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FUNDACION PARA EL FOMENTO DE LA INVESTIGACION CIENTIFICA Y TECNOLOGICA

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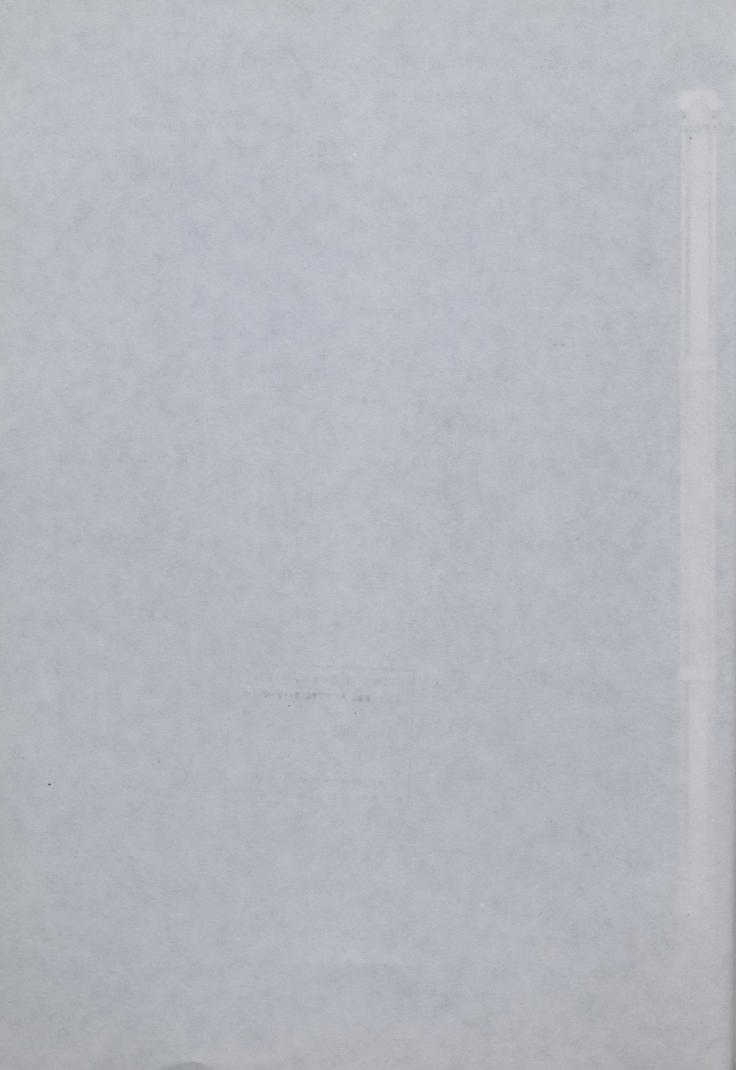
CANADIAN EMBASSY IN COLOMBIA

OVERVIEW OF THE MINING
SECTOR IN COLOMBIA
1991

Dept. of External Affairs
Min. des Affaires extérioures

JAN 18 1997

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## PRELIMINARY NOTE

The purpose of this document is to serve as a guide for Canadian businessmen who may have an interest in supplying equipment, services and technology to the mining sector in Colombia.

Considering that it is just a summary, it does not cover in full detail all of the subjects contained in it.

The material for this document was collected during the months of April and May 1991 and it is based on the information available at the time.

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#### .. COLOMBIA: GEOPOLITICAL AND ECONOMIC DESCRIPTION

#### 1.1. Overview

Within the group of the Latin American nations, the Republic of Colombia occupies an intermediate position on the region's scale of power. It is the fourth largest country in terms of size and population, the fifth in terms of Gross Domestic Product and the ninth in terms of per capita product.

Because of its strategic geographic location and the size of its economy, Colombia plays an important role within the Andean Group market, an economic integration process in which it participates together with Venezuela, Ecuador, Perú and Bolivia. Within the larger context of Latin America, Colombia is also an important exporter of energy products together with Mexico and Venezuela but, in general terms, it is second to the greater economic and political power of Brazil, Mexico, Argentina and Venezuela.

Throughout the Twentieth century, the country's policies in the fields of foreign affairs, security, trade and economic development have envolved on the basis of its close bonds with the United States of America. This friendly and loyal relationship in the field of international politics and economics continues to be a decisive factor in Colombia's foreign affairs, despite its various relationships with the rest of the world.

For decades, Colombia's economic activity was centered around the production and merchandising of coffee for export, in which the country has now become the second world producer after Brazil. However, during the past 30 years, the country's contribution to world supply has been growing and diversifying into other fields such as flowers, bananas, sugar, coal, oil, ferronickel, precious metals, emeralds, garments and other manufactured goods.

Colombia's economic and social development indicators have shown a constant improvement since the 1950's, despite the negative effects caused by the domestic conflicts which have prevented the country from achieving better production levels and from making a more effective use of its substantial natural resources.

On the other hand, given the intermediate level of development which the domestic industry has reached, the country will continue to be dependent on North America, Europe and, to a lesser degree, on Japan for technology, capital goods, external financing and investments.

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#### 1.2. Location and Size

The continental territory of Colombia is located on the Northwestern end of South America. It is the only South American country with shores on the Atlantic (Caribbean Sea) and Pacific Oceans.

The size of its territory is approximately 440.000 square miles (1.138.000 square kilometers).

#### 1.3. Population, Language and Religion

Colombia's current population is about 33 million inhabitants and its official language is Spanish. The country is characterized by a high degree of ethnic diversity.

The majority of Colombians are Roman Catholic, but there is religious freedom.

#### 1.4. Physical Characteristics and Main Cities

In general terms, the Colombian territory is formed by a mountainous region to the West and by a flat region to the East. The former is constituted by the Andean Cordillera and the latter by the Orinoco and Amazon river basins.

The Andean Cordillera is divided into three mountain ranges which run from South to North, with heights greater than 13.000 feet at some points. Most of the population is concentrated in the Andean region where the climatic conditions have given rise to a rich agricultural development. However, this advantage is offset by the cost and difficulty of transportation in the mountains.

Nearly 70 per cent of Colombians live in towns or cities. Cities with more than 500.000 inhabitants include Bogotá, Medellín, Cali, Barranquilla and Cartagena. Bogotá is the administrative and political capital and the major financial, industrial and commercial center.

The most important sea ports are Barranquilla, Cartagena and Santa Marta on the Caribbean and Buenaventura on the Pacific.

#### 1.5. <u>Transportation and Communications</u>

The country has made a substantial effort to meet the increasing demands of the population and of the industrial development process for new and better means of transportation and communications. At present, almost all of the territory is connected by land and air transportation, as well as by mail, telegraph and telephone services.

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International transportation and communications services are highly efficient in the main cities and the new programs for economic opening recently adopted by the government will no doubt contribute to their enhacement and modernization.

#### 1.6 Government

Colombia is a centralized state. Its present constitution, which dates back to 1886, states that the head of the national government is the President, elected by the people for a four-year period, with no prevision for re-election. The Colombian people have always voted for democracy and favoured the implementation of institutional government policies and reform. This has resulted in great political stability during the Twentieth century.

Ministers and Governors are appointed by the President, while Mayors are elected by the people since 1988.

The legislative branch of power is represented by Congress. Members of the Senate and of the Chamber of Representatives are elected by the people every four years. The judicial branch of power is represented by the Supreme Court of Justice.

A Constituent Assembly of seventy members was elected by popular vote in December 1990, empowered to make the constitutional reforms required to modernize the country's political institutions.

#### 1.7. Economic and Industrial Development

Despite a large number of adverse conditions such as rapid population growth, poverty, inadequate distribution of income, unemployment, low productivity and a limited generation of capital, the economy has made substantial progress during the past 30 years. This progress is reflected in the increase of the per capita product which went from US\$260 per year in 1960, to US\$1.300 in 1990.

The international finance and cooperation agencies agree with the economic authorities of Colombia that although the country's real production has grown at a relatively slow pace, it has been exceptionally stable and balanced in the long run.

The perception was confirmed during the 1980's, when the debt crisis struck the Latin American economies causing a dramatic drop in production and employment throughout the region. Although the external sector of the Colombian economy suffered severe disadjustments between 1982 and 1985, the

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sources of instability were controlled and the country was able to maintain a 3.4% average real growth rate throughout the decade.

The government has made an important contribution to development by building costly infrastructures for transportation, communications, power generation and distribution, drinking water systems and other services which are essential for industrial and urban growth. Additionally, the land reform, together with rural development programs and modern taxation systems, have contributed to the improvement of the country's property and income structure.

The once all-important agricultural activities have been substituted by a diversification of the manufacturing industry, mining and construction. At present agriculture and manufactured goods account for nearly 40% of the Gross Domestic Product, while mining accounts for 8% and construction and public works for 6%.

The manufacturing industry accounts for approximately 20% of the Gross Domestic Product and has made substantial progress in the production of consumer goods. However, it is still affected by the limitations of a small domestic market and the capacity of the production plants which have not allowed for a greater production of intermediate and capital goods.

Coffee, which had historically been the largest export product, at present accounts only for 25% of foreign sale revenues. Its importance has diminished as a result of the growth in exports of products such as hydrocarbons, coal, precious metals, emeralds and the so-called minor exports which comprise other agricultural products and mass-consumption manufactured goods.

Most of the external financing comes from multi-lateral credit agencies such as the World Bank, the Inter-American Development Bank and other institutions before which Colombia appears as the sole Latin American nation which did not reschedule its foreign debt service during the difficult years of the region's economic crisis. On the contrary, the country's foreign debt and trade indicators and the position of its international reserves reflect quite a positive situation in 1991.

The policies adopted by the government in the past year have improved the prospects of the Colombian economy despite the problems of public order derived from the country's struggle against drug traffic and the two guerrilla groups that still remain active after the government effort to achieve peace and democratize the political life in the country.

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The most significant and ambitious reform is the government's commitment towards a new development strategy based on the transition between the old import-substitution model to a modern competitive foreign trade system which will serve as the basis for future growth.

### MINING IN COLOMBIA

### 2.1. Economic Significance

During the 80's the mining sector in Colombia showed an unprecedented growth in the country's economic history. This growth was reflected mainly on the sector's share in the Gross Domestic Product and the overall export figure, but it had a major effect on the generation of fiscal resources both for the central government as well as for the regions.

