INDEPENDENT TECHNICAL REPORT
LA PALMICHALA MINE GOLD PERMIT, ANTIOQUÍA (COLOMBIA)

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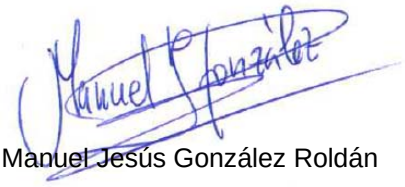

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1. SUMMARY

The Palmichala permit, owned by Arcángel de Jesús Córdoba, is located in the municipality of Remedios, in the Nordeste subregion of the Antioquía Department, Colombia.

La Palmichala is exploiting a vein system, corresponding to the already known model of “orogenic quartz vein” widely described in northern Colombia.

The property has a history of over a century of mining. A British company started exploiting some mineralized vein structures. By the mid-twentieth century came Mr. Berardo Córdoba and acquired the mining rights, the mining of Palmichala continued by his sons.

Currently, Palmichala mine is operating under a yearly License for Exploitation, reporting to the Ministry of Mines and Energy to obtain the Mining Authorization.

In 2013, GREEN MINE INTERNATIONAL CORPORATION commisioned to CONSULTORES INDEPENDIENTES EN GESTIÓN DE RECURSOS NATURALES S.A. (CRN) the preparation of a Technical Report under the *Canadian Securities Administrators National Instrument 43-101 Standards of Disclosure for Mineral Projects* (NI 43-101).

The Segovia-Remedios Mine District (SRMD) is located in the eastern margin of the Central Cordillera, in the Nordeste sub-region of the Antioquía Department, Colombia. This mining district has been a gold productive area since 150 years.

The mineralized seams in the district can be defined as auriferous quartz veins with multiple orientations and dip.

In the Palmichala permit, the main ore body can be defined as a relevant fragile structure, 5.5-7.5 m thick, with N30ºE strike and 40-50º dipping to the E-SE. The vein system is made up by two main veins, 1-2 m thick, being La Criolla at footwall and La

Palmichala at the hanging wall of the fragile structure.

It is probably that the vein system is continuous until the end of the property, 550 m to the NE from the end of the current exploitation. The structure is continuous in depth, the current mining operation is 100 m in depth from the mine access, and old drilling information suggests its continuation, at least, 100 m from the current operation level.

It was undertaken a systematic sampling on the veins that are under exploitation in La Palmichala mine. The samples have been taken, in 10 cm wide channels and 5 cm deep, on the outcropping vein in the exploitation drift and sides of the galleries. The samples features, representativeness and sampling procedures are described in the Item 11 of this report. The number of samples was 38.

The samples preparation and the analyses were made by Actlabs in their laboratory of Río Negro (Antioquía, Colombia).

The samples were weighted, dried and crushed (jaw crusher) up to 90 % passing 2 mm. Once homogeneous, the samples were splitted (250 g) and pulverize (mild steel) to 95% passing 105 µm. Finally, it was analyzed 30 g of this last sample.

The Au has been analyzed by FA (fire assay), being using the gravimetric when the result was higher than 5 ppm. The AA (atomic absorption) was undertaken for Ag, Pb, Zn and Cu. A complementary ICP multi-element assay has been made for the definition of elements that could influence the metallurgical processes as the As, Se, Te, Hg, Sb, etc.

At La Palmichala vein, the Au results range from 1.20 to 9.62 ppm, with a weighted mean by thickness of 4.24 g/t, being the average thickness of 114 cm. The Ag grade range is similar to Au, with a weighted mean of 4.33 g/t for the vein thickness.

At La Criolla vein, the Au range of the values is wide from 0.84 to 11.20 ppm. The weighted mean to the thickness is 3.12 g/t, being the average thickness 131 cm. The Ag weighted mean for the thickness is 2.16 g/t.

According to a thicker fragile structure, La Criolla and La Palmichala veins occurs at the footwall and hanging wall of a major structure. This structure includes granodiorites and aphanitic mafic rocks. A complementary sampling on these sections was undertaken, in crossing tunnels (called “cruceros”), level 595, separated by 20 m in the SW and Central areas of the Palmichala underground mine.

- In the SW section, it was defined a 7.25 m thick structure. The Au weighted mean grade is 3.88 g/t, the Ag grade is 0.97 g/t.

- The Central section defined a 5.5 m thick structure. The Au weighted mean grade is 2.15 g/t, the Ag grade is 8.95 g/t.

The results for the sections are interesting but it is needed to establish its continuity for the whole Palmichala mineralization area. But it can be assumed the possibility of an structure in the area susceptible for be mined of 5-7 m thickness.

In the La Palmichala permit, outside of Palmichala and Criolla veins, has been identified a lot of mineralizations belonging to three vein systems. These mineralizations are (or were) under mining in artisanal works, limited to shallow levels.

All the samples of the mineralization, channels, chips and fragments are remarkable in Au content, independently to the vein sampled. The extension and variety of vein mineralization suggest an important auriferous potential. The Ag and base metal content are low, with only a few samples containing galena and sphalerite.

Since the last 40 years, La Palmichala mine has been one of the most economically profitable in Remedios, despite of being exploited and have a mining beneficiation at low scale.

In the 70’s the exploitation was limited to the altered zones, by extracting the richest mineral with a rate of 2 t/day. It was beneficiated by using amalgamation with 20 ball mills. The recovery rate was below 40 %.

In the 90’s, the beneficiation process was improved, but still as a batches system. The main changes were:

- A primary crusher with balls mill of continuous feeding
- A concentration system with a jig and a german table
- Grinder for fine size before cyanidation

The process rate was 8 t/day. The global efficiency in gold recovery was below the 60%.

Then, the Laboratory of Materials of the National University of Colombia started a research for determination of the better design for gold recovery The gravimetric concentrator, amalgamation and cyanidation were determined as the best process by using a laboratory scale study and a composite of samples from the mine operation at that time. The recovery in the test was 91.3 %.

Currently, the exploitation and mineral processing is developed by an external company of mining operations, extracting 35 t/day. The beneficiation is undertaken in the Quintana plant, in the road to Santa Isabel, 30 minutes from Remedios. The processing plant of Quintana equipments are conventional, regarding to this type of mineralization as crushing, classification, wet mill, gravimetric concentration, flotation, re-grinding, lixiviation and precipitation. This plant is not using mercury at any of its stages. From October to December 2012, the gold recovery is around 90 %.

2. INTRODUCTION AND TERMS OF REFERENCE

GREEN MINE INTERNATIONAL CORP. commissioned to CONSULTORES INDEPENDIENTES EN GESTIÓN DE RECURSOS NATURALES S.A. (CRN) the preparation of a Technical Report under the *Canadian Securities Administrators National Instrument 43-101 Standards of Disclosure for Mineral Projects* (NI 43-101). CRN was entrusted to design the scientific and technical methods, exploration targets and sampling method.

The works and practice involved in the development of this technical report are under the *Exploration Best Practices Guidelines* proposed by the Canadian Institute of Mining and Metallurgy (CIM).

2.1. CRN QUALIFICATIONS

Consultores Independientes en Gestión de Recursos Naturales, S.A. (CRN) is a completely private limited company that does not depend on any industrial or financial group. It is registered in the Companies Registry of Madrid in Volume 12,239, Folio 64, Page M-193751, with Tax Registration No. A81758542.

The company aims to provide its clients with an independent consulting and engineering service in fields related to Subsoil Resources and Earth Sciences, using the most advanced methods and technologies within the framework of a certified Quality Management System. CRN has a technical team comprising over 11 highly qualified professionals: mining engineers, geologists, hydrogeologists, geological engineers and environmental technicians. CRN also has the collaboration and assessments of independent international experts.

This technical report was supervised and compiled by Mr Jesús Ángel Fernández Carrasco, BSc. in Geology. Mr Fernández Carrasco is Managing Director and founding partner of CRN since 1997. He achieved international experience in mineral deposits

studies since 1972.

In this report and field supervision has been involved also:

Dr. Fernando José Palero Fernández, is a collaborator of CRN since 1997. Dr. Palero achieves more than 30 years of international experience in mapping, resources, drilling campaigns, structural and mining geology consultancy in Europe, Africa, Central and South America in several types of mineralizations.

Dr. Manuel Jesús González Roldán is project geologist in CRN since 2011. Dr. González has been involved in international mining projects since 2003. He achieves international experience in Europe, Africa, Central and South America as resource geologist, geochemist, 3D modeler and mine planning.

On behalf of CRN they have developed independent technical reports in Algeria, Angola, Argentina, Burkina Faso, Colombia, Dominican Republic, Guinea Conakry, Liberia, Mauritania, Mexico, Panama, Senegal and Spain.

