

## GUATEMALA

*By Peter Harben & J M Harris  
Peter W Harben Inc ([www.peterharben.com](http://www.peterharben.com))*

In late December 2003, Guatemala's presidential election was decided in a runoff when Oscar Berger, a conservative businessman and former Guatemala City mayor, with 54% of the vote, defeated Alvaro Colom, a centre-right candidate. Inaugurated on January 14, 2004, Mr Berger said that his priorities will be to battle runaway crime and corruption, and create a safe climate that would attract foreign investment and create jobs. However, his supporters include the traditional business elite and it remains to be seen if former President Alfonso Portillo's promises to support economic liberalisation, improve the infrastructure, and continue the peace process will continue. During the campaign, Mr Berger promised not to privatise state companies, a policy that critics said only benefited a handful of business people while increasing the prices of services for consumers.

Although the largest economy in Central America, Guatemala faces a multitude of economic and social challenges as a result of a civil war that ended in 1997 after 36 years. The region's worst drought in ten years, as well as low coffee prices, have not helped. More than 75% of the country's 11 million population still live in poverty and the wealthiest 10% of the population receive almost 50% of all income. Half of all children are chronically malnourished and crime is a problem. The US 'decertified' the country as a co-operative partner in anti-drug efforts and this has jeopardised both foreign aid money and Guatemala's image. One sign of progress was the December 2003 free-trade agreement with the US that also included Honduras, El Salvador and Nicaragua. (The US is the largest trading partner, providing 35% of imports and receiving some 27% of exports.)

Guatemala is the Central America region's northernmost country, bordering Mexico to the north and west, Belize and the Atlantic Ocean to the east, Honduras and El Salvador to the southeast, and the Pacific Ocean to the south. The tectonic interaction of the Cocos, Caribbean and North American plates makes the country's geology diverse. It comprises a Pacific coastal plain; a volcanic province; a metamorphic complex; and the Peten lowlands – and favours the formation of various types of mineral deposits, including gold, silver, copper, cadmium, antimony, nickel, lead, zinc, limestone, barite, bentonite, sulphur and marble.

Despite this potential, however, the mining industry has remained moribund because of the internal insurgency which lasted through the 1960s to the mid-1990s, a period when most mining projects in the country were easy targets. Therefore, labour for mining projects was scarce. Another factor that kept mining activity depressed was the previous mining law (Decree No. 65-85), which provided no incentives to potential investors, be they domestic or foreign. The passage of the new mining law Decree No. 48-97 has helped to promote exploration activity.

Exploration continues in eastern Guatemala at the Buena Vista nickel project, initiated in 1998 by Chesbar Resources Inc (Jaguar Nickel Inc as of mid-2003) and its Guatemalan joint venture partner, Intrepid Minerals Corp. The JV partners have six exploration licences issued by the government covering over 160 km<sup>2</sup>, and these are now owned by Jaguar Nickel through a wholly-owned Guatemalan subsidiary, Minera Mayamerica SA. Work to date has been concentrated on two properties, Sechol and Marichaj. Both are nickel-cobalt laterite projects, and test pitting and assaying of samples have confirmed previous resource calculations. The properties adjoin a former producing operation, Inco's Exmibal mine and smelter based on the Exmibal orebody discovered in 1956 and purchased by Hanna Mining and superficially explored until 1970 when Inco optioned the property. Further exploration by Inco justified a US\$220 mine and smelter and operations began in 1977. Due to the high oil prices, coupled with low nickel prices, Inco's management made a decision to shut down the operation in 1980.

Jaguar Nickel's mineral resources comprise: 14.0 Mt averaging 1.46% Ni and 0.08% Co in the measured category (including 5.0 Mt at 2.1% Ni and 0.08% Co); 23.0 Mt at 1.34% Ni and 0.08% Co indicated; and 133.0 Mt averaging 1.51% Ni and 0.08% Co in the inferred category. Based on these figures, the total resource is 170 Mt at 1.48% Ni. The company says that less than 5% of the nickel properties has been examined in detail sufficient to calculate mineral resources.