Mining activities in Colombia had traditionally revolved around the production of gold, salt, emeralds and coal using mainly manual methods in regions with little or no physical or social infrastructure. Most of the mining activities were artisanal, of little productivity and very hazardous, and had detrimental effects for the environment and the quality of life of those living in the mining areas.

The Cerrejón Zona Norte coal project and the Cerromatoso nickel project were the dawn of a new mining era in which these products would achieve an important share of the world markets and the mining activities would enter the modern age. These projects implied high production levels, long maturation periods, scale economies and a strong participation of foreign technology and funding, hence the government's need to implement those projects under a mixed investment-development system in association with important international companies such as EXXON - for the Cerrejón coal project - and Billiton Overseas - Dutch affiliate of Royal Dutch Shell - for the Cerromatoso nickel project.

While mining activities accounted for only 2% of the added value during the 80's, they now account for nearly 8% of the national production of goods and services, thus becoming an important economic growth factor.

This growth has been especially significant in the case of coal, nickel, gold, emeralds and crude oil extraction in the Eastern Plains which has led the country to become a net exporter of hydrocarbons with enough proven reserves to ensure self-sufficiency until the end of this century.

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### 2.2. Government Sectoral Policies

The recent development of large mining projects was made possible as a result of a policy designed to ensure the domestic supply of mining and energy products by means of the technical development of the country's natural resources.

In 1991, Colombia is the fourth producer of coal in the world and it is expected that by the year 2000 coal annual exports will amount to 40 million metric tons. This policy is consistent with the government's goals of ensuring long-term self-sufficiency for the country in the field of energy and with the need to guarantee foreign balance through new sources of foreign exchange.

The government is firmly comitted to the goal of achieving a 15% share in the world's coal market, thus consolidating a better position for itself in the world market for mining products. Its policy is also intended to increase the domestic production of ferronickel for export and to technify small and medium-size mining in order to enhance productivity.

Additionally, the country is faced with the possibility of achieving a greater degree of substitution in its iron and copper imports by tapping the resources of the Andean mines. Exploratory programs are focused in particular on the circum-Pacific Belt which has a high concentration of metals which are being mined by other countries of the continent such as Chile, Perú, Mexico, the United States and Canada.

One of the government's priorities is to technify gold mining and to expand exploration activities in order to find new mines.

## 2.3. <u>Legal Framework</u>

Mining activities in Colombia are governed by the Code of Mines issued by Decree No. 2655 of 1988.

This Code regulates all prospective, exploratory, development, transformation, transportation, use and merchandising activities related to non-renewable natural resources found in the soil or the subsoil, including jurisdictional maritime zones. The political Constitution establishes that all natural resources found in the soil and the subsoil belong to the Nation which may explore and mine them directly through its decentralized institutions or award the right to do so to private individuals, or abstain from developing them for reasons of public interest.

#### 2.2. Government Sectoral Policies

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The government agency in charge of regulating this sector of the economy is the Ministry of Mines and Energy. Attached to the Ministry are several institutions specialized in exploration (Instituto de Investigaciones Geológicas y Mineras, INGEOMINAS), coal mining (Carbones de Colombia S.A., CARBOCOL) and mining of precious metals, emeralds and other ores (Minerales de Colombia S.A., MINERALCO).

For all mining activities, the government requires that exploration licenses, mining licenses or concession agreements be obtained from the Ministry of Mines and Energy. Any national or foreign individual with a legal capacity may apply for an exploration or development license or to a mining contract. Companies may also be eligible as long as mining exploration and development activities are included as part of their social purpose.

The applicants are obliged to register their licenses in the Mining Record of the Ministry of Mines and Energy which is the agency that has the authority to grant the right to explore and develop soil and subsoil resources.

The beneficiaries of medium-size and large-scale mining are obliged to submit progress reports and final exploration reports. Together with the final exploration report, the license-holder must submit to the Ministry of Mines and Energy the development work and investment program and a statement of the mining project's environmental impact, with a short list of the proposed corrective measures designed to eliminate or mitigate the negative effects of the mining operations. Having complied with these requirements, the exploration license-holder is granted the right to convert his license into a mining permit.

In exchange for the rights to explore or develop mineral resources, the government receives a lease rate based on the mining area, royalties over the gross developed product, shares in contracts with State companies, and specific taxes which are applicable to certain ores such as gold.

People developing mining activities must first meet the domestic demand for inputs required for industrial activities or meet the domestic demand for recourses for power generation.

#### 2.4. Foreign Investment

Resolution No. 49 issued by the Economic and Social Policy Council on January 28, 1991 established special regulations for foreign investments in the hydrocarbon and mining sectors. Consistent with the policy designed to

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internationalize the economy, the new system is governed by the principle of equal treatment whereby these investments are treated by the State in the same way as the investments by Colombian nationals, except as regards fiscal and exchange norms. Consequently, there are no discriminatory conditions and practices for foreign investors.

Foreign investment includes the importation of machinery, equipment and other physical or tangible goods contributed as a part of the capital in the form of non-reimbursable imports; also, importation of foreign currency, supplementary investments to branch-office capital, and importation of foreign currency for investments destined to the purchase of real estate.

Foreign capital regulations only prohibit foreign investments in national defence and security, and disposal of toxic, hazardous or radioactive waste which is not produced in the country.

The rules comprise exchange rights for foreign capital investments in Colombia, whereby the investor is entitled to make remittances of profits derived from his investment and to reimburse the invested capital according to the terms set forth by the government.

Drawings of profits derived from foreign capital investments in Colombia and their reimbursements are carried out in the exchange market at the exchange rate in force at the time.

Foreign companies are entitled to use all the domestic credit lines and all the export promotion and development mechanisms and instruments, under the same conditions set forth for national and mixed companies.

Foreign capital investment projects in mining exploration and development and in services for the mining sector have to be approved by the National Planning Department (Departamento Nacional de Planeación) with the consent of the Ministry of Mines and Energy, whenever the overall project amounts to more than one-hundred million American dollars or their equivalent in other currencies. Investment projects equal to, or lower than, the above figure are authorized as of the date in which the Ministry of Mines and Energy awards a favourable decision.

Foreign investment in mining increased from US\$54 million in 1980 to US\$1.54 billion in 1990.

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#### 2.5. Exchange Regulations

Law 9 of 1991, which modified the Exchange Regulations in force since 1967, rendered foreign currency transactions much more flexible by means of the official exchange certificates market. Although the exchange rate continues to be governed by the monetary authorities, the new measures are designed to expedite transactions with foreign countries, to facilitate the ownership and handling of foreign currency for those people involved in foreign trade, to permit the use of modern financial mechanisms, and to give the market a more significant role regarding the establishment of the level of the foreign currency assets required by the national economy.

The official control of foreign exchange transactions is the responsibility of the Central Bank's Exchange Office (Oficina de Cambios del Banco de la República) and by the Exchange Control Superintendency (Superintendencia de Control de Cambios).

#### 2.6. Foreign Trade

Historically, Colombia's unstable foreign trade has been greatly attributable to the variations of the world economy and the international price of coffee. However, recent advances in import substitution and export diversification have led to a less uncertain situation in terms of foreign revenues. This progress has been partially due to the increase in exports of mining products and to the wise exchange policies adopted in recent years with the purpose of promoting foreign trade.

The Foreign Trade Law (Law 1 of 1991) establishes the overall criteria governing policies in this field. These criteria are based on the promotion of the free trade of goods and services, freedom of competition and private initiatives, greater modernization and efficiency, and support to international integration processes.

Regarding imports, the government has implemented a policy to reduce tariffs and administrative requirements such as the prior importation license. As far as exports are concerned, the government is comitted to the goal of simplifying paperwork and financing in order to promote growth at actual rates.

Total Colombian goods exported in 1990 amounted to US\$7.04 billion and the commercial surplus was equal to US\$1.9 billion according to balance of payments data.

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#### MINING PRODUCTION, MARKETING AND ENTERPRISES

#### 3.1. Characteristics of Production

According to the 1988 Mining Survey, 36 different ores are mined in Colombia, although the mining activity is focused on gold, coal and another 12 ores specifically related to the construction sector.

At present, coal is the most relevant mining resource both in terms of quantity and quality of the reserves (for more than 200 years), with a very broad margin of national coverage and important prospects in the international market. The vast majority of mines are underground, but the largest unit under development (El Cerrejón) is an open pit mine on the North Coast.

Almost all the gold mined comes from alluvial deposits, which represent over 85% of the developed sites. Therefore, there is a predominance of surface mining which is the method used in 78% of the country's mining operation, whereas the remaining 22% are underground operations, mainly of coal and gold.

Hand tools are used to remove the ore in 36% of the operations and explosives are used in 16% of the mines. The main method used for mining gold is that of bank terraces where heavy machinery and hydraulic equipment (monitors and pumps) are used to remove the ore. The second most widely used method is alluvial mining in which the ore is removed using small suction dredges known and minidredges. The quarry system is used mainly for non-metal ores.

At Cerromatoso, nickel is extracted in an open pit operation using large hydraulic shovels and then processed at the neighbouring ferronickel production plant.

According to survey data, there are a total of 8.235 mine units in the country but, of these, only 805 are formal mining operations. The rest include 5.836 small subsistence operations based on primitive practices for mining precious metals and ores for construction.

The survey also revealed that mining provides 90.278 jobs in 1988.

In terms of the organizational structure of the mining sector, in 1988 there were 243 firms, 94 corporations, 17 public enterprises, 3 collective partnerships and 3 cooperatives.

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At Cerromatoso, nickel is extracted in an open bit operation using large hydraulic shovels and then processed at the neighbouring ferromickel production plant.

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### 3.2. Marketing

Together with the increase of mining production in Colombia there has also been a growth of the markets supplied by domestic exports.

Eighty per cent of the total coal production is sold in international markets. These are exports of thermal coal mined mainly at Cerrejón and the most important buyers are the countries of Northern and Central Europe, the Mediterranean, the Far East, the United States and Latin America.

Almost all the ferronickel produced is sold in Europe (62%), the United States (11%), Japan (10%) and Asia (14%). After it is processed, 96% of the gold mined in the country becomes part of the country's international reserves, while only 4% is used for jewelry and ornaments.

Iron ore is produced only by Acerías Paz del Río which uses all of it as part of an integrated process for steel production.

Salts and ores for construction basically meet only the domestic needs in terms of industrial use and final consumption.

Emeralds are exported mainly to Japan, Europe and the United States.

