## CANGOLD LIMITED

# 2011 SUMMARY REPORT ON THE IXHUATAN ADVANCED STAGE GOLD PROJECT, CHIAPAS STATE, MEXICO

-prepared for-

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#### 1.0 SUMMARY

- This report is a review of the geological setting and exploration carried out on the Ixhuatan property, situated in north-western Chiapas State, Mexico for Cangold Limited ("Cangold"). Cangold, on April 25 2011, signed a letter of intent with Brigus Gold Corp. (formerly Linear Gold Corp. "Linear") to enter into an option agreement whereby Cangold can acquire a 75% interest in Brigus Gold Corp's ("Brigus") wholly-owned Mexican subsidiary, Linear Gold Mexico, S.A. de C.V., which, in turn, holds a 100% interest in the Ixhuatan advanced stage gold project ("Ixhuatan Project") in Chiapas, Mexico. Cangold intends to acquire the interest through its own wholly-owned Mexican subsidiary, Coboro Minerales de Mexico, S.A. de C.V. Upon signing the definitive option agreement prior to June 30, 2011, Cangold will pay CDN\$1 million and issue 6 million post-consolidation shares to Brigus. To earn a 75% interest in the Ixhuatan Project, Cangold will be required to pay to Brigus a total of CDN\$10 million and issue 20 million post-consolidation shares over a three-year period as well as complete an independent third-party feasibility study on the Campamento Deposit. Upon commencing commercial production, Brigus will receive a 2% NSR royalty and a payment of CDN\$5.00 per ounce of gold in the Proven and Probable category included in the feasibility study.
- More than 89,000 metres of drilling in 342 holes have been completed on the Ixhuatan Project. The property comprises 4,176 hectares and is host to the Campamento gold deposit and several gold and gold-silver mineralized zones and exploration targets. The Campamento deposit contains a National Instrument ("NI") 43-101 compliant resource estimate of 1.041 Moz of gold and 4.4 Moz of silver within 17.6 Mt at an average gold grade of 1.84 g/t and average silver grade of 7.79 g/t in the Measured and Indicated categories. In addition, there are Inferred Resources of 0.703 Moz of gold and 2.26 Moz of silver within 21.8 Mt at average grades of 1.01 g/t gold and 3.23 g/t silver, all using a 0.50 g/t gold cut-off.
- Prior to this current agreement between Cangold and Brigus (Linear), and since the completion of earlier NI 43-101 reports on the Ixhuatan project by Dimmell (2005) and Giroux (2006), Linear and Kinross Gold Corporation ("Kinross") agreed on September 6, 2007 for Kinross to earn up to a 70% interest in the project by undertaking US\$15,000,000 of exploration expenditure and making payments to Linear of US\$101 million plus a production decision fee of up to US\$15 million. The initial definitive agreement was for Kinross to immediately pay Linear US\$1.0 million and incur a minimum of US\$15,000,000 of expenditures on the project within a 24-month period. Kinross, through its Mexican subsidiary KG Minera Ixhuatan S.A. de C.V. expended US\$11,612,610.34 on the Ixhuatan project between October 2007 and December 2009, before withdrawing from the option.
- Chiapas State lies in the 450-kilometre-long gap between the Trans Mexican Volcanic Belt to the northwest and the narrow Central American Volcanic Arch to the southeast. The area is both volcanically and tectonically active and covers the triple junction of three crustal plates, the North American, Caribbean and the Central American plates. This tectonic setting, combined with inferred low-angle subduction, has generated a highly favourable environment for a Pliocene-age alkaline and shoshonitic magmatism and the development of structures and associated fluid flow required for major world-class gold and base metal deposits.
- The Ixhuatan property is located in the north-western portion of Chiapas State approximately 100 kilometres south of the city of Villahermosa. It represents an advanced exploration project containing a number of mineralized zones including the Campamento Au-Ag deposit and the Cerro La Mina Cu-Mo-Au prospect. Cerro La Mina was the focus for much of Kinross' recent exploration on the property with the best drill intercept coming from hole IXCM08-51 which graded 0.68 g/t Au, 2.71 g/t Ag, 2802 ppm Cu and 288 ppm Mo over 601.4 m, from 1.45 m to 602.9 m.
- Several distinct styles of mineralization are hosted in and around the southern and western flanks of an eroded shoshonitic stratovolcano. Porphyry Cu-Mo-Au mineralization with overprinting quartz-sulphide and high sulphidation style Au-Cu mineralization are present at Cerro La Mina. Carbonate-base metal Au mineralization characterizes the Campamento zone.



- At Cerro La Mina, Corbett (2008) interprets the mineralization to have formed in a telescoped wall
  rock porphyry system emplaced during rapid uplift and erosion of the stratovolcano. At deeper levels,
  sheeted quartz veinlets with Au-Cu-Mo mineralization indicate a porphyry environment. This style of
  mineralization contains most of the gold. Overprinting the porphyry mineralization is a system of
  pyrite veins which change from being Mo-rich at depth to red-sphalerite bearing at higher levels.
  These are interpreted to be a low sulphidation quartz-sulphide Au-Cu style of mineralization (Corbett,
  2008). At highest levels, the latest stage of mineralization consists of structurally controlled Au-rich,
  Cu-poor high sulphidation veins. An oxide zone developed on top of the sulphides which has the
  potential to contain a small gold resource.
- Carbonate-base metal Au mineralization at the Campamento deposit consists of a stockwork of several types of veinlets hosted in andesitic fragmental rocks. Veinlets are quartz-poor and dominated by carbonate, likely a high manganese variety (kutnahorite) as suggested by the strong manganese staining of surface exposures. Gold and Ag mineralization occurs with base metals in veinlets and as wall rock disseminations. Native gold and electrum are the dominant gold bearing minerals. Silver occurs as argentite and acanthite and in a range of sulphosalt minerals including tetrahedritetennantite and polybasite, as well as Ag-bearing telluride phases. Pyrite, chalcopyrite, sphalerite and galena are the main base metal sulphides.
- Both styles of mineralization are prone to supergene gold enrichment and therefore tend to produce strong soil Au geochemical anomalies. Thus, soil geochemistry has been effectively used to identify mineralization on the property.
- This report is based on a site visit to the Ixhuatan property on May 12 and 13, 2011 and on studies of all relevant literature concerning the project. In addition, discussions have been held with Linear and Cangold exploration staff in Villahermosa and Tapilula, Mexico and Vancouver, Canada.
- A 2-phase work program with a budget of CDN\$2.55 million is recommended for the Ixhuatan property. Phase 1 will consist of drilling, metallurgical and geotechnical testwork, geological studies and development of parameters for a Phase 2 Preliminary Economic Assessment.



Figure 1: Location Map





EQUITY -

#### 2.0 INTRODUCTION

Equity Exploration Consultants Ltd. ("Equity") and the authors, Philip K. Seccombe, PhD, Member of the Australian Institute of Geoscientists (AIG) and Gary H. Giroux, M.A.Sc., P.Eng., were contacted by Mr. Robert F. Brown, Director and Vice President Exploration of Cangold Limited ("Cangold") to prepare this technical report on the Ixhuatan property, Chiapas State, southeastern Mexico. Cangold is a British Columbia registered company with its corporate office at Suite 2100, 1177 West Hastings Street, Vancouver, British Columbia V6E 2K3 and is listed on the TSX Venture Exchange (TSX-V) under the trading symbol CLD.

The purpose of the technical report is to provide a summary of the geological setting and mineralization, and exploration on the property, in conformance with the standards required by NI 43-101 and Form 43-101F1. The report will be used by Cangold in fulfillment of their continuing disclosure requirements. This report is based upon publicly-available assessment reports and on unpublished reports and property data provided by Cangold, Brigus, Linear and Kinross. A list of references used in the preparation of this report is provided in Appendix A (References). This report is based on a site visit to the Ixhuatan property on May 12 and 13, 2011 by the senior author and on studies of all relevant literature concerning the project. In addition, discussions have been held with Linear and Cangold exploration staff in Villahermosa and Tapilula, Mexico and Vancouver, Canada.

Unless otherwise stated all units used in this report are metric. Gold assays are reported in grams (g) Au per tonne (t) unless ounces (oz) Au per ton are specifically stated. US\$ are used throughout this report where currencies are discussed unless otherwise stated.

#### 3.0 RELIANCE ON OTHER EXPERTS

The senior author has relied on the documents listed in the References and the site visit for the information in this report, however, the conclusions and recommendations are his. The author has also assumed that all the information and technical documents listed in the References section of the report, are accurate and complete in all material aspects however the accuracy and completeness of the data cannot be guaranteed.

The portions of Section 4.0 related to ownership of mineral tenure rely on a due diligence title report on the Ixhuatan property dated May 2, 2011, prepared by J. E. Rodríguez del Bosque of RB Abogados, Mexico City, D.F. Mexico for Cangold (Rodríguez del Bosque, 2011).

The results and opinions in this report are dependent on the information provided being current, accurate and complete. No information has been withheld which would impact the conclusions or recommendations made.

#### 4.0 PROPERTY DESCRIPTION AND LOCATION

The Ixhuatan property comprises 4176 hectares, centred at 17° 15'N latitude and 93° 05'W longitude, in the state of Chiapas in southern Mexico (Table 1; Figures 1-3). Property boundaries in Chiapas are defined by latitudes and longitudes, with concrete surveyed monuments established on or near the property and surveyed to determine their co-ordinates, thereby describing the property boundaries on the ground. The boundaries are not physically surveyed. A detailed location map showing the Rio Negro concession boundary for the Ixhuatan project is shown in Figure 3.





Figure 3: Tenure Map



Table 1: Ixnuatan Property Mineral Tenure Data							
LOT	HOLDER	SURFACE AREA (Hectares)	CONCESSION TITLE OR FILE NUMBER	TERM FROM / TO	LOCATION		
Río Negro	Linear Gold México, S.A. de C.V. ("Linear")	4176	236835	September 3, 2010 to May 10, 2051	Ixhuatán, Chaputenango and Ixtacomitán, Chiapas.		

Cangold, on April 25 2011, signed a letter of intent with Brigus Gold Corp. (formerly Linear Gold Corp. - "Linear") to enter into an option agreement whereby Cangold can acquire a 75% interest in Brigus Gold Corp's ("Brigus") wholly-owned Mexican subsidiary, Linear Gold Mexico, S.A. de C.V., which, in turn, holds a 100% interest in the Ixhuatan advanced stage gold project ("Ixhuatan Project") in Chiapas, Mexico. Cangold intends to acquire the interest through its own wholly-owned Mexican subsidiary, Coboro Minerales de Mexico, S.A. de C.V.

Upon signing the definitive option agreement prior to June 30, 2011, Cangold will pay CDN\$1 million and issue 6 million post-consolidation shares to Brigus. To earn a 75% interest in the Ixhuatan Project, Cangold will be required to pay to Brigus a total of CDN\$10 million and issue 20 million post-consolidation shares over a three-year period as well as complete an independent third-party feasibility study on the Campamento Deposit. At that point, Cangold and Brigus will hold 75% and 25% interests, respectively, and will be responsible for their pro-rata costs in jointly developing the deposit. Upon commencing commercial production, Brigus will receive a 2% net smelter return ("NSR") royalty and a payment of CDN\$5.00 per ounce of gold in the Proven and Probable category included in the feasibility study.

Cangold obtained a due diligence legal title report for the mining concession on the Ixhuatan property named "Río Negro", which covers the Campamento deposit, Cerro la Mina deposit and the significant geochemical anomalies and current drill targets on the property. This report was prepared by a Mexican legal firm (Rodriguez del Bosque, 2011) according to the information obtained from the Mexican Mines Bureau ("MMB"), in particular from the Public Registry of Mines ("PRM") and the Department of Compliance, both of the MMB and from documents provided by Cangold. The due diligence report, dated May 2, 2011, indicates that the mining concession Rio Negro described above in Table 1 is valid and existing, available for the conduct of exploration and exploitation works and wholly-owned by Linear Gold Mexico, S.A. de C.V.. Concession fees for the first semester of 2011 are not reflected as paid in full at the Department of Compliance of the MMB; as at May 2, 2011 the amount owing is MEX \$484,600.00. The report also notes that: (1) there are no liens or agreements on the property reflected at the Public Registry of Mines of the MMB, and (2): the status of Mining Works Evidencing reports for the property is unknown as of May 2, 2011.

The property is not subject to any royalties, back-in rights, payments or other agreements and encumbrances, other than the 2% NSR payable to Brigus upon completion of Cangold's earn-in.

There are no specifications in the Mexican Mining Regulations as to the amount of work necessary to retain exploration licenses, however, affidavits of all work carried out must be submitted on a yearly basis on all retained lands and property taxes must be paid twice yearly in February and July. The property tax assessment varies with the age and size of the concession but averages \$US 0.50 per hectare per 6 months.

Figure 4 shows the location of all known mineralized zones, including the Campamento mineral resource, relative to the property boundaries. There are no existing tailing ponds, waste deposits or mine workings.





EQUITY -

All environmental permits for the Ixhuatan project have been acquired by Linear and to date all the conditions of the permits have been met. Environmental regulations are governed by the Secretaría de Medio Ambiente y Recursos Naturales [SEMARNAT], whose personnel have made regular visits to the Ixhuatan worksite for environmental compliance inspections. No infractions have been reported and the author did not observe any significant environmental liabilities.

Linear has used the Prospector's and Developer's Association of Canada's (PDAC), Environmental Excellence in Exploration (E3) as a guide for environmental compliance. Controls have been implemented to prevent or minimize contamination of the area where diamond drilling or related exploration activities are taking place.

Some of these prevention methods include:

1) Use of mainly "man-portable" drills which do not require roads for placement.

2) Restricted use of toxic additives/mud used by the drilling companies.

3) MSDS documents required on site and checked regularly.

4) Fuel caches designed to contain any possible spills.

5) Sump holes dug at each drill site to prevent silt and drill mud from entering the water supply with the mud recycled, when possible, from the sumps.

6) Supply of oil absorption mats kept on drill-sites, to be used for cleanup as required.

7) Immediate clean-up of any on-site spills.

8) Memos circulated to the drill companies regarding environmental and safety controls.

9) Water quality checks implemented at three-monthly intervals, to measure any changes to the background water quality in the local drainages and water supplies. Water samples taken, starting July 2005 through 2006 as part of Linear's initial drill program, and again from 2007 through 2009 during the Kinross / Linear drilling were all within the acceptable ranges and showed no contamination.

### 5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 Accessibility

Chiapas has an area of 70,254 km<sup>2</sup> which is 3.7 % of the total area of Mexico, ranking eighth among the Mexican states in size. Population is 3,600,000 (1997), with most of the population centered near the capital city of Tuxtla Gutiérrez (11 %). Native inhabitants make Chiapas, and Oaxaca to the northwest, the Mexican states with the widest ethnic and cultural diversity. The 1997 census indicates approximately 770,000 native Indians in the state, 32 % of whom does not speak Spanish, are mostly located in the central-northern portion of the state.

The Ixhuatan property is located in the north-western portion of the state of Chiapas approximately 100 kilometres south of the city of Villahermosa, capital of Tabasco State, along all season Highway 195 which joins this city to Tuxtla-Gutierrez, capital of Chiapas, a further 100 kilometres to the south. Chiapas is the southern-most state in the Mexican Republic, bordering on Guatemala to the southeast, with the Mexican states of Tabasco to the north; Oaxaca and Veracruz to the west and the Pacific Ocean to the south west (see Figures 1 and 2). The main part of the property (the Campamento zone) is located 3 kilometres to the west of the town of Tapilula on highway 195, however is accessed via highway 195 to Rayon to the south, then through mainly dirt roads which follow the topography linking Rayon to small villages or "ejidos" including San Isidro Las Banderas, Riviera del Triunfo, and Laguna Chica. Travel time from Tapilula to the property is approximately 80 minutes.



Access to the property is difficult due to the rugged terrain and is attained primarily along trails and narrow dirt roads which were in existence or have been built by Linear.

## 5.2 Climate and Physiography

The state is rugged with mountainous topography up to 2500 m above sea level (asl), covered with tropical vegetation which has kept it relatively remote from the rest of Mexico until recently. Chiapas is located in the Central American tropical zone with the climate varying from sub-humid temperate to humid hot with rain all year long and average temperatures ranging between 18° C and 27° C. The "rainy season" lasts from October to December, when work is very difficult. Most of the territory is covered by tropical rain forest, which covers approximately 35 % of the state. Agriculture is an important economic driver in the state with the production of corn, beans, bananas, cacao and coffee.

Average elevation on the property is 1400 to 1600 metres above sea level with a maximum elevation of 2,470 m. Dense tropical vegetation, covered by thick soils, and the rugged topography with deeply incised rivers, makes travel difficult and outcrops hard to find except along the stream valleys. Clouds cover a good portion of the higher elevations on most days.

## 5.3 Local Resources and Infrastructure

Chiapas has reasonably good infrastructure with good communications and highway systems through the mainly mountainous terrain. The railway system and air transportation are also reasonable with international airports located to the north in Villahermosa, Tabasco and to the south at Tuxtla Gutiérrez. The road system totals approximately 19,000 kilometres with the main highways, the Pan American Highway which links the state capital, Tuxtla Gutiérrez, to the state of Oaxaca and Guatemala, and Highway 195 which joins Tuxtla Gutiérrez to the capital city of Villahermosa in Tabasco State to the north, each of which could provide services and personnel. Highway 195 passes adjacent to the Ixhuatan property. Sea access is well developed with the state's southern boundary on the Pacific Ocean where the port city of Puerto Madero near the Guatemala frontier, is located. Chiapas is one of the most important states in the Mexican Republic in electrical power generation, with four main hydroelectric power plants. Security concerns in Chiapas have diminished in recent years and are much less than in other Central and Southern American countries.

A preliminary economic assessment or pre-feasibility study will be necessary to determine the sufficiency of surface rights for mining operations, the availability and sources of water, potential tailings storage areas, potential waste disposal areas, heap leach pad areas and potential processing plant sites. However, the author did not observe an obvious deficiency in any of these items

### 5.3.1 Community Consultation

Although land tenure for mineral rights is acquired through the national government, the local areas or ejidos own the surface rights to the lands near their villages / settlements. Linear's social and community efforts in the Ixhuatan area have been good.

Agreements have to be negotiated with each ejido to allow surface work to be carried out on their properties. The agreements negotiated by Linear are generally for three years allowing for "low impact" exploration such as prospecting, soil and rock sampling and limited hand trenching, for certain annual payments. The agreements "transition" into permission for higher impact exploration such as road building, trenching and diamond drilling for higher annual payments, sometimes related to a payment per drill hole. To date a number of agreements have been signed (see Figure 5 - Ejido Location) with two of these carrying on to the higher impact stage, in the Campamento area, in the ejido of San Isidro Las Banderas.

Linear has communicated with the local village councils or ejidos on all aspects of their exploration and are generally regarded as excellent "corporate citizens". Linear has employed a Mexican specialist in community relations to inform the local communities and work with them during this period of mineral evaluation on the property. Linear has focused efforts on hiring local people, including their technical team, as much as possible, thereby giving relatively high paying jobs to the local communities. Additional aid to the



local community provided by Linear during evaluation of the Ixhuatan property includes projects such as road building, health issues and other community improvement projects.

Towards the start of the second drilling campaign on the Ixhuatan property (first quarter 2008), undertaken as part of the Kinross / Linear joint venture initiative, the agreements with the ejidos of Chapultenango, San Antonio Acambac, Volcan Chichonal, Guadalupe Victoria, Nuevo Chapultenango, San Bernardo Abad, San Isidro and Tapalapa were all in good standing. Field work was planned in the Ejido of Chapultenango and San Isidro during the second quarter of 2008. No field work was planned for the others ejidos.

A meeting took place on April 19th 2008 with the Ejido San Francisco Jacona to discuss the possibility of the company conducting exploration field work on the ejido's lands. The ejido voted unanimously denying the company access. The ejido stated they did not want exploration work conducted on their lands, nor were they interested in considering any socio-economic benefits a relationship with the Company may bring to their community. This result was a considerable setback to Kinross' exploration plans as projection of the Cerro La Mina magnetic (intrusive) and geochemical trends clearly continues northeast on the San Francisco Jacona ejido area. The Community Relations team advised that it was unlikely an agreement could be achieved with the San Francisco Jacona ejido in time for Kinross to conduct meaningful exploration of this area within the schedule of the earn-in period. No work had taken place on this ejido by December 2009 when Kinross withdrew from the option agreement with Linear.





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## 6.0 HISTORY

#### 6.1 General

The following summary description of prior work was taken from a number of reports by A.C.A. Howe International Ltd. (Ewert and Comeau, 2003; Watson, 2003; Ewert and Watson, 2003) and Dimmel (2005). Ewert and Comeau (2003) summarized all work on the property up to 2003 when Linear acquired the Ixhuatan property, after the acquisition of M.I.M. Mexico S.A. de C.V. and Minera Mount Isa Panama S.A. (collectively referred to as "MIM"), from Xstrata plc. in 2003. Ewert and Comeau (2003) made recommendations for follow up which included drilling.

The Ixhuatan property was acquired by MIM in 2000 due to its proximity to the Santa Fe polymetallic mine, a former Au, Ag and Cu producer (See Section 15 of this report). Investigation of numerous Au / Cu zones at Santa Fe indicated that the geological setting was a high sulphidation environment with the potential for an Au-Cu porphyry system at depth. In 2000, a stream sediment geochemical study was carried out in the northern portion of Chiapas, which included the Santa Fe area. This survey indicated strong gold in stream sediment anomalies on the Ixhuatan property, using an anomaly threshold of 5 to 10 ppb gold. Anomalous areas were followed-up with sampling, at 400 m spacing, along the main drainages of the anomalous catchment areas. The survey analyzed sieved stream sediment samples by both the BLEG (Bulk Leachable Extractable Gold by cyanide solution) method as well as the ICP method (for copper and pathfinder metals, such as As, Sb, Ag etc.). The Ixhuatan property geochemical anomalies were located during this follow-up work. Additional detailed BLEG stream geochemistry, semi-detailed geological mapping, regional soil geochemical surveys and later detailed grids located three areas of Au-Cu-Mo geochemistry, called the San Isidro, Central and El Campamento zones. These areas were found to be highly altered in a similar fashion to the Santa Fe area. Pyrite stockwork, silicification, and argillization were found, all suggestive of a highsulphidation epithermal mineralization system. Eight lines of induced polarization geophysics ("IP") were carried out over the San Isidro and the Central mineralized zones. Cross-sections showed strong chargeability anomalies across several lines with the anomalies typical of sulphide responses which could contain gold, silver and base metals.

