

# THE MINERAL INDUSTRY OF SURINAME

By Alfredo C. Gurmendi

Suriname, with an area of 163,000 square kilometers (km<sup>2</sup>) and fewer than 450,000 people, borders with the Atlantic Ocean in the north, lies between Guyana to the west and French Guiana to the east, and limits with Brazil in the south. The Surinamese economy is supported by strong bauxite, alumina, and aluminum industries, which accounted for about 70% of the country's exports and about 15% of the gross domestic product (GDP) of \$600 million<sup>1</sup> in 1996 (Mining Journal, 1996, p. 2). Mining in general accounted for about 2% of GDP. During the period 1992-95, Suriname accounted for 7% of U.S. alumina imports and ranked third behind Australia, 71% and Jamaica, 9% (U.S. Geological Survey, Mineral Commodity Summaries, 1997).

In recent years, the Government's policies have been aimed at attracting foreign investment, encouraging the formation of the private sector through joint-venture opportunities, especially in the natural resources sector, and in particular in the mining sector with highly promising gold and diamond exploration prospects. State controls have been curtailed or ended, inflation was reduced from 225% in 1994 to about 120% by yearend 1996, fiscal stability has become attainable by reducing deficit spending, and the mineral exploration regulations were reviewed.

Suriname's current mining law issues four types of mining titles, which cover diamonds, gold, and other minerals. They are prospecting rights for up to 2,000 km<sup>2</sup> for a maximum of 3 years, exploration rights for up to 400 km<sup>2</sup> and a maximum of 7 years, production rights for up to 100 km<sup>2</sup> and for 25 years that may be extended, and small mining rights for alluvial or shallow operations. Multiple applications may allow a corporation to hold a larger area, following successful prospecting or exploration, for purposes of additional exploration or mine development. Exploration and production titles are transferable to other qualified parties, with the ability to obtain environmentally sound modern mining technology and establishing a very competitive mineral industry.

The corporate income tax rate is 45% and royalty rates are negotiable depending upon the type of mineral produced. License fees for exploration and production are nominal. Mineral rights holders can be exempted from import duties on equipment used for mining, processing, and future expansions. Expenditures on prospecting, exploration, and other pre-production costs can be written off during the first 5 years of operations. Also, there are provisions for a tax deduction on reinvestment and the repatriation of profits is guaranteed.

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<sup>1</sup>Where necessary, values have been converted from Surinamese florin (Sf) to U.S. dollars at the rate of Sf1.7850=US\$1.00.

Bauxite and alumina continued to dominate the industry's annual output. Gold, petroleum, and sand production were expected to increase in the near term. (*See table 1.*)

Suriname's privately-owned multinational companies mined bauxite and processed alumina and aluminum. In 1996, Suriname's output of some 4 million metric tons (Mt) of bauxite made it the 10th largest producer worldwide. The Paramam plant, a joint-venture owned by Suriname Aluminum Co. (Suralco, 55%) a subsidiary of the Aluminum Co. of America (Alcoa) of the United States and NV Billiton Maatschappij (Billiton, 45%) of the Netherlands, is a medium-sized bauxite refinery and aluminum smelter 25 kilometers (km) south of Paramaribo. Paramam produced 1.6 Mt of alumina and 32,000 metric tons (t) of aluminum in 1996. Suralco's bauxite production at Moengo mines are depleting and will be largely replaced by the Coermotibo Mine, which can produce about 4 Mt of bauxite per year into the next decade.

Acaribo Mine, a joint-venture of Suralco (76%) and Billiton (24%), produced 1 Mt of bauxite; however, its reserves will be depleted in 1997, then bauxite production will come from the Lelydorp III deposit, which has reserves of 19.5 Mt grading about 53% Al<sub>2</sub>O<sub>3</sub> and will produce 2 Mt of ore per year until 2006.

A \$1.4 million feasibility study is being conducted on the Bakkuis bauxite project by Billiton and Alcoa, its current resources are estimated at 300 to 400 Mt (Mining Journal, 1996, p. 7 - 8). Suriname's total bauxite reserves were estimated by Suralco at 575 Mt.

Gold concessions are negotiated with Grasshopper Aluminum Company N.V. (Grassalco), a state-owned mining company. Currently, gold is produced by numerous small placer operators and sold to the Government.

The Gross Rosebel gold property is 80 km south of Paramaribo and less than 2 hours by air from Omai, Guyana. The mineral agreement covering this property, ratified by the Surinamese National Assembly in 1994, was between the Government, Grassalco, and Golden Star Resources Ltd. of the United States (GSRL). Grassalco assigned its rights to Gross Rosebel to GSRL in 1994, and has the option to buy a 20% equity when a mine is developed and a 2% royalty on gold production (Mining Journal, 1996, p. 8).

The joint-venture between Cambior Inc. (Cambior), 50% of Canada and GSRL, 50% will bring Gross Rosebel into production. A pre-feasibility study was completed in March 1996 and the feasibility study is expected by mid-1997. As of August 1996, Gross Rosebel's mining reserves were 35 Mt grading 1.5 grams of gold per ton of ore, containing 43.5 t of gold. The expected gold production is about 7,776 kilograms

(kg) per year. The initial target for the feasibility study contemplates mining reserves of 62.2 t and a plant with a milling production capacity of 12,000 to 16,000 tons of ore per day (Cambior Inc., 1997).

