048,600 3/	1,081,100 3/	1,469,700 3/	1,453,100 3/	1,500,000
Chromite	15,000 r/	20,000	30,693 r/ 3/	37,300 r/ 3/	44,000 3/
Cobalt 4/	1,255	1,139	1,851	2,335	2,500
Copper, mine output, Cu content	1,400	2,900	2,000	2,000	1,000
Gas, natural:					
Gross					
thousand cubic meters	36,000	37,000	37,000	37,000	37,000
Marketed					
do.	4,000	4,000	4,000	4,000	4,000
Gold					
kilograms	--	45 3/	184 3/	250	250
Gypsum					
thousand tons	125	125	130	130	130
Iron and steel: Steel, crude					
do.	91 3/	131 3/	207 3/	231 3/	240
Lime					
do.	180	170	180	180	180
Nickel:					
Mine output, Ni-Co content of oxide and sulfide	30,227 3/	26,926 3/	42,696 5/	53,624 5/	61,500
Metallurgical products, Ni content: 4/					
Granular oxide, oxide sinter, and powder	15,999	13,930	21,388	26,700	33,600
Sulfide	12,973	11,857	19,457	24,589	25,400
Total	28,972	25,787	40,845	51,289	59,000
Nitrogen, N content of anhydrous ammonia					
thousand tons	135	130	135	135	135
Petroleum:					
Crude					
thousand 42-gallon barrels	7,320	9,320	10,200	10,500	10,800
Refinery products					
do.	55,000	55,500	60,000	60,000	60,000
Salt					
thousand tons	185	175	180	180	180
Silica (industrial sand and gravel)					
do.	400	300	300	300	300
Sulfur, byproduct of petroleum					
do.	5	4	5	5	5

1/ Table includes data available through May 1, 1998.

2/ 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.

3/ Reported figure.

4/ The Government of Cuba reports figures of nickel-cobalt content of granular and powder oxide, oxide sinter, and sulfide production. By 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 nickel-cobalt 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.

5/ Derived from data reported to the International Nickel Study Group.

TABLE 2  
CUBA: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement	Empresa del Cemento (Government, 100%)	Mariel, Pinar del Río Province; Cienfuegos, Cienfuegos Province	3,500
Chromite	Ministerio de Industria (Government, 100%)	Mercedita Mine and plant, Holguín Province	60
Copper 1/	Empresa Minera de Occidente (Government, 100%)	Mantúa, Matahambre, and Jucrad Mines, Pinar del Río Province Mina Grande, Santiago de Cuba Province	3
Nickel	Empresa Niquelífera Ernesto Ché Guevara (Government, 100%)	Punta Gorda, Holguín Province	30
Do.	Metals Enterprise (Government, 50%, Sherritt International Corporation, 50%)	Moa, Holguín Province	24
Do.	Empresa Niquelífera Comandante Rene Ramos Latour (Government, 100%)	Nicaro, Holguín Province	30
Petroleum:			
Crude	Empresa de Perforación y Extracción de Petróleo (Government, 100%)	Northern coast area between Havana and Cárdenas	12,000 2/
Refinery products	Instituto Cubano del Petróleo (Government, 100%)	Refineries at Cienfuegos, Havana, and Santiago de Cuba	160 2/
Steel	Antillana de Acero (Acinox, 100%)	Cotorro, Havana Province	600
Do.	Acinox (Government, 100%)	Las Tunas, Las Tunas Province	150

1/Matahambre Mine planned for closure in 1997.

2/Thousand barrels per year.