THE MINERAL INDUSTRY OF

GUYANA

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Guyana had a population of about 800,000 in a 215,000-square-kilometer (km^2) area. Guyana's estimated gross domestic product (GDP) was $1.5 billion[1] in 1998. The Central Bank reported that the Guyanese economy attained an annual growth of 6.2% in spite of the effects of El Niño and the lower prices for its major agricultural and mineral exports in the first half of 1998. The inflation rate was 4.2% (Meredith, 1998, p. 3).

The legal and land title systems are based on the English common law, and all mineral rights are vested within the State. Mining concessions are negotiated via Mineral Agreements with the following Government agencies—the Bauxite Industry Development Co. Ltd. (BIDCO) for bauxite, the Guyana Geology and Mines Commission (GGMC) for gold and diamonds, and the Guyana Natural Resources Agency for oil. For the last 15 years, the Guyana Gold Board (GGB) had been the sole official buyer of gold. However, since 1997, 12 private companies had been licensed to join the GGB as purchasers (James, 1997).

The Guyanese Government, through the GGMC, continued to promote foreign investment and participation in the mineral development of the country. Investment in the mining sector is guaranteed by the Government and allows up to 100% foreign ownership of large-scale prospecting and mining projects. The GGMC secures tenure of property rights and title and allows that property rights be assigned and transferred to third parties. Repatriation of profits is also allowed. The granting of prospecting and mining licenses and their renewals are, in accordance with the Mining Act of 1989, grouped in three categories—large-scale development of gold, diamonds, and precious stones; large-scale development of bauxite and other minerals, except sand and stones (quarriable materials); and small- and medium-scale development of gold and diamonds reserved for Guyanese citizens. Foreign investors, however, could enter into joint-venture agreements with domestic entrepreneurs and with the GGMC's approval (Sucré, 1999, p. 1).

The Government uses four fiscal measures to acquire revenues from the mining industry—royalties, 1.5% and 5% of production or gross revenues from bauxite and other minerals (except sand and quarriable stones) and gold and precious metals (included diamonds and precious stones), respectively; corporate income tax, 35% of taxable income; withholding tax, 6.25% of distributed dividends; and 10% consumption tax on fuel. Also, equipment, process materials, and spares used for surveys, exploration, and mining by licensees or their contractors are duty free (Sucré, 1999, p. 1-2).

Mining continued to play a very important role in the Guyanese economy. The main mineral commodities were bauxite, diamonds, and gold. The two largest components of the country's exports were gold (22.6%) and bauxite (14.3%), which represented about one-third of Guyana's exports. Gold exports decreased to $140 million from $144.4 million in 1997 and bauxite exports amounted to about $90 million (Sucré, 1999, p. 9).

Guyana was the fifth largest bauxite producer in Latin America after Jamaica, Brazil, Venezuela, and Suriname, in order of production (Plunkert, 1999). The state-owned companies Berbice Mining Enterprise Ltd. (Bermine) and Linden Mining Enterprise Ltd. (Linmine) are controlled by the BIDCO. Bermine and Linmine will be privatized or "capitalized" (Government and citizens participation) during 1999 (Brassington, 1998). The March 30, 1999 bid submission deadline was established by the Executive Secretary and Head of the Privatization Unit of the Ministry of Finance. The proposed ownership could be as follows: investor (consortia), 60%; Government, 25%; employees, 10%; and private (domestic), 5% (Industrial Minerals, 1998).

Other BIDCO holdings included a 50% share in Guybulk Shipping Ltd., a joint venture with the Norwegian shipping company Klaveness Corp., and Bidco America Ltd., a wholly owned subsidiary that handles bauxite sales in the United States. A third active mining company, Aroaima Bauxite Co., was a joint venture between Reynolds Metals Co. of the United States and the Guyanese Government.

Hardman Resources NL (40%) of Australia entered into a joint-venture oil project with TM Services Limited (60%) of the United Kingdom to explore the Takutu Basin, located onshore in western Guyana and covering 11,200 km^2. The licensing process was in progress (Hardman Resources NL, May 7, 1998, Guyana—South America, Chairman's Report, accessed May 12, 1998, at URL http://www.ozemail.com.au/~hardburn/hardman.htm).

