

## PANAMA

*By Gerald M. Ellis*

**A** Mining industry has been steadily developing in the Republic of Panama, even though the two most important metallic mineral deposits, Cerro Colorado and Cerro Petaquilla, have not been pushed forward. When market conditions improve, exploration and development activity could be considerable.

As in other countries in Latin America, a Directorate General of Mines and Mineral Resources is charged with promoting the development of a minerals industry in both the metallic and non-metallic sectors. As a branch of the Ministry of Industry and Commerce, the Directorate has a variety of functions: it undertakes mineral projects; processes applications for metallic and non-metallic mineral concessions; oversees the extraction of materials for the Public Works Ministry; receives and examines maps of mineral concessions; is responsible for the department of mineral statistics; advises government on matters related to mining policy; examines mining -related problems and proposes solutions; approves and monitors metallic and non-metallic concessions; inspects mining operations; and evaluates all reports and maps presented.

However, its principal function is to promote private investment in the minerals sector, with the aim of engaging private industry in the socio-economic and industrial development of Panama. At the same time, the Directorate aims to ensure that government mineral policies, specifically as regards exploration, mining and environmental protection, are in step with the rest of the world.

This Directorate can also undertake chemical analyses, metallurgical tests, petrographic analyses, geologic field studies, remote sensing and evaluation of environmental studies.

The mining sector represents less than 0.5% of GDP, in spite of the fact that the country has the potential to be a substantial primary producer of copper and gold. In the past nine years 44 metallic mineral concessions and 68 non-metallic concessions have been granted. In the past two years, there have been 35 applications for mining concessions, and four exploitation contracts for non-metallic minerals were granted.

In a joint cooperation programme with Inter-American Development Bank (IDB), a two-year programme has been drawn up for non-reimbursable technical cooperation, the purpose being to establish policies leading to an improvement in the investment climate for the minerals sector. This IDB-financed project invited tenders and 13 proposals were received. The University of Montana was the winner.

In the energy sector, the governments of Panama and Venezuela signed an agreement in October 2000, whereby Venezuela will supply 8,000 bbl/d of oil to Panama in the form of crude, refined products and liquefied petroleum gas (LPG). The agreement is for 15 years and capital repayment will be paid at an annual interest rate of 2%, with a grace period of one year.

Panama is a strong commercial centre for the trans-shipment and discharge of products, and a major transit centre for shipments of crude oil and petroleum products. Crude shipments account for the majority of the Pacific to Atlantic petroleum traffic, much of it coming from the Alaskan North Slope. Oil products dominate the traffic from the Atlantic to the Pacific side. The 860,000 bbl/d Trans-Panama oil pipeline, located outside the former Canal Zone near the Costa Rican border, runs 130 km from Charco Azul on the Pacific coast to Chiriqui Grande on the Caribbean.

Towards the end of 2003, operations resumed for the transport of about 100,000 bbl/d from Ecuador to the US Gulf. The pipeline had been shut down since April 1996 owing to a reduction in Alaskan crude production. There has been some discussion about reversing the direction of the pipeline to allow Caribbean oil producers a less expensive outlet to Pacific destinations.

## **Mining**

The Cerro Petaquilla copper deposit, one of the largest in the world, is owned by Inmet (48%) and Adrian Resources (52%). Since acquiring its interest in 1992, Adrian's primary focus has been on exploration and development of the property. In January 1998, a bankable feasibility study was completed by HA Simons Ltd on behalf of Teck Corp, which has the right to acquire half of Adrian's interest by funding the company's share of the cost of placing Petaquilla into production. Teck is entitled to defer for one further year a production decision and, as of July 2003, this was still the case.

Petaquilla is a world-class deposit and the mineable reserves outlined in the bankable feasibility study represented only part of the ultimate potential. At a 0.2% copper equivalent cut-off grade, Adrian's engineering consultant, Fluor Daniel Wright Ltd, estimated the resource at about 3,700 Mt containing 31.8 billion lb of copper, 9.8 Moz of gold and 962 Mlb of molybdenite.