During 1996, GSRL continued gold exploration in other areas of the Guiana Shield, mainly on the following exploration properties, Headley, Thunder Mountain, Saramacca, Sara Kreek and Tempati, and South Benzdorp and Tapanahony. Gold mineralization similar to that in neighboring French Guiana occurs in the Precambrian Paramaka formation of Suriname, and gold placers are worked by garimpeiros (small-scale independent miners) south and east of the South Benzdorp area; their estimated gold production could amount to 300 kg per year. Reportedly, Canarc Resources of Canada (Canarc) acquired an 80% interest in the Sara Creek concession covering 22,500 hectares (ha) in east-central Suriname about 150 km north of Paramaribo. Canarc and its Surinamese partner, Wylap Development Co., was conducting feasibility studies for a large surface gold mine at Sara Kreek, where placer gold production is already underway. Gold Vessel Resources (GVR), a subsidiary of Saint Genevieve Resources of Canada, signed an agreement with Surinamese interests to participate in three gold properties. Two of them comprised 20,000 ha in the Sipalvini District, where small-scale gold mining was being conducted. Also, GVR and partner Margo Mining Co. applied for permits to explore 65,000 ha on properties held by GSRL near Gross Rosebel. GVR applied for five permits to explore a 259-square-kilometer area near the western border with Guyana.

The state-owned oil company, Staatsolie Maatschappij Suriname N.V. (Staatsolie), reported that about 5,000 barrels per day (bbl/d) of heavy, sweet crude oil are produced from the Tambaredjo fields west of Paramaribo (Mining Journal, 1996, p. 10). The company is expected to increase crude oil output at Tambaredjo to 7,500 bbl/d by 2000. Some 40% of the crude is exported and most of the remainder is used in the bauxite, alumina, and aluminum industries. Staatsolie continued with the construction of a 55-km pipeline from the Catharina Sophia Field at Tambaredjo to the Suriname River export terminal at Tout Lui Faut, 5 km south of Paramaribo. The Tout Lui Faut Canal was proposed as the site of the Staatsolie refinery. Staatsolie reported that Tambaredjo and Borneo fields have proven reserves of 25 million barrels (Mbbbl), with an additional 40 Mbbbl as probable reserves.

In the near future, Suralco and Billiton will continue to control the bauxite mining industry, with GSRL, Cambior, KWG Resources, and Canarc involved in gold exploration. Staatsolie will continue to be involved in the development and production of petroleum. (*See table 2.*)

Because mineral rights continued to be vested in the State, exploration rights will be granted by the Government. The primary mineral produced is bauxite, although gold, nickel, platinum, and tin deposits also occur. The prospects for the Surinamese economy has improved and is brighter because of its strong bauxite-alumina-aluminum industries and a highly promising gold exploration boom. However, the Government continues to be interested in the development of nontraditional exports to increase foreign currency earnings. Also, located on the eastern portion of the Guyana Shield greenstone belt, Suriname apparently is ready to receive the spillover from the

recent gold activities in Brazil, French Guiana, Guyana, and Venezuela. Foreign investors, particularly from Canada and the United States, are paying closer attention to the gold deposits in the Suriname's extension of the Guyana Shield.

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U.S. Geological Survey, 1997, Import sources of alumina 1992-95: Mineral Commodity Summaries, p. 28.

## Major Sources of Information

- Geologisch Mijnbouwkundige Dienst  
Kleine Waterstraat 2-6  
Paramaribo, Suriname  
Telephone: (597) 476215; Fax: (597) 421533  
Staatsolie Maatschappij Suriname NV  
Industrieterrein 21, Flora  
P.O. Box 4069  
Paramaribo, Suriname  
Ministry of Finance  
Tamarindelaan 3  
Paramaribo, Suriname  
Telephone: (597) 472610; Fax: (597) 476314  
Suriname Trade and Industry Association  
Prins Hendrikstraat 18  
P.O. Box 111  
Paramaribo, Suriname  
Telephone: (597) 475286 or 287; Fax: (597) 472287

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- Engineering & Mining Journal, Latinomineria, Revista Oficial, Information Sources, G&T International (BVI) Ltd., Cutlass Building, Wickham's Cay, Road Town, Tortola, British Virgin Islands, bimonthly.  
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TABLE 1  
SURINAME: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity	1992	1993	1994	1995	1996
<b>Aluminum:</b>					
Bauxite, gross weight	3,250 2/	3,300	3,300	3,300	4,000
Alumina	1,600	1,600	1,600	1,600	1,600
Metal, primary	32	32	32	32	32
Cement, hydraulic	50	50	50	50	50
Clays, common	16	20	20	20	20
Gold, mine output, Au content	kilograms	300	300	300	300
Petroleum, crude	thousand 42-gallon barrels	1,500	1,500	1,500	1,825 2/
<b>Sand and gravel:</b>					
Gravel	35	35	35	35	35
Sand, common	160	160	160	160	160
Stone, crushed and broken	50	50	50	50	50

1/ Includes data available through Apr. 1997.

2/ Reported figure.

TABLE 2  
SURINAME: STRUCTURE OF THE MINERAL INDUSTRY FOR 1996

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Suriname Aluminum Co. (Suralco) [Alcoa, USA, 55%; and NV Billiton Maatschappij (Billiton), 45%]	Refinery at Paranam, District of Para	2,000
Aluminum	Suralco, (100%)	Smelter at Paranam, District of Para	50
Bauxite	do.	Mines at Coermotibo and Accaribo, District of Marowijne	2,000 1,500
	Billiton 76%; Suralco, 24%	Accaribo Mine, District of Para	1,000
Cement	Vensur N.V. (private, 100%)	Paramaribo, District of Para	60
Gold	No major operating companies	South and east Suriname	NA
Petroleum	Staatsolie Maatschappij Suriname NV (Government, 100%)	Tambaredjo, District of Saramacca	1,825

NA Not available.