

THE MINERAL INDUSTRY OF

NICARAGUA

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Nicaragua is a Central American country, bounded by the Caribbean Sea on the east and by the Pacific Ocean on the west. The terrain is made up of volcanic peaks, with a wide Caribbean coastal plain and a narrow Pacific coastal plain segmented by volcanoes.

Mining and mineral production in Nicaragua accounted for less than 1% of the country's gross domestic product. Drought conditions in 1994 detrimentally affected agriculture, mining, and electrical powerplants. Electricity was rationed across the country with rolling black-outs for 8 hours per day from June to December.²

In 1994, Nicaragua was in the process of drafting a new mining law. The Nicaraguan Mining Corporation, or INMINE (Corporación Nicaragüense de Minas), was established in July 1988 by Decree No. 377. INMINE's objectives were to organize, administer, direct, and promote the country's mining industry. INMINE also was responsible for granting and canceling permits and licenses for mining concessions of minerals. The Nicaraguan Central Bank provided medium- and long-term financing for the private sector, including mining, through its Nicaraguan Investment Fund.³

When the civil war ended in 1991, the Government of Nicaragua approved to attract foreign investors by adopting a Foreign Investment Law (Decree No. 127 and its amendment Decree No. 2-92, passed in January 1992); an Export Promotion Law (Decree No. 37-91); and an Industrial Free Zones Law (Decree No. 46-91). Gold and silver exports continued to be controlled by the Government's Central Bank.

The country had no environmental regulations. Environmental remediation remained a low priority, given that Nicaragua was one of the poorest countries in the Western Hemisphere. On October 12, 1994, the U.S. Vice President attended a summit of Central American presidents in Managua, the capital. Part of the meeting was to discuss the protection of the region's environment from the exploitation of natural resources.⁴

Nicaragua operated only several small metal mines, producing gold and silver, mostly in the sparsely populated areas in the northwest.

In 1994, production of most commodities in Nicaragua remained about the same as in 1993, except for silver, which increased by nearly 10%, setting a new record high. Most bentonite, gold, gypsum, lime, and silver, were exported. Industrial minerals, such as cement, sand and gravel, and

salt, were consumed domestically. (*See table 1.*)

Nicaragua was a member of the Caribbean Basin Initiative (CBI). CBI was made a permanent program in 1990 when the U.S. Congress amended the Caribbean Basin Economy Recovery Expansion Act. Nicaragua signed an agreement on trade liberalization with Costa Rica, El Salvador, Guatemala, Honduras, and Mexico in 1991. A bilateral Framework Agreement on Trade and Investment was signed on June 27, 1991, by Nicaragua and the United States. At yearend 1993, the United States ended the aid embargo against Nicaragua. In 1994, Nicaragua became a member of the Association of Caribbean States.⁵ Gold and silver accounted for about 3% of the Nation's total export earnings. Nicaragua was totally dependent on imports for its oil supply; petroleum was imported primarily from Venezuela under the San Jose Accord.

INMINE controlled most of the country's mineral exploration and production operations. Corporaciones Nacionales del Sector Público's role included returning firms to former owners, selling them to private investors, and closing unprofitable companies. The Central Bank of Nicaragua (CBN) set the monetary, exchange rate, and credit policies that regulated the country's economic and financial systems. CBN also controlled the export of gold and silver from the country. Cement was produced by the State-owned Compañía Nacional Productora de Cemento. Salt was produced by privately owned operations.

Nicaragua's largest producer of gold was the El Limón Mine, operated by INMINE's Empresa Francisco Meza Rojas (FMR). Proven and probable reserves were estimated at 11,690 kilograms (kg) of gold from three separate sources: two open pit mines adjacent to the cyanide processing plant and the underground Talavera Mine, 4 kilometers (km) to the west. The South pit and the Talavera Mine were in operation, and the mill was expanded to treat 1,000 metric tons (mt) per day. In 1994, the El Limon Mine produced 202.2 kg of gold.⁶ INMINE also produced gold from the Bonanza, La Libertad, and Siuna Mines. INMINE contributed about 70% of total gold production in 1994.

