

HONDURAS

By Peter W. Harben & J. M. Harris

Peter W. Harben Inc., New Mexico 88011, USA (www.peterharben.com)

Honduras is a geologically diverse, mountainous country and the second-largest in Central America. With a population of approximately 6.3 million and a GDP of about US\$10 billion, it is also one of the least developed countries in the Western Hemisphere. Although a traditional industry in the country, mining is significantly underdeveloped, accounting for just 2% of GNP. There are hopes that the political stability enjoyed since 1978, plus a new Mining Code instigated in 1996, will encourage exploration and development of this favourable metallogenic region that is thought to host numerous precious- and base-metals deposits.

Breakwater Resources Ltd operates the underground El Mochito Zn-Pb-Ag mine. The company's international operations include the underground Langlois zinc mine and the underground polymetallic Bouchard-Hébert mine in Québec, the underground Nanisivik Zn-Ag mine in Nunavut on Baffin Island, and the underground and open-pit Caribou Zn-Pb-Ag mine in New Brunswick, all in Canada, along with the underground El Toquí Zn-Au mine in Chile and the underground Bougrine Zn-Pb mine in Tunisia. Langlois and Caribou are currently under care and maintenance, and Nanisivik closed on September 30, 2002. By far the bulk of the company's revenue is derived from the sale of zinc concentrates, plus some from lead, copper, gold and silver.

El Mochito is located near Las Vegas and some 88 km southeast of San Pedro Sula in northwest Honduras. The operation is underground and a 2,000 t/y concentrator utilising conventional grinding, differential sulphide flotation, and pressure filters to produce separate zinc and lead concentrates. These are trucked to the concentrate/storage shed on tidewater at Puerto Cortés approximately 115 km northeast of the mine. During 2002, the mine surpassed its previous production record set in 2001 with an annual production of 663,385 t of ore milled at a head grade of 7.5% Zn. The mine produced 46,358 t (102.2 Mlb) of zinc in 2002 (106.9 Mlb in 2001), 8,120 t (17.9 Mlb) of lead (14.9 Mlb) and 1.7 Moz of silver (1.5 Moz). Mine site operating costs per tonne of ore milled were US\$28.40 in 2002 compared with US\$30.59 in 2001, and total cash costs in 2002 were US\$0.32/lb of payable zinc compared with US\$0.37/lb of payable zinc in 2001 (the US\$0.05/lb reduction is due to lower treatment charges, improvements in grade control, improved productivity, metallurgical changes to improve levels of metal recovery, and a further reduction in the workforce).

Glamis Gold Ltd announced that its San Martin mine has been the company's largest gold producer and the largest contributor of earnings and cash flow. For 2002, San Martin produced 129,435 oz of gold at a total cash cost of US\$106/oz compared with 114,216 oz at a total cash cost of US\$120/oz in 2001. San Martin started commercial production in the first quarter of 2001. The company is headquartered in Reno, Nevada, and operates gold mines in

Nevada and California as well as in Honduras, plus an exploration programme in Guatemala. The strategic goal is to increase annual gold production to 500,000 oz at a total cash cost below US\$150/oz.

First Point Minerals Corp., a Canadian precious- and base-metals exploration company focused on the Americas, signed an exploration and property option agreement with BHP Billiton to explore porphyry copper-gold deposits in Honduras, Nicaragua and El Salvador. This includes its Cacamuyá Au-Ag and the Cedros Ag-Zn-Pb properties, both in Honduras. The Cedros property, located 110 km east of El Mochito, is at the southern end of a belt of world-class, carbonate-hosted, silver-zinc-lead deposits and was mined by the Spanish from the 1500s until the 1800s for high-grade silver. The mineralised belt stretches from northern Mexico to El Mochito (which has been in production since 1948).

At Cacamuyá, a reverse circulation (RC) drilling programme (20 holes, totalling 2,000 m) is designed to test targets in the D4/D5 and Cerro Chachagua areas. The D4/D5 target is a broad area of strongly-altered volcanics and abundant epithermal quartz veins and stockworks in both float and outcrop that carry significant gold values. The target area exhibits potential for bulk tonnage mineralisation that could contain centres of high-grade veins and stockwork zones and more focused bonanza veins at depth. The Cerro Chachagua target is a relatively deep-seated, high-grade epithermal vein mineralisation immediately south of D4/D5 and approximately 2 km east of Filo Lapa. Cerro Chachagua is a classic bonanza epithermal vein similar to Meridian Gold's El Peñón gold mine in Chile.

Drilling is also planned for the Carmen-Esperanza veins, which were mined between 1910 and 1920, when mining stopped once the veins reached the water table and pumps were unavailable. Follow-up drilling is also planned at both the Filo Lapa and Hilo Libre targets, where RC holes drilled prior to the wet season last year encountered previously reported significant gold grades.

Maya Gold Ltd is conducting exploration on its copper/gold porphyry deposit in Honduras. Billiton-BHP may earn a 51% undivided interest in this property by funding US\$2.25 million of exploration prior to February 2004. The current Phase II program marks the first US\$375,000 expenditure to be made under this agreement. Maya's two exploration concessions in Honduras cover some 120,000 acres. Early reconnaissance exploration has discovered two significant targets, the copper/gold porphyry deposit 'Los Lirios' and the potential epithermal precious metal deposit Rio Rico.

Honduras has hundreds of opal prospects and mines, although most high-quality opal is produced from small informal mines in the cool tropical highlands of southwestern Honduras. In particular, the Tablon mine near Erandique is based on the country's biggest deposit where the opal occurs in large blocks of black basalt. Miners hand-chisel the boulders to extract small vertical veinlets of thin, colourful precious opal, including black-seam opals and black-matrix opals. Seam opals, varying from near paper-thin to rare specimens more than 1 cm thick, have a crystal clear, milky white, slightly

blue or brownish orange colouration (valued at up to US\$5,000/ct); because they are so thin, the gems tend to be cut with the black basalt forming the back of the stone forming black-matrix opals (finer grades fetch US\$12 to US\$120/ct). Las Colinas, a mine located on a steep mountainside near Sosoal, Municipio de San Andres in the Departamento de Lempira, is a small producer of crystal, light, blue and matrix opals. The opal occurs as veins and pockets within grey to red andesite which, itself, occurs as weathered blocks. These andesite opals from Las Colinas have base colours ranging from milky white through crystal clear to a fine sky blue. Solid Light, Crystal, and Blue Opals from the same mine are priced from US\$100 up to US\$1,000/ct.

The country depends on imported petroleum products for domestic consumption, but there are several undeveloped oil basins with 500,000 bbl of oil produced annually by Texaco near the Mosquitia coast. Texaco will handle fuel imports through Puerto Cortéz, the principal Caribbean port, the first of a series of concessions to private operators by the state-run port authority. There has been active seismic exploration and increased gas extraction by the petroleum industry.