2.2. SCOPE OF WORK

This independent technical report under the NI 43-101 is included in the tasks addressed by Green Mine International Corp to CRN, including the following issues:

- Planning for initial underground recognition and mapping of the mine activities in “La Palmichala” permit.
- Underground and field sampling, laboratory assessments and geo-statistics data treatment.
- Geological data integration and selection of area of interest.
- Detailed scale topography, geological model, block model, evaluation of resources and Pre-feasibility study.

2.3. INFORMATION SOURCES

The meetings between Green Mine International Corp and CRN teams provided the initial source of information to undertake the planning of this technical report. In these meetings the team of Green Mine International Corp indicated the areas under exploitation in the “La Palmichala” permit during the last six years. This provides the initial areas of interest for field recognition.

The fieldwork exploration and sampling campaign planned by CRN provided the main source of information for this report.

2.4. ON-SITE VISIT AND SUPERVISION OF WORKS

The CRN team on field was made up by the CRN Project Geologist Dr. Manuel Jesús González Roldán (PhD Geo) and Dr. Fernando Palero Fernández (PhD Geo). The visit to the “La Palmichala” permit was from January 20th to January 30th for the development of underground research, field reconnaissance, sampling and mapping of mine activities of the area of interest. The sampling campaign was done under the direct supervision of the CRN team. CRN team controls also the samples storage and the delivery of the samples to the certified laboratory which was done on January 26th. The qualified person certifies that the sampling and delivery was done following the NI 43-101 and CIM guidelines.

The certified laboratory chosen was Actlabs Colombia SAS, located at Zona Franca de Rio Negro, Bodega 172 and 173, Antioquía (Colombia). The Actlabs facilities were supervised on January 21st during a meeting with the Managing Director and the Technical Manager. At that meeting it was established the analytical method and delivery terms regarding to the NI 43-101 report.

During the field visit CRN was supported by a Colombian technical staff assambled by Green Mine International Corp, and in particular CRN acknowledges the participation of Mr Luis Fernando Arias BSc in Mining Engineer; Prof. Juan David Pérez Schile MSc

in Mining Engineer; Mr. Carlos Alberto Alzate Acevedo MSc in Chemical Engineer and the exploration geologist Mr. Lucas Vasquez BSc in Geology.

2.5. DISCLAIMER

This report is authored by Mr Jesús Ángel Fernández Carrasco, “qualified person” for the purposes of national instrument NI 43-101, professional geologist fellow of the European Federation of Geologists, valid until 2014 , with title number 948. Managing Director and founding partner of CRN.

3. RELIANCE OF INFORMATION

The opinion contained in this report was sourced from CRN “qualified person” and all information sourced on Green Mine International Corp. technicians during the investigations. CRN has reviewed information received from Green Mine International Corp. regarding to La Palmichala exploitation, Quintana processing plant, licensing reports and researches.

CRN is totally independent to Green Mine International Corp., and the results of this report are not depending on agreements, understandings or mutual consent.

La Palmichala mine is under legal operation under the current owner. CRN has relied on ownership information provided by Green Mine International Corp. CRN received a copy of official permit title and exploitation licenses. The information regarding the project title and licenses are included in the appendix I, in this report.

The data of production in La Palmichala (listed in the issue of “Recovery Methods”) have been obtained by the Green Mine Solutions SAS team, provided by the current mining operator. CRN is totally independent of these data, listed as the history of the mining operation development.

All economical balances have been provided by Green Mine International Corp. to CRN.

4. PROPERTY DESCRIPTION AND LOCATION

The Palmichala permit is located in the municipality of Remedios, in the Nordeste subregion of the Antioquía Department, Colombia (Fig. 4.1). Its surface is 96.75 ha (0,9675 km^2) and it is defined by a polygon with the projected coordinates given in the table 4.1.

The mine title property code is T59005 (RMN: GARM-01) and it is known as La Palmichala. The surface of the property is 96 ha and 7,500 m^2. The permit is bounded by a polygon whose corners are the following coordinates:

TABLE 4.1. LA PALMICHALA PERMIT CORNERS. DATUM BOGOTÁ OBSERVATORIO

CORNER	EASTING	NORTHING
1	932.644	1.269.245
2	931.144	1.269.245
3	931.144	1.269.890
4	932.644	1.269.890

The License of Exploitation of La Palmichala is granted by order of the *Agencia Nacional de Minería* (National Bureau of Mines) of Colombia. It is valid for 10 years, and renewable a maximum of 2 periods in accordance to the Mine Code of Colombia. The license is being converted to a concession of 30 years.

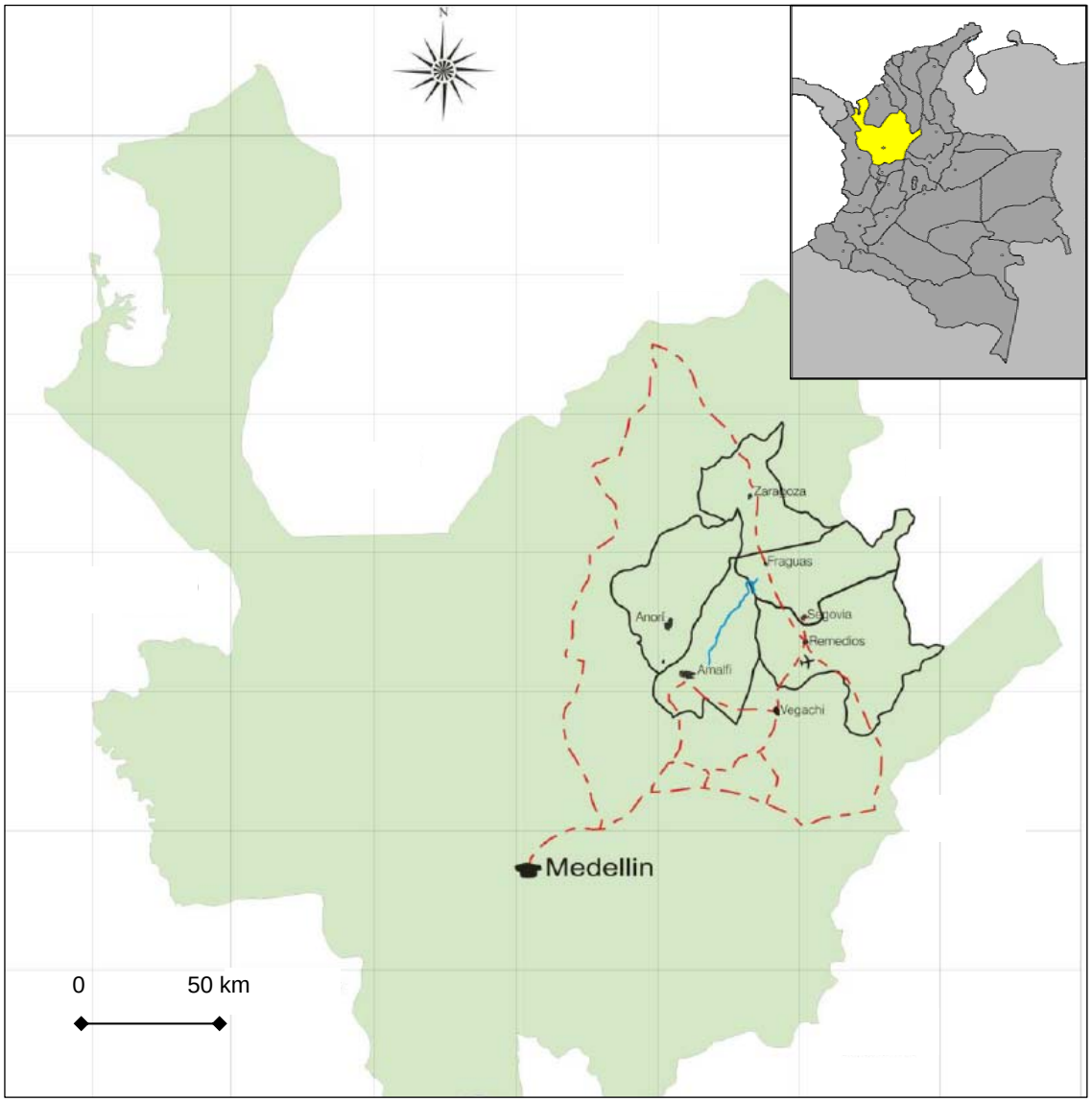


Fig. 4.1.- Sketch map of Antioquía region, Colombia.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURES AND PHYSIOGRAPHY

5.1. ACCESSIBILITY

La Palmichala permit is close to the village of Remedios. Its estimated population, in 2010, was about 9.400 in urban areas and 16.500 in rural areas. It is located 200 km to the NE of Medellin by road (4-5 hours by vehicle). Remedios also counts with the Regional Airport of Otú (OTU) with a daily flight between Remedios and Medellin. There is also a helicopter transportation services at the airport. The road to Remedios connects with the property and the current mine facilities by 300 m sand road.

