

Mining and exploration in Panama

By Robert Lilljequist and Alfredo Burgos

Panama is going through a period of intensive exploration activities. Presently there are 147 concessions for exploration and exploitation covering almost one quarter of the territory of Panama. Two major actors are Cyprus Amax and Minamericorporation.

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Today Panama is going through a period of intensive exploration activities, reflected by a large number of exploration concession applications (more than 700 thousands of hectare in 1994). Over half of the area of the concessions of the concessions belong to three actors: Cyprus Amax (23.6 per cent) and the Panamanian companies: Minamerica Corporation and subsidiaries (23.1 per cent), and 12.8 per cent through several companies owned by a Panamanian promoter (Julio Benedetti, director of Chamber of Mines). Presently there exist 147 concessions for exploration and exploitation covering almost 1/4 of the territory of Panama.

During 1994 about 34 MUSD were spent on exploration and investment within the mining sector. During 1995 this figure is estimated to rise to 60 MUSD. Among the large transnational mining companies present are in addition Cyprus Amax, BHP Minerals, Metal Mining Corporation (with the whole-owned Minnova) and TEC Corporation (Metal Mining has a strategic holding in Teck, which owns 22 per cent of Cominco.), Greenstone Resources and Noranda Exploration. Among North American junior companies present are Adrian Resources, CanAlaska Resources, Western Keltic, Arlo Resources, MK Gold Company, Golden Cycles, Independence Resources, Canyon Resources, Pangold and Panacobre (waiting for a contract with the Panamanian State Company Codemin). There exist parallels with the 1970s when 14 international mining companies were busy in Panama until the mining policy made it impossible for them to remain.

Short history of the Panamanian exploration and mining

Panama was intensely explored by the Spaniards already in the 16th century (from 1504 and onwards). The activities were concentrated on alluvial gold (Santa Maria de Belén is reported to have delivered 21 t between 1519-1620), but the

mine Espíritu Santo de Cana (major exploitation 1680-1729) contributed greatly to the gold production before other sources in South America took over.

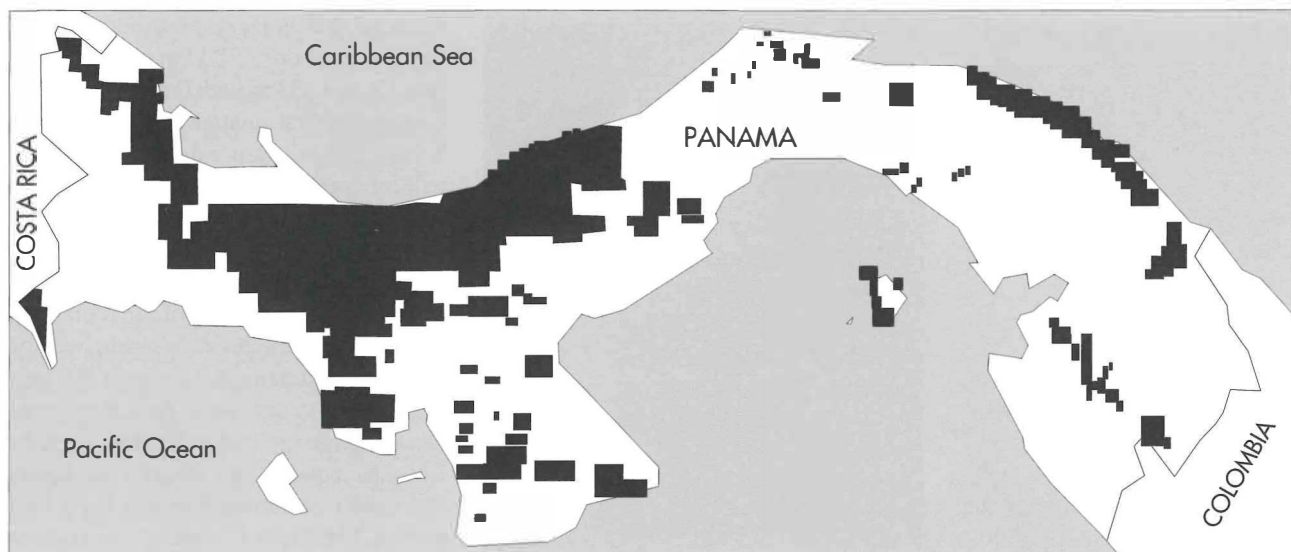
During last century and the beginning of the present English and other European companies explored Panama extensively, but only minor gold-bearing quartz vein mines (Mina el Consuelo de los Pobres or the present name: Remance and Santa Rosa, earlier named Mina de Santa Rosa-San Isidro) and alluvial gold were exploited.