Production and exportation figures for mining products during the past decade are shown in the Tables included at the end of this document.

#### 3.3. State Enterprises and Agencies

The following are the State enterprises and agencies which play a significant role in the exploration and development of Colombia's mining resources.

#### 3.3.1. Ministry of Mines and Energy

This is the agency which governs the mining and energy sector in Colombia and oversees all matters relating to foreign investments and award of exploration and mining licenses. It has a few regional offices but its main offices are located in the capital city:

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Ministerio de Minas y Energía Centro Administrativo Nacional (CAN), Bogotá, D.E. Phone: 222 45 55 and 222 00 68

#### 3.3.2. Carbones de Colombia S.A. (CARBOCOL)

This is a State-owned commercial and industrial enterprise established in 1976 with the purpose of channeling all national efforts in the area of coal mining. At present it is in charge of promoting private investments in export projects and exploratory activities, of managing the resources of the Coal Promotion Fund (Fondo de Fomento del Carbón), and of encouraging the development of regional enterprises in those fields of activity. Additionally, it is a major direct investor in large thermal coal projects such as El Cerrejón.

Its main offices are located in Bogotá: Carrera 7 No.31-10, Floors 5, 10, 16, 18, Bogotá Phone: 287 31 00 - 285 81 50 - 285 92 74 Telefax: (91) 287 32 78

#### 3.3.3. <u>Minerales de Colombia S.A. (MINERALCO)</u>

Is a state-owned enterprise in charge of managing the nation's mining contributions relating to precious metals, precious stones and other ores other than coal and hydrocarbons. The scope of its purpose was recently expanded to cover the management of promotion funds for mining, the creation and administration of stock markets for precious stones, and ore merchandising. At present, the enterprise has a more flexible hiring and operating juridical framework which enables it to promote foreign investments in projects relating to gold, emeralds, phosphoric rock, gypsum and copper. The company's activities include an important technical assistance component and legal advice regarding mining activities in Colombia.

Its main offices are located in Bogotá: Calle 32 No.13-07, Bogotá, D.E. Phone: 287 55 88
Telefax: (91) 287 46 06

## 3.3.4. <u>Instituto Nacional de Investigaciones Geológico-Mineras (INGEOMINAS)</u>

This is a state-owned agency in charge of developing geologic research and of maintaining

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Its main office is located in Bogotá: Diagonal 53 No.34-53, Bogotá, D.E. Phone: 222 18 11

#### 3.4. Major Mining Companies

The following is a summarized overview of the main mining companies currently operating in Colombia.

## 3.4.1. <u>International Colombia Resources Corporation</u> (INTERCOR)

This EXXON-affiliated company concluded a contract with Carbones de Colombia S.A. (CARBOCOL) on behalf of the Colombian government, for 33 years of development work at the open pit mine of Cerrejón Norte, the largest coal mining complex in Latin America, with an annual production capacity of 15 million metric tons of thermal coal. In 1990, net sales under the contract amounted to US\$280 million.

Address in Bogotá - General Management and Marketing Division: Carrera 7 No.37-69, Piso 8, Bogotá, D.E. Colombia, Suramérica Phone: 285 20 80 and 287 79 26, Bogotá

Address in Barranquilla - Project Regional Office: Edificio Parrish, Calle 77 B No.57-141, Barranquilla Apartado Aéreo No. 52499, Barranquilla, Colombia Phone: 56 21 31, Barranquilla

#### 3.4.2. Cerromatoso S.A.

This is a joint project for the extraction of ferrous nickel using combined mining and metallurgical process. The partners in this venture are Billiton Overseas (Dutch affiliate of Royal Dutch Shell) and the Industrial Promotion Institute (Instituto de Fomento Industrial - I.F.I.) on behalf of the Colombian government.

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Address in Bogota - Ceneral Management and Marketing Division: Carrers 7 No.37-69, Piso 8, Bogota, D.E. Colombia, Suremérica Phone: 265 20 80 and 287 79 26, Bogota

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In 1990, net sales amounted to US\$155 million.

Address in Bogotá: Carrera 7 No.26-20, Piso 8, Bogotá, D.E., Colombia Apartado Aéreo No.6823, Bogotá, D.E., Colombia Phone: 288 70 66

Telefax: (91) 285 79 74
Telex: 41216 Cemsa Co.

Production and Purchasing Plant at Montelibano:

Phone: (94) 251 14 10 Telex: 66000 Cemmi-Co.

#### 3.4.3. Mineros de Antioquia S.A.

It is the largest privately-owned gold producer in the country. The company's net annual sales amount to US\$20 million.

Address in Bogotá:
Carrera 13 No.38-29, Oficina 401
Bogotá, D.E., Colombia
Apartado Aéreo No.4484, Bogotá, D.E.
Phone: 285 18 68 and 285 31 75
Telex: 45207

#### 3.4.4. Acerías Paz del Río S.A.

Is the only integrated steel mill in Colombia, with annual sales amounting to US\$130 million.

Address in Bogotá: Carrera 8 No.13-31, Pisos 7-11 Bogotá, D.E., Colombia Phone: 282 81 11 and 341 15 70 Telefax: (91) 282 34 80

#### 3.4.5. Industrias e Inversiones Samper S.A.

Major producer of limestone and cement.

Address in Bogotá: Carrera 10 No.19-65, Piso 11 Bogotá, D.E., Colombia Phone: 281 43 11

#### 3.4.6. <u>Compañía Frontino Gold Mines Ltda.</u>

This is an important private company which has been developing gold deposits for several decades.

In 1990, net sales amounted to US\$155 million.

Address in Bogotá:
Carrera 7 No.26-20, Piso 8, Bogotá, D.E., Colombia
Apartado Aéreo No.6823, Bogotá, D.E., Colombia
Phone: 288 70 66
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Address in Bogotar Carrera 8 No.13-11, Pisos 7-11 Bogota, D.E., Colombia Phone: 282 81 11 and 341 15 70 Telefax: (91) 282 14 80

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Address in Bogotk: Carrera 10 No.19-65, Piso 11 Bogotá, D.E., Colombia Phone: 281 43 11

. Compania Frencino Gold Mines Lides

This is an important private company which has been developing gold deposits for several decades.

Address in Bogotá: Calle 19 No.4-74, Oficina 1901 Bogotá, D.E., Colombia

## 3.4.7. <u>Asociación Colombiana de Mineros</u>

This association represents a group of companies of Antioquia, an area with a long-standing tradition in precious metal mining in Colombia.

Address in Medellín:
Calle 4 Sur No.43A-195, Oficina 122
Apartado Aéreo 874
Medellín, Departamento de Antioquia
Phone: (94) 268 17 00 and 268 44 38, Medellín

## 3.4.8. <u>Drummond Ltda.</u>

In 1988, this American firm entered into an agreement with Carbones de Colombia S.A. (CARBOCOL) for the development of the coal mines located at La Loma, in the municipalities of Chiriguaná, El Paso and La Jagua de Ibirico on the Atlantic coast. This will be an open-pit operation whose maximum estimated production will be 10 million tons per year. The first stage of the project will be completed by 1993, with an annual production of 1.5 million tons during a four-year period. Drummond will be in charge of marketing the coal and shall pay 15% in royalties to the Colombian government during the term of the contract, which is 30 years.

Address in Bogotá:
Apartado Aéreo No.250712
Telefax: 255 52 31, Bogotá, D.E.
Phone: 212 76 72

## 4. ECONOMIC AND MINING PROSPECTS

### 4.1. 1991-1992

The official economic growth forecasts for 1991 and 1992 are 2.5% and 3.0%, respectively. This one-year period is not particularly favourable given the government's decision to exert strict control over inflation and over the factors which gave rise to the existing problems of public order. However, it is expected that there will be a continuous improvement in indicators such as foreign trade, international reserves and foreign debt.

Address in Bogotás Calle 19 No.4-74, Oficina 1901 Bogotá, D.E., Colombia

3.4.7. <u>Seociación Colombiana de Minero</u>

This association represents a group of companies of Antioquia, an area with a long-standing tradition in precious metal mining in Colombia.

Address in Medellin: Calle & Sur No. 43A-195, Oficina 122 Apartado Aéreo 874 Medellin, Departamento de Antioquia Phone: (94) 268 17 00 and 268 44 38, Medellin

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Address in Bogotá: Apartado Aéreo No.250712 Telefax: 255 52 31, Bogotá, D.E.

### REDUCETO AND MINERS PROPOSE

### 4.1. 1991-1992

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The mining sector is expected to continue growing at an average growth rate of 7.0% per year as a result of the impact of the projects which are now under an expansion phase. The major sources of growth for this sector will continue to be coal, gold, nickel and emeralds.

## 4.2. Medium and Long-Term Forecasts

Economic authorities and analysts consider that national production performance will improve in the medium and long-term to the extent that the country is able to make better use of its available resources. With the new thrust to foreign trade and the modernization of the economic infrastructure and with better control of violence factors, the country could recover the dynamism it showed during the 1970's and attain the government's 5.0% annual growth goal during the rest of this decade.

It is expected that mining will account for 6.0% of the total annual economic growth.

Although the growth of the mining sector depends on the greater production of coal, gold, emeralds, nickel, phosphoric rock, gypsum, copper, limestone and iron, exploration indicate that an increase in the portfolio of mining products will be feasible once the reserves of chrome, cobalt, titanium, phosphorus, potassium, copper and molybdenum are confirmed. This is part of the country's long-term program for geological and mining exploration activities.

In view of the above, mining in Colombia represents a good business opportunity for the near future, given its sustained growth and its possibilities for diversification. The government's move towards consolidating the country's position as a major producer and exporter of ores opens new possibilities in terms of foreign investment and imports of goods, services and technologies required for the development of this dynamic sector of the Colombian economy.

The mining sector is expected to continue growing at an average growth rate of 7.0% per year as a result of the impact of the projects which are now under an expansion phase. The major sources of growth for this sector will continue to be coal, gold, nickel and emeralds.

## 4.2. Medium and Long-Term Forecasts

Roomomic authorities and analysts densider that national production performance will improve in the medium and long-term to the extent that the country is able to make better use of its available resources. With the new thrust to foreign trade and the modernization of the economic infrastructure and with better control of violence factors, the country could recover the dynamism it showed during the 1970's and attain the government's 5.0% annual growth goal during the rest of this decade.

It is expected that mining will account for 6.0% of the total annual economic growth.