Linear Gold Corp undertook extensive exploration work on the Ixhuatan property between 2003 and 2007, consisting of diamond drilling, soil geochemistry, mapping, rock sampling and select geophysical surveys (magnetic and IP). Linear completed a total of 282 drill holes totalling 69,679 m between May 2004 and October 2007. This drilling was completed on 6 separate targets but most of it occurred on the Campamento Zone. Regional exploration consisting of prospecting, stream sediment sampling, soil geochemistry, chip / channel sampling and basic geological mapping has also taken place. The exploration has been targeted at the Campamento Zone, and the Western, San Isidro, Central, Cerro Mina and Northern Anomaly areas.

Linear and Kinross Gold Corporation ("Kinross") agreed on September 6, 2007 for Kinross to earn up to a 70% interest in the project by undertaking US\$15,000,000 of exploration expenditure and making payments to Linear of US\$101 million plus a production decision fee of up to US\$15 million. The initial definitive agreement was for Kinross to immediately pay Linear US\$1.0 million and incur a minimum of US\$15,000,000 of expenditures on the project within a 24-month period. Kinross, through its Mexican subsidiary KG Minera Ixhuatan S.A. de C.V. expended US\$11,612,610.34 on the Ixhuatan project between October 2007 and December 2009, before withdrawing from the option.

In a second drilling campaign on the Ixhuatan property, Kinross completed a further 20,027 metres of drilling in 60 holes were completed from October 2007 through December 2009, under terms of a joint venture between Kinross and Linear. In this second drill program no additional drilling was undertaken on the Campamento zone. Rather the emphasis was on defining the emerging gold-copper-molybdenum resource of the Cerro Ia Mina deposit 1.5 km ENE of the Campamento deposit, plus evaluation of the additional soil anomalies of the San Isidro, Laguna Chica, Central, Caracol and Cacate prospects, all located in a 1-2 km-wide, 4 km N-trending corridor situated between the Campamento and Cerro Ia Mina deposits.

No production has been reported on the Ixhuatan property.





Figure 6: Regional Geology (Chiapas State) (after Giroux, 2006)





Figure 7: Geology (Ixhuatan Area) (after Giroux, 2006)

# 6.2 Soil Geochemistry / Rock Chip Sampling

Exploration by MIM in 2001/ 02 included detailed BLEG stream geochemistry, geological mapping, soil geochemical surveys using auger soil-sampling along ridges and trails, and detailed grids over the three main anomalies plus rock chip sampling which delineated the San Isidro, Central and El Campamento Au-Cu-Mo anomalous areas. The soil geochemistry indicates a strong correlation between Au-Cu-Mo. The Cu and Mo anomalies are more restricted than the gold anomalies, possibly reflecting shallow intrusive units (i.e. buried porphyries). The gold anomalies are large with an anomalous zone > 100 ppb Au, extending from the Central to the San Isidro zone, a distance of 2 kilometres. Geological mapping, focused on these three areas indicates that they are highly altered similar to the rocks at Santa Fe. Pyrite stockworks, silicification, jarosite, hematite and argillization with sericite-kaolinite are common, suggestive of a high-sulphidation epithermal mineralization system.

# 6.3 Geology / Mineralization

The Campamento zone covers an area of 250 x 250 metres, giving values up to 1485 ppb Au in soil samples. The Campamento Au-Ag Deposit is situated in a sequence of highly fractured Pleistocene-Pliocene andesitic epiclastic volcanics and basal carbonate layers intruded by a complex feldspar porphyry system in the core of the deposit. Moderate manganese alteration is widespread on the surface of the



deposit. The core alteration is marked by strong bleaching which is surrounded by a broad zone of argillic alteration which is in turn, situated in a large outer carbonate altered zone.

## 6.4 Geophysical Surveys

## 6.4.1 Magnetic Survey

In May 2002, MIM carried out an airborne magnetic survey over the Ixhuatan project area using their proprietary "MiniMag" system. The survey consisted of approximately 2000 line kilometres, covering approximately 215 km<sup>2</sup>, on lines spaced 200 m apart at a north-south orientation which covered the 4 main geochemically anomalous zones on the property as well as the adjoining Santa Fe deposits. The survey outlined a large positive magnetic feature cut by a number of significant structures which extended from the Santa Fe Mine area to the Ixhuatan property (see Figure 8).



Figure 8: Airborne Magnetics (after Giroux, 2006)



#### 6.4.2 Induced Polarization Survey

Eight lines of induced polarization geophysics ("IP") was carried-out, with four north-south lines over the San Isidro anomaly and four lines, oriented east-west over the Central anomaly, using the pole-dipole array with electrode separations of 25 and 50 m. The coverage totalled 11 line kilometres. An interpretation, performed using the University of British Columbia (UBC) inversion process, was presented as scaled crosssections of chargeability and resistivity. The inversion cross-sections show a number of strong chargeability anomalies reaching 40 milliseconds that extend across several lines. Some of the anomalies show corresponding resistivity-lows while others show no change in resistivity. The anomalies are typical of responses from sulphide minerals (pyrite, marcasite, chalcopyrite and galena).

The four east-west lines (Lines 2N to 5N) over the Central Anomaly show several chargeable zones with one crossing all four lines. It appears wider and stronger on Line 5N suggesting more IP is required to the north. The zone aligns well with the geochemical soil gold anomaly making it a prime drill target.

The four north-south lines over the San Isidro anomaly show a number of anomalies continuing from line to line. They are not coincident with the soil anomaly but are excellent geophysical anomalies and warrant evaluation through drilling. Figure 9 shows a compilation of the geology, IP and soil geochemistry and Figure 10 shows MIM's initial geological interpretation of the IP results along Line 4 over the San Isidro anomaly.



Figure 9: Induced Polarization and Gold Soil Geochemistry (after Giroux, 2006)





Figure 10: San Isidro Induced Polarization Interpretation (Line 4) (after Giroux, 2006)

### 7.0 GEOLOGICAL SETTING

### 7.1 Regional Geology and Mineralization

The geology of Chiapas is relatively poorly known due to its remoteness and ruggedness. The area lies in the 450-kilometre-long volcanic gap between the Trans Mexican Volcanic Belt to the northwest and the narrow Central American Volcanic Arch to the southeast. It is both volcanically and tectonically active and covers the triple junction point of three crustal plates, the North American, Caribbean and the Central American plates. On-going volcanic activity is present with the most-recent eruption being the El Chichon volcano, located to the west of the Ixhuatan property, which last erupted from 1982-1985. Intensive study over the last 20 years at El Chichon has defined a classic hydrothermal system developing within the volcanic edifice.

Six geological provinces are represented in the State. These are: The Tabasco Deltaic Belt which occupies the north-western portion; the Chiapas Fold and Fault Belt which is the most extensive geological province in the State, covering 70 % of the land mass, including the Ixhuatan Property; the Chiapas Batholith which is a series of plutonic rocks aligned in a NW-SE direction, forming a mountain range parallel to the Pacific Coast; the Soconusco Igneous Massif which includes the Tacaná volcano and associated units; the Tehuantepec Basin which includes recent deposits located along the Pacific coastline; and the Cuicateco Province which includes metamorphic volcanic and sedimentary units and is mainly exposed in Oaxaca but extends into Chiapas.



The description of the geology and mineral occurrences of Chiapas State was obtained from the Consejo de Recursos Minerales ("CRM") as described in the "References". A map depicting the major geological units is included as Figure 6.

Possible Proterozoic units, as granodioritic gneisses, may occur within the Chiapas Batholith near the coastline. Discordantly overlying the basal rocks are a series of metamorphic units including serpentinites, schists, gneisses and guartzites as well as non-metamorphosed sandstones, conglomerates and other clastic units of middle to upper Paleozoic age. These units have been affected by differentiated intrusions ranging in composition from gabbros to acidic phases. The plutonic rocks are part of the Chiapas Batholith of Permian age and are known geographically as the Chiapas granite massif which is located in the southern part of the State. Marine Mesozoic rocks unconformably overlie the above lithological sequence and are represented by Triassic-Jurassic to upper Cretaceous detritic-calcareous units which occur in the north-central portion of the State. They are strongly deformed, forming a mountain range exposed as NW-SE-trending anticlinoriums / synclinoriums of the Fold and Fault Geologic Province, geographically known as the Sierra Madre Oriental. Cenozoic rocks ranging in age from Paleocene to Pliocene overlie the Mesozoic units. Paleocene units, marine in origin, form flysch type rhythmic deposits. Rocks of Eocene age are of mixed continental and marine origin and are overlain by Oligocene units composed mainly of limestones, sandstones and shales. Rocks of Miocene age are mainly calcareous units of marls, conglomerates, sandstones and shales. The Pliocene-Holocene units are silt, sand and clay deposits together with pyroclastic deposits derived from the recent volcanic activity of the El Chichon and Tacaná volcanoes.

Most of the intrusive rocks in Chiapas are Paleozoic in age and occur in the Chiapas Batholith Geologic Province with the majority of exposures dated as Permian. The Chiapas Granitic Massif is composed of a body approximately 250 kilometres in length consisting mainly of pink biotite granite to granodiorite. The emplacement of the batholith most likely occurred during the Appalachian Orogeny. Tertiary intrusives are also found, although the most important intrusive rocks are, due to their size, units of Paleozoic age. Tertiary age intrusive rocks affect practically the entire lithostratigraphic column with exposures limited mainly to the south-western part of the state but with occurrences near the Santa Fe Au / Cu deposits and the Ixhuatan property. These units are represented by a suite of granitic rocks with a prevalence of pink coloured potassic granites that are compact and holocrystalline with phaneritic textures. Granodiorites, generally strongly weathered and hydrothermally affected by Tertiary volcanic activity, are also present.

#### 7.2 Mineral Deposits in Chiapas

The only current mining activity in the State is amber mining in sandstones in northern Chiapas however CRM has delineated a number of geological zones as favourable areas for the localization of mineral deposits. These prospective zones include: polymetallic mineralization, mainly restricted to the Chiapas Batholith - two types of occurrences, silver and lead dominating; Iron-copper mineralization primarily located near the border with Oaxaca - associated with Tertiary granitic intrusives intruding Cretaceous limestones giving contact metamorphism and skarns along an elongated zone 50 kilometres long and 20 kilometres wide; Copper-molybdenum mineralization - located on the south-western flank of the Chiapas Batholith, a total of 13 mineralized areas with all prospects interpreted as associated with Paleozoic metamorphic rocks intruded by Tertiary granitic intrusives. Mineralization is characterized by sulphides, chalcopyrite, bornite, and molybdenite with some magnetite and hematite; Titanium, nickel and chromium mineralization - located in the eastern portion of the State near the Guatemala border within the Chiapas Batholith province. Three known occurrences include ilmenite, rutile and iron oxides as lenses emplaced in metamorphic volcanic-sedimentary rocks and anorthosites with associated gabbros and related ultramafic units; Gold-copper mineralization, located in the north-central portion of Chiapas with the distribution irregular within an area limited to the south by the Chiapas Batholith, and to the north by the Santa Fe and La Victoria deposits. The occurrences are found in zones of metasomatism developed in Cretaceous rocks intruded by Tertiary granitic units which formed calcareous skarns including wollastanite. Mineralogical association is bornite, chalcopyrite, covellite, tetrahedrite, argentite, galena and sphalerite.



## 7.3 Property Geology

The Ixhuatan-Santa Fe region is underlain by shallow dipping Neogene volcanic and volcanic-related sedimentary rocks intruded by Tertiary granitoids. The area is part of the Chiapas Fold and Fault Belt as defined by CRM. The area reflects a basal structure, filled by well-bedded shales and sandstones which have been "up domed" by the nearby Chichon volcano. Areas of flat-lying andesitic tuffs and lahar material are also present. The geological setting is basal limestone, overlain by basalts, then a lahar unit with interbedded ash fall tuffs and andesitic lavas, which is intruded by mafic dikes. Geological mapping by MIM in the south-central portion of the property located a relatively flat-lying stratigraphy composed of andesitic porphyries, lahars, tuffs and breccias of Pliocene age overlying an Eocene-Oligocene sequence of carbonates, siltstones and sandstones. The stratigraphic package is intruded by diorite and granodiorite of late Tertiary age (Figure 7).

## 7.4 Campamento Deposit Geology

The Campamento deposit is situated in a sequence of highly fractured Pleistocene-Pliocene andesitic volcanics and basal carbonate layers intruded by a complex feldspar porphyry system.

The andesitic volcanics are comprised of a complex sequence of interlayered dominantly epiclastic (locally pyroclastic?) tuff to lapilli to volcanic breccias. On surface, there is a basic progression from coarser volcanic-epiclastic breccia phases at higher elevations (in the east) to finer tuff / flow phases in lower elevations (in the west). The upper coarser epiclastic unit to the east contains numerous types of volcanic fragments and appears to have originated as a pyroclastic flow / lahar / agglomerate. Drilling indicates these coarser epiclastic-pyroclastic phases are locally interlayered with finer volcanic units (10-50m thick - locally up to 100m thick) that vary from andesitic tuff to andesitic flow but also contain minor finely-bedded (reworked) tuffaceous sediments and airfall sediments. Overall the volcanic sequence appears to dip gently (approximately from  $-5^{\circ}$  to  $-20^{\circ}$ ) west to north-west.

At deeper levels there appear to be at least 2-3 separate interleaved limestone / marble units from 25m up to 225m thick that parallel stratigraphy. At least part of the limestone units are impure, comprised of intensely carbonatized volcaniclastic breccias / skarn. Drill hole IX-94, drilled towards the northwest side of the deposit, intersected massive limestone / marble, at least 225 m thick. That is, along the NW side of the deposit, at depth, the limestone appears to form a massive slab while, along the SE side, the limestone forms at least 3 separate, thinner layers. It is possible that this abrupt change from a single thick slab on the NW side to multiple layers on the SE side might be explained by a fault structure that focussed later porphyritic intrusives (sections 250, 275).

Near the core of the deposit there is a feldspar porphyry complex that includes both intrusive and related extrusive phases. The latter extrusive phases include porphyritic flows, crystal tuffs and pyroclastic breccia phases (with a feldspar crystal tuff matrix). The core porphyry appears to be dominantly subvertical but locally there are zones where it is at least partly sub-horizontal (sub-parallel) to stratigraphy. It is possible that at least part of the porphyry complex was intruded near surface where it subsequently vented giving rise to the porphyritic flows and crystal tuff / pyroclastic phases.

## 7.4.1 Campamento Deposit Structural Controls

The Campamento deposit is comprised of a high-grade (+5 grams Au / tonne) core surrounded by a lower grade (approximate 1.0 gram / tonne Au) gold envelope. The deposit appears to be controlled within a zone of strong-intense fracturing. On surface, the fracturing occurs in numerous orientations that are juxtaposed against each other and are highly discontinuous over a few meters. Overall, however, the zone of intense fracturing and lower grade 1 gram gold envelope appears to form a linear NE-trending zone that is at least 110-150m wide and has been traced for at least 350m along strike. This zone of intense fracturing is subvertical, nearly perpendicular to the dip of the lithologies.

The zone of strong fracturing is outlined in Figure 11. In drill core the strong fracturing manifests itself as zones of strongly broken core to rubble, strong fracturing / micro-fracturing, fault zone gouge +/- sand and



tectonic brecciation. In the figure, these various zones of fracturing / rubble are shown in black. The two red lines more or less outline the limit of the area of greater concentration and intensity of these zones of fracturing (rubble). This limit coincides fairly closely to the anomalous gold values > 0.3 grams / tonne.



Figure 11: Campamento Plan of Drill Holes showing Strong Fracturing and Rubble Zone (after Giroux, 2006)

## 7.4.2 Campamento Deposit Alteration

The deposit is complexly altered but there is an approximate overall trend extending outwards from the core area starting with an inner zone of bleaching going to argillic and then to an outer carbonate (calcite) alteration zone. Zones of strong bleaching are mostly adjacent to the porphyry complex although not all of the areas adjacent to the porphyry are bleached. There is abundant moderate argillic alteration developed throughout the fracture zone. Along the NW margin of the fracture zone, the argillic alteration is mostly confined within the deposit. Along the SE margin, the argillic alteration extends well beyond the limits of the fracture zone (and the deposit), there is a wide-spread pervasive carbonate (calcite) alteration envelope that trends NE mimicking the trend of the deposit. The pervasive carbonate alteration also increases in intensity nearer to the limestone at depth. On surface, manganese alteration is widespread but is most abundant near the outer limits of the core porphyry complex.



## 7.4.3 Campamento Deposit Veining

Abundant narrow carbonate+/-kspar +/- clay +/- quartz veinlets are developed throughout but the carbonate+/-kspar+/-rare quartz veinlets tend to be spatially associated with the core porphyry complex while the clay+/carbonate-rich veinlets are more distal, associated with the surrounding epiclastic-volcanic package. Within the core area, the carbonate+/-kspar+/-quartz veins are situated in a zone extending from 25-125 m below surface. Below this level, down to about 250-300 m the veinlets appear to be mainly calcite or clay+/-calcite. Below 250 m, towards the basal limestone, the veins are quartz-carbonate, commonly with visible sphalerite, galena +/- chalcopyrite. This zonation suggests there is a temperature / pressure control to the system and that multiple overprinting events may have occurred.

The veins are oriented in every direction, but many of the veins are steeply dipping. Locally there are areas, however, where the veins appear to be sub-horizontal.

In the Drillking drill logs, many of the veins in the upper part of the deposit (in the core area) are indicated as just quartz - carbonate with no kspar. Although there was very little quartz seen, the veins were hard and it was assumed there was fine-grained quartz in the calcite. In most cases, the ICP data does not show a significant increase in potassium in the areas of calcite veining. Later petrologic work (Rainbow and Keyser, 2005) indicated the hardness was due probably to the potassium feldspar and that the amount of quartz is subordinate.

## 7.5 Campamento Petrology and Gold Distribution

Samples were submitted to two separate institutions to do a study on the lithologies and gold distribution: Applied Petrographics - Clark (2005) and Queens University - Rainbow & Kyser (2005)

### 7.5.1 Clark Study

Petrology of the host rocks at the Ixhuatan property was carried out under contract by Applied Petrographics of Portland, Oregon. This work, which is summarized after Clark, 2005, included detailed petrographic and cathodoluminescence studies, as well as limited microanalytical studies on a suite of twenty-nine samples from the Campamento zone. The studies had the following objectives:

1) The characterization and interpretation of host rock lithologies and petrogenesis.

2) The characterization of wall rock alteration.

3) The characterization of the ore and gangue mineralogy of the veins, and the distribution and modes of occurrence of gold in the ore mineral assemblage.

4) The identification of key petrographic characteristics that could contribute to the geological understanding and exploration of the deposit.

The conclusions reached were:

- The samples represent a coherent package of variably altered and mineralized volcanic flow rocks, pyroclastic flow rocks and tuffaceous rocks of indeterminate depositional origin, related hypabyssal intrusive rocks, and epiclastic volcanic sedimentary rocks. All of the rocks in the suite carry a disseminated sulphide phase assemblage dominated by pyrite. The volcanic and intrusive rocks appear to be of a calc-alkaline or weakly alkaline petrogenetic lineage. The volcanic rocks are grossly andesitic to trachyandesitic in composition.
- All of the rocks have undergone hydrothermal alteration. The most common alteration minerals are
  illite, smectite, calcite, and rutile. Less common alteration minerals include adularia, sericite, chlorite,
  epidote, K feldspar, sodalite, and a second carbonate. The andesites, trachyandesites, and
  pyroclastic and epiclastic volcanic sedimentary rocks display generally similar alteration patterns and
  assemblages, owing to their similarity in primary mineralogy and composition. Plagioclase shows
  moderate to strong alteration to illite and/or cloudy brown smectite ± calcite ± a second carbonate. K
  feldspar, when present, appears to be somewhat less altered than accompanying plagioclase. The



mafic phases are completely pseudomorphed to an assemblage that includes illite/smectite and rutile  $\pm$  calcite  $\pm$  sulphides (dominantly pyrite)  $\pm$  rare chlorite and/or epidote. Mafic minerals are nucleation sites for disseminated pyrite and other sulphides. The groundmass in the volcanic flow rocks and matrix in the pyroclastic and epiclastic rocks are variably altered to illite/smectite and rutile  $\pm$  calcite  $\pm$  rare adularia and/or epidote. Devitrified volcanic glass and vitric ash and dust that has not been affected by hydrothermal alteration is generally manifested as microcrystalline alkali feldspar. Calcite and/or another carbonate can be a significant part of the alteration assemblage in some samples, with abundances that range up to 20 - 25% of the sample. A sodalite-K feldspar-REE carbonate bearing vein and flooded zone is present in one sample (IX-31, 60m).

- Cathodoluminescence (CL) identified multiple carbonate types in veins and alteration including calcite, dolomite, and a non-luminescent carbonate that may be rhodochrosite. Calcite is the most frequent carbonate. The CL data also highlighted disseminated apatite that shows light rare earth enrichment in rims and patchy zones.
- Veins and/or veinlets are present in 21 of the 29 samples. Non-sulphide gangue mineralogy in the veins is dominated by carbonate (mainly calcite, possibly dolomite and rhodochrosite) and adularia. Minor phases include clay (illite/smectite), REE carbonates, rutile, barite, and apatite, as well as rare quartz in one sample.
- Mineralization occurs as gold, silver, and base metal sulphide minerals in veins and wall rock disseminations. Primary gold-bearing phases are present in trace amounts in 3 of the 29 samples with native gold, electrum, and a gold-silver-iron-sulphur alloy noted. The gold mineralization is finegrained, generally less than 50 microns in diameter. Gold minerals are free particles intergranular to vein calcite, in edge contact with other sulphide phases (pyrite, tetrahedrite group minerals, and galena), and as tiny inclusions in other sulphide phases (pyrite and galena), with the inclusion types being the least common.
- Primary silver-bearing mineral phases are present in trace to minor amounts in 4 of the 29 samples. They include silver telluride phases identified tentatively as cervelleite (Ag<sub>4</sub>TeS) and benleonardite [Ag<sub>8</sub>(Sb,As)Te<sub>2</sub>S<sub>3</sub>], a phase or phases identified tentatively as tetrahedrite group minerals, argentite (Ag<sub>2</sub>S), and polybasite [(Ag,Cu)<sub>16</sub>Sb<sub>2</sub>S<sub>11</sub>]. The silver minerals are accompanied by pyrite, chalcopyrite, and sphalerite ± galena ± gold minerals in carbonate veins.
- Pyrite is the dominant sulphide mineral phase in both veins and wall rock disseminations. Total pyrite ranges from 0.1 to 19.5 percent, with pyrite content exceeding those of the other ore associated minerals. Anomalous gold values, ranging from the detection limit (< 30 ppm) to 2650 ppm Au, but generally < 100 ppm are found in both vein and disseminated pyrite. The pyrite also contains minor Te that ranges from the detection limit to 2230 ppm. Trace Ag, As, Sb, Pb, Se, Cu, Zn, and/or Bi are present, but distribution is sporadic. Sphalerite, chalcopyrite, and galena, generally on the order of trace to 0.1 %, occurs as sparse disseminations, but generally associated with pyrite in the veins. Sphalerite reaches 6 % in one sample (IX-45, 72.5 m), where it is intergrown with pyrite in a carbonate-adularia-sulphide vein. Textural relationships indicate that that the four base metal sulphide phases are paragenetically equivalent (Clark, 2005).</p>

Clark indicates that the host rocks at Ixhuatan have undergone significant interaction with hydrothermal and metasomatic fluids derived from a strongly alkaline igneous source intrusion. These characteristics include: silver telluride mineralization in carbonate-sulphide and carbonate-adularia-sulphide veins; geochemically anomalous Te in pyrites; REE carbonate phases in veins and adjacent wall rocks; light rare earth (LREE)-enriched rims on apatite disseminations; and the sodalite-Kspar-REE carbonate in veins and flooded zones. Using these characteristics he makes links with the Cripple Creek area of Colorado however he also says that the ubiquitous clay alteration, rather than the massive K feldspar metasomatism at Cripple Creek and other gold-mineralized alkalic systems, may indicate that the Ixhuatan sits at the periphery of an alkaline igneous body (i.e. porphyry) or complex that is the source of the alteration and mineralization. Further work is required to properly document the mineralization, alteration and host rock lithologies of the property.



