

## ECUADOR

*By Carlos A. Puig*

A year after the bloodless popular coup that overthrew J. Mahauad the task of governing the country, vested in Dr. Gustavo Noboa B. has not been easy. The chaotic and disastrous financial system inherited from the previous government, plus implementation of new monetary system adopting the US dollar as the official currency for all economic transactions, all caused restructuring of government policies, re-adjustments in the economic sectors and consequently, some social unrest. Nevertheless, Gustavo Noboa's government has not been dismayed in spite of all the difficulties encountered along the way. Much effort has concentrated on implementing new laws, modifying others and allowing social and political organisations to share and provide their points of view, with the aims of strengthening monetary stability, attracting investment, and regaining credibility.

Signs of the positive paths that the country is taking are the support and credits obtained from various international financial institutions. Moreover, the government has shown to the international community its firm determination to come forward with the changes by signing a contract with a consortium of international oil companies to start construction of the largest infrastructure project in the history of Ecuador. This decision had been on standby for almost a decade. The US\$1.1 billion project will see the construction of an additional 500 km oil pipeline (OCP) for heavy oil that will run on a parallel route to the existing TransAndean pipeline (SOTE). With the new pipeline, transport capacity difficulties experienced in the past will be solved. These had been detrimental for the expansion of the country's oil industry. Ecuadorean oil production reached last year a peak of 424,000 bbl/d. State-owned Petroecuador accounted for 59% and private companies for 41%.

The consortium of international oil companies that includes Alberta Energy (Canada), Agip (Italy), Kerr McGee (US), Occidental Petroleum (US), Repsol-YPF (Spain/Argentina) and Techint (Argentina), will soon invest a further US\$2 billion in exploration to increase oil reserves/production and feed the new pipeline. Undoubtedly, the private-sector activities in the oil industry will sustain the country's economy, as usual. This new project is expected to provide 3.5% growth in the economy and approximately 45,000 new jobs.

Other companies currently involved in the exploration/production of oil in the east-northeast of Ecuador, and that have contributed significantly to sustain the country's oil industry, besides Petroecuador, are, amongst others, City Investing, Cayman International, CGC – San Jorge, Arco Oriente, Santa Fè, Vintage Oil, Perez Companc, Canada Grande, Tripetrol, Triton Energy, Bellwether International and Tecpecuador.

EDC, a subsidiary of Houston-based Samedan Oil Corp., continues with its natural gas project at the Gulf of Guayaquil where the Amistad Field has been estimated to have reserves of 9.76 billion m<sup>3</sup>. Ongoing drilling to date at Amistad 5 to a depth of 3,325 m, and logging, has detected the presence of 105 m of sandstone saturated with natural gas. Should drilling continue to prove the estimated reserves, the southwest of Ecuador will benefit from an expected daily production of 905,600 m<sup>3</sup> to generate 204 MW.

The oil industry in Ecuador continues to be a strong base for the economy, despite all political difficulties faced in the past year. The petroleum sector currently represents 16% of GDP, which means approximately 45% of the government's income.

The current top officials at the Ministry of Energy and Mines have committed themselves to rebuild the attractiveness of mineral exploration and mining activities that the country had back in 1985. At that time, major and junior mining companies came into the country starting up then, and for the following 12 years, the country enjoyed, one of the most intense mineral exploration periods ever in its history. The fall of international metal prices has been one of the main reasons for the diminished level of activity in the mining sector during the past two years.

It is expected that the new Mining Legislation, recently enacted as part of Ecuador's Economic Re-structuring Law, and which contains very encouraging and motivating reforms as compared with the former law, could attract more companies to carry on exploration and/or develop interesting prospects already outlined in several parts of the country.

IAMGOLD has been carrying out several exploration projects at regional levels and at more detailed levels. Drilling (surface and underground) is ongoing at its wholly-owned Retazos project within the gold producing Zaruma-Portovelo district. Significant and encouraging results have been reported for the Sesmo and Muluncay vein systems with intersections of 0.5 g/t Au and up to 231 g/t Ag and 9.1% Cu. IAMGOLD this year plans to continue exploration of its high sulphidation epithermal Quimsacocha project, where drilling will be carried out.