Although the growth of the mining sector depends on the greater production of coal, gold, emeralds, nickel, phosphorid rock, gypsum, copper, limestone and from exploration indicate that an increase in the portfolio of mining products will be feasible once the reserves of chrome, cobalt, titantum, phosphorus, potassium, copper and molybdenum are confirmed. This is part of the country's long-term program for geological and mining exploration activities.

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TABLE 1

## STATISTICAL SUMMARY - 1990

|  |   |  |                         |            |  | 2550<br>2550<br>2550<br>2550<br>2550<br>2550<br>2550<br>2550 |  |
|--|---|--|-------------------------|------------|--|--|--|
| 440.000<br>33.0<br>20.5  | 3.7   |  | 5.0                     | 5.082      | 4.501  | 33.4   | 10.7                                       |
| Surface area (square miles) Population (million inhabitants) Population growth rate (per thousand inhabitants) | Gross Domestic Product (million USD) Real growth rates (%): - GDP | - Agriculture, Cattle-raising, Fishing<br>- Manufactures | - Mining - Construction | IIion USD) | Trade balance (million USD) International reserves | Exchange rate (pesos for US\$1.00) Annual devaluation (%)    | Annual Inflation rate (%) Unemployment (%) |

SOURCES: DANE, Banco de la República, DNP and Fedesarrollo.

SCHOES DANE, Bonso de la República, DHAP and Redesonallo.

COLOMBIA

ECONOMIC INDICATORS

| 1990 (p) | 3.7<br>5.8<br>5.1<br>8.0<br>- 5.0  | 30.8   | 4501<br>7042<br>5082<br>16289<br>3450<br>33.4   |
|----------|--|--|---|
| 1989 (e) | 3.2<br>4.7<br>2.9<br>12.9<br>0.4   | 29.3   | 3867<br>6031<br>4558<br>16249<br>3270<br>29.2   |
| 1988     | 3.7<br>2.6<br>2.2<br>2.6<br>8.6  | 25.7   | 3810<br>5342<br>4515<br>16434<br>3011<br>27.0   |
| 1987     | 5.4<br>6.2<br>6.2<br>- 10.0  | 32.9   | 3450<br>5254<br>3793<br>15663<br>20.8   |
| 9861     | 5.8<br>4.6<br>4.9  | 22.1   | 3478<br>5331<br>3409<br>14987<br>2672<br>28.2   |
| 1985     | 3.1<br>3.0<br>38.0<br>8.6  | 28.2   | 2067<br>3782<br>3673<br>14063<br>2231<br>51.2   |
| 1984     | 3.4<br>1.8<br>6.0<br>22.0<br>6.4   | 23.4   | 3623<br>4027<br>12350<br>1741<br>28.3   |
| 1983     | 1.6<br>2.8<br>1.1<br>14.2<br>13.0  | 24.7   | 3079<br>3147<br>4464<br>11458<br>1431<br>26.3   |
| 1982     | 0.9<br>-1.9<br>-1.4<br>1.8   | 25.4 24.0  | 4891<br>3282<br>5358<br>10269<br>1314<br>19.0   |
| 1981     | 2.3<br>3.2<br>- 2.6<br>5.4<br>7.1  | 21.2   | 5630<br>3397<br>4730<br>8518<br>1201<br>16.0  |
| 1980     | 4.1<br>2.2<br>1.2<br>18.4<br>14.6  | 27.9   | 5416<br>4283<br>4283<br>6457<br>1061<br>15.7  |
| Years    | Economic Growth  GDP  Farming sector  Manufacturing sector  Mining sector  Construction sector | Currency and Prices  - Monetary supply - Consumer prices | External Sector  Net reserves (USD)  Foreign trade (USD)  Exports (FOB)  Imports (FOB)  Foreign debt (USD)  Foreign investment balance (USD)  Devaluation (%) |

(e) Estimated (p) Projections Million USD SOURCES: DANE, DNP, Banco de la República and Fedesarrollo.

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|---|--|--|

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COLOMBIA

TRADE BALANCE

|          |   | 000           |  |
|----------|---|---------------|--|
| (ط) 1990 | 1370<br>1928<br>1174<br>2570<br>7042<br>585<br>2694<br>1803<br>5082   | 0961          | 0  |
| 1989 (e) | 1476<br>1400<br>1119<br>2036<br>6031<br>495<br>2498<br>1565<br>4558   | 1473          |  |
| 1988     | 1621<br>988<br>971<br>1762<br>5342<br>515<br>2413<br>1587<br>4515   | 827           |  |
| 1987     | 1633<br>1341<br>786<br>1494<br>5254<br>5254<br>1925<br>1380<br>3793   | 1461          |  |
| 1986     | 2742<br>619<br>642<br>1328<br>5331<br>380<br>1784<br>1245<br>3409   | 1922          |  |
| 1985     | 1702<br>409<br>573<br>1098<br>3782<br>345<br>2163<br>1165<br>3673   | 601           |  |
| 1984     | 1734<br>445<br>386<br>1078<br>3823<br>387<br>2231<br>1409<br>4027   | - 404         |  |
| 1983     | 1443<br>434<br>273<br>997<br>3147<br>487<br>2286<br>1691<br>4464  | -1317         |  |
| 1982     | 1515<br>213<br>224<br>1330<br>3282<br>675<br>2711<br>1972<br>5358   | - 2076        |  |
| 1981     | 1507<br>34<br>301<br>1555<br>3397<br>605<br>2460<br>1665<br>4730  | -1333         |  |
| 1980     | 2208<br>100<br>389<br>1599<br>4286<br>570<br>2257<br>1456<br>4283   | 13            |  |
| Years    | Exports (FOB)  - Coffee  - Oil and by-products - Other mining products - Minor exports - Total   mports (FOB) - Consumer goods - Intermediate goods - Capital goods - Total | Trade Balance | The second secon |

Figures in million USD

(e) Estimated (p) Projections SOURCES: Incomex, Banco de la República and Fedesarrollo.

| . 88          |  |  |
|---------------|--|--|
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(c) Estimated (p) Projections (c)

COLOMBIA

## BALANCE OF PAYMENTS

| 1989 (e) 1990 (p) | 612                | 1960<br>- 2098<br>750             | 187                 | 23                         | - 70               | - 95                     | 634            |        |
|-------------------|--------------------|-----------------------------------|---------------------|----------------------------|--------------------|--------------------------|----------------|--------|
| 1989 (e)          | 441 -              | 1473<br>- 2515<br>898             | 596                 | 201                        | - 50               | - 45                     | 27             |        |
| 1988              | - 167              | 827<br>- 1958<br>963              | 958                 | 104                        | - 70               | - 381                    | 3%0            |        |
| 1987              | - 21               | 1461<br>- 2482<br>1001            | 6-                  | 185 - 194                  | 06                 | - 83                     | - 22           |        |
| 1986              | 463                | 1922<br>- 2244<br>785             | 1079                | 2629                       | 51                 | - 129                    | 1464           | - 00   |
| 1985              | - 1586             | - 2156<br>- 461                   | 2220                | 2350                       | - 39               | - 311                    | 284            | - Gran |
| 1984              | - 2088             | - 404                             | 944                 | 1822 - 878                 | 20                 | - 137                    | - 1261         |        |
| 1983              | - 2826             | - 1317<br>- 1673<br>164           | 1436                | 1528                       | - 67               | - 266                    | - 1723         |        |
| 1982              | - 2885             | - 2076<br>- 978<br>169            | 2231                | 1616                       | 1                  | - 47                     | - 701          |        |
| 1981              | - 1722             | - 1333<br>- 631<br>242            | 9161                | 1641                       | .24                | 24                       | 242            |        |
| 1980              | 104                | 13 -74 165                        | 945                 | 815                        | 24                 | 162                      | 1235           |        |
| Years             | I. Current account | A. Goods B. Services C. Transfers | II. Capital account | A. Long term B. Short term | III. Cross Entries | IV. Errors and omissions | V. Net reserve |        |

Figures in million USD

(e) Estimated (p) Projections
SOURCES: Banco de la República and Fedesarrollo.

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|---------------------------|--|--|--|

Figures in million-USD

(a) Estimated (b) Projections

(b) Estimated (c) Projections

(c) Estimated (d) Projections

(d) Estimated (d) Projections

(e) Est

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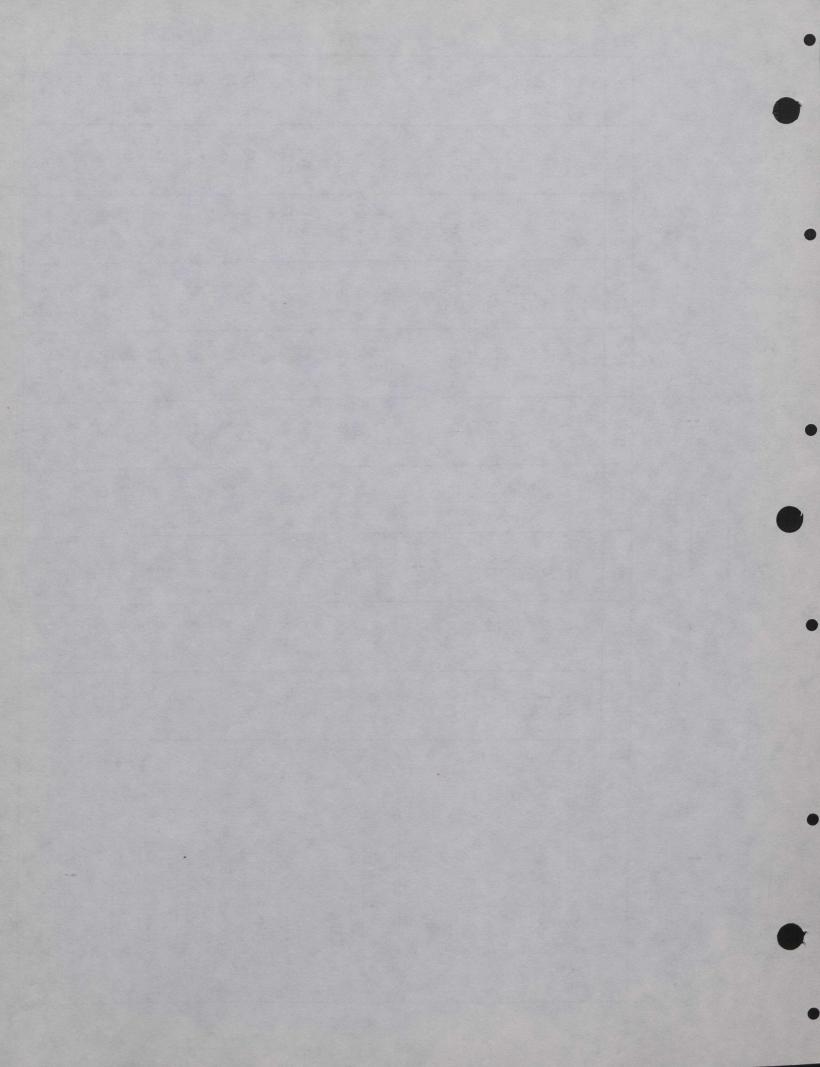
TABLES

