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**COST-BENEFIT STUDY OF THE MARLIN MINE
IN SAN MARCOS, GUATEMALA**

Guatemala, May 7, 2010

INTRODUCTION

From the start, operations at the Marlin Mine have led various sectors of Guatemalan society to debate and confrontation, which transcends even the national level. On one side, the company operating the mine in question manifests that mining exploitation brings development for the people and towns surrounding the mine, and that the environmental issues have been handled appropriately; on the other side social sectors, the Church, environmentalists, jurists, labor unions and the affected communities, among others, cite the danger for contamination of the environment, little social-economic compensation for the surrounding population, the lack of consultation with the directly affected populations, lack of respect for constitutional norms, and even call for the closure of the mine.

The Marlin Mine is operated by Montana Exploradora de Guatemala, S.A., which belongs to the Canadian company Goldcorp Inc. and is located in the municipalities of San Miguel Ixtahuacán and Sipacapa, in the department of San Marcos. The company carries out open-pit as well as subterranean mining activities extracting gold and silver which are entirely for export.

Mining activity, by its nature, brings impacts upon the environment and consequently upon local inhabitants. For these reasons the Constitution of the Republic of Guatemala itself demands that this type of exploitation of natural resources be done rationally and with technical expertise. This study was carried out to support the activities of the Ministry of the Environment and Natural Resources (*MARN* by its Spanish acronym), to contribute to gathering elements that allow for rational data for judgment and evaluation of the principal costs and benefits that the Marlin mine will generate for the country. The timeframe of the study runs from the end of the year 2005 until June, 2009, although a brief medium and long term analysis is also added.

Different issues are explored throughout four chapters, with the respective conclusions detailed at the end of the study.

Chapter I contains a brief historical summary of mining in Guatemala, as well as information regarding the legal framework within which mining activities in the country must be carried out. The first chapter also includes details about the presence and activities of the mining company on a national level and general information about the municipalities of San Miguel Ixtahuacán and Sipacapa. Within the legal framework an analysis highlights the principal national and international legal instruments that have remained unfulfilled, community consultations and respect for the values, identity, traditions customs and unique rights of the rural and indigenous populations.

Chapter II discusses the principal economic and social benefits obtained by the country through operations at the Marlin Mine. These benefits include royalties, income and other taxes, the employer's contribution to the Guatemalan Social Security Institute, the salaries payroll and generation of employment. On a macroeconomic level the mine brings access to foreign currency and plays a role in the Gross Domestic Product (GDP). This chapter also presents an analysis of the distribution of the Gross Value of Production between the Montana Exploradora company and the Guatemalan State.

Chapter III contains the principal costs associated with the operation of the Marlin Mine. Environmental costs are related to impacts upon water and air, noise and vibration levels, as well as overall effects on the landscape. Relevant social costs include immigration, health effects and social conflict. Other principal costs include lost opportunities for the country such as charges for the use and contamination of water and lost royalties. This chapter ends by highlighting other costs and aspects that increase the negative impacts of mining activities such as institutional costs, uncollected taxes, dependence upon international markets and the scant value added and few contributions of mining to sustainable development.

Chapter IV cites the Cost-Benefit Ratio derived from the corresponding comparisons of costs and benefits. This Ratio is a necessary numerical indicator for evaluating the economic and social viability or non-viability of the analyzed mining project. The chapter ends with a brief analysis of the medium and long-term impacts.

EXECUTIVE SUMMARY

This study evaluates the costs and benefits that the operation of the Marlin Mine, operated by Montana Exploradora de Guatemala, S.A. and owned by the Canadian company Goldcorp Inc., has generated for Guatemala from the end of 2005 through the month of June, 2009. The study also presents a medium and long-term analysis.

From the start the principal motivation for mining activities, especially mining for precious metals, has been the generation of wealth. However, the distribution of this wealth has been unequal and exclusive. Likewise, from colonial times to the present, the nature of extractive operations and the effects they cause have led to high levels of conflict.