#### 7.5.2 Rainbow & Kyser (2005) Study

Approximately 20 samples were submitted for the Rainbow& Kyser (2005) study. Except for a sample from deeper down in IX-56B (300 m), all of the samples were from the higher grade core area. Much of the following is taken directly from the report.

The study indicates that the Campamento deposit can be broadly divided into two main stages: an early, potassic alteration stage followed by a later calcite vein emplacement stage.

#### 7.5.2.1 Potassic Alteration:

Samples taken in the core porphyry complex indicate early hydrothermal potassic alteration of the original andesitic rocks. The andesites are made up of a fine-grained assemblage dominated by potassium feldspar (likely orthoclase as indicated by XRD analysis) + green phlogopite or biotite (X-ray diffraction analysis is inconclusive). Chlorite was not identified. Primary plagioclase "feldspar phenocrysts" are variably altered to potassium feldspar + (to a lesser degree) clay minerals (illite±montmorillonite), calcite, and gypsum. The latter two alteration phases may be related to the emplacement of later calcite veins. Primary biotite and hornblende are altered to green phlogopite/biotite and pyrite. Pyrite is locally abundant in altered primary mafic phases, but is also disseminated throughout the alteration zone. Fine-grained needles of apatite are also part of this alteration assemblage, while quartz is largely absent.

Locally very narrow (micron-to-millimetre), discontinuous pyrite stringer veinlets (ex. IX37 103.0 m; IX68 60.9 – 61.0 m) have formed during this potassic alteration stage. Millimetre-scale potassium feldspar veins (likely orthoclase-XRD analysis) occur in multiple samples (ex. IX41 49.2 m), and locally cross-cut the small pyrite stringer veins. These potassium feldspar veins formed late during this potassic alteration stage.

#### 7.5.2.2 Calcite Veining:

Calcite veins (mm-cm wide) host native gold and are economically the most important phase. Strong red fluorescence of the veins under UV light indicates Mn enrichment. XRD analysis of vein calcite suggests the presence of kutnohorite (Ca(Mn,Mg,Fe)(CO<sub>3</sub>)) confirming the veins as the source of the associated high Mn ICP values observed in drill core.

Nearly all calcite veins are lined with potassium feldspar. The crystal morphology coupled with XRD analysis indicates it is not adularia (a low-temperature potassium feldspar commonly associated with low-sulphidation epithermal deposits), but rather orthoclase, similar to that precipitated during the potassic alteration stage. It is postulated that the calcite veins exploited and reopened the earlier potassium feldspar veins that were emplaced during potassic alteration. Calcite veins also locally exploited earlier pyrite stringers (ex. IX-68 60.9 m), depositing later sphalerite, and locally native gold. Virtually all calcite veins host some precious metal and/or base metal mineralization and have an assemblage of pyrite–chalcopyrite–sphalerite– native gold  $\pm$  tennantite-tetrahedrite ((Cu,Ag,Fe,Zn)<sub>12</sub>As<sub>4</sub>S<sub>13</sub> – (Cu,Fe,Ag,Zn)<sub>12</sub>Sb<sub>4</sub>S<sub>13</sub>)  $\pm$  galena  $\pm$  acanthite  $\pm$  marcasite  $\pm$  several unidentified opaque sulphide phases tentatively identified as Ag-sulphosalts. Bornite may also be part of this assemblage, and marcasite is rare, always occurring as over-growths on pyrite.

Deeper down in Campamento, in drill hole IX-56B, occurrences of vug-filling quartz appear to precede calcite deposition (ex. IX56B 302.9 m), and one sample hosts cristobalite intergrown with calcite (IX56B 300.9 m).

#### 7.5.2.3 Bleaching:

In some areas, XRD PIMA, and petrographic study identified no distinct difference in mineralogy between the bleached and unbleached phases (ex. IX-22 108.0 – 108.9 m). But in at least one sample, [IX-22 (108.0 – 108.9 m)] there was less biotite/phlogopite in the bleached portion of the rock. Bleached areas also lacked the pyrite-chalcopyrite-native Au assemblage identified in the wall rock of unbleached zones. Bleaching may reflect Fe mobilization and removal, and appears to be locally controlled by calcite vein distribution.



#### 7.5.2.4 Gold Distribution:

Almost all gold mineralization in Ixhuatan core zone is hosted by calcite veins and occurs as native gold either by itself or intergrown with pyrite, chalcopyrite, sphalerite, and galena or in veins containing varying amounts of tennantite-tetrahedrite, acanthite and several unidentified opaque phases tentatively identified as Ag sulphosalts and possibly bornite. When present, the calcite veins are the primary ore hosts including whether there are large pyrite masses, "rubble" samples (ex. IX-41 49.2 m), or samples that are micro fractured (ex. IX-40 67.0–67.1 m). Although calcite veins are the main ore host, native gold does occur in the altered wall rock where it is associated with pyrite, chalcopyrite, sphalerite, and locally marcasite (ex. IX-46 82.5 – 82.65 m; IX-56B 300.9 – 301.0 m; IX-68 60.9 – 61.0 m, 61.1 - 61.2 m). Such gold occurrences are always in close proximity (< 1cm) to calcite veins and are probably related to the calcite veining stage.

Several samples submitted were from areas that yielded high gold assay values but contained no calcite veins (ex. IX-39 40.6 m; IX-67 47.5 – 47.6 m). These samples do not host native gold within the wall rock and suggests that at least some of the gold at Ixhuatan must be hosted within the pyrite. However, there appears to be no correlation between high gold grades and the occurrence of pyrite stringers, large anhedral masses or "fragments", or pyrite disseminated throughout the wall rock. Additional work is required to understand the distribution of the gold within these samples.

## 7.6 Cerro la Mina Sulphide Petrology and Alteration

Samples of drill core from Cerro la Mina were studied in three separate petrological investigations – Richards (2006), Harris (undated) and Jansen (2007).

## 7.6.1 Richards (2006) Petrological Study

A petrological study of samples of clay-altered drill core (drill holes IXCM06-05 and IXCM06-06) from the Cerro Ia Mina deposit was undertaken by Richards (2006). Detailed petrographic descriptions of eight samples were given. Clay minerals were not identifiable under the microscope; most clay was washed away by the sectioning process (despite impregnation). Ore minerals were identifiable down to grain sizes of a few micrometers, and gold, if present, would have been identifiable down to ~1  $\mu$ m; none was seen however.

The report, excluding individual descriptions, is reproduced here in its entirety:

"Eight samples of clay-altered drill core were impregnated and sectioned at Vancouver GeoTech labs. All samples showed a similar style of clay alteration in volcanic or volcaniclastic rock, with fine-grained guartz and minor sericite or pyrophyllite (especially in relict feldspar crystals). Clay veinlets occurred in some samples, but there was no evidence of quartz veining, and original textures were mostly obliterated. Rutile was common as small granules throughout the matrix of all sections. Sulphides consisted of varying proportions of disseminated pyrite, chalcopyrite, molybdenite, minor arsenopyrite, and rare bornite. Chalcopyrite and bornite were in some sections partially to completely replaced by covellite, digenite, and idaite ( $Cu_3FeS_4$ ); minor enargite was observed with covellite and digenite replacements. The samples appear to preserve an early pyrite-chalcopyrite-(bornite)-molybdenite assemblage, which has been variably replaced by a secondary (high-sulphidation?) assemblage of covellite-digenite-idaite-enargite. However, other characteristic high sulphidation alteration minerals were not observed, and the original sulphide assemblage seems to have been in equilibrium with the guartz-clay alteration (as indicated by some clay veinlets containing chalcopyrite and pristine pyrite). Thus the original assemblage seems to be more consistent with argillic rather than advanced argillic alteration (intermediate sulphidation?). The "high-sulphidation" sulphide minerals are clearly replacive towards this earlier chalcopyrite-pyrite-molybdenite assemblage, and probably reflect a localized late hypogene high-sulphidation overprint. A supergene origin is not favoured because the replacing minerals are quite well-formed, and there is little evidence of oxidation. Gold was not observed microscopically in these sections."



## 7.6.2 Harris (undated) Cerro la Mina petrographic and alteration study

Harris investigated a suite of 35 drill core rock samples from the Cerro la Mina prospect using petrographic and mineragraphic methods. Despite apparent bleaching (by hydrothermal and supergene processes), most rocks exhibit good textural preservation. The report is undated but uses core drilled during 2006; a 2007 date is likely.

Harris notes the comments made by consultant Noel White (White, 2005) that there is significant potential for porphyry style, and associated skarn and high-sulphidation epithermal mineralisation in the Cerro la Mina prospect. Independent petrographic descriptions (complemented with existing TerraSpec data) have recognized mineral assemblage indicative of contrasting styles of hypogene alteration systems; i.e., high-temperature porphyry-style potassic (biotite and K-feldspar) alteration assemblages (and associated chalcopyrite-pyrite  $\pm$  bornite) and lower-temperature, clay-alunite ( $\pm$  covellite) dominated high-sulphidation epithermal alteration. Such alteration mineral assemblages are in addition to any supergene oxide gold zone that exists.

At Cerro la Mina, porphyry- and epithermal-style alteration zones are hosted in andesitic volcanic and volcaniclastic rocks that unconformably overlie regionally extensive limestones. Multiphase K-feldspar phyric intrusions cut these host rocks. Zones of the most intense, pervasive potassic alteration appear intimately associated with these intrusions as pervasive K-feldspar- and biotite-rich assemblages in patches or near-total replacement of the rock.

K-feldspar-rich potassic alteration assemblages involve K-feldspar-quartz  $\pm$  biotite-muscovite-apatitetitanite. Biotite-rich potassic alteration assemblages comprise biotite-K-feldspar-quartz  $\pm$  muscovite-apatitetitanite. Rutile and muscovite intergrowths also occur with the biotite. Highly birefringent muscovite laths appear as radial intergrowths with some biotite.

Weak propylitic (or more appropriately termed intermediate argillic) alteration assemblages partly overprint potassic alteration assemblages. Where seen, these assemblages occur as chlorite  $\pm$ ?muscovite-actinolite-epidote (e.g., IXCM06-14, 255.60m; IXCM06-14, 241.6m). Rare retrograde chlorite alteration assemblages overprint pervasive biotite alteration assemblages (e.g., IXCM06-14, 265.0m). Phyllic alteration assemblages are weakly developed in IXCM06-16. These assemblages include poor development of pyrite-quartz-sericite (probably very fine illite) alteration spots.

Advanced argillic alteration assemblages occur as shallow-level pervasive alteration zones. Alunite (up to 0.5mm) occurs as coarse isolated and clustered crystals intergrown with quartz and clays (e.g., IXCM06-10, 43.2m), either as vugs or replacement assemblages of the igneous groundmass. Near-total replacement of euhedral igneous feldspar is also common. TerraSpec data confirm that these alunite-rich zones coexist with illite-smectite, dickite and pyrophyllite (in part confirmed by petrographic observations).

Harris draws a number of conclusions from the study:

- Zones of high metal values appear in the most pervasive potassic alteration assemblages.
- Argillic alteration assemblages (alunite-quartz-illite-smectite ± dickite-pyrophyllite) assemblages overprint the potassic alteration zones.
- Based on textural relationships, the alunite appears to be hypogene in origin. Alunite and its associated advanced argillic alteration is generated from magmatic volatiles (SO<sub>2</sub>, HCI, HF), which extends from deeper porphyry ore-forming systems.
- At Cerro la Mina, the close spatial relationship (clear overprinting) of advanced argillic and potassic (sodic-calcic) assemblages implies clear telescoping of high-sulphidation epithermal on top of porphyry systems.
- Petrographic observations appear to confirm the alteration zones/assemblages logged by TerraSpec.

## 7.6.3 Jansen (2007) Clay Mineral Alteration Study at Cerro La Mina

An alteration mineral study (using reflectance spectroscopy specifically targeting clay minerals) of the Cerro La Mina anomaly continued through the fourth quarter of 2007. A total of 40 surface samples and 18



drill holes were analyzed, adding to previously collected data. This work forms part of a Ph. D thesis study at the University of Tasmania by Nick Jansen.

An interpretation of the data shows the alteration at Cerro Ia Mina to be a high sulphidation alteration package superimposed onto a potassic porphyry-style alteration assemblage. The high sulphidation system, or lithocap, is approximately 500-600 meters thick. It comprises a thick lower kaolinite and an upper sericite alteration (Figures 12 and 13). Stronger gold mineralization is hosted within a small pod of advanced argillic alteration that occurs within the sub-horizontal sericite alteration. Sporadic high gold values occur within other zones of alteration, most noticeably the lower kaolinite alteration, and are interpreted to be structurally controlled.



Figure 12: Cerro Ia Mina Cross Section – Alteration Zoning (after Londero and Masterman, 2008)





Figure 13: Cerro Ia Mina Plan – Alteration Zoning (after Londero and Masterman, 2008)



#### 8.0 DEPOSIT TYPES

Rainbow and Keyser (2005) indicate the wall rock alteration assemblage of potassium feldspar+biotite/phlogopite+pyrite± apatite is consistent with potassic alteration associated with porphyry systems. Conversely, the Mn-enriched, Au-Ag–base-metal calcite vein system, with mineralogical features such as opal and marcasite, is typical of a low-sulphidation epithermal system. However, vein-hosted sphalerite appears translucent in transmitted light, a feature indicative of low Fe content, atypical for low-sulphidation systems, and it is possible that the veins at Campamento are "intermediate-sulphidation" in origin. The Keyser & Kurt (2005) study regards the veins to be definitely epithermal and indicates the Campamento deposit is a low-to-intermediate sulphidation epithermal vein system hosted in potassically-altered rocks typical of a porphyry environment.

High sulphidation mineralized systems are hosted by leached silicic rocks associated with acidic fluids generated in the volcanic-hydrothermal environment and are intimately associated with subduction zones. These deposits contain acid-stable minerals such as alunite and kaolinite which comprise the advanced argillic alteration assemblage formed during the initial leaching. The most acid-altered rock, and the most characteristic feature of high-sulphidation deposits, is a silica residue, termed vuggy quartz; this leached rock is commonly the ore host, with a halo of advanced argillic alteration. These deposits contain Cu-As minerals, especially the high-sulphidation state sulphosalt, enargite. Massive to banded sulphide veins of pyrite and enargite may cut the vuggy quartz bodies.

Epithermal mineralization is associated with porphyry copper-gold mineralization, where the gold deposits are hosted by calc-alkaline volcanic rocks of andesitic to rhyolitic composition and contemporaneous volcanogenic sedimentary rocks and sometimes basement units. Hypogene gold is generally hosted by hydrothermal breccias and horizontally-banded pyrite-rich chalcedony which occurs in veins and open space fillings.

Observed and documented (MIM and CRM) geological characteristics of the Santa Fe area, to the north of Ixhuatan, allow the inference that the deposits are suggestive of a high-sulphidation porphyry Cu-Au-Ag-Mo mineralizing system. Host rocks are potassic altered granodiorites, monzonites and felsic porphyries commonly associated with mineralized, magmatic, hydrothermal systems. The main deposits on the Santa Fe claims (El Cobre, San Sebastian and La Victoria) are interpreted as gold-copper-bearing hydrothermal breccias. The associated skarns have been brecciated with accompanying hydrothermal biotite-bearing veins. The "Veta Goyen" vein at Santa Fe is a quartz mass with a dome structure at the contact between skarns and the intrusive rock and has been interpreted as a replacement cavity filling quartz-sulphide body that may represent a cupola above the intrusive body that produced the mineralizing event (Miranda et al, 2000). This indicates that the Santa Fe area, and the Ixhuatan property, may reflect the upper portion of a large porphyry Cu-Au-Ag-Mo system.

The presence of the porphyry complex and the potassium alteration (indicated by the petrogenetic studies) suggests there is a porphyry association at Campamento. As indicated by the Rainbow and Kyser (2005) study, the presence of the Mn-enriched Au-Ag-base metal-calcite vein system, locally with opal, marcasite and low Fe sphalerite is typical of low-to-intermediate sulphidation epithermal veins hosted by potassically altered rocks typical of a porphyry environment.

#### 9.0 MINERALIZATION

MIM work indicates that the San Isidro mineralized zone consist of anomalous Au, Ag and Mo values with soil samples up to 975 ppb Au, 31 ppm Ag and 75 ppm Mo. Tuffs and andesitic pyroclastics have been cut by a hydrothermal breccia believed similar to that exposed at the Santa Fe site. The hydrothermal breccia is a highly silicified unit with abundant disseminated pyrite. Rock chip sampling by MIM, restricted to the hydrothermal breccia, gave values of 0.69 % Cu and 1.67 g /t Au across an approximate width of 2 metres.



MIM soil samples at the Central mineralized zone assayed as high as 1.19 g/t Au, 0.15 % Zn and 0.51 % Pb. The zone is located on the contact between a dioritic - granodioritic intrusive and surrounding volcanic breccias and tuffs. Pyrite content is up to 5% along the contact and a small skarn outcrop has been mapped in the region. Alteration is pyritic stockwork with accompanying argillization, sericite-kaolin, silicification and propylitization.

Anomalous soils from the Campamento mineralized zone contain up to 1.485 g/t Au. The main alteration package is argillization with a sericite-kaolin association. Two alteration packages are noted at the Campamento target. The first is a high temperature one which has associated biotite, K feldspar (orthoclase), silica and epidote with pyrite and chalcopyrite sulphides. The second is a lower temperature one associated with the emplacement of a diatreme, at the junction of north and north-east trending faults, which brecciated the rock units and allowed the lower temperature fluids to alter the units. MIM thought that the mineralization at Campamento was associated with this second phase, low temperature alteration. Mineralization is associated with illite, calcite, silica (quartz), manganiferous calcite, chlorite and fluorite. Black sulphosalts are present in the best mineralized sections. Pyrite is ubiquitous in the system but is not necessarily related to the tenor of the gold values (pers. comm. M. Miranda).

More recent work on the Ixhuatan property by Corbett (2008) and Heberlein (2009) note that the several distinct styles of mineralization in the district are hosted in and around the southern and western flanks of an eroded shoshonitic stratovolcano. Carbonate-base metal Au mineralization characterizes the Campamento zone. Porphyry Cu-Mo-Au mineralization with overprinting quartz-sulphide and high sulphidation style Au-Cu mineralization are present at Cerro La Mina.

Carbonate-base metal Au mineralization at the Campamento deposit consists of a stockwork of several types of veinlets hosted in andesitic fragmental rocks. Veinlets are quartz-poor and dominated by carbonate, likely a high manganese variety (kutnohorite) as suggested by the strong manganese staining of surface exposures. Gold and Ag mineralization occurs with base metals in veinlets and as wall rock disseminations. Native gold and electrum are the dominant gold bearing minerals. Silver occurs as argentite, acanthite and in a range of sulphosalt minerals including tetrahedrite-tennantite and polybasite. Tellurides are also present (Linear Gold Technical Report, 2006). Pyrite, chalcopyrite, sphalerite and galena are the main base metal sulphides.

At Cerro La Mina, Corbett (2008) interprets the mineralization to have formed in a telescoped wall rock porphyry system emplaced during rapid uplift and erosion of the stratovolcano. At deeper levels, sheeted quartz veinlets with Au-Cu-Mo mineralization indicate a porphyry environment. This style of mineralization contains most of the gold. Overprinting the porphyry mineralization is a system of pyrite veins which change from being Mo-rich at depth to red-sphalerite bearing at higher levels. These are interpreted to be a low sulphidation quartz-sulphide Au-Cu style of mineralization (Corbett, 2008). At highest levels, the latest stage of mineralization consists of structurally controlled Au-rich- Cu-poor high sulphidation veins. An oxide zone developed on top of the sulphides which has the potential to contain a small gold resource.

#### 10.0 EXPLORATION

Cangold has not conducted, or had conducted, any exploration work on the Ixhuatan property. For completeness, the following discussion relates to exploration carried out on the property by Linear and its joint venture partner Kinross.

#### 10.1 General

Linear Gold Corp undertook extensive exploration work on the Ixhuatan property between 2003 and 2006, consisting of diamond drilling, soil geochemistry, mapping, rock sampling and select geophysical surveys (magnetic and IP). Up to drill hole IX-103 a total of 138 drill holes totalling 26,553 m (Note: This total does not include hole IX-101 - not completed as of May 7, 2006 – Giroux, 2006) metres of diamond drilling was completed between January, 2004 and May, 2006. This drilling was completed on 6 separate targets but most of it occurred on the Campamento Zone. Regional exploration consisting of prospecting, stream



sediment sampling, soil geochemistry, chip / channel sampling and basic geological mapping has also taken place. The exploration has been targeted at the Campamento Zone, and the Western, San Isidro, Central, Cerro Mina and Northern Anomaly areas.

In a second drilling campaign on the Ixhuatan property, more than 20,000 metres of drilling in 60 holes were completed from October 2007 through December 2009, as part of the exploration undertaken through the Kinross / Linear joint venture agreement. In this second drill program no additional drilling was undertaken on the Campamento zone. Rather the emphasis was on defining the emerging gold-copper-molybdenum resource of the Cerro la Mina deposit 1.5 km ENE of the Campamento deposit, plus evaluation of the additional soil anomalies of the San Isidro, Laguna Chica, Central, Caracol and Cacate prospects, all located in a 1-2 km-wide, 4 km N-trending corridor situated between the Campamento and Cerro la Mina deposits.