The exploration interest were aroused worldwide with the recognition of the copper and copper-gold mineralisation of porphyry type at Cerro Colorado and Petaquilla. Cerro Colorado was originally discovered already in 1936 but first in the 1970s the Canadian exploration company Javelin studied the deposit more in detail. After having failed to reach an agreement with the Panamanian Government Javelin withdraw from the project in 1973 and got reimbursed by the government for the past expenditures.

In 1976 Texas Gulf made an agreement with CODEMIN (Corporación de Desarrollo Minero - a state-owned company). Texas Gulf abandoned the project as not being profitable and sold its interest to Rio Tinto Zinc for its past expenditures. RTZ made a new feasibility study (through Bechtel) in 1981 which showed a low profitability. The deposit was estimated to contain 24 billions pounds of copper or 1 380 000 000 t of 0,78 per cent Cu. The low copper prices and lack of infrastructure had an overwhelming influence on the project for a long time. RTZ finally wrote off the whole of their investment in the project in 1990.

Since 1990 the Panamanian government has decided to sell their part of the Colorado deposit. The Canadian financial constellation PanaCobre is now prepared to realise a feasibility study during 2 years at a estimated cost of 3 MUSD to prove the extraction of cathode copper by modern leaching methods.

Concessions and reservations of metal minerals in Panama.



Cerro Petaquilla was on the headlines soon after its discovery in February 1968 by personal working for the "Proyecto Minero de Azuero" (1966-71) financed by the UNDP. The original discovery, however, dates back to the 1930s. After a tendering process Mitsui Mining Co (through a consortium of Japanese copper companies, PMRD) explored the deposit by drilling and performed a pre-feasibility study in 1977. The reserves were estimated to 300 Mt with about 0,7 per cent Cu. Mitsui abandoned the property after having failed to come to an agreement with the Panamanian Government (1980). In 1990 Georecursos Internacionales S.A. (a whole-owned Panamanian company) and Minnova Inc signed a private contract to explore Petaquilla and in 1991 they were granted the concession. Minnova realized exploration in the Petaquilla area with positive results and the concession was extended. In April 1992, Adrian Resources accepted to finance the feasibility study achieving 40 per cent of the interest from Minnova. In 1993 Adrian bought 100 per cent of Georecursos and in May 1994, Metal Mining (now Inmet) bought 100 per cent of the Canadian company Minnova Inc. Later on, in 1994, a new contract be-

tween Teck, Adrian and Metall (Inmet) was signed. Teck's arrangement with Adrian are formalised. As part of this agreement Teck undertook to buy 3.5 million shares in Adrian in stages. To date, some 1.5 million shares have been purchased. A more recent feasibility study (August 1994) estimated the minable reserves of the deposits of Petaquilla and Botija to 495 Mt with 0,53 per cent Cu and 0.124 g/t Au.

In 1977-1979 the DGRM realized a project named "Proyecto Aurifero" and defined the mineralisation at Santa Rosa and Mina Remance. Between 1982-1986 the Panamanian company Transworld Exploration S.A. started a preliminary geological investigation which was continued by the American mining company Freeport in 1986-1990 when the deposit was sold to Greenstone Resources. The exploration activities of the gold-bearing quartz vein of Remance was also realized by Transworld Exploration SA (which still holds the concession) between 1984-1988. Production started in March 1990 and is operated by Minera Remance, S.A.