In 1998, bauxite production amounted to about 2.6 million metric tons (Mt) of which 75% was produced by Aroaima, or about 2% of the world's bauxite production. Bermine and Linmine produced 200,000 metric tons (t) each. Bermine produced mainly metal-grade and chemical-grade bauxite, and Linmine produced calcinated refractory-grade bauxite. Aroaima and Bermine produced 100,000 and 150,000 metric tons per year (t/yr) of chemical-grade bauxite, respectively (Industrial Minerals, 1998).

Gold production in 1998 fell to 13.4 metric tons (t) from 14.8 t in 1997. Omai Mine, with its sustained production of 10.9

[1]Where necessary, values have been converted from Guyanese dollars (G$) to U.S. dollars at the rate of G$175.00=US$1.00.

t/yr, is one of the largest open pit gold mines in Latin America and owned by Omai Gold Mines Ltd. (OGML) (Sucré, 1999, p. 12). A small amount of silver, equivalent to approximately 5% of gold output, was recovered during refining of the gold. Recorded production of diamonds exceeded 35,000 carats in 1998. *(See table 1.)*

Several international companies were involved in the Guyanese mining industry. *(See table 2.)* The Canadian firm, Cambior Inc. (65%) and the Denver-based Golden Star Resources Ltd. (GSRL) (30%) owned a 95% interest, and the Guyanese Government held a 5% interest in OGML (Veneroso, 1997). OGML accounted for about 20% of Guyana's GDP and 18% of its exports. Omai's gold reserves, based on a $350 per ounce gold price, were about 54.1 Mt grading 1.4 grams per metric ton (g/t), representing some 78.3 t (2,518,000 ounces) of contained gold (Golden Star Resources Ltd., 1998).

Other participants exploring for gold and diamonds in Guyana were BHP Corp. of Australia and International Roraima Gold Corp., Placer Dome Inc., Seahawk Minerals Ltd., and Toscana Resources Ltd., all of Canada. BHP's interests in Latin America were the potential for finding mineral deposits similar to the Carajás iron ore mine in Brazil and low-cost gold producers, such as the Yanacocha and the Pierina gold mines in Peru. GSRL's interests were to find deposits similar to the Omai gold mine and the Five Stars-type gold and diamond prospects in the Guiana Shield of South America.

Traditionally, independent gold miners had smuggled much of their recovered gold into Brazil or Venezuela. After the end of the GGB's monopoly status, a system of licensed and bonded gold buyers was established, and independent and/or small-scale gold miners continued to be encouraged to constitute cooperatives that may qualify them as licensed buyers, who will then be responsible for paying royalties to the Government. The royalty rate of 5% is considered to be high by international standards. One of the options under consideration by the Government is to reduce that rate by 50% and phase in to this new rate over a period of time. A portion of the royalty payment would be made a deductible from the income tax. The result of this change would reduce the attractiveness of smuggling, or other forms of evasion, and would provide an incentive to declare profits (Baharrat, 1998).

As a result of low gold prices, $272.50 per ounce as of May 19, 1999, exploration programs will continue to be reduced, in particular, on the Guiana Shield (northern Brazil, French Guiana, Guyana, Suriname, and southeastern Venezuela), (Mining Journal, 1999). For example, GSRL has reduced exploration activities since the first quarter of 1998 in Guyana, except on its high-priority Eagle Mountain prospect, where the company calculated a resource of 4 Mt grading 1.4 g/t gold (MacLean, 1998). The project could supply mill feed to the Omai mill, which is 50 kilometers southwest of the discovery.