COLOMBIA

## FOREIGN INVESTMENT BALANCE

(Million USD)

|      | (1.) By Economic Activities Mine developments Manufacturing industries Agriculture Trade Finances Others Total | (II.) By Geoeconomic Area | North America<br>Canada<br>United States | European Common Market | European Free Trade<br>Association<br>The rest of Europe | South America | Central America | West Indies | Asia | Other Countries | Total: |
|------|--|---------------------------|--|------------------------|--|---------------|-----------------|-------------|------|-----------------|--------|
| 1980 | 55<br>25<br>110<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>100<br>10                                  |                           | 616<br>42<br>574                         | 252                    | 113  | 72            | 74              | 8           | 12.  | -               | 10%1   |
| 1981 | 58<br>888<br>12<br>109<br>115<br>41  |                           | 700 45 655                               | 292                    | 130  | 74            | 75              | 46          | 12   | 2               | 1201   |
| 1982 | 109<br>922<br>12<br>112<br>117<br>42<br>1314   |                           | 759<br>46<br>713                         | 335                    | 134  | 78            | 80              | 48          | 12   | 2               | 1314   |
| 1983 | 119<br>991<br>142<br>142<br>43<br>1431   |                           | 813<br>49<br>764                         | 388                    | 161 22   | 2             | 88              | 46          | 12   | 2               | 1431   |
| 1984 | 2%6<br>1101<br>11<br>133<br>160<br>40<br>1741  |                           | 1042<br>64<br>978                        | 304                    | 134  | 82            | 85              | 47          | 33   | 2               | 1741   |
| 1985 | 736<br>1127<br>12<br>138<br>176<br>42<br>2231  |                           | 1491<br>62<br>1429                       | 483                    | 137  | 8             | 83              | 49          | 33   | 2               | 2231   |
| 1986 | 1108<br>1200<br>14<br>138<br>174<br>38<br>2672   |                           | 1847<br>59<br>1788                       | 554<br>395             | 157  | 8             | 93              | 53          | 42   | 2               | 2672   |
| 1987 | 1433<br>1189<br>17<br>174<br>34<br>2892  |                           | 2262<br>63<br>2199                       | 461                    | 162  | 71            | 108             | 46          | 42   | 2               | 2992   |
| 1988 | 1435<br>1217<br>17<br>155<br>171<br>16   |                           | 2256<br>66<br>2190                       | 495                    | 173  | *             | 105             | 4           | 40   | က               | 3011   |
| 1989 | 1536<br>1367<br>17<br>157<br>174<br>19<br>3270   |                           | 2403<br>57<br>2346                       | 553                    | 207  | 117           | 117             | 46          | 32   | 2               | 3270   |



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COLOMBIA

THE MINING SECTOR IN FIGURES

(Including Hydrocarbons)

|  | 1980                               | 1881  | 1982                              | 1983                   | 1984                                | 1985                                 | 1986                                  | 1987                                   | 1988                                   | 1989                                     | 1990                                     |
|--|------------------------------------|---|-----------------------------------|------------------------|-------------------------------------|--------------------------------------|---------------------------------------|--|--|--|--|
| 1. Contribution to the GDP (%) - In current pesos                  | 2.3                                | 2.5   | 2.6                               | 2.9                    | 3.3                                 | 3,8                                  | 4.9                                   | 6.5                                    | 6.2                                    | 7.3                                      | 7.7                                      |
| 2. Value Added by the Mining Sector (million USD)                  | 764                                | 968   | 1007                              | 1124                   | 1263                                | 1331                                 | 1708                                  | 2382                                   | 2400                                   | 3200                                     | 3500                                     |
| 3. Value of Major Mining<br>Product Exports<br>(million USD)       |                                    |   |                                   |                        |                                     |                                      |                                       |  |  |  |  |
| - Oil and by-products - Coal - Gold - Ferronickel - Emeralds Total | 100<br>10<br>310<br>-<br>69<br>489 | 23.8 23.8 3.3 3.3 3.3 3.5 3.5 3.5 3.5 3.5 3.5 3.5 | 213<br>14<br>169<br>-<br>41<br>43 | 434<br>777<br>83<br>83 | 445<br>38<br>245<br>62<br>21<br>811 | 40%<br>126<br>365<br>55<br>27<br>882 | 619<br>201<br>359<br>48<br>34<br>1261 | 1341<br>263<br>385<br>76<br>62<br>2127 | 988<br>304<br>413<br>161<br>93<br>1959 | 1400<br>457<br>366<br>188<br>108<br>2519 | 1928<br>530<br>374<br>154<br>116<br>3102 |
| 4. Exports of Mining Products as a % of Total Exports              | 11.4                               | 6.9   | 13.3                              | 22.5                   | 22.4                                | 26.0                                 | 23.7                                  | 40.5                                   | 38.7                                   | 41.8                                     | 44.0                                     |
| 5. Foreign Investment Percentage                                   | 5.1                                | 4.7   | 8.3                               | 8.3                    | 17.0                                | 33.0                                 | 41.5                                  | 47.9                                   | 47.7                                   | 47.0                                     | 45.0                                     |

SOURCES: DANE, INCOMEX, Ministry of Mines and Energy.

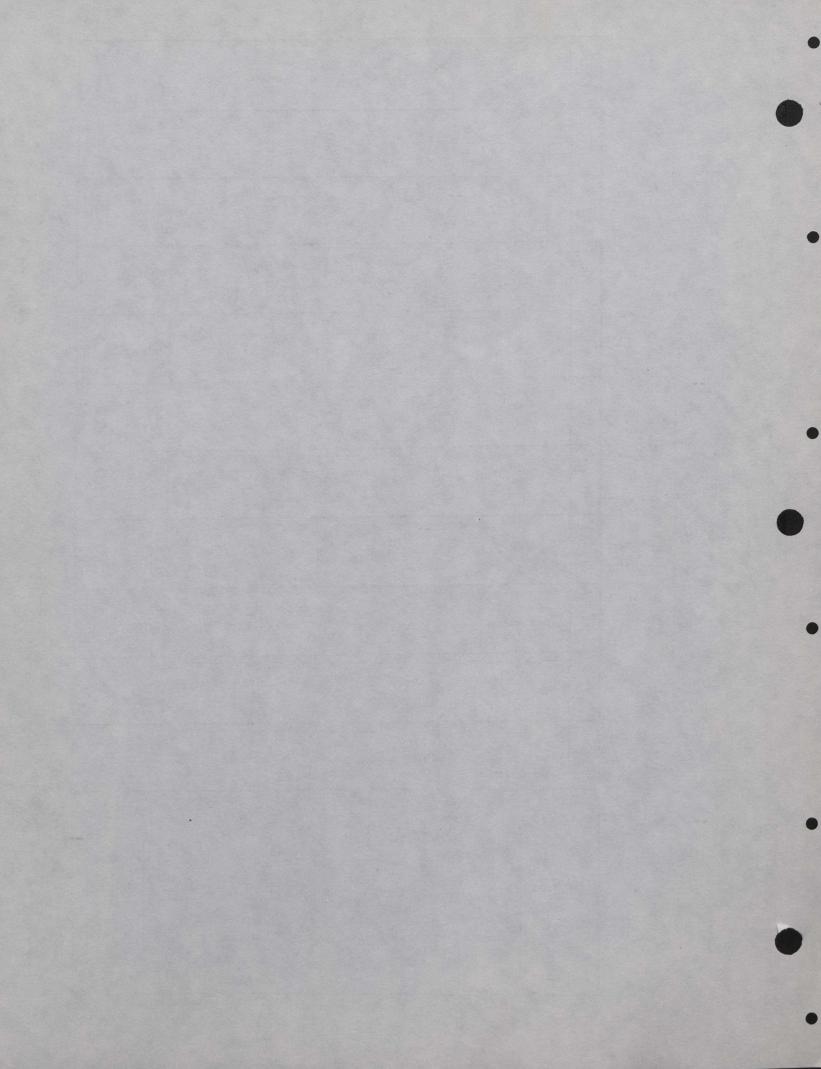


TABLE 7

## MINING PRODUCTION STATISTICS

| 1990  | 1203                                  | 3100                               | 20400                         | 1358                       | 21108                             |  |
|-------|---------------------------------------|------------------------------------|-------------------------------|----------------------------|-----------------------------------|--|
| 1989  | 1200                                  | 3420                               | 18902 2                       | 1322                       | 21113 2                           |  |
| 19    |                                       |                                    |                               |                            |                                   |  |
| 1988  | 1170                                  | 1906                               | 15101                         | 1283                       | 174:9                             |  |
| 1987  | 1043                                  | 887                                | 14594                         | 1394                       | 17008                             |  |
| 1986  | 1487                                  | 505                                | 10737                         | 1228                       | 16267                             |  |
| 1985  | 1308                                  | 338                                | 8974                          | 938                        | 14426                             |  |
| 1984  | 940                                   | 395                                | 9937                          | 1126                       | 14214                             |  |
| 1983  | 548                                   | 1011                               | 5053                          | 1003                       | 11811                             |  |
| 1982  | 621                                   | 386                                | 4422                          | 557                        | 1811                              |  |
| 1981  | 289                                   | 888                                | 3990                          | 455                        | 12446                             |  |
| 1980  | 979                                   | 775                                | 3902                          | 529                        | 12247                             |  |
| Years | Precious metals  Thousand Troy ounces | Precious stones - Thousands karats | Mineral fuels - Thousand tons | Metal Ores - Thousand tons | Non-Metal Ores<br>- Thousand tons |  |

SOURCE: Ministry of Mines and Energy.