The Interamerican Development Bank (IDB) financed a mineral inventory programme (PIM = Proyecto Inventario Minero) between 1988-1990 and the

study was undertaken by DGRM (Dirección General de Recursos Minerales, a state entity under the Ministry of Industry) and the Swedish company Swedish Geological International. As a result of this investigation in combination with a modified mining code (1988), a changed political scene (1991) and the ambitious efforts of local promoters, an intense mineral exploration activity started in 1992 to increase dramatically in 1993-1994. The PIM project succeeded in indicating several interesting mineralized areas which now are under a more intense exploration.

Ongoing mining activities

In 1995 the Mine Remance (owned by Peruvians) has been in production for 5 years and is presently mining 250 t/day. The extraction of gold is financed by the Banco Panamericano (PANABANK) and has generated more than 12 MUSD to the country. There are 200 persons employed in the mining activities. The reserves are 200 000 t with 6.5 ppm Au and 19.9 g/t Ag.

Mina Santa Rosa has started the removal of the vegetation and soil cover on top of the mineralization. The first doré will be poured in April 1995. Proven and

probable minable ore reserves are 12.4 Mt with 1.5 g/t Au. The plant capacity is of 5 000 t/day and in the first year 1.3 Mt will be treated for heap leaching and 1.8 Mt for each of the following 8 years. The recovery is 74 per cent with higher recovery from the oxidized cap. A total of 78 persons are employed in Santa Rosa, of which 45 per cent are locally hired.

The Caribbean Mining Company has started to produce manganese (45-55 per cent) from two deposits about 50 km northeast of the Panama Canal, Cerro Viejo and La Soledad in the Colón province. The volume of manganese is presently stockpiled (due to a drop in the price) but is expected to rise to 7 500 t monthly.

Golden Cycle of Panama Inc. has initiated extraction of alluvial gold from an area near the rivers of Concepción and Belén, where the Spaniards were active after their first arrival to Central America.

Mineral deposits on the line

Mining activities are also planned at Cerro Colorado (PanaCobre) and in Petaquilla (Minamerica, Adrian Resources, Inmet Mining – previous Metall Mining – and Teck).

Other defined deposits are Mollejón (12.3 Mt with 3.2 g/t Au) near the Petaquilla and Botija deposits. In the Peninsula of Veraguas, Cyprus Amax has drilled the Cerro Quema deposit which have estimated reserves of 10 Mt with 1.26 g/t Au.

At Río Pito on the north coast of Panama, close to the Colombian border, almost 300 000 t with 2.12 g/t Au have been proven. At Los Hatillos, in the same gold-bearing district as Remance, 30 000 t with 12.5 g/t Au and 21.6 g/t Ag remains since the mining activities at the beginning of this century.

Important exploration targets

There are several exploration programs going on in Panama the last years:

Cerro Chorcha is located in the province of Chiriquí, at about 25 km north-



west of Cerro Colorado. Chorcha was discovered in 1969 by Asarco Company during a regional stream sediment program. In 1993 MinAmerica undertook a soil and rock geochemical program over the Guariviara porphyry copper zone, outlining a 500 m x 900 m zone with anomalous copper values. In 1994, six

Trenching at the Capira Project, 50 km west of Panama City.