### 10.2 Geological Mapping

#### 10.2.1 Fourth Quarter 2007

On initiation of the work on the property by Kinross as part of the Kinross / Linear JV, geological mapping of the San Isidro area showed that the volcanic units are intruded by dykes, overlying a thick sequence of basement limestone and lesser clastic units. 287 surface rock chip samples were collected during the period as part of the mapping program, leading to a geological and rock chip geochemistry map used to guide further drilling at this prospect.

### 10.2.2 Second Quarter 2008

Geological mapping was completed at geochemical and drill targets that include Cerro la Mina, San Isidro, Laguna Grande, Laguna Chica, Central and Caracol. A few areas required a second assessment to refine the final surface geological map.

### 10.2.3 Third Quarter 2008

Geological surface mapping of San Isidro was completed and a preliminary geology map created. Outcrop is quite limited in the area and most of the rock exposures are present along river beds or cliffs. The quality of the rock exposure is poor as weathering and alteration make rock identification challenging.

The regional geology consists of a well bedded shale, sandstone and thick massive limestone basement overlain by two volcanic sequences. The older volcanic rock package consists of a monolithic volcanic unit that hosts most of the mineralization encountered to date on the project. The package has been altered by clay, propylitic and potassic assemblages. The youngest volcanic unit is polymictic and contains weak mineralization and is relatively unaltered, with sparse zones of clay alteration. The contact between the two volcanic units in outcrop has been not observed, but in drill core seems to be gradational or transitional. Numerous intrusive bodies, mainly dioritic in composition, have intruded the sedimentary and volcanic sequence. The relatively coarse-grained, magnetic-rich intrusion comprises coarse-grained feldspar, euhedral biotite and elongate hornblende. Although not mineralized, this intrusion is interpreted as the source for zoned potassic-propylitic alteration within the overlying volcanic rocks. The intrusion is relatively massive without significant marginal stockwork quartz veins and only mineralized as endoskarn.

Various types of mineralization were observed during the mapping and the most common alteration consists of quartz-pyrite veinlets forming generally sheeted patterns within the older volcanic rock package. Localized hydrothermal breccias were also mapped at Cerro Ia Mina.

Two major structure sets were identified during the mapping. A NE-NNE structural corridor provides the first control on mineralization of the Ixhuatan volcanoplutonic complex. NW-WNW structures represent the main structural grain apparent in field exposures and the aeromagnetic data. This structural grain has been inherited from the underlying fold belt and also developed in response to the SW-NE subduction-related compression in the region.


#### 10.2.4 Fourth Quarter 2008

A selective sampling and structural mapping program was initiated at Cerro Ia Mina. In earlier work, rock exposures along roadcuts at Cerro Mina were sampled using a channel sampling method which did not take into consideration any lithologic or structural parameters. Re-sampling of anomalous areas defined in the earlier study was undertaken using a selective sampling method where wall rock (lithology) and structure (veins) were sampled independently of each other. The goal of the program was to better understand the control of the mineralization and to be able to vector toward mineralized zones. A total of 209 structures/veins, 52 wall rock and 13 vein interception samples were collected comprising 90 different areas (outcrops) along cut roads on Cerro La Mina. The program was completed in December 2008 and all assay results were received.

The results of the veins reported similar results to the 2 meter chip sample previously taken. There were a few exceptions where samples of the veins reported values as high as 9.12 g/t Au, and where selected samples indicated lower values than the original channel samples.

The overall average grade of all the samples returned 1.01 g/t Au. The wall rock also contains anomalous gold with grades averaging 0.61 g/t Au. The source of the gold in the wall rock is possibly associated with micro fractures and or supergene gold enrichment processes, since visible veins were not included in the sample. The wall rock samples collected within advanced argillic alteration zones reported gold values higher than wall rock collected in zones of argillic alteration.

Four main structural patterns were identified with all the structural orientations containing gold values. The N-S structural pattern is the more abundant system present on the area mapped, while the SE-NW system contains the most elevated gold values.

Based on the results, the NE-SW drilling orientation currently employed at Cerro Ia Mina represents the best orientation to intercept most of the structures; particularly the higher grade NW-SE mineralized structures. The results are disappointing as higher grades were expected from the structures (veins) rather than the wall rock. If the "mean" of the gold values reported from the sampling is used to predict the overall grade of Cerro La Mina, the grade should be less than 1 g/t Au since dilution has to be expected, unless grade improves at depth. The concept that grade could improved with depth at Cerro Ia Mina was tested with hole IXCM08-51 which was drilled in the center of the higher surface grade coincident with advanced argillic alteration. The results returned 0.68 g/t Au and 2802 ppm Cu over 601.44m (1.45 m to 602.89m E.O.H.), with no indications of grade improving with depth in the drill hole.

#### 10.2.5 Second Quarter 2009

Check geological mapping and prospecting was completed on the Ixhuatan Ejido to increase geological control between geological units and to cover an area of the prospect omitted during the initial geological mapping. Skarn mineralization was observed along the river beds. A total of 147 rock samples were collected.

The skarn mineralization is present in the intrusive and volcanic units. Mineralization consists of sheeted fractures filled with garnet and sulphides (mainly pyrite, with a trace of chalcopyrite and/or copper oxide minerals). The mineralization seems to be more developed within the volcanic unit where zones are generally wider but rarely exceed 1 m. Results indicated non-anomalous gold and copper values with grades less than 1 g/t gold, and less than 0.1 % copper.

## 10.3 Stream Sediment Geochemistry

Linear initiated a large scale regional stream sediment sampling program in June 2005 with all major catchments and drainages on the original Ixhuatan property being evaluated. A total of 10 catchment areas over a 284 square kilometre area were sampled around the Rio Negro (Ixhuatan) concession. Stream sediments were taken at 300 m intervals along all the streams with emphasis on those in the immediate area of the known mineralized zones, and over the magnetic feature thought to represent a buried porphyry body,



working outwards to the periphery of the property. Replicate sample were taken every 25 samples within 10-20 m of the original site with areas where alteration / mineralization are noted having three (3) samples taken within 25-30 m.

#### 10.4 Soil Geochemistry and Rock-chip Sampling

Between 2003 and 2006, Linear utilized soil sampling to "follow up" stream sediment anomalies. A total of 1,691 "B" horizon soil samples have been collected on the Ixhuatan property with 566 collected by Linear personnel since the Linear / MIM option in 2003. Samples, obtained by auger and placed into plastic bags were taken at 50 m intervals, on variously spaced reconnaissance lines over the possible source areas for the stream sediment anomalies. Where possible, sample locations were obtained by a handheld GPS. Figure 14 gives the results of the survey and general location data.

For the main showings on the Campamento target, Linear conducted geological mapping, rock sampling and chip / channel sampling has been carried out over the main showings on the Campamento target. A total of 599 rock and chip / channel samples have been collected by Linear personnel to 2006 (Giroux, 2006). Figure 15 is a location map for these samples.

Also in 2005, 2.0 m surface channel sampling was done in the core area beginning approximately 10 m to the south of drill hole IX-26. The surface results (Table 2) confirmed the high assays intersected in IX-26.

SAMPLE_ID	SAMPLE_TYP	AU_PPM	AG_PPM	CU_PPM	MN_PPM	PBPPM	ZN_PPM
LGA19559	Chip Channel	6.2	21.8	81.0	2360.0	31.0	74.0
LGA19560	Chip Channel	17.1	50.2	146.0	3080.0	73.0	131.0
LGA19561	Chip Channel	48.1	40.0	151.0	2110.0	111.0	103.0
LGA19562	Chip Channel	20.5	43.7	102.0	1495.0	70.0	71.0
LGA19563	Chip Channel	4.2	18.2	124.0	1225.0	138.0	46.0
LGA19564	Chip Channel	8.0	33.0	92.0	2510.0	113.0	42.0
LGA19565	Chip Channel	1.5	11.3	99.0	582.0	24.0	34.0
LGA19566	Chip Channel	0.3	1.7	76.0	433.0	8.0	47.0

## Table 2: Assay Results from Surface Sampling Near Drill Hole IX-26







EQUITY -

#### 10.4.1 MMI Soil Geochemistry Survey

In 2005, a grid was cut over the Campamento deposit. This grid was cut with a base line cut at N60°E and 100 m spaced lines oriented at 330° / 150° azimuth. The grid extends 600 m to the SW and 1100 m to the NE of the Campamento deposit. MMI soil geochemistry and geophysical (Ground Magnetic and IP) was completed over the grid. A total of 317 MMI soil samples were taken from L24E in the SW to L37E in the NE. Due to contamination from surface disturbance from drill pads and road construction etc. it was not possible to collect samples directly over the known deposit. Figure 16 is a contoured plot of the response ratios contoured to nearest neighbour. No samples were taken within the blue dashed zone. The approximate 0.1 gram and 1 gram gold envelopes are approximated on the map (from L2900E to L3100E, just north of the base line (L3000N). The survey indicates a broad anomaly extending to the SW with numerous targets (#1-8). Target numbers 5, 9, 10 and 12 have moderate to strong IP chargeability anomalies (see Section 10.4.2).



Figure 16: Campamento Grid MMI Survey (after Giroux, 2006)



## 10.4.2 Kinross Soil and Rock Geochemistry

Kinross undertook substantial soil and rock-chip geochemical sampling during the Kinross / Linear JV agreement over the period October 2007 to December 2009.

#### 10.4.2.1 Second Quarter 2008:

A soil geochemistry survey covering the area between Cerro Ia Mina and Caracol was completed with a total of 482 samples collected. Encouraging results highlight a small cluster with anomalous gold values (>1ppm Au) focused on the Central Anomaly and extending the zone southwards a further 200 m. The general trend of the anomaly is oriented roughly northwest. A second cluster of anomalous gold results (1.0 - 0.1 g/t Au) is located to the north and displays a north orientation.

Thirty-five samples were collected along existing roads or trails at Cerro Ia Mina. The results from the sampling replicated previous results. Twelve samples were collected west of Cerro Ia Mina and returned one significant result located less than 50 meters west of Jacona Ejido. The sample (LGA49690) returned 1.22 g/t Au and 59 ppm Cu.

A total of 87 samples were collected and assayed from the Caracol area. Most of the samples returned values less than 100 ppb Au with the exception of four samples returning greater than 1 ppm Au. These latter samples are associated with volcanic-hosted skarn alteration characterized by the presence of garnet as veinlet infill and or along fractured planes.

#### 10.4.2.2 Third Quarter 2008:

A soil geochemistry survey covering the area between Cerro la Mina and Caracol was completed. The purpose of the infill survey was to increase the soil sample density coverage of the area. A total of 482 samples were collected and results have been received.

The results are encouraging and show one elongate cluster of anomalous Au values (>1ppm Au) centred on the Central zone and extending 200 m to the south. A second, weaker anomaly (grades ranging from 0.1 to 1 g/t Au) is located to the north.

A total of 211 surface rock samples were collected from numerous areas within the Ixhuatan project during the geological surface mapping programme. Most of the outcrops encountered were sampled irrespective of visual mineralization or alteration. No new anomalous areas were outlined. Anomalous Au results (>0.3 g/t Au) are associated with known mineralized zones that have previously been drilled tested.

The Western zone is located on the western part of the San Isidro Ejido and near border with the Laguna Grande Ejido. A land conflict exists between these two ejidos and all work at the target has been halted until the dispute is resolved.

A series of 20 consecutive 2 m chip samples returned anomalous gold values with the highest value of 1.16 g/t Au and 77 ppm Cu (sample LGA31255) which confirmed previous sampling by Linear Gold. The samples were taken within a diorite intrusion that has been altered by a narrow clay-quartz-potassic envelope confined to a series of narrow NW structures. Mineralization consists of fine-grained disseminated pyrite and veinlets present throughout the area — copper minerals were not observed.

#### 10.4.2.3 Fourth Quarter 2008:

The results of a soil geochemistry survey of 282 samples, covering the area south of San Isidro area were received during the fourth quarter of 2008. The survey covered the contact between volcanic rock and limestone basement units. The results from the soil geochemistry survey failed to outline new prospective areas. All samples collected within the limestone basement unit returned a value below detection values.



The geological mapping outlined a zone of skarn mineralization at the contact between the volcanic rock package and the limestone basement unit which was drill tested with 3 holes (IXSI07-01, 03, 04 and 05). The skarn zone is also outlined by the soil sampling program, where values greater than 1 g/t Au are reported.

10.4.2.4 Second Quarter 2009:

In 2006, a regional soil sampling program (200m x 200m) was conducted on the Ixhuatan Ejido. Based on the results a closer spacing grid (100m x 25m grid) was established over an anomalous area covered by the regional survey (Cacate zone). As part of the 2009 exploration program, the geochemical grid was extended to the east covering prospective areas within the volcanic units and along the contact with adjacent intrusions and involved the collection of 665 samples. Results are generally non-anomalous in gold and copper with grades less of less than 1 g/t gold, and less than 0.1 % copper.

#### 10.4.2.5 Interpretation of Soil Sampling: Cerro la Mina

Over the years, the soil geochemistry sampling program has covered most of the Ixhuatan project. However, there are large gaps that were not included in the original survey. In 2008 a soil survey was undertaken in area where no coverage or wide spacing survey was conducted. The goal of the survey was to increase the level of information. Soil geochemistry surveys at the project have proven to be a very useful exploration tools as all Au occurrences tested have corresponding soil geochemistry anomalies.

A few observations can be extracted from the contour metal maps (Au, Ag, Cu, Mo, As and Sb) covering Cerro la Mina area. At Cerro la Mina, anomalous Au occurs over a 250 by 400 m area that is locally controlled by NW trending structures and terminated to the SE by a major regional NE-NNE trending fault investigated in drill-hole IXSI07-08. The controlling fault to the south is interpreted to extend NW towards the southern boundary of the Caracol target. NW trending mineralized faults, linear breccia zones and sheeted veins are discernible at the surface.

A positive correlation exists for Au against Ag, Mo, As and Sb; whereas a negative correlation exists between Au and Cu. The distribution of the elements can be explained by supergene processes where metal distribution was modify by weathering. The supergene mobilization has resulted in strong enrichment in Au, whereas Cu has been leached from the oxide zone and redeposited as chalcocite beneath the oxide zone. Mo, Ag, As and Sb remain relatively stable during the supergene process.

## 10.4.3 Heberlein Review of Soil Geochemical Data

Heberlein (2009) conducted a review for Kinross Gold Corporation of the historical soil geochemical data base for the Ixhuatan property. A total of 7,645 soil samples were included in this study. Figure 17 shows the sample locations and the main prospects.

Heberlein (2009) notes that both major styles of mineralization on the property — Porphyry Cu-Mo-Au mineralization with overprinting quartz-sulphide and high sulphidation style Au-Cu mineralization at Cerro La Mina and carbonate-base metal Au mineralization in the Campamento zone, are both prone to supergene gold enrichment and both tend to produce strong soil Au geochemical anomalies. It is for this reason that soil geochemistry has been effectively used for identifying mineralization on the property. Gold soil geochemistry clearly defines the known prospects with high contrast anomalies (Figure 18).

Based on these contrasting styles of mineralization Heberlein (2009) reviewed the historical soil geochemical data to test the concept that the different styles of mineralisation might be identified by their soil dispersion patterns, by particular associations of geochemical elements and whether further drill targets might be defined by the data. Results show that three element associations, or factors, describe the mineralization: Factor 2 (As-Mo-Sb); Factor 3 (Ag-As-Cd-Cu-Mo-Pb); and Factor 4 (Cu-Fe).

Campamento is identified by Factor 3 as are the Western, Laguna Grande, Caracol and San Isidro zones, suggesting that they are all potentially of the same Carbonate Base-Metal Au-Ag style. Cerro La Mina is delineated by Factor 4, which is interpreted to represent a porphyry environment (Heberlein, 2009). The



review identified four new areas on the grid with potential for porphyry mineralization at depth. Several of these targets show a zonation in the geochemical data and the element signatures that suggest a central zone of porphyry-style mineralization grading outwards to more peripheral carbonate-base metal and epithermal quartz sulphide styles. The Western Zone and Campamento – Lagunas Grande areas display this zonation, which Heberlein (2009) attributed to lateral fluid migration from a porphyry source outwards into low and intermediate sulphidation conditions peripherally.

Altogether, eight potential targets were identified by this study, with two having the space to contain a moderate size Au deposit. Heberlein (2009) notes that the primary anomalies have already been defined and drill-tested. The remainder were considered to be secondary targets that have a relatively small footprint. Here, any mineralization discovered would have to be of high grade to be of economic interest. Heberlein (2009) makes the comment that because of widespread supergene gold enrichment, there is no correlation between soil gold values and gold content in underlying sulphide.



Figure 17: Soil Geochemistry Base Map – Soil Sample Locations (after Giroux, 2006)

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Figure 18: Soil Geochemistry Base Map - Gold (ppm) (after Giroux, 2006)

# 10.5 Ground Geophysics

# 10.5.1 Ground Magnetic Survey

In 2005 RDF Consulting (RDF Consulting, 2005) conducted an in-house ground magnetic survey over the Campamento grid area. The magnetic survey indicates that the Campamento deposit occurs in a magnetic low flanked on the north and south by much higher magnetic signatures. The magnetic signature trends NE similar to the deposit trend. Wave Geophysics, L.L.C. (2006) merged and levelled the MIM airborne magnetic data and the Campamento ground magnetic data and plotted reduced to pole and vertical-derivative magnetic maps.

Both of the above geophysical reports suggest the magnetic low is related to magnetite destruction during alteration. The only magnetite seen in the Campamento deposit area (including much less altered zones) occurs in some of the very large (up to 1.5-2.0 m) sub-rounded blocks of andesite (to basalt?) in the coarse upper agglomerate unit. It is not known if there was much magnetite in the Campamento area prior to alteration.

EQUITY

## 10.5.2 Induced Polarization Geophysical Survey

RDF Consulting, (2005) conducted pole-dipole array / time domain IP (chargeability/resistivity) over most of the Campamento grid. The IP was done on 200 m line spacing, extending from 300 m to the SW to 1100 m to the NE. The Campamento deposit can be correlated with a broad zone of high chargeability but is better defined by a strong resistivity break (probably caused by strong fracturing and clay alteration. The chargeability over the deposit is about 7-8 times above background response (of the rest of the grid). The IP results suggest that the Campamento geophysical signature extends at least 300 m to the SW and this is coincident with an extensive MMI soil anomaly (Section 10.3.1 this report).

Wave Geophysics L.L.C. constructed 2 dimensional chargeability and resistivity models of the RDF Consulting data. This work also indicated the Campamento deposit is characterized by high IP chargeability corresponding to sulphide minerals and clay alteration. Wave Geophysics indicated that variable resistivity over the deposit is related to lithologic change and alteration.

#### 10.5.3 Golder Associates Ltd. Pit Slope Stability Study

Golder Associates Ltd. visited the property on Nov. 30 / Dec 1, 2006 to do a quick study of the site and selected drill core to determine pit slope for a possible open pit mining method. Their preliminary investigation indicated that pit slopes of between 40-45 degrees may be achievable and that for planning purposes an overall slope of 42.5° could be assumed.

#### 10.5.4 Wave Geophysics L.L.C. Geophysical Data Synthesis

Wave Geophysics L.L.C. (Beasley, 2006) documents the processing and interpretation of geophysical data collected over the Ixhuatan project. Geophysical data evaluated include regional helicopter-borne magnetic, ground magnetic and induced polarization (IP) and resistivity data. Regional and detailed geological, regional steam-sediment and detailed rock and soil geochemical data are also presented in this report

The report identified the locations of inferred buried Tertiary intrusions considered to be the causative bodies for the copper-gold porphyry systems. The extent of these inferred intrusions were derived from the merged magnetic data. Inferred faults based upon the merged magnetic data were also presented. Target areas were defined based upon an integration of the inferred intrusions, mapped geology, geochemical data and geophysical data and models. Target areas generally encompass areas previously identified by Linear, but expand the previous areas of interest, and identify large areas underlain by inferred Tertiary intrusions where detailed ground magnetic or soil geochemical data were lacking.

#### 11.0 DRILLING

#### 11.1 General

The Campamento area had not been drilled prior to 2004. Drilling was not carried out by MIM although a drilling program was planned and a drill was en route when the company was bought by XStrata PLC. XStrata immediately had the drill turned around and cancelled the program. Linear started drilling on the property in early 2004 and started drilling the Campamento Zone (later termed the Ixhuatan Zone by Kinross) with hole IX 9 on May 24, 2004. Hole IX 9 intersected significant gold mineralization grading 11.6 g/t over 30 m. Altogether, Linear drilled 69,679 metres in 282 holes, including 107 holes totalling 21,605 metres on the Campamento Zone. Later, the Kinross/Linear joint venture drilled a further 20,027 metres in 60 holes, concentrating on the Cerro Ia Mina Zone, with no further drilling on the Campamento Zone. Drilling undertaken on the Ixhuatan property by both Linear and Kinross (KG Minera) is summarized in Table 3.



Zone	LINEAR	GOLD CORP	KG M	INERA	LINEAR + KG	LINEAR + KG
	# Holes	Total Meters	# Holes	Total Meters	Total # Holes	TOTAL Meters
CERROMINA	66	21,718	21	8,498	87	30,216
IXHUATAN	107	21,605	0	0	107	21,605
CENTRAL	24	5,624	13	3,683	37	9,307
CARACOL	24	5,709	5	1,673	29	7,382
SANISIDRO	17	4,560	9	2,517	26	7,076
LAGUNA CHICA	15	3,248	5	1,577	20	4,825
LAGUNA GRANDE	16	4,184	0	0	16	4,184
WESTERN	13	3,031	0	0	13	3,031
CACATE	0	-	7	2,079	7	2,079
	282	69,679	60	20,027	342	89,707

# Table 3: Ixhuatan Project – Drilling Summary

## 11.2 Linear Drilling Program (2004-2007)

Linear drilled 282 holes totalling 69,679 metres on the Ixhuatan property between 2004 and 2007. A number of zones were tested by Linear, most notably the Campamento Zone where Linear drilled 107 holes totalling 21,605 metres. Drilling was accomplished using three separate drilling companies. Most of the drill holes were completed by Major Drilling de Mexico, S.A de C.V based out of Hermosillo, Mexico. Kluane International Drilling Inc. drilled holes IX-67, 71, 74 and 77 from May 8 to Sept. 6, 2005. BDW International Drilling Inc. drilled IX-90, 90B, 94, 98, 101 and 104 from Jan. 26, 2006 to May 2006. The drilling utilized up to 6 different drill rigs. Most of the shorter holes were completed with man portable drills but the deeper drill holes were completed with larger rigs that required either road access or helicopter support.