Jaguar Nickel is contemplating the use of 'Atmospheric Chloride Leaching' (ACL) to process its nickel laterites and has obtained several patents on parts of this process, which is designed to address some of the challenges of exploitation of nickel laterites in general, and of Jaguar Nickel's properties in particular. In late 2003, pilot-plant testing of the ACL process began at Ortech in Mississauga, Ontario.

Prior to the start of the campaign, extensive laboratory testing was completed on the various horizons (saprolite, limonite and transition mottled zones) present on the Sechol property. These tests showed that excellent nickel and cobalt recoveries could be achieved from all horizons. The objectives of the pilot campaign include: to demonstrate that the laboratory process can be translated into a continuous pilot operation; to demonstrate the behaviour of all horizons from the Sechol ore profile; to provide samples of mixed nickel-cobalt hydroxide for customer evaluation; to allow equipment testing on live process slurries for the purposes of commercial design; to obtain data for an environmental impact statement; and to obtain data for design criteria and a prefeasibility report.

In 2003, Jaguar Nickel signed an option agreement with Aurogin Resources Ltd to explore two of the company's gold exploration projects, whereby Aurogin has the right to earn a 51% interest in the Rio Paz and Las Mina properties. Under the terms of the agreement Aurogin must issue 100,000 of its common shares to Jaguar, incur a minimum exploration expenditure of US\$100,000 in year one and spend an additional US\$4.0 million or provide a final feasibility by the end of the fourth year of the agreement to earn its

interest. Rio Paz is located near the border of San Salvador and Las Minas is located south of Lake Izabal. Jaguar is currently reviewing all of its non-nickel exploration projects for potential joint venture or disposition.

Radius Exploration Ltd has direct involvement in several active gold exploration programmes in central and eastern Guatemala. At the Banderas property, Pillar Resources Inc of Vancouver holds an option to earn a 60% interest in the property from Radius by spending US\$4 million on exploration. The target at Banderas is high-grade epithermal gold-silver veins hosted by felsic and intermediate volcanic rocks within a typical volcanic dome field setting. In the final quarter of 2003 a first-stage, ten-hole drilling programme intersected gold-bearing quartz veins in all holes. A best intersection of 3.6 m at 9.3 g/t Au, including 1.5m at 18.8 g/t Au and 64 g/t Ag, was returned from the deepest vein intercept. At the beginning of 2004, a second phase drill programme was started at the Banderas property consisting of a minimum 2,500 m of drilling in more than 20 holes.

The Tambor properties form part of a 25 km long belt of gold mineralisation located on the south side of the Motagua fault zone, a regional structure that forms part of the collision boundary between the Caribbean and North American tectonic plates. In October 2003, Radius purchased all of Gold Fields' interest in Tambor, comprising 1,300,000 common shares in the capital stock of the company to give Radius 100% ownership of the properties and increasing Gold Fields' equity interest in Radius to 5,100,000 shares, or 13.6% of Radius' issued shares. The Tambor properties host an orogenic lode gold belt, discovered by Radius in 2000 and advanced by Gold Fields.

During the first half of 2003, Gold Fields drill-tested the Guapinol, La Laguna, Poza del Coyote and Cliff zones, and then, in late 2003, Radius released a resource estimate stating that the area contained 216,000 oz of gold in inferred resources and 57,800 oz of gold in indicated resources (the estimate assumes a heap-leach scenario for Tambor and uses a 0.3 g/t Au cut off). In addition, there are at least two major gold-in-soil anomalies with associated anomalous rock samples that have yet to be drill tested: a substantial strike length of strong gold-in-soil geochemistry associated with gold values in rock samples to the west of the Guapinol South-Cliff Zone trend, and another similar zone roughly 1 km to the north of, and parallel to, Guapinol. Accordingly, it is considered likely that the current resource (at Tambor) could be doubled or tripled with a concerted drilling programme.