Picture 5.1.- Remedios town in the back of the picture.
View north to south in La Palmichala property.

Fig. 5.1.- Roads map of northwestern region of Antioquía. Roads from Medellin to Remedios.

5.2. CLIMATE

This natural region is called Andean Region. There are two rainy seasons from October to May (450-550 mm/month) and a dry season from December to January (20-80 mm/month), with annual rainfall of 1.600 mm. The climate is optimal for farming, agriculture and industry.

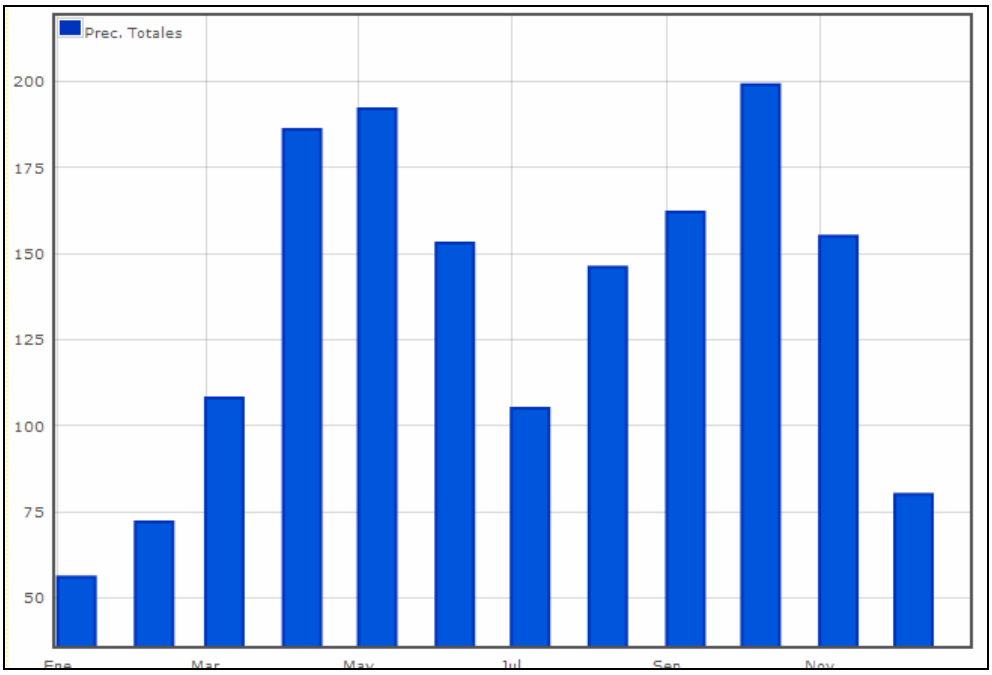


Fig. 5.2.- Annual rainfall in Remedios area. January to December.

The temperature is mild to warm, with an average annual temperature of 24° C, with maximum temperatures of 33° C and minimum of 18° C. The operating season covers the whole year due to the right climate and road conditions.

5.3. LOCAL RESOURCES

The Palmichala facilities are less than 300 m from the town of Remedios. The houses are close to the southern boundary of the permit. The road that connects the facilities to the city is the main access of workers and suppliers between the mine and the city.

The mine transportation of material is made by the same road has the access to the mine. The long term mine industry in the area provides the mine supplies for all current work.

The current area of the Palmichala permit is 96.75 ha, it is enough to assure the sufficient surface for mining operations. During the fieldwork it was also discussed with the Green Mine International Corp team the appropriate areas to relocate the storage areas, potential waste disposal areas, and also the potential processing plant.

5.4. INFRASTRUCTURES

Currently the mining operations are sending the mineral by truck to an external processing plant that centralizes the mining operations in the Remedios-Segovia zone.

The mining area has power supply from Remedios town. There is also water supply and several streams all over the property that assure the water supply for the project.

Regarding to the mining personnel, the main economical activity is the Au mining industry, which implies enough experienced personnel in semi-industrial mining. Miners are use to work with pneumatic hammer, hoist machinery for the bulk material, etc. It will be necessary to train the personnel for special mining machinery and technology.

5.5. PHYSIOGRAPHY

The Palmichala area has several hills and rough terrain, with small streams. There are less than 150 m of difference between the top and bottom of the hills. The elevation in the property varies from 570 to 710 m. The vegetation of the area is mainly prairie due to the livestock uses of the area, only moderate forest along the streams.

During the reconnaissance of the permit, it was studied by the Green Mine International Corp team the areas for storage, tailings and waste.

Picture 5.3.- Panoramic view of the Palmichala property. View south to north.

The hydrographical network in the area is plotted in the figure 5.2. The active streams in the area follow the regional E-W, N-S and N30ºE trend. The streams are tributary of Ité River basin, affluent to Cimitarra River and finally to the Magdalena River. It is a permanent water flow to the East in this area, providing water supply the whole year.

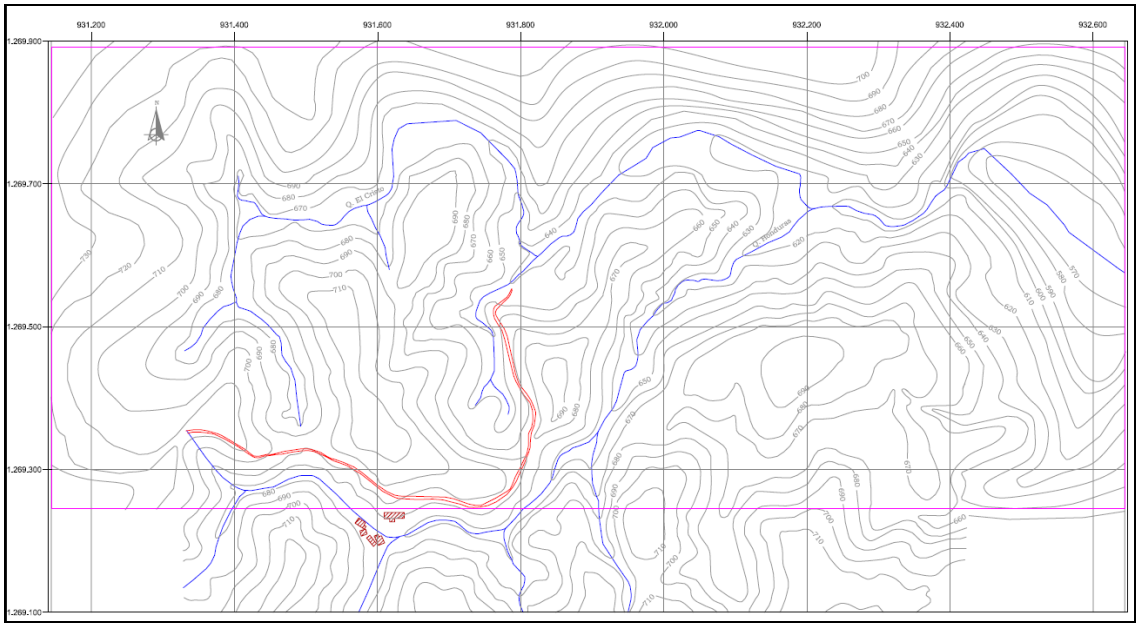


Fig. 5.4.- Hydrographic network in La Palmichala property.
Limits of the permit colored in magenta.

6. HISTORY

The property has a history of over a century of mining. A British company started exploiting some mineralized vein structures. By the mid-twentieth century came Mr. Berardo Córdoba and acquired the mining rights, the mining of Palmichala continued by his sons.

In the 90's of the past century Procoloro Colombia Ltda, a Canadian company entered into a partial assignment of rights to Mr. Arcángel de Jesús Córdoba Velásquez (son of the former owner) and the owner of the property located to the north, known as Santa Cruz. The partial assignment of rights was determined on August 1995.

The union among Palmichala, Santa Cruz and a small property in between was called Palmisan. Conversations with formerly managing exploration geologist of Procoloro indicate the existence of 45.000 m of perforation in the Palmisan property.

Because of the price of gold in 1996, Procoloro return the mining rights to its former owner. In October 2008 it was approved the re-assignation of the mining rights to Mr. Arcángel de Jesús Córdoba Velásquez, coming from Procoloro Colombia Ltda and AMG Sociedad Minera Ltda.

Currently, Palmichala mine is operating under a 10 year License for Exploitation, reporting to the Ministry of Mines and Energy to obtain the Mining Authorization. The current owner has applied for the 30 year mine concession.

Green Mine Solutions SAS is in process of starting to operate La Palmichala mine under a 1 year term renewable every year.

7. GEOLOGICAL SETTING AND MINERALIZATION

The Segovia-Remedios Mine District (SRMD) is located in the eastern margin of the Central Cordillera, in the Nordeste sub-region of the Antioquía Department, Colombia. This mining district have been a gold productive area since 150 years.