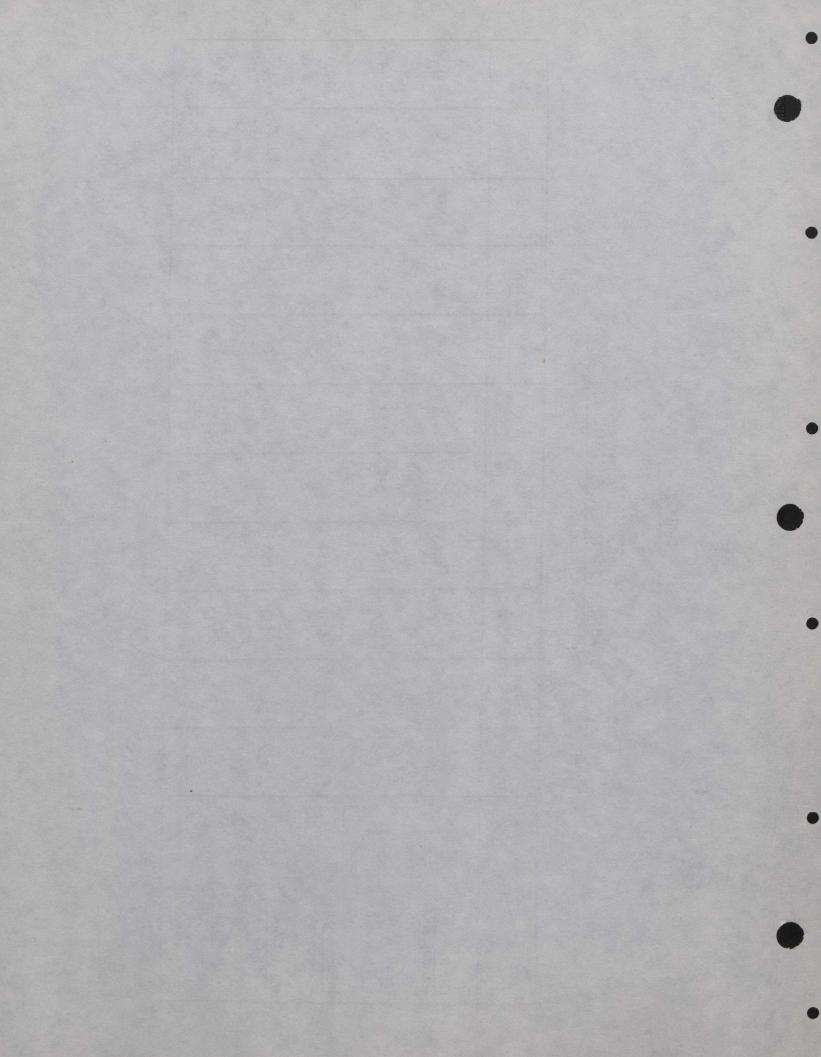


TABLE 8

PRODUCTION OF PRECIOUS METALS AND EMERALDS

| 1980 | 1881                        | 1982             | 1983      | 1984             | 1985 | 1986              | 1987             | 1988       | 1989             | 1990             |
|------|-----------------------------|------------------|-----------|------------------|------|-------------------|------------------|------------|------------------|------------------|
|      |                             |                  |           |                  |      |                   |                  |            |                  |                  |
|      |                             |                  |           |                  |      |                   |                  |            |                  |                  |
|      | 510 529<br>152 143<br>14 15 | 473<br>136<br>12 | 439 99 10 | 800<br>130<br>10 | 1143 | 1286<br>187<br>14 | 853<br>168<br>22 | 932 211 26 | 949<br>220<br>31 | 943<br>213<br>39 |
|      | 289 929                     | 621              | 548       | 940              | 1308 | 1487              | 1043             | 1169       | 1200             | 1195             |
|      | 275 239                     | 396              | 1011      | 395              | 338  | 505               | 288              | 1906       | 3420             | 3100             |

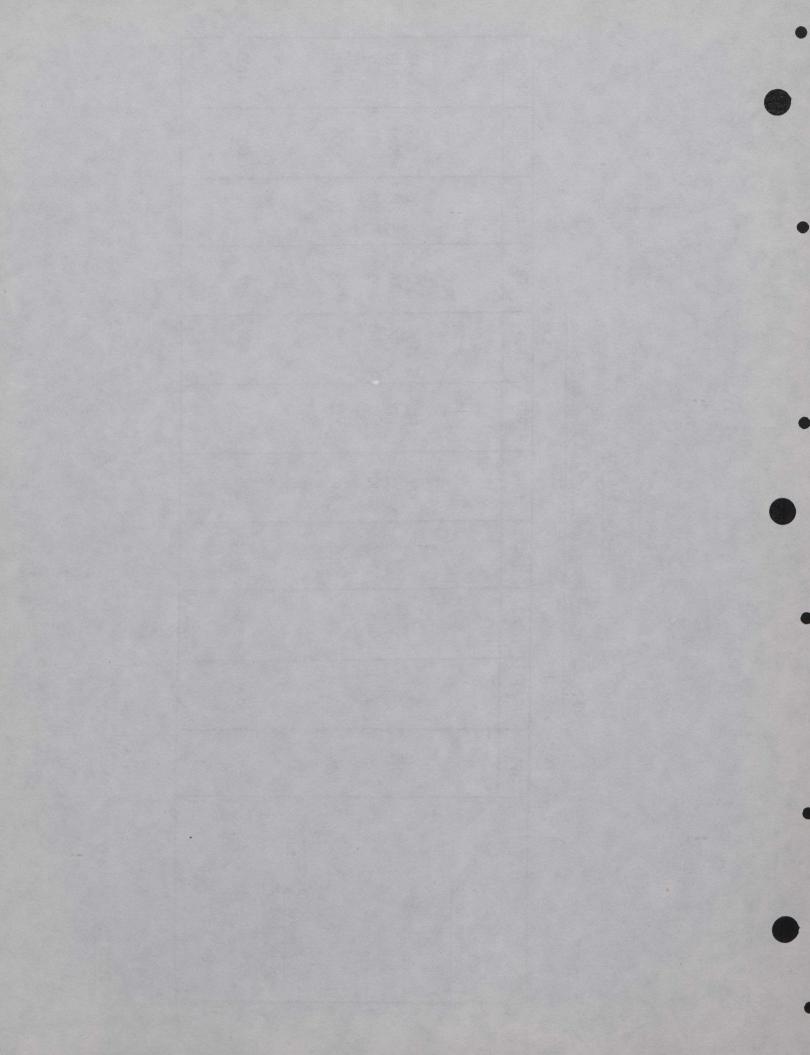
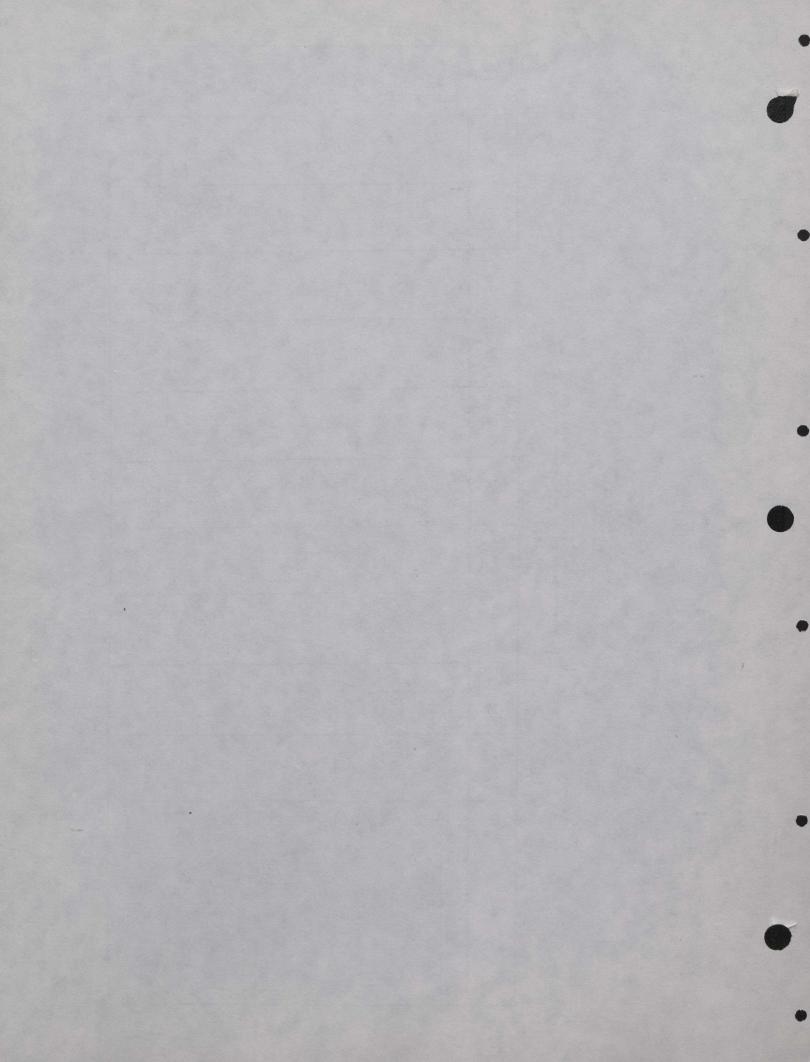


TABLE 9

## COAL PRODUCTION AND EXPORTS

|   | 1990 (4) |   | 19444 5060   | 956                   | 20400 |  | 722                                     | 15092  |
|---|----------|---|--|-----------------------|-------|--|---|--------|
|   | 1989     |   | 17738  | 1164                  | 18902 |  | 712                                     | 13462  |
|   | 1988     |   | 14222 4844   | 879                   | 15101 |  | 706                                     | 107.39 |
|   | 1987     |   | 13545  | 1049                  | 14594 |  | 700                                     | 9587   |
|   | 1986     |   | 9821 4217 5504   | 916                   | 10737 |  | 693                                     | 27.27  |
|   | 1985     |   | 8189<br>4589<br>3400                                       | 785                   | 8974  |  | 553                                     | 3536   |
|   | 1984     |   | 6034<br>4537<br>1497                                       | 603                   | 6637  |  | 474                                     | 957    |
|   | 1983     |   | 4629<br>4282<br>347  | 562                   | 5191  |  | 382                                     | 501    |
|   | 1982     |   | 4085 3995 90   | 584                   | 4669  |  | 222                                     | 254    |
|   | 1981     |   | 3731<br>3729<br>2  | 594                   | 4325  |  | 156                                     | 156    |
|   | 1980     |   | 3490<br>3486<br>4  | 622                   | 4112  |  | 221                                     | 221    |
| ; | Products | Coal production by type (Thousand tons) | - Thermal coals<br>- Traditional mining<br>- Modern mining | - Metallurgical coals | Total | Coal exports by origin (Thousand tons) | - Traditional mining<br>- Modern mining | Total  |

(p) Preliminary SOURCES: Ministry of Mines and Energy and Carbocol S.A.