In November 2003, Glamis Gold Ltd, headquartered in Reno, Nevada, gave formal approval to proceed with final design and construction of the Marlin gold and silver project located near the village of San Miguel Ixthuaca in the western Guatemalan highlands and some 150 km northwest of Guatemala City. The Marlin project will be developed as a combined open pit and underground mine with commercial production scheduled for the first quarter of 2006. The approved plan calls for mining of 2.5 Moz of gold over a ten-year mine life, and the deposit remains open to the west and at depth. The Glamis land package in the Marlin area consists of approximately 10,000 ha.

Marlin was first discovered in 1998 and Glamis acquired its 100% interest through its merger with Francisco Gold Corp in July 2002. During its due diligence review, Glamis established a gold equivalent resource of 1.4 Moz. Upon completing the acquisition, the company immediately commenced a drilling programme to expand the Main zone and in the process discovered a major extension to the south and southeast. The drilling programme ultimately succeeded, with a four-fold increase in the gold equivalent mineral resource to 5.6 Moz. Mineralisation is still open to the west and down-dip to the south. The company believes that the Marlin area has the potential to become an important new gold-producing district and has already identified a number of priority exploration targets within a 5 km radius of the original discovery.

The Cerro Blanco property, located in south-western Guatemala near the town of Asuncion Mita, was acquired by Glamis in 1998 as part of the Mar-West Resources Inc acquisition. Cerro Blanco is considered to be a classic hot springs gold deposit with typical bonanza-type gold mineralisation. Initial exploration work and much of the 3,700 m of drilling were geared to defining a deposit amenable to open-pit mining and heap leaching. However, subsequent drilling identified a number of narrow, high-grade intercepts and Glamis has since changed its focus to potential development as an underground deposit, with possible operating synergies with the Marlin project to the northwest. Drilling during the final quarter of 2002 intersected high-grade feeder structures. Depending on the results of the latest programme, Glamis will continue to test for potential expansions of the underground mineralisation and, if successful, will study potential operating synergies with the Marlin project.

Guatemala has been the third-largest producer of antimony in Latin America after Bolivia and Mexico. Antimony ore and concentrates have been produced by Minas de Guatemala from several mines at Ixtahuacan in the west.

Guatemala's output of industrial minerals varies greatly from year to year. Industrial minerals such as gypsum, barite, talc, feldspar, salt, limestone, clays, sand (including silica sand) and gravel are produced, often for domestic use. Marble from white through green is exported abroad, especially to Colombia. Pumice and volcanic sand, ash, basalt, or andesite, are used in construction and agriculture. Jade is also found. Cement consumption tends to exceed local supply with imports of up to 40,000 t/y. Cementos Progreso has two plants and a 1.4 Mt/y capacity.

Guatemala is the only oil-producing country in Central America; its reserves, estimated at 526 Mbbl in the northern Peten jungle region near Mexico's Tabasco formations, have created some interest and the government has been opening areas for bidding. Production is in the region of 20,000 bbl/d and was expected to increase to 22,000 bbl/d by the end of 2003.

Basic Resources International, a subsidiary of US-based Anadarko, is the largest oil producer and also operates a mini-refinery (2,000 bbl/d) in Peten. Anadarko bought the former parent company of Basic, Union Pacific, in 2000 and two years earlier Union Pacific had acquired the Xan oilfield, the country's

largest producing field, through its acquisition of Norcen Energy Resources of Canada. Texaco operates the Escuintla refinery plus gasoline stations, and has a large downstream presence. Nevertheless, national oil consumption exceeds domestic production and refining capacity, so Guatemala is a net importer of petroleum and receives a share of reduced price oil from Venezuela and Mexico as part of the San Jose Pact; the Caracas Energy Accord signed in October 2000 provides additional reduced-price Venezuelan oil.