7.1. REGIONAL SETTING

The SRMD is located in the north of the Central Cordillera of Colombia, on the western side of the Andes, large intrusive bodies of diorites and granodiorites of Jurassic and Cretaceous age are outcropping, intruded in Paleozoic metamorphic rocks. Some volcanosedimentary sequences and Cretaceous clastic sedimentary complete the major lithological groups in the region.

The Au bearing quartz veins are widespread across the region, as part of a large mineralized area named *Región Oriental* (Eastern Region) by Rodríguez and Pernet (1983). The region northern boundary is in Zaragoza, being Remedios the southern limit; most of the bigger exploitations are in the Segovia surroundings. The most important exploitation has been El Silencio, being the mined area 1.200 m in depth following the dip, and 2.000 m in strike.

The host rock of these mineralizations is the Segovia batholith (*d* in the geological map). It is an allochtonous intrusive, elongated N-S, being the boundaries the Otú-Pericos Fault (considered the boundary between the geological terrains of Chibcha and Tahami) in the west and Nus Fault in the East. The Segovia batholith, Jurassic age, is about 700 km^2, intrusive in the metamorphic rocks of the eastern sector. The batholith varies from pyroxenitic gabbro to granite, including porphyritic dacites and andesites. Several ductile shear zones have been identified in the batholith, ranging from less than 1 m to dozens of meters. These shear zones usually occur in the boundary with the host rocks and limits of the different plutonic pulses.

To the west of the Otú-Pericos Fault outcrops Paleozoic metamorphic rocks, Cajamarca Complex: quartz+feldspars gneiss and quartz sericite schists (Pz). In this unit are included limestones (m) and amphibolites (a). Intrusive on these metamorphic rocks are granodioritic Cretacic rocks, named Antioqueño batholith (Kqd). To the east of the Nus Fault outcrops Cretacic volcanosedimentary rocks known as Segovia vulcanites (Ksh).

Nus and Otú-Pericos Faults converge to the south, so the batholith becomes tight to the south. The batholith is 12 km in the northern part, and becomes less than 9 km in the south of Remedios.

The SRMD is divided into two (eastern and western) sectors limited by the Otú fault. The Otú fault is part of the regional Otú-Pericos fault system:

- The eastern sector: qtz-gneiss, limestones and amphibolites of pre-Cambrian age (Ordoñez et al, 1999). Later intrusion of Segovia batholith occurs during Jurassic (Marvin 1968, Feininger et al, 1972). In this sector is located the Palmichala permit.

- The western sector: feldespatic, aluminic and qtz gneiss, limestones and amphibolites of undetermined age. This host rocks are intruded by Santa Isabel and La Culebra stocks, acid to intermediate undifferentiated (Ordóñez Carmona et al, 2005).

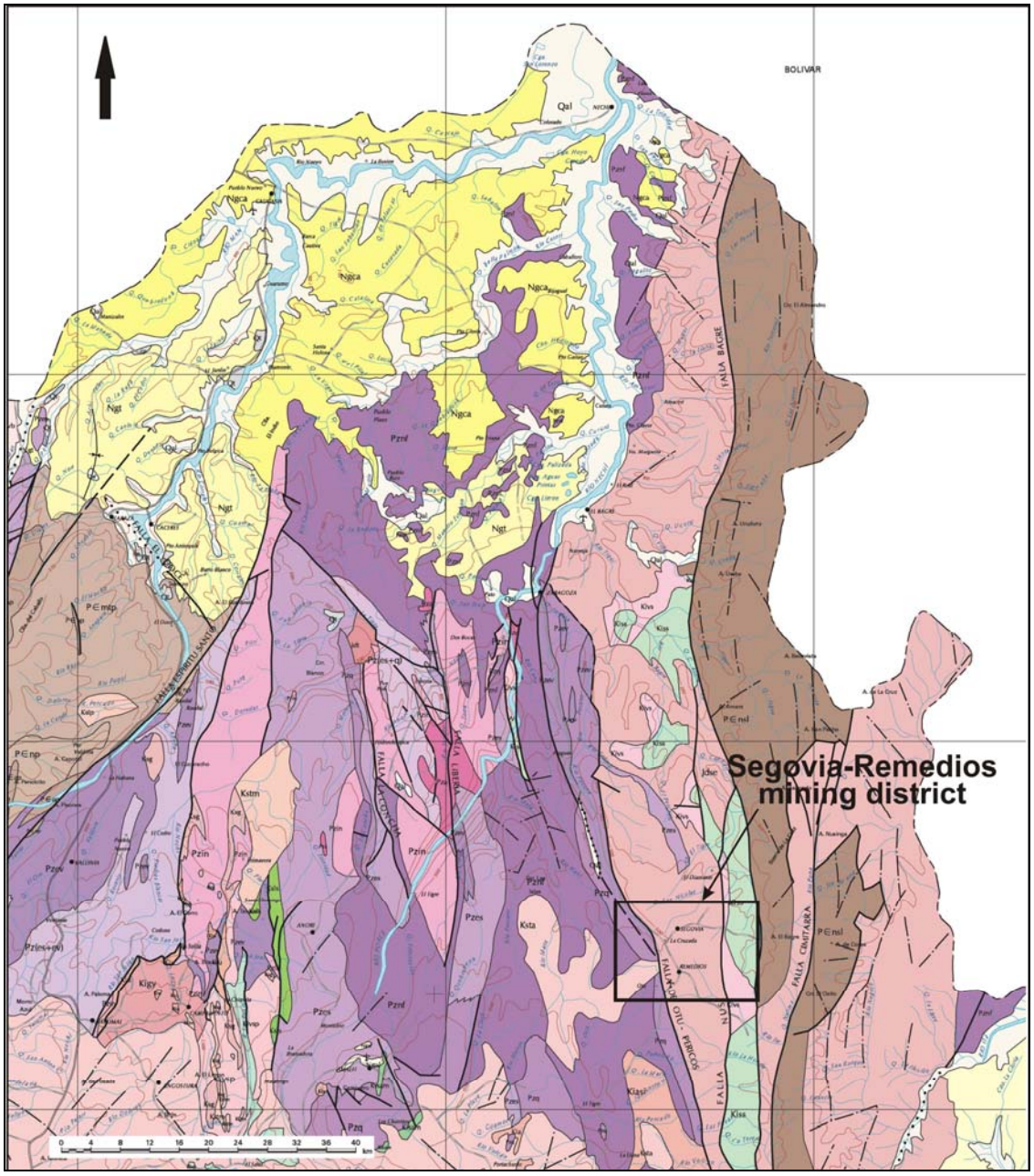


Fig. 7.1.- Geological map of Northwestern Antioquía.
Geological map of Antioquía region (González, 1999).
See text for descriptions.

The mineralized seams in the district can be defined as auriferous quartz veins with multiple orientations and dip. Based on the structural features it has been determined four systems of mineralized bodies by Echeverry et al., 2009:

- **El Silencio system**: structures NE-SW and NNE-SSW, gentle dip to the E and SE. The major and most continuous structures under exploitation belong to this system. The biggest exploitation is “El Silencio”, its main feature is that the mineralization is hosted in the quartz vein and in aphanitic mafic rocks.

- **Vertical system**: veins NW-SE, subvertical dipping to NE. Mostly brecciated.

- **Cogote system**: structures NW-SE to WNW-ESE, gently dipping to the NE.

- **Providencia system**: veins ENE-WSW, gentle to strong dipping SSE. There are porphyritic dikes associated to these veins. Its cross-cutting relationships postdate the Silencio system.

The paragenesis of these veins is quartz as major mineral and pyrite as main sulfide. It is also common, but variable content, the dolomite, galena and sphalerite. Some chalcopyrite, pyrrotite and scheelite occur as minor minerals. The Au is usually as free gold, or alloyed with Ag as electrum. The Ag content is usually low, the ratio Au/Ag is close to 1, sometimes higher than 1.

The genesis of these veins has been related with the dynamic of Otú-Pericos Fault (Echeverry et al., 2009; Álvarez et al., 2007). In a general view, Rodríguez Álvarez (2007) considers that these veins belong to a transpressive regime resulting from the evolution of an accretion of arc that is in a collision with the South American continental margin. This event could be developed during Paleogene.

The Palmichala-Criolla veins structure belongs to “El Silencio” system.