The drilling program was directed by numerous individuals. During the first part of the drill program from May 2004 to May 20, 2005 (including drill holes IX-9 through to IX 55 and portions of drill holes IX-56 to IX-58), P. Pyle and M. Druecker PhD, P.Geo (qualified person on site) directed the drill program. The last part of the program from May 20, 2005 to May 2006 (including drill hole IX-56B, and holes IX-64 to IX-104) was directed by B. Bond MSc, P. Geo (qualified person on site), D. Fraser P.Geo and D. Rowe P.Geo. During the interim transition period (between the above two time periods) Peter M. Dimmell P.Geo, acted as the Qualified Person for portions or all of drill holes IX-56 to IX-63. Significant management assistance was also provided by Dale Schultz. J. Barry was responsible for compilation of the database and QA/QC procedures.

Figure 19 is a location map for the Campamento drilling with the drill sections labelled. The geologic cross sections shown as Figures 20 to 22 are drawn at azimuth N30°W and face N60°E.





Figure 19: Campamento Diamond Drill Hole Plan, Showing Limits of Strong Fracture Zone in Red and Drill Holes with Colour Coded Gold Assays (after Giroux, 2006)





Figure 20: Campamento Cross Section 150, Looking NE (after Giroux, 2006)





Figure 21: Campamento Cross Section 250, Looking NE (after Giroux, 2006)





Figure 22: Campamento Cross Section 275, Looking NE (after Giroux, 2006)



# 11.2.1 Early Logging Procedural Problems

Although there was almost no down hole surveying done in the early portion of the Campamento drill program, many of these early holes are short (less than 150 m). For this reason and the fact that, for the most part, the later holes do not display major deflections it is probable that these early holes have not wandered too far off their collar orientations. Many of the early holes had no core recovery estimates done, however, from re-logging it would appear that visually; most of the holes had similar recoveries. Also Table 4 (see below) comparing recoveries of the early holes (where recovery estimates were actually done), indicates similar recoveries to later drill holes. It is reasonable to expect that similar recoveries would have been returned in the holes that were not measured.

HOLE ID	FROM	ТО	% Recovery	HOLE ID	FROM	ТО	% Recovery
IX-25	0	103.6	74.9	IX-70	0	83.8	89.8
IX-30	0	134.7	80.4	IX-70B	0	358.1	79.9
IX-33	0	133.2	71.9	IX-71	0	327.7	69.6
IX-41	0	122.5	76.8	IX-72	0	400.8	76.0
IX-42	0	139.3	85.4	IX-73	0	301.1	82.2
IX-43	0	156.4	83.9	IX-74	0	339.9	80.1
IX-44	0	153.0	88.0	IX-75	0	376.1	87.1
IX-45	0	142.3	74.5	IX-76	0	408.4	71.1
IX-46	0	93.6	76.7	IX-77	0	382.5	80.6
IX-47	0	130.2	83.9	IX-78	0	54.0	66.5
IX-48	0	92.4	76.7	IX-78B	0	650.8	77.7
IX-49	0	139.7	83.4	IX-79	0	201.9	88.0
IX-50	0	92.1	73.1	IX-80	0	164.0	89.9
IX-51	0	121.3	65.9	IX-81	0	445.0	76.9
IX-52	0	119.8	73.7				
IX-53	0	329.2	80.6	Average rec	covery hol	es IX-70	to IX-81=78.9%
IX-54	0	185.3	77.8				
IX-56B	0	399.3	78.5				
IX-59	0	232.3	88.0				
Average re	covery of	early drill	holes = 79.4%				

 Table 4: Comparison of Recovery of Early and Later Drill hole Recovery

## 11.2.2 Drill Collar Locations

The early drill holes (IX-9 to IX-44) were surveyed by Arturo Arenas Rauda with Procesos Analiticos Informaticos, S.A. De C.V. out of Mexico City using a TOPCON Total Station GTS-220.

The later drill holes were surveyed by surveyor, Edwin Jiménez, using three existing control points using the following method:

In the month of August, UTM coordinate points were measured in the Campamento Anomaly Area, with a Differential GPS (with a margin of error of 0.50 to 5 meters). These points were also verified with LRR's Trimble Differential GPS. Three different Differential GPS points were then measured and later corrected with a TOPCON Total Station, model GTS-229 (giving exact distances and angles; the adjusted points, STA-1, STA-2 and STA-3, are detailed in Table 5 below). These points have been marked with concrete plaques.

Subsequent to Edwin Jimenez, two different surveyors (Samuel Julian and Enrique Rivera) carried out work in the Campamento zone and provided data regarding the location of drill collars. Before this data was accepted, each surveyor's results were checked against Edwin's existing data to ensure that accuracy was maintained.



The drill hole collars were all located with the TOPCON Total Station. A few collars (IX-48/50 and IX-20) could not be located by Edwin for more accurate surveying, due to earlier massive landslides covering the hole location. Survey history for all collar locations is recorded in the "Collar" table within the DrillKing Database.

POINT-ID	LOCATION X	LOCATION Y	LOCATION Z	DESCRIPTION
STA-1	493400.569	1907558.185	1648.144	Camp.Lag.Ch.
STA-2	492704.825	1908160.588	1491.986	IX-53
STA-3	492518.095	1908142.020	1439.938	Mo-5
POINT-ID	LOCATION X	LOCATION Y	LOCATION Z	DESCRIPTION
Mo-1	492298.538	1908303.078	1374.796	Anom. Camp.
Mo-2	492414.486	1908277.029	1350.150	Anom. Camp.
Mo-3	492290.663	1908235.953	1390.208	Anom. Camp.
Mo-4	492515.788	1908322.147	1340.593	Anom. Camp.
Mo-5	492518.095	1908142.020	1439.938	STA-3
M-LB-1	492779.372	1908203.546	1526.429	Línea Base
M-LB-2	492905.872	1908291.340	1597.322	Línea Base
M-LB-3	492945.588	1908299.038	1600.627	Línea Base
M-LB-4	492950.228	1908302.318	1597.221	Línea Base
M-LB-5	493177.379	1908430.828	1463.916	Línea Base
M-LB-6	493244.198	1908473.184	1446.872	Línea Base

Table 5: Survey Control Points Used at Campamento

## 11.2.3 Geotechnical Logging

Geotechnical logging was begun on Hole IX-80 and was continued to the end of the drill program in Campamento. The geotechnical logging was done prior to the geological logging and included core recovery (REC), rock quality designation (RQD), fracture types, fracture count and frequency, number of fracture sets (Jn), fracture roughness (Jr), fracture alteration (Ja), fracture alteration, dip of structures, rock strength and weathering alteration index.

## 11.2.4 Results of Campamento Drilling

The first hole on the Campamento target was IX-09, which intersected 30 m of 11 g/t Au and 22.6 g/t Ag including 20 m of 16.7 g/t Au and 33.2 g/t Ag. The Campamento deposit is comprised of a high-grade (+5 g/t Au) core surrounded by a lower grade (approximate 1.0 g/t Au) gold envelope. The deposit appears to be controlled within a zone of strong-intense fracturing. This zone is at least 110-150m wide; it strikes ENE-NE, dips subvertically and has been traced for at least 350 m along strike. The highest grade intersection to date has been in hole IX-26 which gave 100.3 m at 12 g/t Au and 63.7 g/t Ag.

The various volcanic assemblages appear to be very complex; the variability is compounded by the complexity of the alteration. In order to simplify and correlate the drill sections, all of the coarse epiclastic / pyroclastic phases were lumped together in one unit and all of the finer-grained andesitic tuff or flows were lumped in another unit. Also the various extrusive and intrusive phases of the porphyry complex were also lumped together.

Higher gold values do not appear to be associated with the porphyry complex, especially on the SE side of the deposit between sections 225E to 325E where there is a definite association of increasing gold with increasing carbonate veining - this is seen whether it is associated with <u>kspar+/-quartz</u> or <u>clay</u> (e.g. hole IX-66 [approx 100-200 m]; hole IX-70B [from approximately 250-450 m]). However, it would appear that the veining situated outside of the limits of the main fracture zone controlling most of the gold mineralization does not carry significant gold mineralization. Hole IX-69 intersects abundant carbonate + clay veining from 250-



315 m and lacks grade. Similarly for calcite veining in holes 23, 48, 50, 74 (150-225 m) and for clay-carbonate veining in hole IX-12.

The red lines limiting the deposit in drill sections are approximated based mainly on the dominant presence and increased concentration of strong to intense fracturing / rubble. These limits are noticeably, approximately coincident with anomalous gold values >0.15 to 0.3 g/t Au. Outside of the main Campamento deposit structure, there are local, isolated strong-intense rubble / fracture zones — some of these do carry gold mineralization but for the most part they are narrow and not as strongly fractured. Both holes IX-16 and IX-87 are mainly un-fractured with the core being largely intact in the core boxes and both holes do not intersect significant gold mineralization. In fact hole IX-16 (situated just outside of the NW limit of the structure) does intersect two significantly anomalous gold zones (0.5-1.5 g/t gold) zones (from 39-54 m and 106-112 m); the former is situated completely in a strong rubble zone while the latter is on the edge of and partly includes strong rubble. Approximately 30 m to the SE of hole IX-16, hole IX-15 (which is inside the deposit structure) intersects 3.1 g/t gold over 34 m (from 76-110 m). This interval is also situated in a strong rubble zone from 61-108 m. Isolated, less abundant rubble / fracture zones in holes IX-75 (section 0) and IX-77 (section 440E) and only minor zones of gold mineralization >0.2 g/t gold indicate the intensity of the fracturing is weakening along strike; that is, the structure is breaking up into more isolated zones (2-10 metres wide).

In areas, the higher grade mineralization appears to be sub-horizontal. Drill holes IX-21, 22, 38, 40, 42, 44, 88, 89, and 95 intersect a tabular zone of high-grade mineralization situated on the northeast end of the deposit. The high-grade mineralization is associated with the porphyry complex and commonly has associated carbonate +/- clay +/- kspar +/-quartz veining.

#### 11.3 Kinross / Linear JV Drilling (2007-2009)

During the period of Kinross' management of the Ixhuatan project from October 2007 to December 2009, 20,027 m of drilling was undertaken, bringing the total drilling on the property by Linear and Kinross to 89,707 m.

Kinross did not undertake any further drilling on the Laguna Grande and Western zones (Figure 4), where Linear had already drilled 4,184 m and 3,031 m respectively (Table 3). Additionally, no further drilling was undertaken on the Campamento deposit ("Ixhuatan Zone" of Kinross), where Linear had drilled 107 holes totalling 21,605 m and an NI 43-101 resource had already been established (see Section 17.0).

Rather, Kinross focussed drilling on the major soil gold geochemical anomalies on the property to further test these areas. Anomalies (or "zones") drilled include the Central (13 holes for 3,683 m), San Isidro (9 holes for 2,517 m), Caracol ("Northern") (5 holes for 1,673 m), Laguna Chica (5 holes for 1,577 m), Cacate (7 holes for 2,079 m), and in particular, the Cerro Ia Mina ("Cerromina") porphyry system where an additional 21 holes were drilled for 8,498 m. The Cacate zone had not been drilled previously by Linear.

Significant intersections listed below in Sections 11.3.1 through 11.3.6 show core lengths of mineralized intervals. Drilling in each of these zones is at an early stage and mineralization is irregular in form, so the true widths of these intersections cannot be determined.

Drill hole data for all Kinross holes completed during their involvement in the Ixhuatan project are listed in Table 6. Included in the table are collar data, hole start dates (where available) and hole completion dates.



Table 6: Kinross Drill Hole Data 2007-2009

					Total	Date	Date
Hole ID	Prospect	Easting	Northing	Elevation	Depth	Started	Completed
IXCM07-42#	Cerro la Mina	494057.5	1908942.9	1520.3	325.53	24-Sep-07	01-Oct-08
IXCM07-43#	Cerro la Mina	494031.4	1909063.32	1457.98	325.53	02-Oct-07	10-Oct-07
IXCM07-44*	Cerro la Mina	494268.71	1908827.19	1555.26	325.53	07-Oct-07	27-Oct-07
IXSI07-01*	San Isidro	494717.5	1900776.39	1294.1	443.48	08-Sep-07	25-Sep-07
IXSI07-02*	San Isidro	494435.21	1908176.86	1294.14	535.84	28-Sep-07	03-Nov-07
IXSI07-03	San Isidro	494617.27	1907761.16	1307	325.53	07-Nov-07	27-Nov-07
IXSI07-04	San Isidro	494717.94	1907762.74	1324.6	319.43	23-Nov-07	05-Dec-07
IXSI07-05	San Isidro	494533.55	1908282.22	1199.54	58.83	25-Nov-07	27-Nov-07
IXSI07-06	San Isidro	494534.6	1908281.56	1199.38	115.21	29-Nov-07	05-Dec-07
IXSI07-07	San Isidro	494674.16	1908226.88	1170.71	301.14	08-Dec-07	18-Jan-08
IXSI07-08	San Isidro	494554.06	1908334.8	1211.68	552.6	13-Dec-07	03-Feb-08
IXCM08-45	Cerro la Mina	493871	1908768.03	1453.32	316.38		20-Feb-08
IXCM08-46	Cerro la Mina	494505	1908841.93	1639.04	589.18		30-Mar-08
IXCM08-47	Cerro la Mina	494376	1908965.72	1565.84	320.95		11-Mar-08
IXCM08-48	Cerro la Mina	494375	1908965.35	1565.64	255.42		16-Mar-08
IXCM08-49	Cerro la Mina	494348.38	1908747.95	1620.61	325.53		04-Apr-08
IXCM08-50	Cerro la Mina	494504.84	1908841.6	1638.49	46.63		01-Apr-08
IXSI08-09	San Isidro	494600	1908117.03	1289.27	278.28		31-Jan-08
IXSI08-10	San Isidro	494506	1908006.63	1348.13	301.14		12-Feb-08
IXSI08-11	San Isidro	494505	1908006.62	1348.43	264.57		29-Feb-08
IXCA08-09	Central	493602.39	1908691.63	1328.56	264.57	23-May-08	Q3 2008
IXCA08-10	Central	493602.53	1908691.66	1328.43	325.53		24-Jun-08
IXCM08-51	Cerro la Mina	494187.45	1908813	1534.13	602.89		18-Apr-08
IXCM08-52	Cerro la Mina	494162.32	1908522.46	1544.13	325.53		13-Apr-08
IXCM08-53	Cerro la Mina	494306.23	1908474.18	1477.01	325.53		22-Apr-08
IXCM08-54	Cerro la Mina	494103.15	1908808.65	1565.86	595.17		09-May-08
IXCM08-55	Cerro la Mina	494004.46	1908630.93	1521.88	325.53		01-May-08
IXCM08-56	Cerro la Mina	494004.48	1908629.86	1521.94	324		08-May-08
IXCM08-57	Cerro la Mina	494289.85	1909005.32	1550.33	601.37		04-Jun-08
IXCM08-58	Cerro la Mina	494011.95	1908909.55	1532.91	324		18-May-08
IXCA08-11	Central	493605.34	1908691.65	1328.6	302.67		10-Jul-08
IXCA08-12	Central	493373.01	1909022.11	1265.78	180.75		10-Jul-08
IXCA08-13	Central	493230.68	1908882.83	1337.73	285.9		08-Aug-08
IXCA08-14	Central	493329.83	1908883.27	1271.26	292		24-Aug-08
IXCA08-15	Central	493509.864	1908885.16	1340.964	325.53		09-Sep-08
IXCA08-16	Central	493292.453	1909231.04	1288.799	320.95		24-Sep-08
IXCM08-59	Cerro la Mina	494707.96	1908846.33	1648.08	427.63		01-Jul-08
IXCM08-60	Cerro la Mina	494505.4	1908842.06	1639.02	388.01		28-Jul-08
IXCM08-61	Cerro la Mina	494376.07	1909025.17	1584.33	548.03		31-Aug-08
IXCM08-62	Cerro la Mina	493776.715	1908975.91	1448.482	601.37		29-Sep-08
IXCA08-17	Central	493642.99	1908503.04	1468.42	325.53	29-Sep-08	09-Oct-08
IXCA08-18	Central	493478.46	1909520.32	1418.47	282.85	06-Oct-08	20-Oct-08
IXCA08-19	Central	493329.68	1909507.04	1315.92	301.14	27-Oct-08	13-Nov-08
IXCA08-20	Central	493250.13	1909503.65	1281.6	275.23	15-Nov-08	27-Nov-08
IXCA08-21	Central	493374.54	1909021.1	1265.54	200.56	10-Dec-08	14-Jan-09
IXCM08-63	Cerro la Mina	493668.7	1909173.88	1363.62	601.37	02-Dec-08	18-Jan-09



					Total	Date	Date
Hole ID	Prospect	Easting	Northing	Elevation	Depth	Started	Completed
IXLC08-08	Laguna Chica	493536.69	1907912.05	1676.52	325.53	11-Oct-08	21-Oct-08
IXLC08-09	Laguna Chica	493460.55	1907866.88	1600.07	325.53	22-Oct-08	02-Nov-08
IXLC08-10	Laguna Chica	493342.91	1907748.63	1591.38	308.76	01-Nov-08	17-Nov-08
IXLC08-11	Laguna Chica	493234.09	1907725.27	1565.84	308.76	18-Nov-08	27-Nov-08
IXLC08-12	Laguna Chica	493109.44	1907723.99	1545.22	308.76	29-Nov-08	07-Dec-08
IXNA09-18	Caracol	493665.05	1909851.01	1303.16	301.14	21-Jan-09	02-Feb-09
IXNA09-19	Caracol	493651.47	1910140.64	1329.77	403.25	28-Jan-09	17-Feb-09
IXNA09-20	Caracol	493187.35	1910431.34	1263.64	296.57	09-Feb-09	24-Feb-09
IXNA09-21	Caracol	493483.28	1910095.43	1248.5	371.25	21-Feb-09	05-Mar-09
IXNA09-22	Caracol	493488.88	1910342.8	1391.42	301.14	27-Feb-09	09-Mar-09
IXCT09-01	Cacate	494220.42	1911259.17	1173.68	334.67	20-Mar-09	30-Mar-09
IXCT09-02	Cacate	494150.86	1911180.41	1195.07	320.65	01-Apr-09	18-Apr-09
IXCT09-03	Cacate	494338.81	1911137.5	1255.4	322.48	24-Apr-09	04-May-09
IXCT09-04	Cacate	493624.43	1911737.53	1266.63	185.32	07-May-09	16-May-09
IXCT09-05	Cacate	494129.43	1910885.53	1244.5	309.07	19-May-09	01-Jun-09
IXCT09-06	Cacate	493809.41	1911763.82	1223.31	301.14	01-Jun-09	09-Jun-09
IXCT09-07	Cacate	493807.08	1911213.33	1225.97	322.48	11-Jun-09	24-Jun-09
IXCT09-08	Cacate	493807.08	1911213.33	1225.97		25-Jun-09	Q3 2009

Table 6: Kinross Drill Hole Data 2007-2009 (continued)

<sup>#</sup> Drill hole completed before Kinross commenced management at Ixhuatan

\* Drill hole commenced during Linear's tenure at Ixhuatan and completed under Kinross management

#### 11.3.1 Cerro la Mina Zone

New drilling by Kinross at the Cerro la Mina zone (Figure 23) was designed to further define the extent of the mineralised porphyry system initially tested by Linear in a program of 66 drill holes for 21,718 m (Table 3). Kinross completed 21 additional drill holes for 8,498 m. The best intercept from Kinross' drilling came from hole IXCM08-51 which graded 0.68 g/t Au, 2.71 g/t Ag, 2802 ppm Cu and 288 ppm Mo over 601.4 m, from 1.45 m to 602.9 m. The prospect remains an important target on the Ixhuatan property (Table 7).

#### Table 7: Cerro la Mina Drilling (2007-09)

Hole ID	From	То	Width	Au g/t	Ag g/t	Cu ppm	Mo ppm
IXCM07-32	0	150.3	150.3	0.661	NA	663	NA
IXCM07-34	72	120	48	0.528	NA	1062	NA
including	94	100	6	1.235	NA	1890	NA
IXCM07-36	0	16	16	0.7	NA	636	NA
IXCM07-44	0	86	86	1.075	NA	182	NA
IXCM07-44	256	298	42	2.093	NA	4,706	NA
including	266	274	8	6.148	NA	8,470	NA
IXCM08-51	1.45	602.89	601.44	0.68	2.71	2802	288
including	560	595.5	35.5	0.94	1	3500	100
IXCM08-54	169	595.27	426.27	0.58	1	1353	NA
including	543.96	595.27	51.31	1.27	1	2103	NA
IXCM08-57	185.4	601.37	415.97	0.43	5	1728	NA
IXCM08-62	408	536	128	1.018	0.338	341	NA
including	466	495	29	2.037	0.392	362	NA
IXCM08-63	470	506	36	0.574	0.361	248	NA







Figure 23: Cerro la Mina Zone Drilling (after Londero, 2009)

# 11.3.2 Central Zone

Kinross completed 13 drill holes to test targets in the Central zone (Figure 24) immediately to the west of the Cerro Ia Mina zone. This built on the previous 24 holes drilled by Linear in this area. The best intersection from the Kinross drilling came from hole IXCA08-12, which encountered 67.05 m @ 0.345 g/t Au, 2.557 g/t Ag, 121 ppm Cu and 38 ppm Mo, from 71.02 to 138.07 m (Table 8).

In general, drilling of the Central Anomaly indicated only low-grade mineralization related to N-S structures developed in diorite and adjacent dacitic and andesitic pyroclastic rocks and minor coherent andesitic lavas.





Figure 24: Central Zone Drilling (after Londero, 2009)



Hole ID	From	То	Width	Au gpt	Ag gpt	Cu ppm	Mo ppm
IXCA08-09	32.00	71.02	39.02	0.235	1.419	107	3
IXCA08-09	147.22	185.32	38.10	0.154	1.006	216	10
IXCA08-10	77.11	119.79	42.68	0.173	0.418	94	6
IXCA08-11	269.14	302.67	33.53	0.231	1.414	372	43
IXCA08-12	71.02	138.07	67.05	0.345	2.557	121	38
IXCA08-13	2.30	41.00	38.70	0.419	3.176	191	5
IXCA08-13	149.00	194.00	45.00	0.240	0.616	233	27
IXCA08-14	79.00	127.00	48.00	0.231	0.899	92	12
IXCA08-15	94.00	133.00	39.00	0.270	1.156	113	5
IXCA08-15	143.00	212.75	69.75	0.237	0.638	90	8
IXCA08-15	265.00	325.53	60.53	0.176	0.393	181	7
IXCA08-17	8.00	40.30	32.30	0.493	4.170	83	4
IXCA08-17	122.00	144.17	22.17	0.377	1.970	137	2
IXCA08-17	240.00	270.00	30.00	0.211	1.384	96	1
IXCA08-17	302.67	325.53	22.86	0.189	1.232	65	2
IXCA08-21	24.60	46.00	21.40	0.328	0.250	113	4

Table 8: Summary Results - Central Zone Drilling

## 11.3.3 San Isidro Zone

Kinross drilled 7 holes to test soil Au geochemical targets in the San Isidro zone (Figure 25) located immediately south of the Cerro Ia Mina zone. This added to the database of 17 holes drilled by Linear on this prospect. The best intersection from the Kinross drilling at San Isidro came from hole IXSI07-08, which yielded an intercept of 160.03 m @ 0.240 g/t Au, 0.520 g/t Ag, 648 ppm Cu and 34 ppm Mo, from 392.58 m to 552.61 m (Table 9).