Following 2 years of intensive negotiations, Canada-based Greenstone Resources Ltd., acquired in October 1994 a 75% interest in the La Libertad open pit gold mine from the Nicaraguan Government. The La Libertad property in Central Nicaragua was composed of a 120-square-kilometer concession surrounding a small existing gold mine. The mine produced about 155 kg of gold in 1994 and was expected to

increase to 235 kg in the near future. A feasibility study was initiated to justify a large-scale production expansion by 1997. Reportedly, environmental studies and geological investigations are underway. Proven and probable reserves held by Greenstone in Nicaragua were estimated at 15,550 kg of gold.⁷

The Bonanza and the Siuna Mines in the country's northeast, the El Limon Mine, and the inactive La India Mine, south of El Limon, were to be privatized. The La India Mine also included two gold prospects—the Topacio east of Managua and the La Reina northeast of Managua. The probable and possible reserves of the La India Mine were estimated at 8.7 million mt grading 9 grams per mt of gold.⁸

Delgratia Developments Ltd., of Vancouver, opened an office in Managua in early 1994 to explore and develop six properties. Several gold deposits were already known, the two most promising sites being Coco and La Reina; both reportedly also hosted silver.⁹

In 1994, the Government reportedly granted a 10-year concession to Hunt Exploration and Mining Co. for the Bonanza, Rosita, and Siuna gold mines. Hunt invested \$60 million in the mines and local infrastructure. The Government also would drop a \$168 million claim made by the previous Sandinista Government against the former owner, Rosario Mining Co., and pay Rosario \$21 million for losses sustained during nationalization.¹⁰

Empresa Nicaragüense de Minerales No Metálicos controlled several of the state's industrial mineral companies including the bentonite operations of Empresa Rotowa S.A.; the gypsum plant and quarries of Yesera Centroamericana S.A.; and the limestone operations of Empresa Piedra Cal S.A. and Empresa Cal El Pueblo.

The Inversiones Mineras A.S. (IMISA) functioned as a holding company to promote and expand its affiliated production companies. IMISA incorporated Arenas S.A. (sand and gravel), Canteras S.A. (dimension stone), and Calizas S.A. (grounded limestone).

Numerous undeveloped deposits of ash and pumice are found along a line of volcanoes on the Pacific Coast. Kaolin had been reported at several locations, including Cerro Colorado, Dilpito, Mombacho, and Volcán. Nicaragua imported kaolin for its ceramic products.

Nicaragua relied totally on imports for all its mineral fuel needs. Crude oil was imported primarily from Venezuela.

Infrastructure for mining in Nicaragua was not well developed. Only about 4,000 km of roads was paved of the total of 26,000 km, including the 369-km Pan-American Highway. Most minerals were transported by trucks on public roads or on a few private roads. Only 373 km was in railroad tracks, mostly used to transport agricultural products and gypsum. A 56-km crude oil pipeline extended from Puerto Sandino on the Pacific Coast to the refinery in Managua. The ports of Cabezas, El Bluff, and Rama also serviced Caribbean traffic for export of raw materials.

Esso Standard Oil S.A. Ltd. (Esso) supplied most of the country's petroleum product needs. Esso has had marketing operations in Nicaragua since 1920, opening the country's

only refinery in Managua on a small scale in 1963 and expanding the operation in 1969.¹¹

Nicaraguan powerplants were operated by the Government, with installed capacity between 401 and 450 megawatts (MW). More than 55% of its electricity was generated by thermal coal plants and 23% by hydrothermal plants. Other private electrical powerplants supplied about 55 MW to the national network. A small quantity of electricity was imported from neighboring Costa Rica, Honduras, and Panama to supplement its requirements. Nicaragua's Energy Institute (Instituto Nicaragüense de Energia) and U.S.-based Florida Power and Light Co. signed a \$30 million, 15-year agreement in mid-1994 to construct five turbines to generate 30 MW of power.¹²

Geothermal energy was one of Nicaragua's most important energy resources, with an estimated potential of about 1,200 megawatts (MW). Only the Momotombo geothermal field was in operation, while other areas were being explored. The Momotombo field is in the western part of Nicaragua on the north shore of Lake Managua. The Momotombo geothermal electric powerplant, known as Patricio Arguello Ryan, accounted for 20% of the installed capacity in Nicaragua and about 35% of the country's annual electricity generation. The capacity of the plant was 70 MW.¹³

Mining in Nicaragua had a significant potential for expansion. The lack of mine growth and the drop in mineral production were largely attributed to the expropriation of major mines in the early 1980's and an absence of managerial and technical expertise. The Government planned to revive Nicaragua's mining industry with financial and technical aid from abroad. The Government hoped that the privatization of mines would be completed in 1995 to reduce the country's deficit. Nicaragua had a developing economy, with occasional armed violence throughout the country, mostly in the north. Prospectors and mining companies were expected to guarantee their own safety and finance their own programs, including health and medical coverage. The production of gold and silver was expected to rise by 75% in 1999.