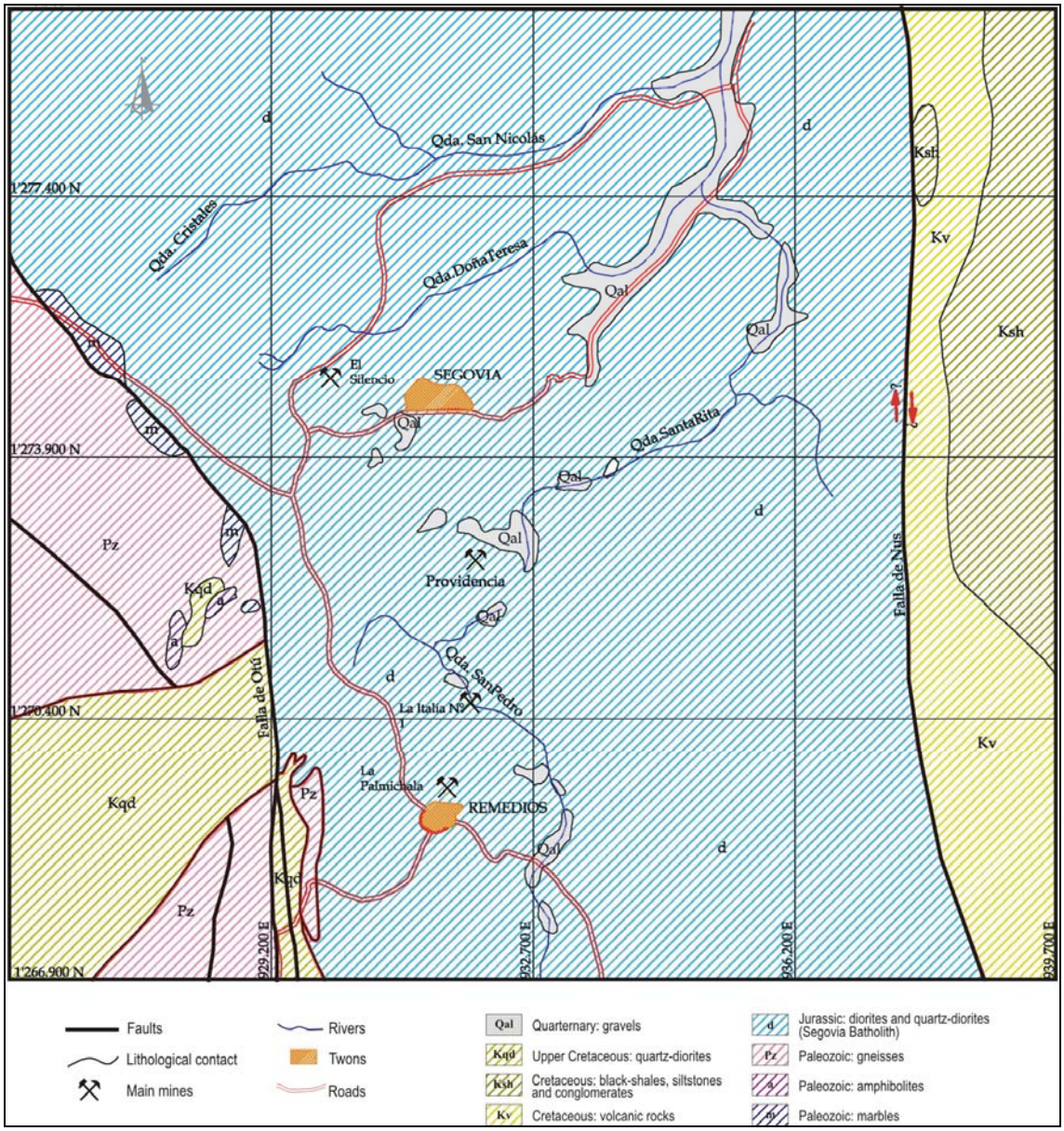


Fig. 7.2.- Geological sketch map of Segovia Remedios Mining District

7.2. MINERALIZATION

The Palmichala-La Criolla orebody structure can be defined as a relevant fragile structure, 5.5-7.5 m thick, with N30ºE strike and 40-50º dipping to the E-SE. The vein system is made up by two main veins, 1-2 m thick, being La Criolla at footwall and La Palmichala at the hanging wall of the fragile structure. Strike length is more than 150 m

in the exploitation, being the vein open in the mining drift in both senses (E-NE and W-SW). It is probably that the vein system is continuous until the end of the property, 250 m to the NE from the end of the current exploitation. The structure is continuous in depth, the current mining operation is 100 m in depth from the mine access, and old drilling information suggests its continuation, at least, 100 m from the current operation level.

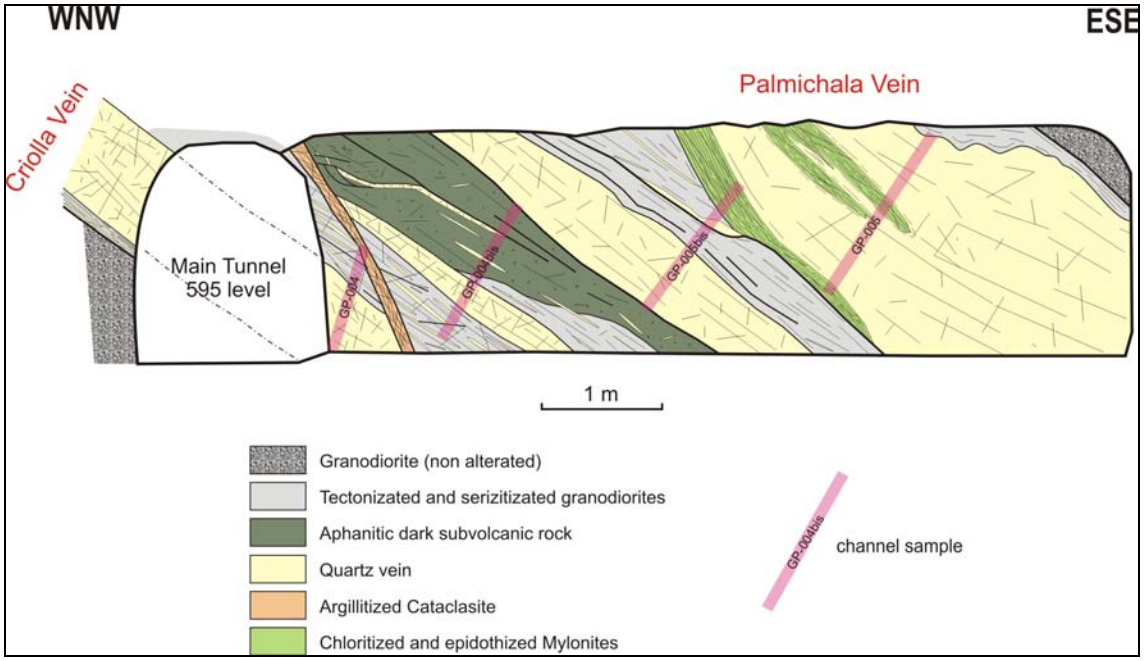


Fig. 7.2.- Geological section of the mineralized structure of La Palmichala mine, sketch of the section crossed in the Central inner area, level 595.

In this report, the description order is firstly for La Criolla vein and secondly for La Palmichala vein, because of their structural position, but both belongs to the same major structure.

7.2.1. La Criolla vein

It is a banded milky-quartz vein, 1-1.50 m thick, very continuous and uniform. Some pyrite and chloritic bands occur in the vein, although the quartz is cataclastic, the structure suggests that the original band is related to crack-seal processes. The

bottom is 15-25 cm of tectonized granodiorite, slightly mylonitic, with irregular thin quartz veins and disseminated pyrite. The footwall of the structure can be defined as a reactivated fault, N35-45ºE strike and 35-43º dipping to SE.

The contact is usually argillitized, with a thin band of grey clay; it could provide movement of blocks and have to be analyzed from a geotechnical point of view. At the hanging wall of the vein occurs mylonitic and altered granodiorites with irregular quartz veins and disseminated pyrite. The contact is usually reactivated with, at least, two slickenside lineations, one in strike and other in dip. The fault planes are parallel or slightly oblique to the vein, strike of N10-20ºE and dipping slightly higher, around 50-55º E. On these reactivation planes occur the cataclastic process on the top of the vein, generating brecciation with associated argillization and sericitation, but not producing gauge in the fault plane.

The interceptions of these planes on the mineralization generate the thinning and also make discontinuous the vein, being the cataclastic rock the orebody. The analytical results indicate that there is not Au loss on these structures. It has been identified idiomorphic pyrite on these planes that indicates hydrothermal fluid that must remove Au and disseminated it through the fault planes.

Picture 7.1. La Criolla vein on a mining drift, channel of 130 cm, level 595.

7.2.2. La Palmichala vein

It is also a very continuous structure, but structures and textures more irregular than La Criolla vein. The thickness is 1-2 m, but sometimes very variable. The banded structures are common, being clearer than in La Criolla vein due to the occurrence of tectonic planes overprinted. It is relatively common the occurrence of lenticular structures of foliated greenish rocks, made up by mylonitic granodiorites, silicification, chloritification and epidotization. In association to these bands occur pyrite, and it is interesting rock for Au content (accordingly to miners experience).