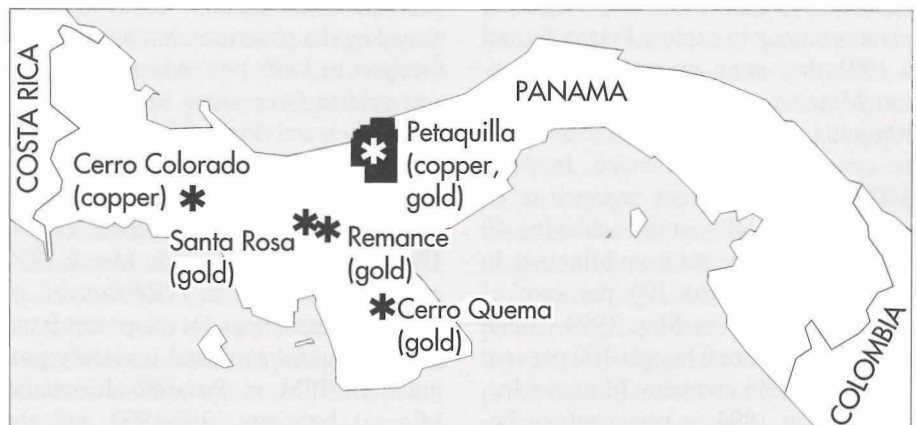
Adrian Resources' holdings total 2 086 km² in the Petaquilla district.

diamond drill holes were drilled with the best intersections of 232 m with 0.54 per cent Cu and 133 m with 0.88 per cent Cu. During the first quarter of 1995, a five-hole (1 250 m) diamond drilling program will be completed within the Guariviara zone in order to extend the area of copper mineralization.

Regional stream sediment sampling and geological mapping of the remaining area of the Chorcha concession will be completed. Minamerica controls 100 per cent of the concession. Arlo Resources has an option to acquire 50-percent of the Chorcha concession through payments and work commitments over a three-year period. MK Gold Company has back-in rights to acquire a 45 percent direct interest in any discovery on the concession.

The Rio Liri concession is located approximately 240 km southwest of Panama City within the western Veraguas and eastern Chiriqui provinces. Proyecto Inventario Minero (PIM) conducted a regional survey in 1989 which included the Rio Liri concession. Several rock samples were taken which gave gold values up to 200 ppb.

Compania de Exploración Mineral SA (CEMSA) acquired the concession and in 1991 Minnova established a grid with 100 m space lines over Cerro Pelado. Soil and rock geochemistry defined an area roughly 400 m x 50 m with anomalous gold values. Silicification is most pronounced on the highest parts of Cerro



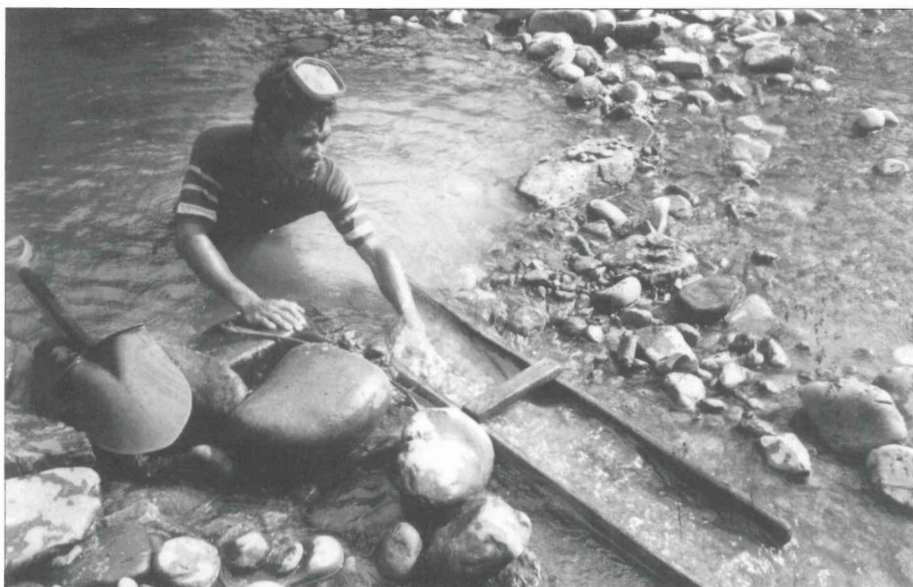
Alluvial gold exploitation. Mamoni River, 20 km east of Panama City.