The Cerro Colorado property remains on a stand-by basis. In 2001, the owner, Tiomin Resources Inc, transferred ownership to Aur Resources in return for a US\$2.3 million loan made by Aur to Tiomin. The Panamanian subsidiary of Tiomin, PanaCobre SA, evaluated the sulphide and oxide reserves at Cerro Colorado and feasibility studies have estimated the sulphide reserves at 1,750 Mt averaging 0.64% Cu.

At its 100%-owned property in the Panama Faja de Oro gold district, Calais Resources Inc has embarked on its Phase I programme and has installed facilities including housing. Operations will include placer mining as well as hard-rock exploration. The area covers some 25,000 ha and Calais has applied for an additional 5,500 ha in the same district.

The mineral rights are reported to include hard-rock, placer and offshore marine placers deposits. The Faja de Oro district is located between Cerro Colorado, some 70 km to the west, and the Petaquilla and Molejon copper and gold deposits, some 25 km to the east.

Glamis Gold has relinquished all its exploration concessions in Panama because of poor drill results at its Viento Frio property.

Minas de Santa Rosa was very active during the period 1995-2000. However, after five to six years of mining, its gold and silver mines have been closed and prepared for rehabilitation and reforestation.

Transworld Exploration's Romance project lasted for the nine years 1990-98, during which time a series of gold-silver veins were exploited. The mines are under care-and-maintenance and reforestation has begun.

Minera Cerro Quema purchased the Cerro Quema gold-silver project from Campbell Resources Ltd in 2000 and has continued with maintenance, road repairs, and reforestation activities pending a production decision. The original owner, Campbell Resources, explored Cerro Quema with successful results and a feasibility study indicated the deposit could be mined at a gold price of US\$400/oz. Campbell retains a 9% royalty on future net profits.

### **Hydrocarbon exploration**

Virtually all oil is imported and the country neither produces nor consumes natural gas. Houston-based Global Energy Development of which Harken Energy owns a majority interest, plans to convert the Bocas del Toro exploration blocks to a production-sharing contract (PSC). This plan was in effect in October, 2003, although it was rumoured in late December that the blocks had been relinquished. This could not be confirmed. The last petroleum exploration permits granted by the Government of Panama, before Harken Energy's technical evaluation agreement in September, 2001, were made to Idria Oil & Gas Co NV in 1987.

In 1989, Idria Oil & Gas completed 309 km of 2D seismic surveying in the Golfo de San Miguel block located in the Sambu (Garachine) Basin. In 1991, Texaco flew a synthetic aperture radar survey over its onshore Bocas del Toro seismic option permit in the Bocas del Toro Basin of northwestern Panama. The last onshore seismic survey was acquired by Gulf in the same area in 1963.

In 1989, Idria drilled an exploratory well, Bayano 1, to a total depth of 1,564 m. This was plugged and abandoned. The well was located in the offshore Golfo de San Miguel Block in the Sambu or Garachine Basin. The most recent onshore exploratory well was Canazas 2, drilled to a total depth of 1,219 m by Sossa Petroleum Co in the Bayano Basin in 1981. The well had oil shows in the Middle Oligocene Arusa Formation sandstones.

The primary exploration objectives are untested Middle Miocene carbonate bioherms with secondary targets located in Miocene and Oligocene clastic reservoirs in anticlinal folds of the Perlas Deformed Belt. The Garachine Block covers part of two deep sub-basins that contain potential source rocks of middle Miocene age and potentially additional source rocks in the deeper section. Several shallow wells drilled in the 1920s near oil seeps located onshore near Punta Garachine encountered good oil shows in the middle Miocene section. Reappraisal of exploration data by Global Energy suggests that there is exploration potential in the carbonate buildups in the middle Miocene. Seismic interpretation suggests the presence of a carbonate platform rim with associated shelf margin buildups and pinnacle reefs flanking the Middle Miocene, organic rich shale basin.