Drilling of the San Isidro zone typically encountered wide intersections of mineralized fragmental andesitic and dacitic host rocks, but only low-grade mineralization.





Figure 25: San Isidro Zone Drilling (after Londero, 2009)



Hole ID	From	То	Width	Au gpt	Ag gpt	Cu ppm	Mo ppm
IXSI07-03	0.00	38.00	38.00	0.297	1.558	131	10
IXSI07-03	56.00	160.00	104.00	0.367	4.304	311	22
IXSI07-03	176.00	236.00	60.00	0.842	3.390	86	31
IXSI07-03	244.00	268.00	24.00	0.757	3.258	49	22
IXSI07-05	9.00	25.30	16.30	0.229	1.045	1113	166
IXSI07-05	39.01	58.83	19.82	0.659	2.698	1894	19
IXSI07-06	8.80	109.00	100.20	0.319	1.552	836	30
IXSI07-07	14.20	32.92	18.72	0.419	1.735	894	33
IXSI07-07	272.40	298.00	25.60	0.156	1.067	493	15
IXSI07-08	2.10	62.00	59.90	0.227	1.787	286	53
IXSI07-08	292.30	348.39	56.09	0.179	0.573	455	35
IXSI07-08	392.58	552.61	160.03	0.240	0.520	648	34
IXSI08-09	63.00	102.00	39.00	0.285	1.001	476	35
IXSI08-09	112.00	234.00	122.00	0.230	0.487	313	33

Table 9: Summary Results – San Isidro Zone Drilling

## 11.3.4 Caracol Zone

The drill program tested soil geochemistry anomalies (both Au and Cu) hosted by coherent andesitic flows and stratigraphically underlying limestones, east of the Caracol zone (Figure 26).

Low-grade mineralization only was encountered. The best intercept was in drill hole IXNA09-18 which encountered 49.14 m @ 0.189 g/t Au, 7.917 g/t Ag, 43 ppm Cu and 12 ppm Mo from 252.0 m to 301.1 m.





Figure 26: Caracol Zone Drilling (after Londero, 2009)

## 11.3.5 Laguna Chica Zone

Only narrow zones and relatively low-grade structurally controlled mineralization was intersected in the five holes drilled by Kinross that added to the 15 drill holes completed earlier by Linear at Laguna Chica. The best intercept from the Kinross drilling was encountered in drill hole IXLC08-11 with an intersection of 10.00 m @ 1.657 g/t Au, 21.661 g/t Ag, 126 ppm Cu and 6 ppm Mo from 155.00 to 165.00 m.

Host rocks to the mineralization at Laguna Chica comprise coarse-grained andesitic pyroclastic rocks and lesser dacitic lapilli tuffs and breccias.







Figure 27: Laguna Chica Zone Drilling (after Londero, 2009)

# 11.3.6 Cacate Zone

In the Cacate zone, seven drill holes targeted by Kinross encountered only low-grade skarn-related mineralization. The best intercept came from hole IXCT09-04 with an intersection of 16.00 m grading 0.461 g/t Au, 0.820 g/t Ag, 56 ppm Cu and 3 ppm Mo from 9.00 m to 25.00 m. Mineralization and alteration are related to structures developed in a package of coherent andesitic flows and intercalated limestone, intruded by bodies of diorite.

EQUITY -



Figure 28: Cacate Zone Drilling (after Londero, 2009)

## 12.0 SAMPLING METHOD AND APPROACH

The following descriptions, adapted from Dimmell (2005) and Giroux (2006), apply particularly to the protocols carried out by Linear between 2004 and 2007. When Kinross took over management of the Ixhuatan project in October 2007, they adapted very similar protocols.

# 12.1 Drilling Procedure

The drill hole locations were marked in the field by the geologist using a cloth tape or hip-chain and compass, measured from a known point to locate the drilling site. A wooden picket, marked with the drill hole number and orientation was placed at the site of the drill hole. In the case of angled drill holes, foresight and backsight pickets were put into place to help in the alignment of the diamond drill. The drilling rig was then brought to a level orientation and aligned to the pickets. The dip of the hole was set using an adjustable level.

Following completion of a drill hole, the location of the collar was marked with white plastic PVC piping encased in a cement marker roughly measuring  $0.5m \times 0.5m \times 0.3m$ . The number of the drill hole was inscribed in the cement prior to the cement hardening.

Core was placed in core boxes and the tops secured with string. The core boxes were carried from the various drill sites to the drill access road and then transported by truck to a fenced, secure, restricted access, core logging and preparation facility at Tapilula.



#### 12.2 Core Logging Procedure

At the Tapilula core facility, the boxes were opened, the core washed to remove mud and drill fluids. The core was then marked out, logged, photographed and sampled.

Local Mexican assistants were trained in how to measure and mark the core on 2 m intervals and were trained in measuring the amount of core recovery. The core recovery estimates were done by measuring the amount of core recovered between the block markers placed in the core boxes by the drill company.

#### 12.2.1 Early Logging Procedure

From May 2004 to approximately June 2005 (drill holes IX-9 to IX-58) the holes were logged in Spanish and recorded on paper logs by various geologists. During this period, much of the work (core logging, down hole surveying, core photography, core recovery) was incomplete. There are no photographs for drill holes IX-12, 14, 30-32, 35, 37, 41- 50, 52-55 and 57 and holes IX-11, 13, 17-19, 33, 38, 51, 59-63 are incompletely photographed. The remaining drill holes were photographed. Except for drill holes IX- 53 and 56B, none of the drill holes were surveyed for their down hole deviation. Also there are no recovery estimates for holes IX12-14, 16-24, 26-28 and 34-40. No advanced geotechnical work was done during this period.

#### 12.2.2 Transitional Logging Procedure

During a transition period (between drill holes IX-64 to IX-69), the drill logs were begun to be logged in English but also recorded on paper. Beginning at drill hole IX-67 the holes were recorded onto a "DrillKing" formatted paper copy and subsequently transferred into a digital format in "DrillKing" (a software program). During the transition period, down hole surveys were made for holes IX-66 and IX-67 but no down hole surveys were done for holes IX-63, 64, or 68. All of the drill holes in the transition period were photographed but are incomplete.

## 12.2.3 Later Logging Procedure

After the transition period (i.e. after and including hole IX-70 on or about June 2005) all of the drill holes were photographed with the exception of 1 or 2 missing boxes in each of holes IX-70B, 71 and 75. All of the holes were surveyed down hole with the exception of IX -80, 83 (hole had to be abandoned due to landslide), 84 (bad reading) and 85. Except for hole IX-80 (164 m) all of these unsurveyed holes were short holes (less than 100 m). The surveying was mostly done with a Reflex EZ-shot but Kluane used Sperry Sun and BDW used a Flexit. Complete advanced geotechnical logging was performed on drill holes IX-80 through to IX-104.

Near the transition to the later logging procedure, "skeleton" logs were started whereby representative samples (5-20 cm in length) were systematically taken down the length of the hole about every 5-10 m or where changes in lithology, alteration, and veining dictated. These samples were marked with the distance down the hole with a permanent marker and placed in a separate core box. The skeleton log for each hole is stored in the core logging facility in Tapilula and provides a quick reference for comparative purposes.

#### 12.3 Discussion

Details of the methodology for establishing sample intervals for the various drill programs are not readily available to the author, nor are detailed records of drilling, sampling or recovery factors which could materially impact the accuracy and reliability of the results. However, nothing in the periodic reports on the drill programs raised any suspicions that such factors are present. As discussed in Section 13.0 (Sample Preparation, Analyses and Security), the sample preparation protocol appears sound and there do not appear to be any factors that would have resulted in sample biases.

Summaries of relevant core intersections from the zones outside the Campamento Deposit are presented in Sections 11.3.1 through 11.3.6. True widths for drilling on these zones cannot be estimated because of their limited drilling and irregular geometry of mineralization. Summaries of relevant core



intersections, and their corresponding true widths, are not presented here for the Campamento Deposit since it is the subject of a resource estimate in Section 17.0 (Mineral Resource and Mineral Reserve Estimate) below.

## 13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All samples were collected prior to Cangold's involvement with the Ixhuatan property. No aspect of the sample preparation was conducted by an employee, officer, director or associate of Cangold. The following description of Linear's sampling protocol was derived from Dimmell (2005). The details of the protocol used by Kinross are not known to the author, but are reported to be similar.

#### 13.1 Sample Protocol for Rock/MMI/Stream Sediment Samples

A protocol was established for samples collected by Linear as follows:

<u>Stream Sediment Samples</u>: Stream sediment samples were collected by qualified junior geologists at approximately 400 metre intervals. Sample locations are determined by a handheld GPS. Material was screened to obtain one litre which was placed in a labelled sample bag and sealed for transport. Duplicate samples are taken every 20 samples as a quality assurance check.

The samples were transported to Tapilula, then to Villahermosa and on to the ALS Chemex preparation lab in Guadalajara, Jalisco. Processing included wet sieving through -80 mesh with the undersize dried and pulverized to -150 mesh. Samples were analysed using an Au / ICP21 process with a gravimetric finish for samples over 10 ppm Au. A multi-element analysis, ME-ICP41, was performed for values carrying Ag > 100 ppm, re-analyzed using an AA46 process.

<u>MMI Soil Samples</u>: MMI soil samples were taken by standard methods for this process. All samples were placed in plastic ziplock bags with strict protocols to prevent contamination. All samples were located by UTM coordinates and then tagged by qualified field personnel. Samples were forwarded from the field office in Tapilula to Villahermosa, then shipped by air to SGS Mineral Services in Durango, Mexico and then to the SGS laboratory in Toronto, Canada.

<u>Rock Samples</u>: Rock samples were collected by qualified Mexican and Canadian geologists / prospectors with data, including UTM coordinates, lithology and mineralization recorded in field books. Grab and representative chip samples were placed in standard plastic rock sample bags, tagged and the locations recorded in a master database. The plastic bags were sealed using plastic pull ties. All samples were taken to a central logging facility where they are stored under lock and key with security guards watching the premises 24 hours per day.

The samples were transported to the city of Villahermosa where they were shipped by airfreight to ALS Chemex labs in Guadalajara, Mexico to be prepared. Once prepared, the pulps were forwarded to the ALS Chemex labs in Vancouver, Canada for analysis by fire assay, with an AA finish for Au and the ICP21 method. Gold assays > than 10 ppm, use a gravimetric finish. A multi-element package ICP-41 analysis was also run with an AA finish if silver values are >100 ppm. Most ALS Chemex laboratories are registered or are pending registration to ISO 9001:2008, and a number of their analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

#### 13.2 Drill Core Samples

All sampling was carried out at 2 m intervals. In a few areas of poor recovery, samples were combined into lengths greater than 2 m. The 2 m sample intervals were not tied to lithology, alteration or structure. Most of the core was fairly hard and competent and a diamond saw was used to cut the core in half (lengthwise). However, a good deal of the core came out clay-altered or as rubble that was too small to cut and in this case the core was divided in half (lengthwise) using a spatula-like blade with 1/2 being scooped



out for the sample. Larger samples within the rubble zones were sawed in half where possible. Care was taken to keep the saws as clean as possible.

One half of the core was put into individual sample bags while the other remaining half in the core boxes was retained and stored on site in Tapilula. The Linear personnel who did the cutting are local labourers with no technical or geological knowledge but were trained on site.

Assay samples were bagged, tagged and zip-tied in secure bags and then transported in rice sacks one or more times a week to Villahermosa where they were immediately delivered to AeroMexico for air transport to Guadalajara and the ALS Chemex sample preparation facility. In the later drilling period, after approximately June, 2005, a "Chain of Custody" form was used to track the samples once they left the security of the core shed in Tapilula.

Samples were prepared and the pulps sent by air to the ALS Chemex Vancouver laboratory for analysis for Au by fire assay. The samples were analysed by fire assay — AA finish with samples greater than 10 g/t gold analyzed by fire assay gravimetric finish. Other metals were analyzed by aqua regia digestion with ICP-31 finish.

Prior to the transition period (i.e. prior to about hole IX-64) a 30 gram charge digestion fire assay was used. During the transition period either a 30 gram or 50 gram charge was used. After the transition period a 50 g charge digestion was used. Check samples, when taken, were sent to the SGS laboratory in Toronto.

Most ALS Chemex laboratories are registered or are pending registration to ISO 9001:2008, and a number of their analytical facilities have received ISO 17025 accreditations for specific laboratory procedures. The SGS laboratory in Toronto has also received ISO 17025 for specific laboratory procedures including Au fire assays.

The author believes that sample preparation, security and analytical procedures were adequate for geochemical and core samples.

## 14.0 DATA VERIFICATION

## 14.1 Data Verification Linear Drilling (2004-2006)

Linear set up an effective quality control/quality assurance program to monitor the drilling program on the Campamento Project. Prior to QA / QC protocols instituted by Linear in June 2005, one standard, which was of very low grade almost to the detection limit, was placed in every batch of samples (78 per batch). Minor check sampling was also done.

New QA / QC protocols began with hole IX-56B in mid May, 2005, as follows:

- Blank material, usually barren silica sand or limestone (approximately 250 grams per sample bag) was inserted wherever the geologist deemed appropriate, mainly after intervals thought to contain high gold values which could lead to contamination. These were inserted by the geologist and sent with the shipment.
- Standards (as Standard Reference Material (SRM)) were added every 25th sample. Linear has 6 different SRM's purchased from Rocklabs Ltd in Auckland, NZ. These samples are contained in 5 kg bottles which are measured out in 50 g charges and inserted into the sample stream. The type (numbers) of the SRM were marked on the sample sheets.
- Duplicates were also analyzed every 78 samples (each batch) by placing 2 sample tickets in the same sample bag and having the lab generate two pulps of the same sample for analysis. Duplicates were taken from holes IXCM-05-01 to 03 and IX-56B to IX-70.

This protocol is considered the minimum required however geologists are encouraged to insert more as they deem appropriate. All SRM's and duplicates are analysed together for any given batch. Other QA/QC techniques include: twinning holes, which consists of holes drilled at the same orientation within 2 m or so of



each other, with two (2) twinned holes drilled, and check assays, which consists of analyzing rejects from earlier techniques.

#### 14.1.1 Blanks

Blanks, usually barren silica sand or limestone (approximately 250 grams per sample bag) were submitted routinely into the assay stream for all labs used and were evaluated when the results were obtained. Appendix B shows plots for Blanks sent to ALS (115 samples), LMS (44 samples) and SST (286 samples). In most cases the blanks are within industry standard levels. For each Laboratory, however, these plots have identified problems with some blank assays and show the follow up that was taken.

#### 14.1.2 Standards

Standards were added every 25th sample. Linear used a number of SRM's purchased from Rocklabs Ltd in Auckland, NZ. These samples are contained in 5 kg bottles which were measured out in 50 g charges and inserted into the sample stream. The type (numbers) of the SRM was marked on the sample sheets. Au values that fell outside Industry Standard limits triggered the re-run of the particular batch of samples containing that standard.

#### 14.1.3 Check Samples

QA/QC analysis was performed on 140 drill core samples from selected intervals of holes IX-09 to IX-54 in July 2005, to check the repeatability of assay results received from ALS Chemex. Rejects were pulled from storage at the ALS Chemex labs in Guadalajara, and sent to SGS Labs in Toronto, Canada as three separate batches for Au/Ag analysis only. Analysis was performed at both labs using comparable, standard, Fire Assay Methods.

Samples from each hole were also randomly selected for check analysis. The pulps were labelled with new sample ID's specific to SGS analysis. Three batches of samples were sent with two levels of QA/QC performed. The first was a check on the SGS results and if the results were deemed reliable, then the next level of QA/QC was performed, as a comparison between the original ALS Chemex and the new SGS check-assays. Each batch contained two known standards and two duplicate samples.

SGS also carried out internal duplicate analysis on various samples within each batch which were not requested by Linear. When results were received for the three batches, the standard and duplicate results were examined to ensure that they all fell within acceptable limits.

Two batches, consisting of ninety two samples gave seventy six percent falling within the acceptable range for quality assurance purposes. Seven of the ninety two samples were outside acceptable limits. No correlation is evident between problems in high or low grade samples between the two labs and inaccuracies in the data appear to be random. Although values were variable especially in the higher grade samples the variability is not significant, with the overall grade of the holes not significantly different.

#### 14.2 Data Verification Kinross / Linear Drilling (2007-2009)

A review of the current procedures for geological collecting information, capturing information digitally, and the treatment of analytical results, conducted in January 2008 revealed several minor flaws. A cleansing and checking program of the data was implemented to capture all information in one single database. Kinross used acQuire software to manage the information. The system was implemented in the second quarter 2008.

A total of 15,654 samples (not including quality control samples) of drill core, rock samples and soil samples were submitted to ALS Chemex for analysis (Table 10). The samples were analyzed for gold and trace element using the AA13 and ICP 41 analysis.

As part of the QA/QC, one standard, one field blank and one duplicate samples were randomly inserted within a string of 20 samples submitted to the laboratory. The QA/QC was done exclusively for gold. The values reported from the laboratory for the standard and field blanks were checked for accuracy. If the results of the standard or the blanks were outside the limit permitted (mean  $\pm$  3 standard deviation) the



laboratory was requested to re-analyze the complete batch with the re-analyzed results taking precedence over the original results.

Analytical performance for the duration of the drilling program and on-going soil and rock-chip sampling during 2007-2009 is tabled below (Table 10). There were a significant number of QA/QC failures during the fourth quarter of 2008. The true failures are all related to values of the standards results falling outside the limit permitted (mean  $\pm$  3 standard deviation), while the failures/warnings were attributed to human errors or a slightly high field blank result.

	2007	2008	2009	Total
Number of Core, Rock and Soil Samples*	1,371	10,122	4,161	15,654
Number of Duplicates	53	471	177	701
Number of Blanks	61	564	246	871
Number of Standards	59	569	253	881
Number of Failures/Warnings	6	16	5	27
Number of True Failures	5	21	0	26
Number of Batch Re-runs**	2	21	0	23
*Does not include QC samples				
** Includes batch re-runs (including pulps) requ	uested for a	ny reason		

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# 14.2.1 Cyanide Gold and Copper Extraction

A series of 49 pulp samples from Cerro la Mina core was analyzed by the 'Cyanide Leach' technique (ALS Chemex code Au-AA13). The exercise was to establish potential extraction efficiency by cyanide leach for gold and to use these recoveries for resource treatment investigations. The pulp samples were selected by category (oxide and sulphide ore) and by grade: high grade >0.75 g/t Au, medium 0.4 - 0.75 g/t Au and low grade 0.15 - 0.40 g/t Au. Overall the results demonstrated that satisfactory gold can be extracted within the oxide ore (94%), whereas gold recovery from the sulphide ore is far from satisfactory (26%). The most probable reason for poor gold recovery in sulphide ore seems related to soluble copper minerals present that affect gold dissolution and interference with the subsequent recovery process. The results are an indicator that metallurgy of the deposit is not simple and will require further study to find the proper technique to recover gold, since the majority of the gold is contained within the sulphide ore.

## 14.2.2 Copper Analytical Comparison

A comparative analysis for copper was undertaken during the Second Quarter 2008 to identify if copper results reported by "Aqua-Regia" digest with ICP-AES finish under-estimate the copper content of the samples and therefore misguide interpretations. Forty-two samples (including Cu standards) originally analyzed with an "Aqua-Regia" digest with ICP-AES finish were re-analyzed using a "Four-Acid" digest with ICP-AES finish (OG62).

No significant difference in results is observed between the two techniques with the variation ranging from -98.37% to +0.62%. The Cu standards show a slight increase of 1.91% and 1.65% using the "Four-Acid" digest. The variation from sample LGA53162 (-98.37%) is attributed to a laboratory failure or a mix up of samples while retrieving the pulp from the laboratory. Excluding sample LGA53162, the overall average shows a gain of 1.03% in favor of the "Four-Acid" digest technique. The results suggest copper mineralization is simple and the "Aqua-Regia" digests most of copper minerals present.

## 14.3 Data Verification by Qualified Person

The author examined closely approximately 970 m of core from 20 holes drilled by Kinross from several zones on the Ixhuatan property and stored at the core facility in Tapilula, Chiapas State, Mexico. Despite covered storage, the state of the core, as a result of post-drilling self-disintegration due to the clay-



rich nature of the mineralized intersections and breakdown of dispersed, finely divided sulphide (particularly marcasite) accompanied by secondary mineral growth, precluded its quartering and sampling. Instead, the author relied on the data verification and quality control measures performed by Kinross, a major Canadian gold mining company with state-of-the-industry standards.

# 15.0 ADJACENT PROPERTIES

The following information was derived from Giroux (2006). The author has not verified this information and it is not necessarily indicative of the mineralization on the Ixhuatan property.

## 15.1 Introduction

The only significant mineralization in the area of the Ixhuatan property is the Santa Fe Mine area, which is contiguous to the Ixhuatan property, to the northwest. Mineralization at Santa Fe was discovered during the late nineteenth century with the main areas of past workings, the Santa Fe, La Victoria and San Sebastian areas. The area, collectively called the Santa Fe deposits, consists of a number of distinct zones, namely; El Cobre, El Jardin, Los Arcos, Veta Verde, Santa Maria, Veta Goyens, Veta Taylor, Santa Fe, Providencia, El Portillo and La Victoria of which the El Cobre, Santa Fe, San Sebastian and La Victoria deposits are the most important. No historical production records exist.

## 15.2 Ownership / Location / Access / Physiography

The Santa Fe mine claims have belonged to Minera Frisco since the 1960's. The property is contiguous, to the east-northeast of the Ixhuatan property. The area is underlain by the Chiapas Northern Range and Highlands geological sub-provinces.

The property is accessed from the Villahermosa-Tuxtla-Gutierrez highway, Route 195, by a 2.3 kilometre long, narrow, dirt road which follows a steep stream valley, and which is in disrepair. The road can be driven by four wheel drive vehicles to within 300-400 m of the mine site. The property is covered by thick soils and dense vegetation, typical of the Mexican tropical rain forest.