An analysis of the legal framework of Guatemala demonstrates that in the case of the Marlin mine, the State has violated national and international law, especially on the issues of *community consultations* and respect for the values, identity, traditions, customs and unique rights of the indigenous and rural populations. On the international legal stage, the study finds that the State has not complied with Convention 169 of the International Labor Organization (ILO) on Indigenous and Tribal Peoples in Independent Countries, nor has it respected the framework established by the United Nations Declaration on the Rights of Indigenous Peoples. On a national level non-compliance can be found with respect to the Agreement on the Identity and Rights of Indigenous Peoples as part of the Peace Accords, as well as to the Municipal Code, Law on Urban and Rural Development and the Constitution of the Republic of Guatemala itself.

In the analysis of the municipalities of San Miguel Ixtahuacán and Sipacapa, in the department of San Marcos, it was found that poverty abounds and that the greater part of the population works in small-scale agriculture. Principal economic activities include trade, planting and harvesting corn, beans, potatoes and coffee, and some tourism. Mining operations, with their own particular characteristics and high levels of conflict, can be identified as a relatively new activity in these areas.

With respect to the volumes and values produced, this study determined that from 2005 – 2008 the Marlin Mine produced and exported 755.63 thousand troy ounces of gold and 9.14 million troy ounces of silver. The international prices per troy ounce of exported gold have risen from US\$ 444.74 in the year 2005 up to US\$ 915.11 in the first six months of the year 2009. Likewise, the prices per troy ounce of silver have gone from US\$ 8.44 to US\$ 15.01 over the same timeframe. This

shows a gross value of production of US\$ 693.84 million, or 536.89 billion in Guatemalan Quetzals.

With respect to the benefits, it can be shown that from 2005 – 2009 the total rose to 748.87 million Quetzals. These benefits include, in order: payment of salaries, Income Taxes, royalties, other contributions and the employer's contribution to the Guatemalan Social Security Institute. Other additional benefits are also added, such as improved salaries and buying power of mining workers, generation of Value Added Sales Tax and local purchases made by the Marlin Mine. The macro-economic contributions include the generation of currency and the role of mining in the Gross Domestic Product (GDP), although the latter is not very significant.

When income is compared to the gross value of production, it shows that the Country-State only receives 13.9%; the company operating the mine receives the remaining 86.1%. This distribution of the value of production is disproportionate for the company, given that the State is the owner of the gold and silver, and that mining activity also brings great environmental, social and economic impacts.

In order to quantify costs representative values and assumptions were used in certain cases. The various costs identified and analyzed were subdivided in three principal categories: environmental and social costs, and loss of opportunities.

With respect to the environmental costs it was confirmed that the operations of this mine require enormous quantities of water for processing, as well as the use of various dangerous chemical compounds with high potential for contamination, including cyanide and others. For these reasons members of affected populations feel that the availability and quality of water for their own consumption and hygiene is threatened, as well as water for irrigation of certain crops and raising livestock.

With respect to the social costs, the impacts upon people's health and the social conflicts generated by mining operations were identified as the most relevant aspects.

In an analysis on the costs of lost opportunities, it was determined that the most meaningful and measurable cost was that of *lost royalties*, which includes income lost to the national treasury due to granting preferential taxation requirements for mining activities; royalties were reduced from 6% to 1% through changes in the previous and current Mining Laws. Likewise there are alternative costs that include the lack of payments for the use and possible contamination of water, and the cost of opportunities lost by not delegating the operation of the Marlin Mine to alternative structures, such as through the figure of a *sub-contract*.

In total the income for and costs to the country in the year 2008 reached 268.05 million Quetzals and 940.26 million Quetzals, respectively; meanwhile over the course of the period from 2005 – 2009 the totals were 748.87 million Quetzals and 1.366 billion Quetzals. Given these values the Benefit-Cost Ratio shows that the costs greatly outpace the benefits, with a Benefit-Cost Ratio (BCR) of 3.51. Other effects exist that were hard to quantify economically, yet these effects exist and make mining operations more damaging still for the country; if these effects could be included they would result in a BCR that is weaker still.

It is assumed that the expected conditions in the medium term will be basically similar to those observed in the year 2008 (short term), and as such the ratio between benefits and costs will stay proportionate to what was observed in said year, though the totals may be different.