¹Text prepared July 1995.

²Latin American Economy & Business (London): Sept. 1994; Oct. 1994; Jan. 1995.

³Latin American Times (London): Apr.-June 1994.

⁴Journal of Commerce (New York): Sept. 28, 1994, p. 5A.

⁵Institute for International Economics (Washington, DC): July 1994, p. 246.

⁶The Northern Miner (Toronto): Oct. 3, 1994, p. 1; Mar. 27, 1995, p. C2.

⁷Greenstone Resources Ltd. (Toronto): News Release, Nov. 1994. Mining Magazine (London): Dec. 1994, p. 385.

⁸The Northern Miner (Toronto): Oct. 3, 1994, p. 1.

⁹The Northern Miner (Toronto): July 11, 1994, p.11.

¹⁰Engineering & Mining Journal (Chicago, Illinois): May 1994, p. 16.

¹¹PennWell Publishing Company (Tulsa, Oklahoma): 1994 Worldwide Petrochemical Directory, 32d Ed. 1993, p. 109.

¹²U.S./Latin Trade (Miami, Florida): Nov. 1994, p. 22.

¹³Inter-American Development Bank (Washington, D.C.): July 26, 1994; Latin American Economy & Business (London): Jan. 1995, p. 20.

Major Sources of Information

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Instituto Nicaragüense de Recursos Naturales del Ambiente
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Nicaraguan Mining Chamber
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Major Publications

Banco Central de Nicaragua, Gerencia de Estudios Económicos: *Indicadores de Actividad Económica*, 1993, Managua, Nicaragua, annual.

Corporación Nicaragüense de Minas (INMINE): *Balance Anual*, 1993, Managua, Nicaragua, annual.

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Latin American Mining Institute, Washington, DC: *Mexico and Central America Investment and Mining Guide*, annual.

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U.S. Department of Commerce, International Trade Administration: *Foreign Economic Trends and Their Implications for the United States*, annual.

TABLE 1
NICARAGUA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodities	1990	1991	1992	1993	1994 e/
Bentonite	4,590	5,070	2,820	2,160 r/	2,200
Cement	219,000	239,000	277,000	567,000 r/	570,000
Gold, mine output, Au content kilograms	1,200	1,150	1,320	1,240 r/	1,070 3/
Gypsum and anhydrite, crude	13,400	16,200	9,120	11,100	11,000
Lime	1,010	2,120	2,000	3,630 r/	3,500
Petroleum refinery products thousand 42-gallon barrels	4,000 e/	4,540	4,810 r/	4,630 r/	4,700
Salt, marine e/	15,000	15,000	15,000	15,000	15,000
Sand and gravel thousand tons	1,060	1,170	1,290	1,100 r/	1,200
Silver, mine output, Ag content kilograms	1,100	1,010	2,240	2,240 r/	2,460 3/

e/ Estimated. r/ Revised.

1/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits.

2/ Includes data available through July 7, 1995. In addition to the commodities listed, Nicaragua continued to produce a variety of industrial minerals to meet domestic needs. Output of these materials is not reported, and there is insufficient general information for formulation of estimates.

3/ Reported figure.

TABLE 2
NICARAGUA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity ownership	Location of main facilities	Annual capacity
Bentonite	Empresa Rotowa S.A. (Corporación Nicaragüense de Minas (INMINE), (Government, 100%))	South of Sébaco, Matagalpa Department	4
Cement	Compañía Nacional Productora de Cemento (Government, 100%)	San Rafael del Sur, Managua Department	700
Gold kilograms	INMINE, 100%	El Limón Mine, León Department; Bonanza mining complex, Zelaya Department; Siuna mining complex, 1/ Zelaya Department	1,100
Do.	Mining of Nicaragua S.A. (Greenstone Resources Ltd., 75%; Inversiones Mineras S.A., - Grupo IMISA, 25%)	La Libertad Mine, Chontales Department	200
Gypsum	Yesera Centroamericana S.A. (INMINE, 100%)	Santa Rosa del Peñón, León Department	17
Petroleum products thousand 42-gallon barrels	Esso Standard Oil S.A. Ltd.	Managua, Managua Department	5,400
Silver kilograms	INMINE, 100%	Bonanza and Siuna 1/ mining complexes, Zelaya Department; El Limón Mine, León Department	3,000

1/ The Siuna Mine is inactive.