#### 15.3 History

Mineralization was discovered at Santa Fe in the mid to late 1800's. Mexican, British and French mining companies have carried out limited mining activity. The first was El Boleo, a French company active in Baja California in the mid to late 1800's. An English company, Santa Fe Mines, mined the property in the late 1800's / early 1900's. The claims then passed on to two local gentlemen, Mr. Ernesto Rios and Mr. Nestor de la Torre who were associated with Compañía Minera de Cerralvo S.A. and Compañía Minera La Corzo. In 1963, Minera Meteoro Company (subsidiary of Grupo Frisco S.A.) obtained most of the mining concession and re-assessed the area using soil sampling, induced polarization, magnetic surveys and diamond drilling which resulted in the discovery of a deposit (San Sebastian) near the original Santa Fe deposit. The La Victoria deposits were discovered more recently and records obtained by MIM suggest mining was carried out from 1966 to 1970. Minera Corzo, S.A. commenced operations in 1966 but ceased soon after. The La Victoria Mine came under the control of Nacional Financiera S.A. in 1973. At their request, Consejo de Recursos Minerales (CRM) evaluated the area and conducted a resource study from 1974 to 1978, with additional exploration work in the immediate Santa Fe are in 1991..

## 15.4 Geological Setting

The Santa Fe area is underlain by a sedimentary sequence of Eocene shales and sandstones in the southeast and northwest with carbonate rocks of possible Oligocene age to the south and northeast. The sedimentary package is intruded by a medium grained granodiorite unit which outcrops in the central portion of the area, grades to monzonite locally and is regionally distributed (Figure 29). It is strongly chloritized and sericitized and contains biotite veinlets. Felsic porphyries related to mineralization are argillized and



chloritized (Miranda, Gasca, Martinez, 2000 site visit). Hornfels and skarn related to the intrusions are common throughout the area. The sedimentary units show extensive folding and faulting with the two main fault systems at right angles to each other trending NW-SE and NE-SW. The intrusive activity is calc-alkaline dacitic to andesitic, related to volcanic activity of Pliocene to Pleistocene age, which is related to the subduction of the Cocos Tectonic Plate below the continental Chiapas plate. This arc is referred to as the Trans Volcanic Belt to the northwest and as the Central American Volcanic arc to the southeast.



Figure 29: Geological Setting Santa Fe Area (after Giroux, 2006)

## 15.5 Mineralization

The Santa Fe area deposits are polymetallic sulphide deposits, with appreciable Au and Ag content in both wollastonite-rich endoskarn and exoskarn zones. At Santa Fe, the mineralization is chalcopyrite, bornite and argentite with gold associated with copper minerals. At La Victoria mineralization is galena, argentite, chalcopyrite, chalcocite and sphalerite with the gold content less than at Santa Fe. The average grade for the mineralized zone, as defined by CRM is 2.4 g/t Au, 120 g/t Ag, 1.30 % Pb and 0.6 % Cu.

The CRM groups the deposits at Santa Fe into three types: 1) irregular disseminated bodies hosted along the granodiorite / limestone contact; 2) veins; and 3) stockwork type veinlet deposits. The "Veta Goyen" vein consisted of a massive quartz-skarn zone at the contact between porphyritic felsite and limestone which formed a domal structure. The skarn is predominantly wollastonite containing garnets and calcite with chalcedony present as cavity fillings. Sulphide minerals include chalcopyrite, bornite, molybdenite, chalcocite, enargite, galena, sphalerite, auriferous pyrite, linnaeite (cobalt sulphide) and fahlite (sulphur arsenide of copper). Gold is associated with chalcopyrite, bornite and enargite and also as free gold within the wollastonite skarn with the copper minerals. The sulphide bodies have undergone secondary enrichment with the oxidized deposits exploited during the early Santa Fe mining operations.



The El Cobre deposit, close to and parallel with the Santa Fe dome, is described by MIM personnel as a dike-like hydrothermal breccia primarily composed of rounded skarn fragments cemented with chalcedonic guartz, pyrite, specularite and minor chalcopyrite, chalcocite, malachite and chrysocolla. The Veta Verde deposit, also located near the dome area is similar to El Cobre. The La Victoria deposit is a chimney-like breccia zone containing angular to sub rounded fragments of strongly silicified, sericitized and chloritized granodiorite and monzonite, limestone, guartz and skarn. The breccia contains chalcopyrite, enargite, galena, sphalerite, tetrahedrite and magnetite. It displays a pervasive silicification with abundant cavities, some filled with chalcedonic quartz, which also replaces sulphide minerals. The chalcedony carries significant gold and silver values. The San Sebastian deposit is another pipe-like breccia hosted by granodiorite-monzonite intrusive with similar characteristics to La Victoria. The breccia is healed by chalcedonic quartz containing spherulitic pyrite. Associated minerals include sphalerite, enargite, tetrahedrite, chalcopyrite and galena. The host granodiorite/monzonite is sericitized, chloritized and contains abundant hydrothermal biotite as veinlets. The intrusive is locally heavily fractured forming a stockwork carrying Au, Ag and Cu. MIM personnel collected 34 rock chip-channel samples from the El Cobre, San Sebastian and La Victoria occurrences during their investigation of the area. Mean values of 3.8 g/t Au, 98 g/t Ag, 0.44 % Cu and 353 ppm Mo were reported. The geological environment suggests that the area could be a high-sulphidation Au / Cu deposit overlying a large porphyry Cu / Au system.

#### 16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Dimmell (2005) noted that limited metallurgical testing of the mineralization at the Campamento zone had been carried by a number of companies as part of their due diligence evaluation of the property. These results were confidential at that time since they were proprietary to the companies.

#### 17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Co-author Giroux estimated a mineral resource for the Campamento deposit in 2006 for Linear Gold Corp. (Giroux, 2006). No further holes have been drilled in the resource area since the 2006 resource was estimated and the following has been taken from the 2006 report.

## 17.1 Data Analysis

A total of 8,372 gold assays were taken from 85 holes within the Campamento area. A listing of drill holes used in this study is included as Appendix C. The assays were plotted on a lognormal cumulative probability plot shown below in Figure 30. A single lognormal population will plot as a straight line in this graphical technique. Multiple overlapping populations will plot as a curve line with inflection points determining the breaks between these populations. On the graph below the solid black dots represent the data points. The vertical lines show the interpreted inflection points between the populations. Breaking or partitioning these populations out produces the lines shown as open circles. Recombining these interpreted populations back is a check on how valid the interpretation is and is shown as open triangles. In this case the check is very close to the original data indicating a reasonable fit.




#### Figure 30: Lognormal Cumulative Probability Plot for Gold at Campamento Zone

A total of 4 overlapping lognormal gold populations are shown to make up the total gold distribution. These populations are summarized in Table 11 below.

Population	Mean Au (g/t)	Proportion	Number of
		Of Data	Assays
1	37.87	0.20 %	17
2	10.75	4.47 %	374
3	0.43	67.26 %	5,632
4	0.02	28.06 %	2,349

#### Table 11: Summary of Gold Populations Present at Campamento

An explanation of these populations might be population 1 represents erratic high grades that need to be capped. In examining the data, however, these assays always occur in areas surrounded by population 2 and are possibly just a higher concentration of mineral. A more reasonable approach would be to cap the upper tail of this population at 45 g Au/t. A total of 5 samples are capped at 45 g Au/t. Populations 1 and 2 represent the higher grade core of the Campamento Zone with mean grades of 37.87 and 10.75 g Au/t respectively. This higher grade core is surrounded by a lower grade envelope, population 3, which is perhaps related to structure and veining. Population 3 has a mean of 0.43 g Au/t and represents 67% of the samples. Population 4 would represent background gold in the host rock with a mean of 0.02 g Au/t. An effective threshold to separate populations 3 and 4 would be two standard deviations above the mean of population 4, a value of 0.29 or say 0.3 g Au/t. This threshold, when modelled in a three dimensional solid, can be compared to structural and alteration domains. A threshold that might separate the higher core zones of populations 1 and 2 might be 4.7 g Au/t, 2 standard deviations above the mean of population 3.

A similar procedure was used to cap 7 silver assays at 191 g Ag/t.



# 17.1.1 Analysis of ICP Data

Supplied with gold and silver assays for the Campamento Project were 33 element ICP analysis for all samples. This data base was evaluated with the use of a Dendrograph. The Dendrograph (McCammon and Wenninger, 1970; McCammon, 1968) is a graphical method of clustering that depends on correlation coefficients. Referring to the dendograph Figure 31 for Campamento, gold has the best correlation with Ag. The Au-Ag mineralization has the best correlation with a group of elements including, Mn, Mo, Sb, Pb, Zn and Cd. Other groups that cluster together and probably relate to alteration and/or host rocks are:

- Co, Fe, V, Al, Ga
- S, Mg, Sc, Ni, Cr
- Cu, W
- P, Be
- Ca, Sr, Ba
- B, K, As, Hg, TI, Ti, La, U and Na



Figure 31: Dendrograph for Campamento Assays

# 17.2 Geological Model

Based on the assay statistics a threshold of 0.3 g/t Au effectively outlined the mineralization for the Campamento Zone. This 0.3 g/t Au envelope also matched well with a zone of intense fracturing mapped by Linear geologists (Figure 18).



# 17.3 Composites

Drill holes were compared to geologic 3 dimensional solids with the points at which the holes entered and left the solids recorded. Uniform down hole 5 m composites were produced to honour the solid boundaries. Small segments at the contacts of the solids were combined with the adjoining sample, if less than 2.5 m in length and left as a composite if greater than 2.5 m. In this manner, composites formed a uniform support of  $5 \pm 2.5$  m. The samples statistics for the gold and silver composites are presented in Table 12.

	Au (g/t)	Ag (g/t)
Number	3,617	3,617
Mean	1.16	5.46
Standard Deviation	2.89	13.11
Minimum Value	0.002	0.10
Maximum Value	32.0	156.6
Coefficient of Variation	2.49	2.40

Table 12: Summary of Statistical Parameters for Gold and Silver 5m Composites

# 17.4 Variography

Pairwise relative semivariograms were used to model both gold and silver composites at Campamento. The horizontal plane was first examined with semivariograms produced in a variety of azimuths with zero dip. The direction of maximum continuity for both gold and silver was N 70 E. The vertical plane perpendicular to this was then tested and the vertical direction showed the longest continuity. Nested spherical models were fit to all directions with a geometric anisotropy demonstrated. The parameters are summarized below in Table 13. Individual semivariograms in the three principal directions for gold and silver are shown in Appendix D.

Table <sup>•</sup>	13:	Summary	of Semiv	variogram	Parameters	for	Campamento
				-			-

Variable	Direction	Со	C1	C2	Short Range (m)	Long Range (m)
Au	Az. 70 Dip 0	0.12	0.28	0.55	5	95
	Az. 340 Dip 0	0.12	0.28	0.55	28	50
	Az. 0 Dip -90	0.12	0.28	0.55	20	180
Ag	Az. 70 Dip 0	0.20	0.25	0.45	30	95
	Az. 340 Dip 0	0.20	0.25	0.45	33	54
	Az. 0 Dip -90	0.20	0.25	0.45	22	140

# 17.5 Block Model

A block model of  $10 \times 10 \times 5$  m blocks was built to cover the mineralized solids. For each block the proportion of the block within the mineralized solid and below topography was recorded. In addition an interpreted oxidation surface was queried with the proportion of each block above and below this surface recorded. Figure 32 shows an isometric view of the block model and drill hole composites.

The origin of the model is as follows:

Lower Left Corner	492400 E	10 m wide	60 columns
	1908000 N	10 m long	60 rows
Top of Model	16100 Elev	5 m high	167 levels





Figure 32: Isometric View of Campamento Block Model with Blocks within 0.3 g/t Au Solid and Drill Hole Composites Shown

#### 17.6 Interpolation

Block grades for gold and silver, for all blocks with some proportion within the mineralized solid, were estimated by ordinary kriging using a minimum of 4 composites and maximum of 8. The estimation process was completed in a series of passes with an expanding search ellipse for each successive pass. The first pass used a search ellipse oriented in the directions of anisotropy with dimensions equal to ¼ of the semivariogram ranges. The vertical direction during the first pass was restricted to 6 m to force the use of at least two drill holes. If the minimum of 4 composites was found the block was estimated. For blocks not estimated during pass 1 the ellipse was expanded to ½ the semivariograms range and the exercise was repeated. A third pass was made using the full semivariogram range and a fourth pass using twice the range was used to fill in the remaining blocks. The search directions, distances and numbers of blocks estimated are summarized below in Table 14.

A similar strategy was used to estimate the waste for any blocks with some portion outside the mineralized solid.



Variable	Pass	Number	Direction	Dist.	Direction	Dist.	Direction	Dist.
		Estimated		(m)		(m)		(m)
	1	2,614	Az 70 Dip 0	23.75	Az 340 Dip 0	12.5	Az 0 Dip -90	6.0
$\Delta u (\alpha/t)$	2	25,132	Az 70Dip 0	47.5	Az 340 Dip 0	25.0	Az 0 Dip -90	12.0
Au (g/t)	3	24,618	Az 70 Dip 0	95.0	Az 340 Dip 0	50.0	Az 0 Dip -90	24.0
	4	5,295	Az 70 Dip 0	190.0	Az 340 Dip 0	100.0	Az 0 Dip -90	50.0
	1	2,972	Az 70 Dip 0	23.75	Az 340 Dip 0	13.5	Az 0 Dip -90	6.0
	2	26,046	Az 70 Dip 0	47.5	Az 340 Dip 0	27.0	Az 0 Dip -90	12.0
Ag (g/t)	3	24,061	Az 70 Dip 0	95.0	Az 340 Dip 0	54.0	Az 0 Dip -90	24.0
	4	4,580	Az 70 Dip 0	190.0	Az 340 Dip 0	100.0	Az 0 Dip -90	50.0
Au (g/t)	1	333	Az 70 Dip 0	23.75	Az 340 Dip 0	12.5	Az 0 Dip -90	6.0
In Waste	2	11,016	Az 70 Dip 0	47.5	Az 340 Dip 0	25.0	Az 0 Dip -90	12.0
	3	37,697	Az 70 Dip 0	95.0	Az 340 Dip 0	50.0	Az 0 Dip -90	24.0
	4	93,738	Az 70 Dip 0	190.0	Az 340 Dip 0	100.0	Az 0 Dip -90	50.0
Ag (g/t)	1	403	Az 70 Dip 0	23.75	Az 340 Dip 0	13.5	Az 0 Dip -90	6.0
In Waste	2	11,665	Az 70 Dip 0	47.5	Az 340 Dip 0	27.0	Az 0 Dip -90	12.0
	3	39,555	Az 70 Dip 0	95.0	Az 340 Dip 0	54.0	Az 0 Dip -90	24.0
	4	91,161	Az 70 Dip 0	190.0	Az 340 Dip 0	100.0	Az 0 Dip -90	50.0

Table 14: Search Parameters for Ordinary Kriging

A weighted average grade was established for blocks containing both mineralized material and waste.

#### 17.7 Bulk Density

Specific gravity was completed down selected drill holes throughout the deposit. A piece of core is obtained for bulk specific gravity (BSG) determination. BSG is defined as the ratio of the mass of a given volume of rock to the mass of an equal volume of water. The method of determination used involves weighing oven dried (12 hours) drill core samples in air, then coating the samples with paraffin wax (Microsere® 5714) reweighing the paraffin-coated samples in air, and then finally weighing the paraffin-coated samples while submersed in water. Paraffin-coating technique was employed to account for volumes of pore space within any given samples.

A total of 591 samples were taken from 5-20 m down the length of the drill holes at changes of lithology / alteration / mineralization and depending upon the availability of adequate sample material.

	SG
Number of Measurements	591
Mean Value	2.39
Standard Deviation	0.32
Minimum value	1.22
Maximum value	5.06
Coefficient of Variation	0.13

Table 15. Statistics for bulk Density Measuremen	ments	Measurer	Density	Bulk	for	<b>Statistics</b>	15:	Table
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Bulk density was interpolated into blocks using Inverse Distance Squared with the same search ellipses as gold. Blocks still not estimated after pass 4 were assigned the average bulk density of the deposit, a value of 2.39.



#### 17.8 Classification

Based on the study herein reported, delineated mineralization of the Campamento Project is classified as a resource according to the following definition from National Instrument 43-101:

"In this Instrument, the terms "mineral resource", "inferred mineral resource", "indicated mineral resource" and "measured mineral resource" have the meanings ascribed to those terms by the Canadian Institute of Mining, Metallurgy and Petroleum, as the CIM Standards on Mineral Resources and Reserves Definitions and Guidelines adopted by CIM Council on August 20, 2000, as those definitions may be amended from time to time by the Canadian Institute of Mining, Metallurgy.

"A **Mineral Resource** is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge."

The terms Measured, Indicated and Inferred are defined in NI 43-101 as follows:

"A 'Measured Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity."

"An 'Indicated Mineral Resource' is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed."

"An 'Inferred Mineral Resource' is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes."

Based on surface mapping and drill hole information the geologic continuity is well established within the zone of intense fracturing. Grade continuity can be quantified by semivariogram analysis. The estimation of blocks in multiple passes, with expanding search ellipses based on the ranges of semivariograms, is a method of using the grade continuity to determine classification.

Blocks estimated during pass 1 using  $\frac{1}{4}$  of the semivariogram ranges to limit the search ellipse dimensions, a minimum of 2 drill holes and located above the 1200 elevation where there is sufficient drill hole data are classed as measured. Blocks estimated in pass 2 using a search ellipse with dimensions equal to  $\frac{1}{2}$  the semivariogram range were classed indicated. All other blocks estimated were classed inferred.

The results are presented in a set of tables for each classification type.

At this stage of the project there has been no economic evaluation completed so an economic cut-off has not been established. A reasonable cut-off for an open pit in Mexico might be 0.5 g Au/t. A whole range



of gold cut-offs are provided in each table to demonstrate the grade and tonnage distribution as a function of cut-off.

Au Cut-	Tonnes > Cut-	Grade>	Cut-off	Contained Meta	
off	off	Au	Ag	Au	
(g/t)	(tonnes)	(g/t)	(g/t)	(ozs)	Ay (025)
0.30	2,410,000	2.900	13.247	225,000	1,030,000
0.40	2,170,000	3.182	14.474	222,000	1,010,000
0.50	1,950,000	3.494	15.837	219,000	990,000
0.60	1,790,000	3.748	16.959	216,000	980,000
0.70	1,680,000	3.957	17.876	214,000	970,000
0.80	1,540,000	4.233	19.078	210,000	940,000
0.90	1,440,000	4.467	20.107	207,000	930,000
1.00	1,320,000	4.795	21.540	203,000	910,000
1.10	1,220,000	5.111	22.831	200,000	900,000
1.20	1,140,000	5.386	24.053	197,000	880,000
1.30	1,080,000	5.627	25.087	195,000	870,000
1.40	1,030,000	5.824	25.886	193,000	860,000
1.50	990,000	5.988	26.511	191,000	840,000
2.00	850,000	6.719	29.114	184,000	800,000
2.50	760,000	7.261	31.053	177,000	760,000
3.00	667,000	7.864	32.996	169,000	710,000
3.50	600,000	8.381	34.464	162,000	660,000
4.00	537,000	8.918	36.100	154,000	620,000

# Table 16: Campamento Project Mineral Resources - May 2011 Estimate Using Diluted Whole Blocks Measured

Table 17: Campamento Project Mineral Resources - May 2011 Estimate Using Diluted Whole Blocks -Indicated

Au Cut-	Tonnes > Cut-	Grade>Cut-off		Contained Metal	
off	off	Au	Ag	Au	
(g/t)	(tonnes)	(g/t)	(g/t)	(ozs)	Ag (ozs)
0.30	22,000,000	1.277	5.534	903,000	3,910,000
0.40	18,480,000	1.454	6.174	864,000	3,670,000
0.50	15,620,000	1.638	6.790	823,000	3,410,000
0.60	13,500,000	1.809	7.362	785,000	3,200,000
0.70	11,890,000	1.966	7.931	752,000	3,030,000
0.80	10,390,000	2.142	8.546	716,000	2,850,000
0.90	9,130,000	2.320	9.191	681,000	2,700,000
1.00	8,050,000	2.505	9.845	648,000	2,550,000
1.10	7,010,000	2.720	10.626	613,000	2,390,000
1.20	6,230,000	2.919	11.363	585,000	2,280,000
1.30	5,550,000	3.121	12.094	557,000	2,160,000
1.40	5,000,000	3.316	12.829	533,000	2,060,000
1.50	4,540,000	3.505	13.533	512,000	1,980,000
2.00	2,970,000	4.453	17.000	425,000	1,620,000
2.50	2,270,000	5.147	19.303	376,000	1,410,000
3.00	1,800,000	5.770	21.100	334,000	1,220,000
3.50	1,479,000	6.322	22.390	301,000	1,060,000
4.00	1,247,000	6.802	23.548	273,000	940,000



# Table 18: Campamento Project Mineral Resources - May 2011 Estimate Using Diluted Whole Blocks -Inferred

Au Cut-	Tonnes > Cut-	Grade>Cut- off		Contained Metal	
(g/t)	(tonnes)	Au (g/t)	Ag (g/t)	Au (ozs)	Ag (ozs)
0.30	41,910,000	0.704	2.491	949,000	3,360,000
0.40	28,980,000	0.866	2.922	807,000	2,720,000
0.50	21,750,000	1.006	3.231	703,000	2,260,000
0.60	17,210,000	1.127	3.441	624,000	1,900,000
0.70	13,890,000	1.241	3.613	554,000	1,610,000
0.80	11,180,000	1.361	3.802	489,000	1,370,000
0.90	8,670,000	1.510	3.943	421,000	1,100,000
1.00	7,130,000	1.632	4.006	374,000	920,000
1.10	5,880,000	1.756	4.105	332,000	780,000
1.20	4,910,000	1.877	4.204	296,000	660,000
1.30	3,910,000	2.036	4.289	256,000	540,000
1.40	3,160,000	2.200	4.387	224,000	450,000
1.50	2,470,000	2.407	4.522	191,000	360,000
2.00	1,186,000	3.178	5.093	121,000	190,000
2.50	828,000	3.591	5.218	96,000	140,000
3.00	542,000	4.048	5.370	71,000	90,000
3.50	351,000	4.495	5.729	51,000	60,000
4.00	201,000	5.030	6.432	33,000	40,000

 Table 19: Campamento Project Mineral Resources - May 2011 Estimate Using Diluted Whole Blocks 

 Measured plus Indicated

Au Cut-	Tonnes > Cut-	Grade>	>Cut-off	Contained Metal	
off	off	Au	Ag		
(g/t)	(tonnes)	(g/t)	(g/t)	Au (ozs)	Ag (ozs)
0.30	24,410,000	1.437	6.294	1,128,000	4,940,000
0.40	20,650,000	1.635	7.045	1,086,000	4,680,000
0.50	17,560,000	1.844	7.792	1,041,000	4,400,000
0.60	15,290,000	2.036	8.486	1,001,000	4,170,000
0.70	13,570,000	2.212	9.161	965,000	4,000,000
0.80	11,930,000	2.413	9.910	926,000	3,800,000
0.90	10,580,000	2.614	10.682	889,000	3,630,000
1.00	9,370,000	2.828	11.494	852,000	3,460,000
1.10	8,230,000	3.074	12.433	813,000	3,290,000
1.20	7,370,000	3.300	13.326	782,000	3,160,000
1.30	6,630,000	3.528	14.204	752,000	3,030,000
1.40	6,030,000	3.744	15.057	726,000	2,920,000
1.50	5,530,000	3.950	15.859	702,000	2,820,000
2.00	3,820,000	4.956	19.690	609,000	2,420,000
2.50	3,020,000	5.676	22.241	551,000	2,160,000
3.00	2,470,000	6.336	24.315	503,000	1,930,000
3.50	2,080,000	6.916	25.874	463,000	1,730,000
4.00	1,785,000	7.439	27.327	427,000	1,570,000

To the authors knowledge there are no environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other relevant issues that would adversely affect this mineral resource.