Pelado and is coincident with anomalous gold values up to 5.9 ppm in soils and 4.1 ppm in rocks. In 1994 Arlo Resources tightened the line and sample spacing on Cerro Pelado. In addition, a proton magnetometer and EM-16 survey was done over the grid. A five-hole drilling program is planned for the first half of 1995. CEMSA controls 100 per cent of the Rio Liri concession. Arlo Resources has an option to acquire 50 percent of Rio Liri, through payments and work commitments over a three-year period. MK Gold Company has back-in rights to acquire a 45 percent direct interest in any discovery on the concession.

The Panamanian company Capira Dorada SA has been granted a concession surrounding the town of Capira, about 50 km southwest of Panama City. Recent exploration began during the course of the state sponsored Mineral Inventory Project (PIM). Regional mapping and geochemical studies conducted during this project identified the presence of quartz veins that contained gold in several areas near the town of Capira. After obtaining the concession, Capira Dorada continued the exploration and evaluation of the veins. Extensive trenching, channel sampling and geological mapping by Capira Dorada on the Salomon Vein has identified an altered mineralized zone over 400 meters in length, with a width of more than 50 meters. Silification and quartz veins and veinlets tend to have high gold grades. The best gold intervals sampled occurred in one trench over a width of 16.7 meters with 6.16 grams of gold per ton.

Over 20 other structures have been identified in the immediate Capira area with similar geology and mineralization.

The Flor structure has a strike length in excess of 1 400 meters and gold analyses for chip samples collected along the length of the structure ranged from 0.02 to 24.3 grams of gold per ton. The best interval in reconnaissance trenches across the structure was 3.17 m averaging 2.26 g/t Au. The Brenda structure has



a strike length in excess of 1,100 meters and trends parallel to the Flor structure in east-west. Chip samples collected along the length of the structure ranged from 0.03 to 5.53 g/t Au.

Transworld Exploration holds a concession south of the Capira Concession where a quartz vein (Veta Buhu) was exploited during the 1930s. Remaining reserves are 126 000 t with 7.16 g/t Au within the vein and 102 000 t with 4.0 g/t Au in the upper parts of a veins structure close by.

The Cacao Concession is situated about 12 km to the west of the Capira concession and exhibits several km-long quartz structures with a width of up to 20 meters. Gold values in the ppm-level occur both within the veins and in veinlets within the alteration zones.

The Chami Property is situated in the north-central part of the Chiriqui Province, 15 km north of the town of San Felix. A large epithermal quartz zone near Cerro Mosquito was sampled by the PIM project with gold values up to 24.4 grams/ton. A joint venture between MinAmerica and Independence Resources Inc was initiated in 1994. Exploration expenditures on the property from 1991 to 1994 are estimated to be 250 000 USD. In the most recent program approximate-

ly 120 000 USD was spent. In 1994, a geochemical sample grid was completed over the concession with a total of 1 263 soil samples and 676 rock samples. Extensive grid mapping has outlined numerous broad argillic and silica alteration zones, representing an epithermal (high-level hydrothermal) event postdating the deposition of tuffs and probably related to caldera margins. The geochemical sampling has outlined a broad NW trending belt of geochemical anomalies roughly 3 km in length and 1 km in width, covering the alteration zones. Gold, silver and arsenic are the main elements outlining the mineralized zone with gold values in soil up to 1 720 ppb. Preparation has begun at Chami for drilling five or more shallow test holes positioned to cross the widest and best known siliceous zones. An exploration budget for the outlined drill program will be 200 000 USD.

The classical Santo Espiritu de Cana deposit has been investigated by St. Joe Minerals, Freeport and Goldfields of South Africa. The original deposit is supposed to have delivered more than 1 Million ounces of gold and an additional pipe was located in the area by Goldfields in 1992.

Several alluvial deposits are investigated by a relatively large number of

small companies, like Iberoamericana de Aridos SA, European Progress Inc, Alamo Exploration, Tierra Minera SA, Can Incorporated SA, Minera Oro SA, Green Mine Panama Corp, The Mine Point Panama, SA and the Panama Mining and Exploration Company.