The study culminates in a brief exposition of the long term conditions considered, starting with the closure of the mine which, according to the expected exhaustion projections for gold reserves, will be in the year 2019. The analysis for this period is related to the liabilities or environmental damages post-closure or abandonment of the mine which, according to specialists, may last thousands of years or more depending on their magnitude. Changes provoked in the relief and geomorphology of the terrain, acid mine drainage (AMD) and ongoing damages to the environment and the health of people and fauna are included in the environmental liabilities generated by mining operations. Likewise the study highlights the rigid and demanding position that the governmental authorities should adopt given this situation, including the importance of demanding that the companies (if future projects are eventually approved) create a possible compensation fund in the form of a *mining trust*.

The study's conclusions may be summarized as follows:

- ✓ The Marlin Mine and its operator Montana Exploradora de Guatemala, S.A., owned by the Canadian company Goldcorp Inc., operate in a climate of illegality with respect to the unique customs and values of the affected peoples. The Mine does not comply with national and international laws that regulate its activities, especially with respect to the issue of community consultations.

On the international level, the State has not complied with ILO Convention 169 on Indigenous and Tribal Peoples in Independent Countries, nor has it complied with the guidelines established in the United Nations Declaration on the Rights of Indigenous Peoples. By declining to consult with affected

populations, there is not only a violation of these laws but also a disregard to the worldview of the indigenous peoples.

At the national level non-compliance can be found with regard to the Agreement on the Identity and Rights of Indigenous Peoples as part of the Peace Accords; as well as the Municipal Code, the Law on Urban and Rural Development and the Constitution of the Republic of Guatemala itself.

- ✓ The threats felt by the population in the areas of influence of the mine including the destruction and contamination of natural resources, especially land and water, as well as damages in the health and livelihoods of the inhabitants together with non-compliance of the aforementioned legal instruments, have been the detonators for ongoing social conflict and the rejection of mining operations.
- ✓ Social conflict generated by mining operations, especially by the Marlin Mine, is growing worse in the country and can reach a level that affects governability. If a solution is not found, this situation will bring high social and economic costs. A comprehensive reform of the economic, environmental and social aspects of the Mining Law must be on the agenda in the search for a solution to this social conflict and future conflicts that may be generated.
- ✓ It is clear that there are economic benefits that can be derived from the operations of the Marlin Mine. Despite this, when these benefits are compared to the distribution of the value of production, without including the economic, social and environmental impacts, it is clear that the distribution is disadvantageous to the State, given that the State is the owner of the gold and silver resources. According to the data collected in the study, 13.9% of the estimated gross value of production of the Marlin Mine goes to the State, while 86.1% goes to the mining company.
- ✓ The social benefits of the Marlin Mine include the creation of jobs; both jobs directly as well as indirectly created help to a certain extent in order to alleviate the problem of unemployment in the country, accentuated by the recent world economic crisis. However, the temporary nature of the operations at the Marlin Mine and their high dependence on the behavior of international markets, combined with the environmental effects or hazards caused by the operations, are factors that seriously limit the contributions that the company can make in the immediate future for the sustainable development of the areas where mining operations are carried out as well as other areas of influence.

- ✓ The net influx of foreign currency derived from mining activity is small, and the role of mining in the Gross Domestic Product is irrelevant (1.48%). Given this situation it can be found that the economic activity of the country does not show a high dependence on mining activities, such as is the case of other countries.
- ✓ With respect to cyanide, environmental problems are due mostly to poor handling and management, and the permanent contact that people have with this highly toxic chemical, as well as the imminence of the discharge of residual waters into nearby rivers due to filtration that may occur, or is already occurring, in the floor and walls of the tailings pond.
- ✓ The results presented by the Peace and Ecology Pastoral Commission (COPAE by its Spanish acronym) as well as by other independent investigators with respect to the existence of heavy metals in nearby rivers should be taken into account, especially by government authorities. Likewise the opinions and information presented by the population in the areas of influence of the mine should be taken seriously, as well as reports of destruction and contamination of natural resources, damages to housing and the health and livelihood of the inhabitants.
- ✓ With the values obtained, the costs outweigh the benefits; using the year 2008 as a period of reference, the proportion of the Cost Benefit Ratio is 3.51. The costs are far more than the benefits obtained, and as such the logic for economic evaluation would suggest that the Marlin Mine project is not economically or socially viable for the country
- ✓ The aggregate of the environmental, social and cultural effects that are present but that were not able to be fully economically quantified may further elevate costs, making the project totally unviable for Guatemalan society. Likewise the effects and costs of environmental liabilities or damages after the closure or abandonment of the mine must be taken into account.