Likewise to the authors knowledge there are no mining metallurgical, infrastructure or other relevant factors that might adversely affect the resource.

#### 18.0 OTHER RELEVANT DATA AND INFORMATION

There is no additional information or explanation necessary to make this technical report understandable and not misleading.

#### **19.0 INTERPRETATION AND CONCLUSIONS**

Chiapas is the southernmost state in Mexico, bordering on Guatemala. The state lies in the 450kilometre-long volcanic gap between the Trans-Mexican volcanic belt to the northwest and the Central American volcanic arch to the southeast. The area is both volcanically and tectonically active and covers the triple junction of three crustal plates, the North American, Caribbean and Central American. Such tectonically active areas are typical hosts for porphyry / epithermal systems worldwide; however Chiapas has had little previous exploration for reasons that are both geographic and political.

The Ixhuatan property was explored extensively between 2000 and 2009 by MIM, Linear and Kinross through geological, geochemical (stream sediment, soil and rock sampling) and geophysical (magnetic and induced polarization) surveys and more than 89,000 metres of drilling in 342 holes. This work led to the discovery of several mineralized zones including the Campamento (also referred to as the Ixhuatan) deposit, which contains a National Instrument ("NI") 43-101 compliant resource estimate of 1.041 Moz of gold and 4.4 Moz of silver within 17.6 Mt at an average gold grade of 1.84 g/t and average silver grade of 7.79 g/t in the Measured and Indicated categories. In addition, there are Inferred Resources of 0.703 Moz of gold and 2.26 Moz of silver within 21.8 Mt at average grades of 1.01 g/t gold and 3.23 g/t silver, all using a 0.50 g/t gold cut-off. Data density within the Campamento deposit was sufficient to estimate the above mineral resource, but further drilling will be necessary in the other zones prior to estimation of mineral resources for them. Data is considered reliable.

To the extent that the objective of the 2000-2009 programs was to develop a potentially economic gold-silver resource on the Ixhuatan property, there is no doubt that the completed programs met their objective.

The exploration model for the Ixhuatan project involves epithermal Au-Ag systems and Au-Cu-Mo porphyry systems. On the Ixhuatan property, porphyry systems such as Cerro Ia Mina appear to predate epithermal systems such as Campamento, since the Cerro Ia Mina mineralization, involving higher temperature Cu-Mo associated with potassic alteration that formed at mesothermal crustal levels, is now exposed and adjacent to shallow crustal, lower temperature Au-Ag mineralization at the Campamento zone. Additionally, epithermal-style high-sulphidation alteration is shown to overprint the potassic alteration event in the Cerro Ia Mina deposit. This suggests that erosion of the Cerro Ia Mina deposit took place before the epithermal system at Campamento developed and that epithermal fluids, active during formation of the Campamento system, were responsible for the younger high-sulphidation overprint on the Cerro Ia Mina mineralization. Recognition of alteration centres, multiphase intrusions and breccias and the geological environment all suggest an erosional level consistent with the upper portions of porphyry Cu-Au systems.

Recognition of multiple fluid events in the district adds to the complexity of the Ixhuatan property and opens up the potential for adding to the metal budget during each mineralizing event. Overprinting of the district by multiple mineralizing events not only gives rise to enhanced metal budgets in individual mineral systems, but permits the vertical stacking of mineralization through the stratigraphy, thus providing additional targets for exploration.

Epithermal Campamento-style Au-Ag mineralization has a high base metal sulphide content and occupies primary structural fluid-release sites in a thick host rock sequence of fragmental andesitic volcanics in which extensive carbonate-clay alteration has taken place. Mesothermal porphyry-style Cu-Au-Mo



mineralization with associated skarn developed over regionally extensive limestones, represents high-temperature potassic (biotite and K-feldspar) alteration assemblages (and associated chalcopyrite-pyrite  $\pm$  bornite) generated by multiphase K-feldspar phyric calc-alkaline through shoshonitic and alkaline intrusions, with overprinting lower-temperature, clay-alunite ( $\pm$  covellite) dominated high-sulphidation epithermal hydrothermal alteration. Such alteration mineral assemblages are in addition to any supergene oxide gold zone that exists.

Noel White, a world renowned, consulting geologist, with extensive experience in epithermal and porphyry style mineralization and environments, visited the property from June 21 to July 4, 2005. During his visit he evaluated the property by field work, examined much of the drill core, as well as reviewed the data and discussed the project with the field staff. His conclusion is that "the Ixhuatan property is an outstanding project, and it gives Linear Gold a commanding position controlling a highly prospective district" (White, 2005). He also indicates that the "main potential of the Ixhuatan area is for world-class porphyry copper-gold deposits. The setting of the area shows similarities to that of the majority of giant porphyry deposits worldwide: it occurs above shallowly-dipping subduction, where an aseismic ridge is being subducted. The composition of the associated igneous rocks is alkalic, of the shoshonite suite, similar to those hosting such deposits as Grasberg (Indonesia) and Bingham Canyon (USA). The main prospects under exploration in the Ixhuatan area show abundant evidence for porphyry affinities, including very widespread biotite and feldspar alteration, and the appearance along the eastern margin of the area of a very thick advanced argillic lithocap similar to those found over porphyry deposits in other parts of the world. The extent of gold enrichment throughout the area is extraordinary, with highly anomalous (subeconomic) values occurring over very large areas". The author concurs with White's opinion and believes that the Ixhuatan property warrants further exploration to test its potential for both epithermal and porphyry copper-gold deposits, particularly in light of the current high and sustained commodity prices.

#### 20.0 RECOMMENDATIONS

#### 20.1 Program

The Ixhuatan property has demonstrated that is has the potential to host major gold deposits, with a NI 43-101 resource already defined for the Campamento zone and a number of mineralized intersections from other zones on the property.

An initial recommended work program for the Ixhuatan project, Chiapas State, Mexico should be to prepare a preliminary economic assessment which would lead to a pre-feasibility study on the Campamento zone. This would be consistent with the intent and purpose of the option agreement between Cangold and Brigus established on April 25, 2011. The recommended program would be split into two phases, with Phase 1 focused on better understanding the Campamento zone and setting the parameters for a preliminary economic assessment (PEA) in Phase 2. Advancement to Phase 2 is contingent upon favourable results from Phase 1.

Specific goals in the Campamento zone recommended Phase 1 work program are to secure all necessary local community and federal permits, re-open an office and initiate official presence in the project area, confirm the previous drilling assays by twinning several holes and infilling on several sections to review continuity, re-estimate the mineral resource, and delineate the parameters to launch a PEA. The Phase 1 drilling will also provide initial material for geotechnical and metallurgical studies. Location and orientation data for proposed drill holes are listed in Table 20. Over the course of Phase 1 work, appropriate personnel, and / or consulting engineering groups will be recruited to review all the data set from the Campamento zone, review literature, and ultimately consider the most appropriate terms of reference for the PEA. The time frame for Phase 1 will be approximately 8 months from securing of the financing and option.



Hole #	Linear Site	East	North	Azumith	Dip	Depth (m)
CLD-01	IX38	492673	1908314	150	-45	200
CLD-02	IX83	492598	1908298	150	-45	200
CLD-03	IX46/53	492607	1908269	0	-90	150
CLD-04	IX46/53	492607	1908269	150	-45	200
CLD-05	IX98	492595	1908235	0	-90	150
CLD-06	IX98	492595	1908235	150	-45	200
			TOTAL			1,000

Fable 20: Recommended Surface	Drilling, Phase	1
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If the results of Phase 1 warrant further work, Phase 2 recommendations will be with regard to the PEA, and in this regard are general overview estimates in nature, and will be based on results of the due guidance framework in Phase 1. Phase 2, or the PEA, will include commencement of baseline environmental assessment; all permitting, community, and sustainability issues; necessary drilling for detailed geotechnical, metallurgical, and hydrogeological studies; project management and report preparation; processing plant, services and infrastructure engineering; mine planning scenarios; and waste management and water resource engineering.

An additional recommendation (budget item "Exploration") in Phase 1 is to develop exploration models based on the better documented calc-alkalic South American porphyry systems, including those where high-sulphidation epithermal mineralisation is superimposed on more typical, porphyry-style alteration assemblages (e.g., Chuquicamata, Chile). This will guide future work on various other exploration targets, in particular at the Cerro Ia Mina porphyry copper-molybdenum zone with high sulfidation gold zone mineralization.

As part of this approach, detailed paragenetic observations are needed (including documentation of porphyry phases and relative timing of vein and alteration stages). Zircon-bearing porphyries could be dated via U-Pb methods to provide absolute timing on magmatism and mineralisation. A reconnaissance fluid-inclusion study should be considered that may highlight differences in fluid temperature, composition and source among the differing mineral systems on the property, especially in differentiating epithermal from porphryry-style systems, and generate data to define vectors to mineralization.

# 20.2 Budget

All figures are in Canadian dollars.

#### Phase 1

Drilling (H or N size core, oriented, and triple tube method): 1,000 meters @ \$200/m	\$200,000
Assays (500 @ \$30/sample):	\$ 15,000
Up-Date the Mineral Resource Estimate:	\$ 55,000
On site personnel (Community, Geological, Logistics):	\$100,000
Off-site personnel (Legal, Engineering):	\$ 75,000



\$ 40,000
\$180,000
\$ 80,000
\$745,000
\$540,000
\$30,000
\$50,000
\$300,000
\$200,000
\$100,000
\$200,000
\$125,000
\$60,000
\$100,000
\$100,000

# **TOTAL Phase 2:**

# \$1,805,000

The recommended Phase 1 and 2 programs will cost approximately CDN \$2,550,000 to complete.

Respectfully submitted,

"signed"

Philip K. Seccombe, PhD, MAIG EQUITY EXPLORATION CONSULTANTS LTD. Vancouver, British Columbia May 18, 2011 "signed and sealed"

Gary H. Giroux, MASc, P.Eng. GIROUX CONSULTANTS LTD.



Appendix A: References



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# Appendix B: QA/QC Plots

#### **BLANK SAMPLES**

BLK-ALS – Blanks run at ALS BLK-LMS – Blanks run at LMS BLK-SST – Blanks run at SST

# STANDARDS

SF12 – Au Standard with expected value = 0.819 g/t (199 samples)
SJ10 – Au Standard with expected value = 2.643 g/t (81 samples)
OXH29 – Au Standard with expected value = 1.298 g/t (56 samples)
SJ22 – Au Standard with expected value = 2.604 g/t (120 samples)
SF23 – Au Standard with expected value = 0.831 g/t (32 samples)

#### DUPLICATES

Original assays from ALS compared to duplicates from SGS





Date: 8 February 2006





Date: 8 February 2006







Data









Data





Data









Appendix C: Listing of Drill Holes used in

<u>Study</u>



HOLE	EASTING	NORTHING	ELEVATION	HLENGTH	PROJ_ID
IX-09	492517.32	1908333.72	1338.03	159.11	IXHUATAN
IX-102	492887.27	1908411.90	1574.97	300.00	IXHUATAN
IX-11	492539.15	1908319.06	1343.88	163.68	IXHUATAN
IX-12	492600.29	1908344.65	1351.65	153.00	IXHUATAN
IX-13	492447.42	1908320.98	1326.60	136.31	IXHUATAN
IX-14	492445.41	1908374.05	1296.55	121.31	IXHUATAN
IX-15	492635.05	1908382.00	1356.42	127.10	IXHUATAN
IX-16	492609.72	1908403.08	1345.29	165.20	IXHUATAN
IX-17	492620.47	1908306.14	1336.02	173.13	IXHUATAN
IX-18	492481.56	1908144.38	1443.62	164.50	IXHUATAN
1X-19	492669.59	1908382.12	1368.38	151.79	I XHUATAN
IX-20	492639.00	1908294.00	1351.00	154.84	IXHUATAN
1X-21	492647.42	1908339.60	13/9.8/ 1201 EE	131.98	IXHUATAN
IX-22 IX-23	492073.32	1908314.03	1312 55	110.74	TYUUATAN
IX-23 IX-24	492544.09	1908328 73	1352.33	149.00	TYHUATAN
IX-24 IX-25	492010.01	1908358 03	1356 19	103 63	TYHUATAN
IX 25 IX-26	492636 28	1908258 52	1375 76	100.03	ΤΧΗΠΔΤΑΝ
IX 20 IX-27	492653 49	1908281 40	1362 73	143 87	ΤΧΗΠΑΤΑΝ
TX-28	492606.60	1908240.14	1377.23	130.15	TXHUATAN
IX-29	492634.43	1908171.52	1465.32	172.82	IXHUATAN
IX-30	492633.16	1908228.35	1398.05	134.72	IXHUATAN
IX-31	492647.66	1908220.99	1414.52	127.10	IXHUATAN
IX-32	492656.14	1908236.63	1404.80	123.44	IXHUATAN
IX-33	492611.08	1908215.53	1396.15	133.20	IXHUATAN
IX-34	492656.61	1908236.69	1404.85	128.63	IXHUATAN
IX-35	492654.79	1908235.42	1404.74	122.53	IXHUATAN
IX-36	492646.77	1908220.48	1414.51	130.15	IXHUATAN
IX-37	492651.92	1908277.11	1364.15	131.98	IXHUATAN
IX-38	492673.35	1908314.32	1391.55	167.03	IXHUATAN
IX-39	492651.91	1908277.31	1364.15	81.64	IXHUATAN
IX-40	492695.55	1908309.37	1410.47	177.70	IXHUATAN
IX-41	492677.43	1908273.24	1402.15	122.53	IXHUATAN
IX-42	492695.55	1908309.37	1410.47	139.29	IXHUATAN
IX-43	492677.68	1908273.45	1401.84	156.36	IXHUATAN
1X-44	492667.89	1908341.71	1383.10	153.01	I XHUA'I'AN
1X-45	492636.17	1908257.38	13/5.84	142.34	IXHUATAN
1X-40 TX 47	492607.47	1908269.52	1338.17 1345 01	93.57	IXHUATAN
IX-4/	492527.17	1906305.35	1202 00	130.13	IXHUAIAN
IA-40 TV-40	492526.00	1900370.11	1345 01	92.3J 139 70	TYUUATAN
IX-49 IX-50	492526.90	1908303.72	1293 00	92 05	ΙΧΗΟΑΙΑΝ
IX 50 IX-51	492478 72	1908372 83	1311 17	121 31	ΤΧΗΠΑΤΑΝ
TX-52	492478.49	1908372.57	1310.85	119.79	TXHUATAN
TX-53	492704.66	1908160.77	1492.05	330.10	ΤΧΗIJΑΤΑΝ
IX-54	492606.94	1908269.30	1358.15	185.32	IXHUATAN
IX-55	492487.21	1908358.54	1321.31	50.00	IXHUATAN
IX-56	492588.94	1908266.14	1361.50	24.30	IXHUATAN
IX-56B	492588.94	1908266.14	1361.50	399.29	IXHUATAN
IX-57	492513.01	1908139.76	1439.91	85.34	IXHUATAN
IX-59	492572.34	1908210.80	1385.16	235.34	IXHUATAN
IX-60	492529.94	1908236.77	1360.66	116.43	IXHUATAN
IX-62	492770.89	1908248.22	1483.91	396.24	IXHUATAN
IX-63	492533.89	1908263.93	1349.33	163.68	IXHUATAN
IX-64	492572.69	1908210.76	1385.48	303.89	IXHUATAN
IX-66	492570.41	1908210.62	1385.19	227.84	IXHUATAN
IX-67	492634.84	1908256.96	1375.76	283.46	IXHUATAN
⊥X-68	492776.51	1908281.10	1485.70	277.37	IXHUATAN



IX-69	492532.22	1908276.15	1345.77	400.81	IXHUATAN
IX-70	492780.77	1908288.55	1486.17	83.82	IXHUATAN
IX-70B	492776.77	1908284.55	1486.17	358.14	IXHUATAN
IX-71	492622.49	1908350.02	1357.86	327.66	IXHUATAN
IX-72	492578.66	1908277.86	1355.71	400.81	IXHUATAN
IX-73	492331.32	1907940.42	1323.71	301.14	IXHUATAN
IX-74	492501.01	1908222.30	1365.21	339.85	IXHUATAN
IX-75	492371.71	1908236.29	1359.28	376.12	IXHUATAN
IX-76	492621.41	1908434.32	1387.10	408.43	IXHUATAN
IX-77	492755.82	1908469.99	1475.83	382.52	IXHUATAN
IX-78	492506.60	1908338.55	1331.27	53.95	IXHUATAN
IX-78B	492506.60	1908338.55	1331.27	650.75	IXHUATAN
IX-79	492826.34	1908328.95	1540.21	201.85	IXHUATAN
IX-80	492828.39	1908254.32	1540.73	163.98	IXHUATAN
IX-81	492463.94	1908307.01	1321.11	444.98	IXHUATAN
IX-82	492574.22	1908280.50	1354.71	155.45	IXHUATAN
IX-83	492598.15	1908298.19	1337.58	53.34	IXHUATAN
IX-84	492637.00	1908375.65	1358.68	80.77	IXHUATAN
IX-85	492694.55	1908308.19	1410.61	91.44	IXHUATAN
IX-86	492676.33	1908270.75	1402.15	160.02	IXHUATAN
IX-87	492471.05	1908201.58	1390.85	100.58	IXHUATAN
IX-88	492696.15	1908308.44	1410.59	132.58	IXHUATAN
IX-89	492692.92	1908371.86	1382.36	171.30	IXHUATAN
IX-90	492573.04	1908280.67	1354.65	100.50	IXHUATAN
IX-90B	492572.03	1908280.87	1354.68	606.00	IXHUATAN
IX-91	492692.46	1908372.69	1382.41	95.40	IXHUATAN
IX-92	492730.66	1908382.09	1405.86	208.79	IXHUATAN



Appendix D: Semivariograms for Gold and

<u>Silver</u>





















Appendix E: Qualified Persons' Certificates



# QUALIFIED PERSON'S CERTIFICATE: P.K. SECCOMBE

I, Philip K. Seccombe, MAIG, do hereby certify:

- THAT I am a Consulting Geologist with an office at my residence, 124 Andrew Road, Valentine, NSW, Australia.
- THAT I am co-author of the Technical Report entitled "2011 Summary Report on the Ixhuatan Advanced Stage Gold Project, Chiapas State, Mexico" (the Technical Report") and dated May 18, 2011. This report is based on a study of the data and literature available on the Ixhuatan Project. I have visited the property on May 12 and 13, 2011.
- THAT I am responsible for all sections of the Technical Report with the exception of Section 17.0 (Mineral Resource and Mineral Reserve Estimates).
- THAT I am a Member in good standing of the Australian Institute of Geoscientists.
- THAT I graduated from the University of Melbourne, Australia with a Bachelor of Science degree in Geology in 1966 and a Master of Science degree in 1968. I graduated from the University of Manitoba, Canada with a Doctor of Philosophy degree in 1973. I have practiced my profession continuously since 1968.
- THAT since 1968, I have undertaken mineral deposit teaching, research and exploration involving the commodities gold, silver, copper, lead, zinc, nickel, platinum, tin and uranium, in Australia, Canada, Argentina, Peru, Fiji, Indonesia, Austria and USA.
- THAT I have read the definition of "independence" set out in Part 1.4 of National Instrument 43-101 ("NI 43-101") and certify that I am independent of Cangold Limited and Brigus Gold.
- THAT I have had no prior involvement with the Ixhuatan property which is the subject of this report.
- THAT I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
- THAT I have read NI 43-101, its Companion Policy 43-101CP and Form 43-101F1 and that this report has been prepared in compliance with NI 43-101.
- THAT as of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
- THAT I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated at Vancouver, British Columbia, this <u>18th</u> day of May, 2011.

\_\_\_\_\_"signed"\_\_\_\_\_ Philip K. Seccombe, PhD, MAIG


## QUALIFIED PERSON'S CERTIFICATE: G.H. GIROUX

I, G.H. Giroux, of 982 Broadview Drive, North Vancouver, British Columbia, do hereby certify that:

- 1) I am a consulting geological engineer with an office at #1215 675 West Hastings Street, Vancouver, British Columbia.
- 2) I am a graduate of the University of British Columbia in 1970 with a B.A. Sc. and in 1984 with a M.A. Sc., both in Geological Engineering.
- 3) I am a member in good standing of the Association of Professional Engineers and Geoscientists of the Province of British Columbia.
- 4) I have practiced my profession continuously since 1970. I have had over 30 years of experience calculating mineral resources. I have previously completed resource estimations on a wide variety of precious metal deposits both in B.C. and around the world, including La Colorada, La Jojoba and Livia de Oro, La India and Kisladag.
- 5) I have read the definition of "qualified person" set out in National Instrument 43-101 and certify that by reason of education, experience, independence and affiliation with a professional association, I meet the requirements of an Independent Qualified Person as defined in National Instrument 43-101.
- 6) This report titled "2011 Summary Report on the Ixhuatan Advanced Stage Gold Project, Chiapas State, Mexico" and dated May 18, 2011 is based on a study of the data and literature available on the Ixhuatan Project. I am responsible for the Resource Estimation summarized in Section 17, which was completed in Vancouver during 2006. To my knowledge no additional drilling has been completed since this estimate and therefore the results are still current and relevant. I have visited the property on April 19-20, 2006.
- 7) As stated above I have completed a Resource estimate and 43-101 Report on this property in 2006. I have no interest in this property.
- 8) I am not aware of any material fact or material change with respect to the subject matter of the technical report that is not reflected in the Technical Report.
- 9) I am independent of the issuer and of the property vendor, applying all of the tests in section 1.4 of National Instrument 43-101.
- 10) I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 11) As of the date of this certificate, to the best of my knowledge, information and belief, this technical report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 18th day of May, 2011

"signed and sealed"

G. H. Giroux, P.Eng, MASc.