Artisanal informal mining in Panama

In Panama extraction of gold from rivers has been going on since humans first populated the area. With the arrival of the Spaniards the gold mining intensified, especially at the alluvial deposits on the northern flank of the cordillera, near the Atlantic Coast (the rivers Belén and Concepción). The present activities and the number of individuals are estimated from information gathered from several sources. The total number of miners dedicated to artisanal mining is between 2 700 and 4 600 individuals. Recently there has been a mining boom in the Cuango River on the Atlantic coast (50 km northeast of the Panama canal), where alluvial gold mining takes place in the river beds and on the old river terraces. Three small companies have started modest activities in Cuango (European Progress Inc, Can Incorporated and Embera Daw).

Taxation

Although Panama does not have a long and extensive background in mining, it adopted a policy of improving its competitive position for the international mining capital. A new mining law was promulgated in February 1988. An important part of the improvement of the competitive position has been a adjustment of the taxation, which today is 34 per cent. A mineral royalty of 2 per cent of sales (= nets smelters return) is deductible from income for the calculation of income taxes. The mining companies have to pay a fee of 3 per cent of the CIF value on imports.

A proposal for changes in the present mining code and mining taxation is now being processed in the Panamanian Par-

liament. Changes involve reduction of the income tax rate from 34 per cent to 25 per cent, a tax incentive for infrastructure investments and the abolishment of the dividend tax entirely.

Mining laws

The mining laws of Panama were modified in February 1988 in order to bring the code in line with the international free market and stimulate foreign and local investors within the mining field. The following features of the reformed Mining Code may illustrate the special advantages for mining investors in Panama:

- Guarantees to the explorer that if he finds an ore body the State is obliged to grant him an extraction concession for the minerals found.

- Exploration concessions are granted for a period of 4 years, extendible for 2 additional periods of 2 years.

- Extraction concessions are granted for a period of 20-25 years depending on the class of mineral, extendible for three periods on 10.5 and 5 years respectively.

Panama has still a series of factors that have limited the development of the mineral sector, such as lack of modern mining tradition, uncertainty in acquiring concessions, legal instability, slow and subjective handling of the concessions etc. However up till now the mining companies established in Panama have not met any serious obstacle in the application and granting of concessions or other kind of legal abuse.

Infrastructure and environment

Panama has a number of competitive advantages compared with other nations, such as the existence of a free monetary system, an excellent geographical location, free import and export of metals, banking center and international trade service and a relatively virgin geological exploration ground. The basic existing infrastructure has contributed to the development of the up till now few mines in operation, i.e. the Remance, Santa Rosa and Cerro Viejo, as well as a large

number of quarries and not-metallic operations. As a governmental policy, it is expected that the mining industry provides infrastructure development in the rural areas as an indirect benefit and contribution to the country. Environmental concerns are relatively new concepts in Panama and public environmental awareness is still in its infancy. There has been no general governmental policy statement in environmental matters. However, a proposal for a general environmental law has been elaborated in 1995 and is presently subject to review by the Legislative Assembly.

Indian rights on a national level

The indigenous people in Panama have the right to their land (comarcas) but one of the agrupations, the Ngobo-Buglé population in Western Panama have fought a long time in vain to have access to a comarca. The issue concerning mineral policy in indigenous areas has been more relevant during the last years. The mineral exploration boom is used as a mean to achieve their demands. Recent incidents (May 1995) have occurred between the indigenous people and mining companies holding concessions, caused as a mean to put pressure on the Government to approve the proposed Comarca Ngobe-Buglé in the Province of Chiriquí, Veraguas and Bocas del Toro. The situation was improved when the President arranged a meeting with the leaders and promised that a new law will be introduced creating a new comarca for the Ngobe-Buglé population. This situation will make it much easier for the mining companies to enter in negotiation directly with the representatives of the indigenous people and present their exploration plans and activities. The mining community is mainly concerned with whether the introduction of comarcas will influence the mineral and civil rights in a positive or negative direction. ■