The hanging wall of the structure is a flat plane, very continuous in the level 585, N20-45ºE strike, 40º dipping to the SE. This plane is directly onto the quartz vein or on tectonized granodiorites with thin quartz veins.

Picture 7.2. La Palmichala vein in a mining drift in a room of the level 595.

The footwall contact is also a fault plane, more irregular than the contact of the hanging wall, and changing the dip around 15º. The contact occurs on the mylonitic and silicified granodiorites, being the bottom of the exploited zone. The reactivations of the planes imply the tectonization and separation of the vein into lenticular pieces of

quartz and irregular veins in the tectonized granodiorites. This tectonization do not imply the Au loss of the mineralized structure.

7.2.3. Internal zone between the veins

Between the two veins there are a band, 3-5 m thickness, of tectonized granodiorites with irregular veins of quartz, decimetric veins of quartz and a mafic aphanitic rock. It has been defined as “Inner Zone”. These rocks are chloritized and slightly sericitified, the silicification is limited to the contact with quartz veins. In this area occurs lot of disseminated pyrite, usually idiomorphic, so it can be considered a generalized pyritization. Some samples on this inner structure provide some Au and Ag, but lower than the mineralized veins.

The mafic aphanitic rock occurrence is regular on the orebody, but irregular relevance on mineralization. In the SW inner tunnel, that provides access to the Palmichala vein in the level 595, the lithology is mostly the mafic aphanitic rock, low tectonized, with disseminated quartz and dolomitic veins. In contrast, in the Central inner area, the mafic rock is less than 1 m thick, very tectonized, with overprinted deformation related to a reactivation of the fault plane as thrust fault.

The mafic rock is in this case argilitized and chloritized. In addition, this lithology has been identified not only in the inner areas but in other areas of the mine as irregular fragments in the tecnonized inner areas. It has not been identified in direct contact with the exploited areas. This rock has been identified by Echeverry et al (2009), considered as a feature of the El Silencio type veins. Regarding to these authors the rock is mineralized and is under exploitation with the mineralized veins. The samples of the mafic rock that has been analyzed in this report are low Au, but cannot be considered as sterile.

Picture 7.3. Aphanitic mafic rock in the structure between the veins. Central inner area at level 595 (picture 1 m wide).

8. DEPOSIT TYPES

La Palmichala is exploiting a vein system, corresponding to the already known model of “orogenic quartz vein” widely described in northern Colombia (Rodriguez Alvarez, 2007). The structural features and the host rocks suggest that La Palmichala belongs to the veins classified as “El Silencio” type, regarding to the classification undertaken by Echeverry et al., (2009).

The formation of these veins of medium angle, as La Palmichala or El Silencio type veins, fix with the transpressive model proposed by Rodriguez Alvarez (2007). They considered the aphanitic rock as lamprofides, precursors of the mineralization event, being the quartz veins the zones of concentration of the Au. The mylonites occurrence in the contact of the granodiorites with the veins and alteration associated (silicification, chloritization and epidotization) support this hypothesis; but not too much have been undertaken in the field of the strength field on the tectonics of this region. Some models have been considered but not supported by an adequate structural analysis (Álvarez et al., 2007; Echeverry et al., 2009).

The tectonic reactivation on the vein generates de current geometry of the mineralization. The geometry of the veins is controlled by the hanging wall, footwall and other longitudinal fault planes. These reactivations are not exclusives of La Palmichala and have been identified in other exploitations of the district (Sanchez et al., 2007). The reactivation planes suggest, at least, two reactivations by the slickenside indicators, being the pitch of the major 80º to SW. The other indicator dip is lower and previous to the vertical. This implies that it was a previous strike slip movement and a later vertical movement. The kinematic of these movements cannot be defined due to the high number of planes that were generated, existing opposite criteria. It was identified sigmoidal structures that defined the movement as reverse, related to the vertical movement. .

The tectonic reactivations imply a longitudinal thinning and also the lost of the quartz vein, in the areas where the fault planes are N20ºE. The thinning and lost of the vein leave an altered cataclastic granodiorite. These thinning can be defined by the left-

strike movement of reactivation.

La Palmichala vein is a fragile to fragile-ductile structure of 5.5-7.5 m thick, strike NNE-SSW, dipping 40º approximately to the SE. The structure is limited by the two veins at the hanging wall and footwall of a bigger structure. The inner area is made up by mylonitic and tectonized granodiorites with irregular quartz veins and a mafic aphanitic rock. In the mine extent, this structure is continuous; it is modified by later faults reactivations as a strike slip (left lateral) and dip slip (reverse slip). These reactivations imply the thinning and lost of the quartz vein, and development of tectonized and mylonitic argillitic granodiorites with Au mineralization.

9. EXPLORATION

The CRN team members with the Green Mine Solutions group proceed from January 22nd to 26th for geological reconnaissance of the current Palmichala mine and permit, sampling, identification of artisanal to semi-industrial mine activities and samples delivery to the laboratory.

9.1. LA PALMICHALA UNDERGROUND SAMPLING

It was undertaken a systematic sampling on the veins that are under exploitation in La Palmichala mine. The samples have been taken, in 10 cm wide channels and 5 cm deep, on the outcropping vein in the exploitation drift and sides of the galleries. The samples features, representativeness and sampling procedures are described in the Item 11 of this report.

The number of samples was 38, being plotted in the Fig. 9.1.

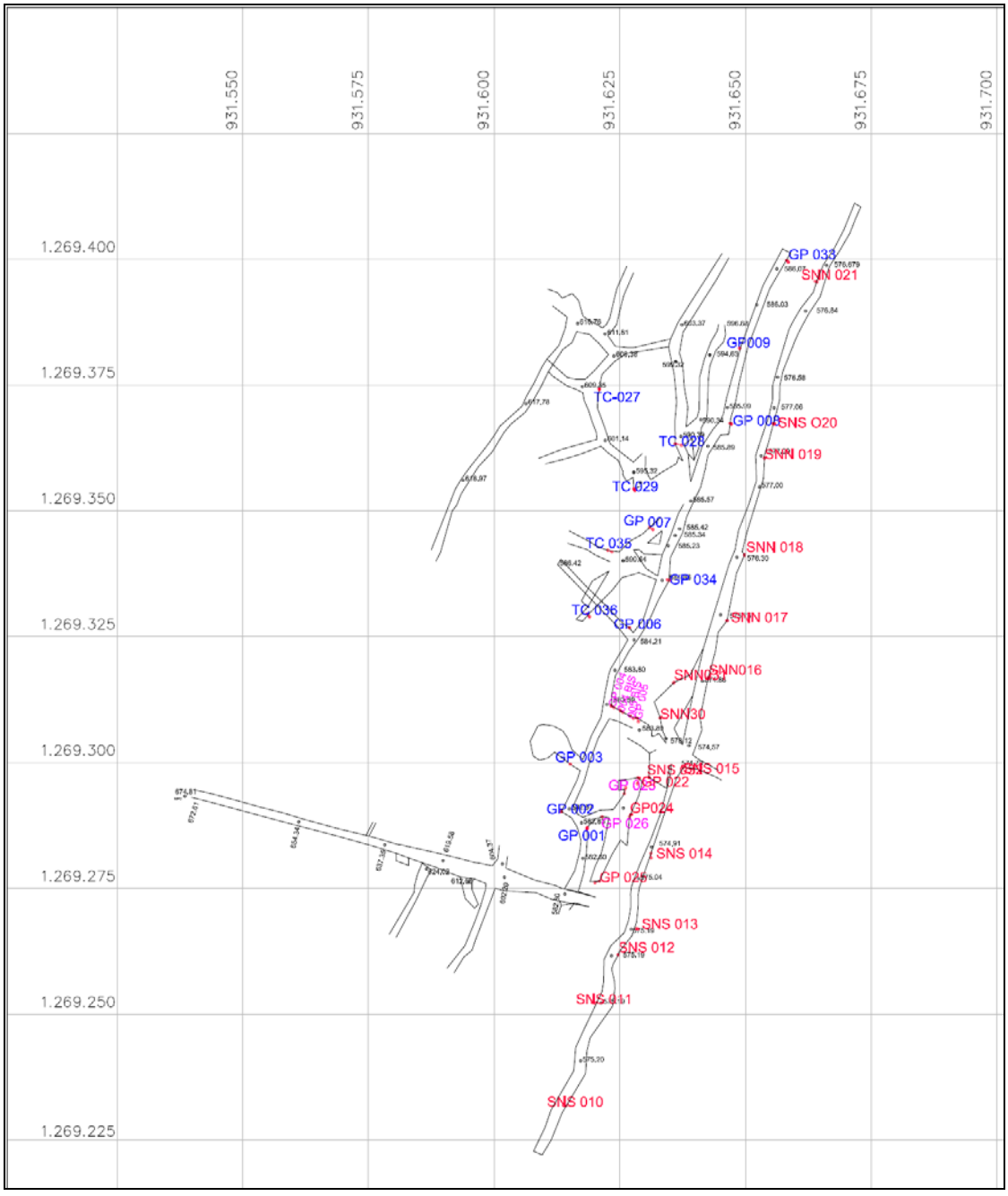


Fig. 9.1.- Samples location in “La Palmichala” underground mine. Topography updated to February 25th 2013. Coordinates in Bogotá Observatory datum.