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COLOMBIA

METAL ORE PRODUCTION

|  | 1980 | 1981 | 1982 | 1983            | 1984                                   | 1985    | 1986  | 1987  | 1988  | 1989    | (4) 0661        |
|--|------|------|------|-----------------|--|---------|-------|-------|-------|---------|-----------------|
| Production<br>(Thousand tons)          |      |      |      |                 |  |         |       |       |       |         |                 |
| - Iron ore<br>- Nickel ore<br>- Others | 506  | 433  | 470  | 456<br>546<br>1 | 14 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 | 455 482 | 523   | 282   | 615   | 530 790 | 628<br>726<br>4 |
| Total                                  | 529  | 455  | 557  | 1003            | 1126                                   | 938     | 1228  | 1394  | 1283  | 1322    | 1358            |
| Ferronickel exports<br>(In Tons)       | 1    | 1    | 969  | 14644           | 15870                                  | 11641   | 21092 | 33935 | 17569 | 15797   | 19980           |

SOURCES: Ministry of Mines and Energy and Cerromatoso S.A.

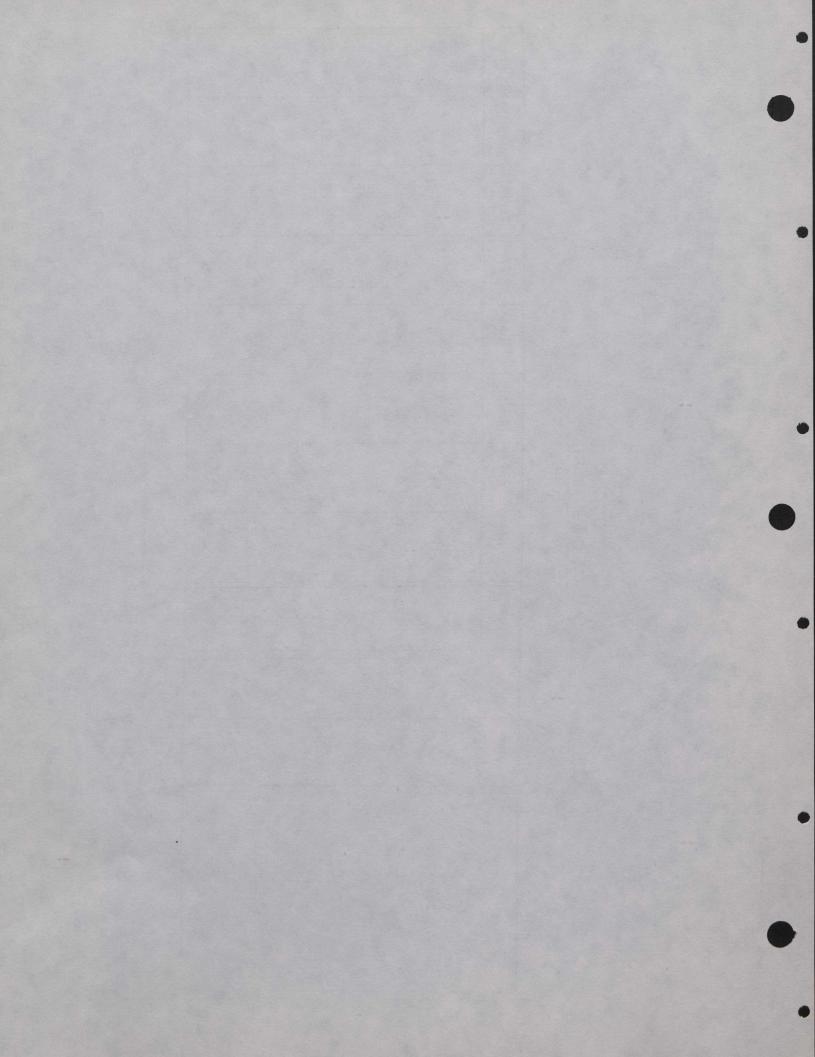
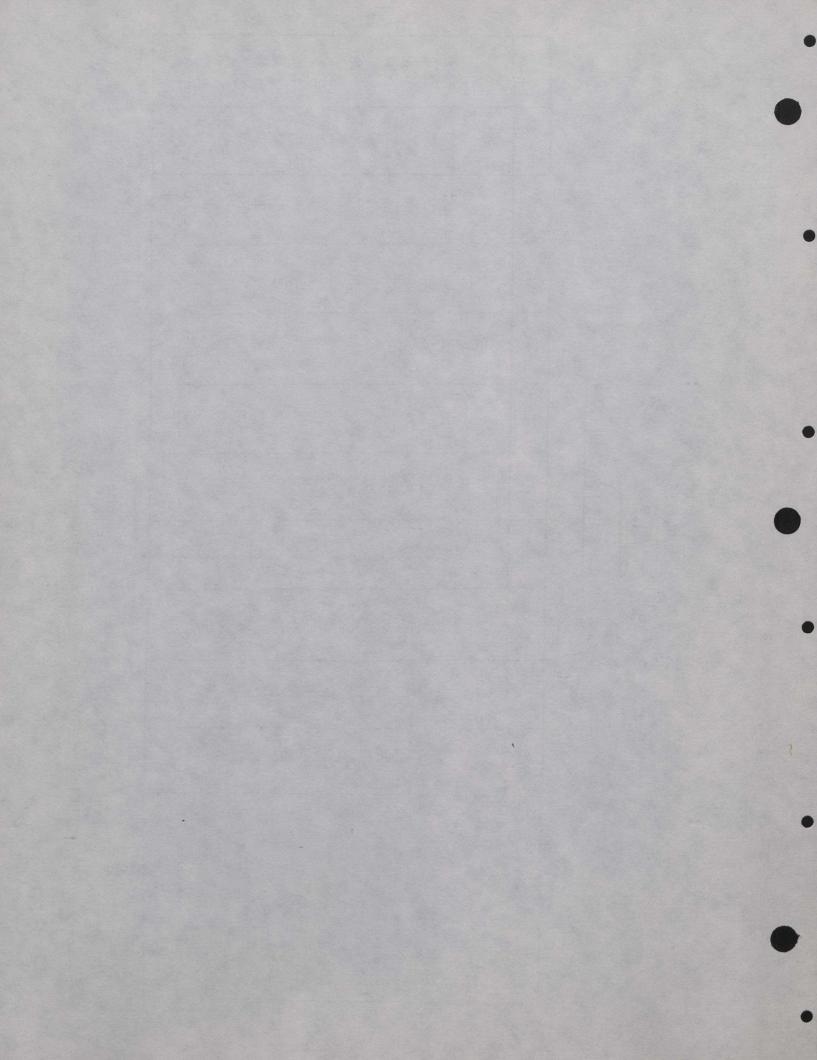


TABLE 11

# NON-METAL MINERAL PRODUCTION

| Service of the servic | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | (4) 0661 |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|
| 07.  | 0740  | 10053 | 10620 | 10685 | 11527 | 11756 | 13428 | 13885 | 14100 | 17000 | 17000    |
| , '  |       | 270   | 281   | 224   | 260   | 251   | 295   | 302   | 307   | 553   | 809      |
| Jave and kaolin  | 786   | 810   | 856   | 762   | 938   | 1941  | 1155  | 1221  | 1306  | 1800  | 1800     |
| 1  | 92    | 502   | 497   | 507   | 202   | 512   | 516   | 602   | 655   | 78    | 700      |
|  | 147   | 316   | 301   | 266   | 273   | 234   | 227   | 205   | 209   | 190   | 508      |
| 4  | 161   | 399   | 202   | 291   | 469   | 346   | 344   | 450   | 473   | 470   | 478      |
|  | 17    | 17    | 17    | 16    | 18    | 17    | 20    | 18    | 25    | 30    | 30       |
|  | 9     | 9     | 9     | 7     | 6     | 6     | 6     | 12    | 01    | 6     | 6        |
|  | 14    | 16    | 20    | 12    | 15    | 15    | 18    | 33    | 8     | 45    | 45       |
|  | 27    | 28    | 30    | 31    | 33    | 8     | 8     | R     | 31    | 41    | 35       |
| Observation rock   | 9     | 17    | 20    | 17    | =     | 24    | 82    | 8     | 8     | 30    | 31       |
|  | 0     | 6     | 6     | 9     | 5     | 3     | 5     | 8     | 02    | 12    | 2        |
|  | 30    | . r   | 58    | 87    | 149   | 183   | 185   | 208   | 224   | 233   | 158      |
| 122  | 12247 | 12446 | 12917 | 12911 | 14214 | 14425 | 16267 | 17008 | 17419 | 21113 | 21108    |

(p) Preliminary SOURCE: Ministry of Mines and Energy.