At the Beroen property, Ecuadorean Minerals Corp. (EMC) has been carrying out drilling to confirm important mineralisation, showing good continuity and potential of the veins for additional mineralisation along strike and at depth. At Beroen, the present inferred resource estimate at a cut-off grade of 1 g/t Au is 1.07 Moz gold and 7.6 Moz silver. It contains an important high-grade zone within the Alejandra North sector consisting of 575,000 oz gold at a grade of 10.9 g/t and 4.3

Moz silver at a grade of 81 g/t. Additional drilling on this property is now being planned to test for possible strike and depth extensions, mainly on the eastern extension of the Alejandra sector. This work will be accompanied by adit sampling and detailed geological mapping of the mineralised zone.

The Santa Barbara gold-copper project in the southeast of Ecuador where recently a programme of ten holes (2,500 m) of diamond drilling tested a gold-copper soil geochemical anomaly. Eight holes intersected gold mineralisation with an interval of 190 m grading 0.95 g/t Au. Within the project area, two other sectors have been found to have significant importance for copper and gold mineralisations. Those areas are El Hito, comprising a porphyry copper target, and Nayumbi where anomalous gold assays have yielded up to 3.4 g/t, as reported by the property's owners. The exploration work carried out by the joint venture partners Valerie Gold and TVX Normandy has been terminated, even though the project shows excellent possibilities to develop a large copper-gold prospect. The main partner considered that results were not sufficiently positive under present market condition to recommend further work. It is thought that the new Ecuadorean owner, FJTX, will continue exploration work with new partners.

Corriente Resources has very successfully been confirming previous scout drilling by Billiton on a high-grade copper resource called Panantza in the southeast of Ecuador. Drilling results to date, as reported by the company, average above 0.8% Cu. Mineralisation outlined as high-grade covers an area of 300 x 300 m surrounded by a much larger area of lower copper grades. Company sources noted that drilling within the high-grade sector was stopped in mineralisation due to the depth limitations of the drilling equipment. It thus remains open at depth. The best result obtained in Panantza was hole PA-12 that returned a 300 m intersection of almost 1% Cu starting at a depth of 29 m. Mineralisation comprises

chalcopryite, with a thin zone of oxide copper below a leached capping at the top of most of the drill holes. Within this district covering an area of 80 x 40 km, Corriente has identified other porphyry situations with similar grades to those at Panantza. These additional porphyries are known as Mirador, Warintza, and San Carlos and form part of (so called by the company), the 'Corriente Copper Belt'.

Rio Tinto, one of the major mining companies involved in mineral exploration some years ago, has returned to Ecuador and is currently conducting reconnaissance exploration to identify porphyry intrusions prospective for copper and/or precious metals.

Ecuator, a Norwegian-financed company, last year focused its exploration on the Cañicapa and Curiplaya prospects. Results from each of the properties have been encouraging and the company is looking for joint-venture partners to continue drilling at these two promising properties for gold and copper-gold, respectively. The company has started new regional exploration programmes to outline base and precious metals prospects in the central-eastern part of the country.

Another interesting base metals property awaiting resumption of work in order to confirm additional targets within the approximately 10 x 10 km area of interest is the Lumbré prospect. A copper resource of

150 Mt has already been identified. The last exploration work carried out in the area, in 1998, outlined an additional mineralised section with an enriched zone 40 m thick where the initial five exploratory drill holes indicated 0.53-0.60% Cu. Significant gold values have been found within the area. The property owners are looking for a sound partner to be able to accomplish the necessary exploration work to evaluate fully this interesting copper prospect.

Other companies involved in exploration are Saxon Gold and Minera Gribipe, both concentrating on the southern part of the country.

Gold production in Ecuador continues to be the important activity in the Portovelo-Zaruma, Nambija and Ponce Enriquez gold districts. This activity is carried out by small private companies and/or by miners' co-operatives. However, the most reliable gold production is that by BIRA, in the Zaruma-Portovelo gold district, with 100 t/d being fed to the mill. This company is considered the main formal gold producer in Ecuador. BIRA announced recently that it will expand its activities. The company has signed a joint-venture agreement with Buenaventura from Peru. They will both be involved in mineral exploration in southern Ecuador and expansion of Bira's current gold production operation.