9.1.1. Fire Assay analytical results

The analyses listed in this item were obtained by fire assay completed with atomic absorption. The global results are listed in table 9.2. The results are coherent with the known grade obtained in the concentrator plant. The heading grade of the material mined sent to the plant are shown below:

TABLE 9.1.- HISTORY OF THE GRADE MINED IN LA PALMICHALA				
	21 july	**26 sept.**	**27 sept. - 31 oct.**	**13-25 dec.**
t	61.3	538.4	226.8	421.2
Grade gr/t	8.5	4.1	5.07	5.66

The Ag values are low, ranging from <0.5 to 29.4 g/t. Base metal content is low; these data discard the occurrence of poly-metallic sulphides.

In Fig.9.2. are plotted the Au and Ag results. In both cases the modal value is 2 ppm, being the Au more variable with a lot of values higher than 5 ppm. The median for Au is 2.7 ppm, and 2.4 ppm for Ag.

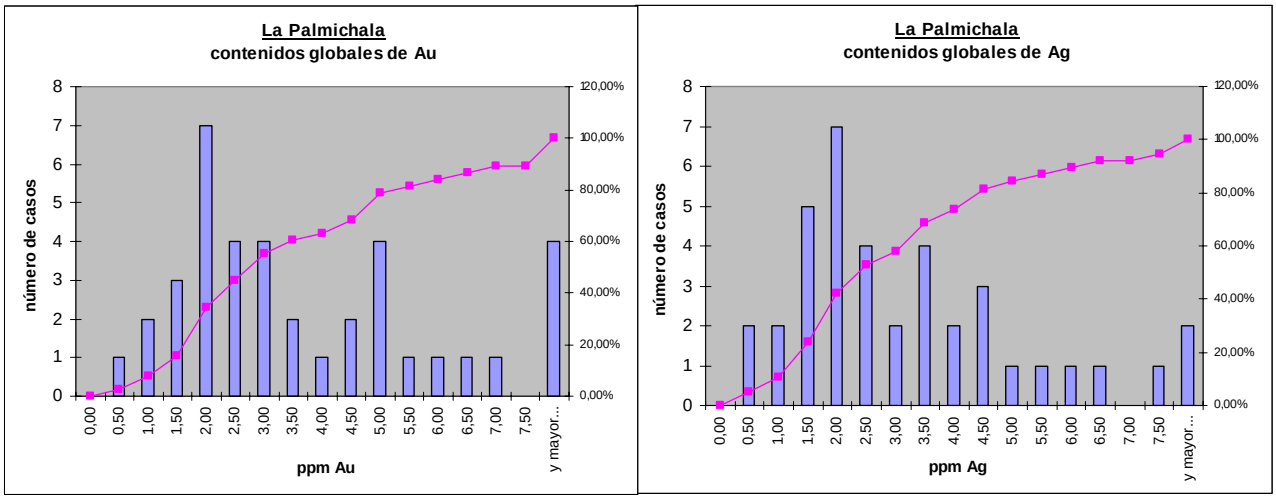


Fig. 9.2.- Histograms of distribution of Au and Ag content in La Palmichala mine.

TABLE 9.2.- ANALYTICAL RESULTS OF GOLD. SILVER AND BASE METALS OF THE CHANNEL SAMPLES IN LA PALMICHALA

SAMPLE	COORDINATES BOGOTA OBSERVATORIO			ANALYSES				
	X	Y	Z	Au (ppm)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)
GP-001	931614	1269284.5	595.54	0.835	< 0.5	2	< 1	6
GP-002	931611.5	1269288.5	595.72	11.200	3.1	< 1	19	32
GP-003	931611	1269300.5	599.47	1.616	1.6	< 1	6	32
GP-004	931623	1269305	596.6	1.338	1.1	7	7	54
GP-005	931627	1269304	596.68	4.064	4	10	15	32
GP-006	931626.5	1269321.5	596.9	1.786	2.2	2	7	19
GP-007	931630.5	1269338.5	602.5	3.020	2	< 1	8	12
GP-008	931647	1269362	598.55	1.189	1.2	10	3	17
GP-009	931651	1269376.5	598.61	2.538	1.8	3	17	37
SNS-010	931607.5	1269243	589	5.740	4.5	12	14	61
SNS-011	931613.5	1269251	588.7	2.965	2.3	56	19	60
SNS-012	931617.5	126960	588.2	1.824	1.8	9	15	67
SNS-013	931621	1269265.5	588	2.760	0.8	4	71	46
SNS-014	931627.5	1269277	587.8	3.156	3.9	16	22	34
SNS-015	931634.5	1269295.5	584.15	3.987	3.4	2	8	6
SNN-016	931640.5	1269312	587.58	4.515	6.5	< 1	6	11
SNN-017	931645	1269324	588.2	9.620	7.1	17	29	36
SNN-018	931651	1269340.5	589.2	8.400	5.9	4	40	9
SNN-019	931655.5	1269354.5	589.8	1.195	0.9	2	< 1	8
SNN-020	931657.5	1269362	589.95	4.750	2.8	18	18	15
SNN-021	931671	1269387	590.5	6.950	5.2	2	2	34
GP-022	931626	1269292.5	597.8	1.615	2.1	21	7	19
GP-023	931624	1269292	596.8	4.646	1.3	2	4	8
GP-024	931624	1269286.5	596.76	1.604	3.1	3	6	30
GP-025	931615.5	1269272.5	596	4.107	2.8	5	10	33
GP-026	931621.5	1269285.5	596.7	0.120	< 0.5	7	3	94
GP-004bis	931621.5	1269306	596.27	0.717	29.4	3	1	21
GP-005bis	931625.5	1269304.5	596.67	2.087	2.5	5	< 1	10
TC-027	931626	1269366.5	617	2.315	1.8	4	13	59
TC-028	931635	1269360.5	605	2.437	2	2	8	22
TC-029	931628	1269352	607.8	1.671	1.6	< 1	7	18
SNN-030	931629.5	1269304	593	7.730	15.7	6	18	10

TABLE 9.2.- ANALYTICAL RESULTS OF GOLD. SILVER AND BASE METALS OF THE CHANNEL SAMPLES IN LA PALMICHALA								
SAMPLE	**COORDINATES BOGOTA OBSERVATORIO**			**ANALYSES**				
	X	**Y**	**Z**	**Au (ppm)**	**Ag (ppm)**	**Cu (ppm)**	**Pb (ppm)**	**Zn (ppm)**
SNN-031	931634.5	1269311.5	591	5.460	4.9	3	9	20
SNS-032	931627.5	1269294.5	593	2.280	1.4	< 1	1	34
GP-033	931661.5	1269395.5	598.7	4.962	4.1	13	23	53
GP-034	931633.5	1269331.5	597.6	6.50	4.1	2	25	17
TC-035	931623.5	1269337	605	1.715	1.2	6	19	21
TC-036	931619	1269323.5	603.5	2.651	3.3	< 1	25	15
			Max. value	11.20	29.4	56	71	94
			Min. value	0.120	< 0.5	< 1	< 1	6

The two veins under exploitation in La Palmichala are studied separated:

- Criolla Vein: is under exploitation in the level 595 of the main tunnel.
- Palmichala Vein: is under exploitation in the sublevel 585.