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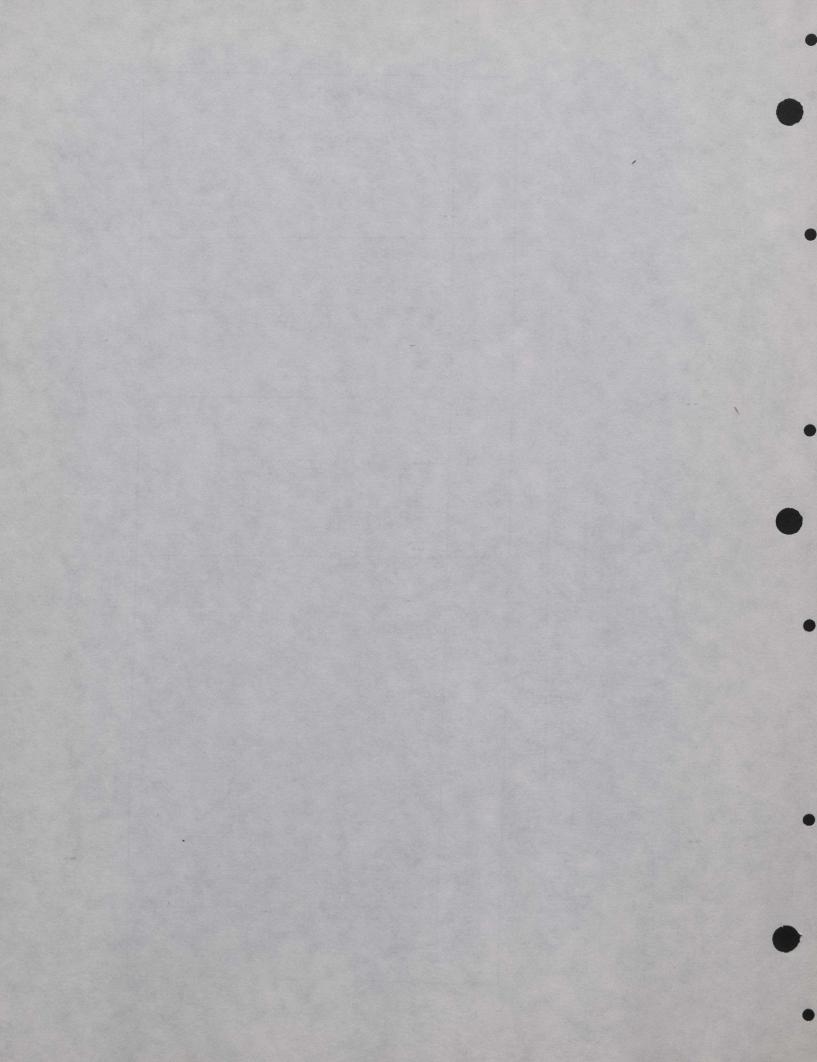
TABLE 12

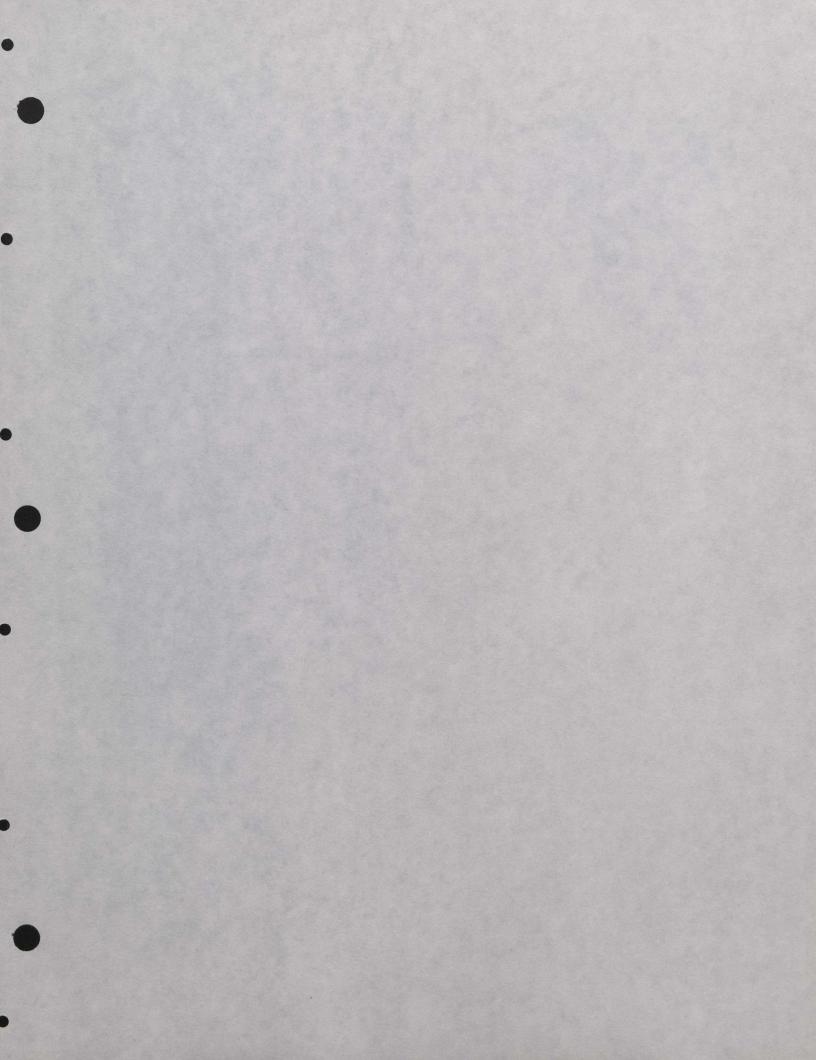
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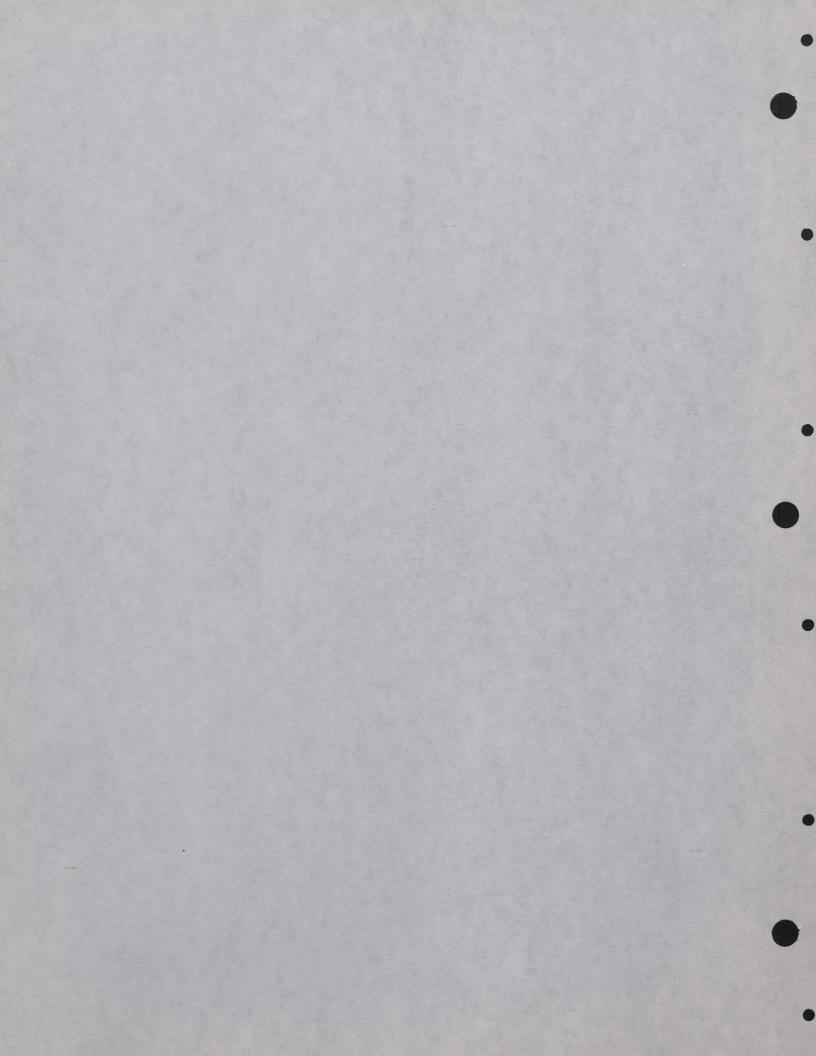
## COLOMBIA

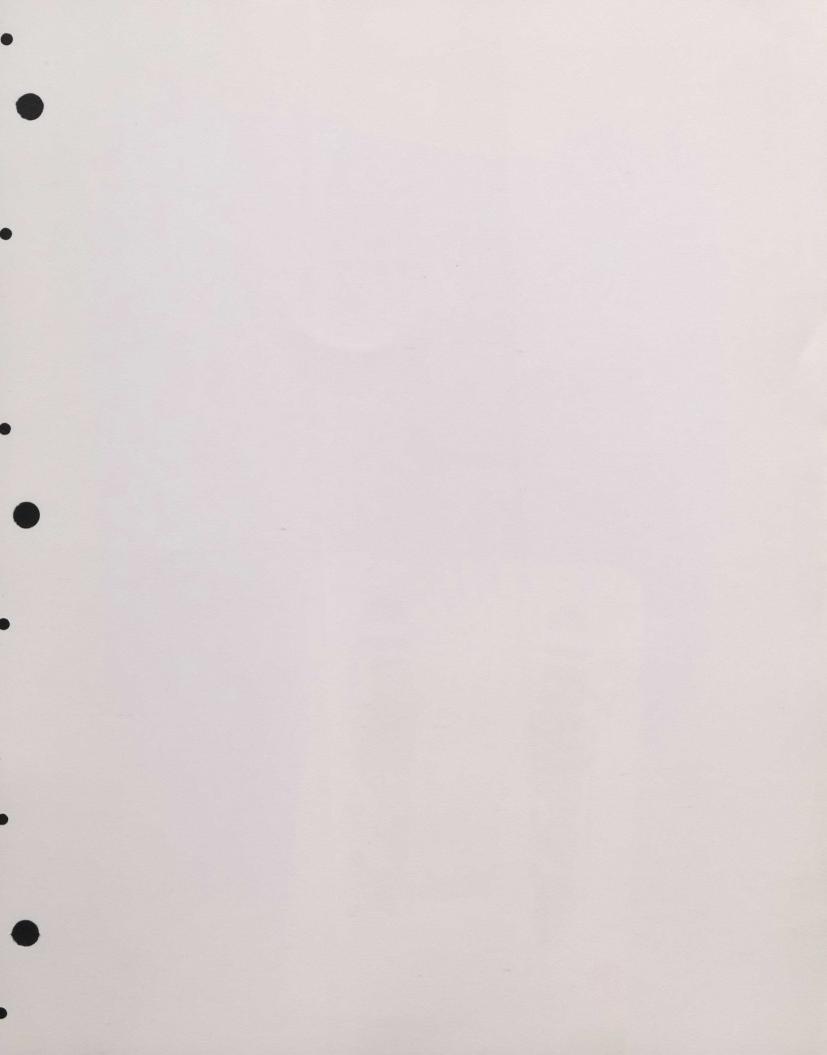
LIST OF MACHINES AND EQUIPMENT USED FOR GOLD MINING

SOURCE: 1988 DANE Mining Survey and Ministry of Mines and Energy.











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