While maximizing the returns from its natural resources, Guyana also desired to minimize the social and environmental costs and biodiversity losses (Sawh, 1998). Guyana's Environmental Protection Act 1996 (Act No. 11 of 1996) and the Guyanese Environmental Protection Agency of 1997 require an environmental impact assessment (EIA) for all mining operations. A detailed EIA forms part of the mining license process. Mining companies must observe environmental guidelines, such as designing dams for tailings and ponds of retention to avoid failures because of the milling or leaching discharges, respectively. Also, mining companies must maintain air and water quality during operations, use larger and technologically advanced dredges in the Essequibo River, and protect ecosystems from emerging environmental problems, such as mercury contamination of soils and waters resulting from gold recovery by individuals, as well as small dredges.

The private sector dominated the production of gold and diamonds. Five companies held large-scale mining licenses. About 1,200 prospecting licenses for gold and precious stones and a number of license applications were on file. Local subsidiaries of private foreign firms carried out petroleum exploration with little discernible success (Sucré, 1999, p. 10).

Baracara Quarries and Toolsie Persaud Ltd. produced gravel near Bartica. The Government's Teperu-Itabu Quarry reopened in response to the overwhelming demand for construction materials, and consideration was given to using Omai gold mine waste rock for aggregate and boulders.

Guyana has diversified the formerly bauxite-oriented mineral industry by means of its 8-year gold and diamond promotion programs. The Guiana Shield of South America is considered by some authors to be the last major craton unexplored for diamonds (White, 1997). Foreign participation and internationally funded exploration activity has resulted in augmented gold production, which is considered to be sustainable into the next decade. Large-scale gold operations, such as those of the Omai Mine, which, at 13.4 t, is the second largest gold producer in Latin America after the Yanacocha Mine of Peru and which produced 41.4 t, would significantly strengthen Guyana's economy,

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TABLE 1
GUYANA: PRODUCTION OF MINERAL COMMODITIES 1/

Commodity 2/		1994	1995	1996	1997	1998 e/
Aluminum, bauxite, dry equivalent, gross weight	thousand metric tons	1,991	2,028	2,475	2,467	2,500
Diamond	carats	50,000 e/	52,014	49,000	35,612	35,000
Gold, mine output, Au content	kilograms	11,710 r/	9,005 r/	12,006 r/	13,521	13,500
Stone, crushed e/	metric tons	136,000	136,000	136,000	136,000	136,000

e/ Estimated. r/ Revised.
1/ Includes data available through June 1999.
2/ In addition to the commodities listed, a variety of crude construction materials (clays and sand) and semiprecious stones was also produced. Available information was inadequate to make an estimate of production.

Source: Bureau of Statistics & State Planning Secretariat.

TABLE 2
GUYANA: STRUCTURE OF THE MINERAL INDUSTRY IN 1998

(Thousand metric tons, unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bauxite and alumina:			
Bauxite	Bauxite Industry Development Co. Ltd. (BIDCO) (Government, 100%)	Kara Kara, Northeast Dorabece, and East Montgomery Mines, MacKenzie, Linden, West Demerara District	3,500
Do.	do.	Block 2 Manaka, North, South mines. Kwakwani, East Berbice District	1,500
Do.	do.	Processing plant at Linden	900
Do.	do.	Processing plant at Everton, East Berbice District	700
Do.	C.A. Dayco (private, Venezuela, 100%) (BIDCO contract)	Kwakani area	500
Do.	Green Mining Inc. (Green Construction Co., United States, 100%) (Guymine contract)	Dacouria Mine, Linden	NA
Do.	Aroaima Bauxite Co. (Government, 50%; Reynolds Metals Co., United States, 50%)	Aroaima, East Berbice District	1,500
Alumina	BIDCO	Alumina refinery at Linden (presently closed)	300
Gold kilograms	Omai Gold Mines Ltd. (Cambior Inc., Canada, 65%; Golden Star Resources Ltd., Canada, 30%; Government of Guyana, 5%)	Omai Mine, Mazaruni-Potaro District	300
Gravel	Baracara Quarries (private)	Quarry near Bartica, Mazaruni-Potaro District	100
Silica sand	Minerals and Technology Ltd. (Minerals and Chemicals of Texas, United States)	Sand Hills, Demerara River, West Demerara District	300

NA Not available.