9.1.1.1. La Criolla Vein

It is currently under exploitation at the level 595 of the main tunnel. The main tunnel is the departure point for a room exploitation following the ascendant dip of the mineralization, called “tambor”. It has been taken 15 samples on this vein, in the main tunnel and room exploitations departing from the main tunnel. The summary of the analytical results is listed below:

TABLE 9.3.- SUMMARY OF THE RESULTS OF LA CRIOLLA VEIN												
SAMPLE	COORDINATES BOGOTA OBSERVATORIO			ZONE	LENGHT (cm)	THICKNESS (cm)	ANALYSES					
							sample	Weighted mean		sample	Weighted mean	
	X	Y	Z				Au (ppm)	Au Lenght	Au Thickness	Ag (ppm)	Ag Lenght	Ag Thickness
GP-001	931614	1269284.5	595.54	Main tunnel	145	114.26	0.84	0.77	0.67	< 0.5	< 0.5	< 0.5
GP-002	931611.5	1269288.5	595.72	Main tunnel	170	170	11.20	12.13	14.53	3.1	3.36	4.02
GP-003	931611	1269300.5	599.47	Tambor 0	130	130	1.62	1.34	1.60	1.6	1.32	1.59
GP-004	931623	1269305	596.6	Main tunnel	135	135	1.34	1.15	1.38	1.1	0.95	1.13
GP-006	931626.5	1269321.5	596.9	Main tunnel	165	165	1.79	1.88	2.25	2.2	2.31	2.77
GP-007	931630.5	1269338.5	602.5	Tambor 1	140	140	3.02	2.69	3.23	2	1.78	2.14
GP-008	931647	1269362	598.55	Main tunnel	130	83.56	1.19	0.98	0.76	1.2	0.99	0.77
GP-009	931651	1269376.5	598.61	Main tunnel	225	156.30	2.54	3.64	3.03	1.8	2.58	2.15
TC-027	931626	1269366.5	617	Tambor Criolla	190	155.64	2.32	2.80	2.75	1.8	2.18	2.14
TC-028	931635	1269360.5	605	Tambor Criolla	180	137.89	2.44	2.79	2.56	2	2.29	2.10
TC-029	931628	1269352	607.8	Tambor Criolla	160	160	1.67	1.70	2.04	1.6	1.63	1.95
GP-033	931661.5	1269395.5	598.7	Main tunnel	85	54.64	4.96	2.69	2.07	4.1	2.22	1.71
GP-034	931633.5	1269331.5	597.6	Main tunnel	170	120.21	6.50	7.04	5.96	4.1	4.44	3.76
TC-035	931623.5	1269337	605	Tambor 1	170	130.23	1.72	1.86	1.70	1.2	1.30	1.19
TC-036	931619	1269323.5	603.5	Tambor 1	160	113.14	2.65	2.70	2.29	3.3	3.36	2.85
				Average value	157	131.06	3.05	3.08	3.12	2.22	2.19	2.16

As can be seen in the table, the Au range of the values is wide from 0.84 to 11.20 ppm. The weighted mean to the thickness is 3.12 gr/t, being the average thickness 131 cm. The Ag weighted mean for the thickness is 2.16 gr/t.

9.1.1.2. La Palmichala Vein

The exploitation of this vein is advancing in the level 585, being also exploited below in a room following the descent along the dip of the vein. The sublevel 585 is advancing to SW and NE in strike of the vein. There is also, exploitation over the level 595, remaining unknown the continuity to upper levels.

The sampling of this vein is focused on the level 585, taking 15 channel samples in the sublevel tunnel, and some room exploitation following the ascendant dip of the vein. In addition, it was taken 4 channels in the level 595 and a sample in the inner connection area.

The Au content range from 1.20 to 9.62 ppm, with a weighted mean by thickness of 4.24 gr/t, being the average thickness of 114 cm. The Ag grade range is similar to Au, with a weighted mean of 4.33 for the vein thickness.

The results are listed in the table below:

TABLE 9.4.- SUMMARY OF THE RESULTS OF LA PALMICHALA VEIN

SAMPLE	COORDINATES BOGOTA OBSERVATORIO			ZONE	LENGHT (cm)	THICKNESS (cm)	ANALYSES					
							sample	Weighted mean		sample	Weighted mean	
	X	Y	Z				Au (ppm)	Au Lenght	Au Thickness	Ag (ppm)	Ag Lenght	Ag Thickness
GP-005	931627	1269304	596.68	Area between veins	160	160	4.06	4.37	5.69	4	4.30	5.60
SNS-010	931607.5	1269243	589	Sublevel South	110	76.41	5.74	4.25	3.84	4.5	3.33	3.01
SNS-011	931613.5	1269251	588.7	Sublevel South	150	114.91	2.97	2.99	2.98	2.3	2.32	2.31
SNS-012	931617.5	126960	588.2	Sublevel South	160	122.57	1.82	1.96	1.96	1.8	1.94	1.93
SNS-013	931621	1269265.5	588	Sublevel South	120	91.93	2.76	2.23	2.22	0.8	0.65	0.64
SNS-014	931627.5	1269277	587.8	Sublevel South	185	135.30	3.16	3.93	3.74	3.9	4.85	4.62
SNS-015	931634.5	1269295.5	584.15	Sublevel South	145	104.30	3.99	3.89	3.64	3.4	3.32	3.10
SNN-016	931640.5	1269312	587.58	Sublevel North	155	107.67	4.52	4.71	4.26	6.5	6.78	6.13
SNN-017	931645	1269324	588.2	Sublevel North	165	118.69	9.62	10.68	10.00	7.1	7.88	7.38
SNN-018	931651	1269340.5	589.2	Sublevel North	110	55	8.40	6.21	4.04	5.9	4.36	2.84
SNN-019	931655.5	1269354.5	589.8	Sublevel North	120	80.30	1.20	0.96	0.84	0.9	0.73	0.63
SNN-020	931657.5	1269362	589.95	Sublevel North	105	67.49	4.75	3.35	2.81	2.8	1.98	1.65
SNN-021	931671	1269387	590.5	Sublevel North	125	89.92	6.95	5.84	5.47	5.2	4.37	4.09
GP-022	931626	1269292.5	597.8	Palmichala lv 595	160	131.06	1.62	1.74	1.85	2.1	2.26	2.41
GP-024	931624	1269286.5	596.76	Palmichala lv 595	180	137.89	1.60	1.94	1.94	3.1	3.75	3.74
GP-025	931615.5	1269272.5	596	Palmichala lv 595	140	140	4.11	3.87	5.03	2.8	2.64	3.43
SNN-030	931629.5	1269304	593	Tambor North Palmichala	220	147.21	7.73	11.44	9.96	15.7	23.23	20.23
SNN-031	931634.5	1269311.5	591	Tambor North Palmichala	190	164.54	5.46	6.98	7.87	4.9	6.26	7.06
SNS-032	931627.5	1269294.5	593	Tambor South Palmichala	125	125	2.28	1.92	2.50	1.4	1.18	1.53
				Average value	149	114.22	4.35	4.38	4.24	4.16	4.53	4.33

9.1.1.3. Area between veins or inner area

The Palmichala vein is in the hanging wall of the La Criolla vein, separated by 5-7 m. In the area between the two veins occur deformed granodiorites (host rocks), bearing qtz-veins cm to dm length; it also occur cataclasis deforming the granodiorites and veins; a mafic aphanitic rock, slightly porphyrytic.

It is interesting to analyze the Au grade of the complete structure including the veins and area between veins. This area between veins can be recognized in two zones departing from La Criolla vein to the Palmichala vein.

- The SW section as the inner area of structure close to the main access to the mine.

- The Central section inner area, that provides access from La Criolla vein to La Palmichala vein.

The SW section

In the SW inner area, the mafic aphanitic rock occurs as a massive homogeneous structure of 1.5 m thick, with low content of tensional quartz and dolomitic veins of cm length, hosted by granodiorites bearing qtz-veins. At the hanging wall of this rock occurs the deformed granodiorites with quartz veins, 1 m thick. Finally, at the hanging wall of the granodiorites occurs the Palmichala vein, 1.5 m thick, dipping 35ºSE. Below (footwall) the aphanitic mafic rock, there are another deformed band of granodiorite of 1.5 m with quartz veins and pyrite. La Criolla vein of 1.5 m thick is at the footwall of this mineralized granodiorite.

A geological section, footwall to hangingwall, can be defined by the samples:

- GP-002: La Criolla vein, massive quartz, 170 cm thick.

- GP-001: deformed granodiorite, quartz veins, 145 cm thick.

- GP-026: aphanitic mafic rock, quartz and dolomitic veins occurrence, 140 cm thick.

- GP-023: deformed granodiorite, quartz veins, 110 cm thick.

- GP-022: La Palmichala vein, 110 cm of layered quartz with 50 cm of interlayered deformed granodiorite

The Central inner area section

In the Central inner area, accessing to the Palmichala vein, can be seen the complete section between the veins. La Criolla vein, 135 cm thick, occurs in the side of the main tunnel. Then it is the 130 cm of granodiorite and the aphanitic mafic rock, both are deformed and randomly structured, with quartz veins and bands of tectonic reactivation. A 50 cm thick quartz vein and 75 cm of mylonitic altered granodiorites are over the previous lithology. La Palmichala vein is in the hanging wall of the section, being 150 cm thick. The continuous sampling of the section is summarized in the samples:

- GP-004: La Criolla vein, deformed quartz, 135 cm thick.

- GP-004 bis: granodiorite and aphanitic rock, quartz and dolomitic veins, 130 cm thick.

- GP-005 bis: quartz vein and mylonitic granodiorite, 125 cm thick.

- GP-005: La Palmichala vein, quartz and mylonitic granodiorite, 110 cm of quartz vein and 50 cm of mylonitic granodiorite.

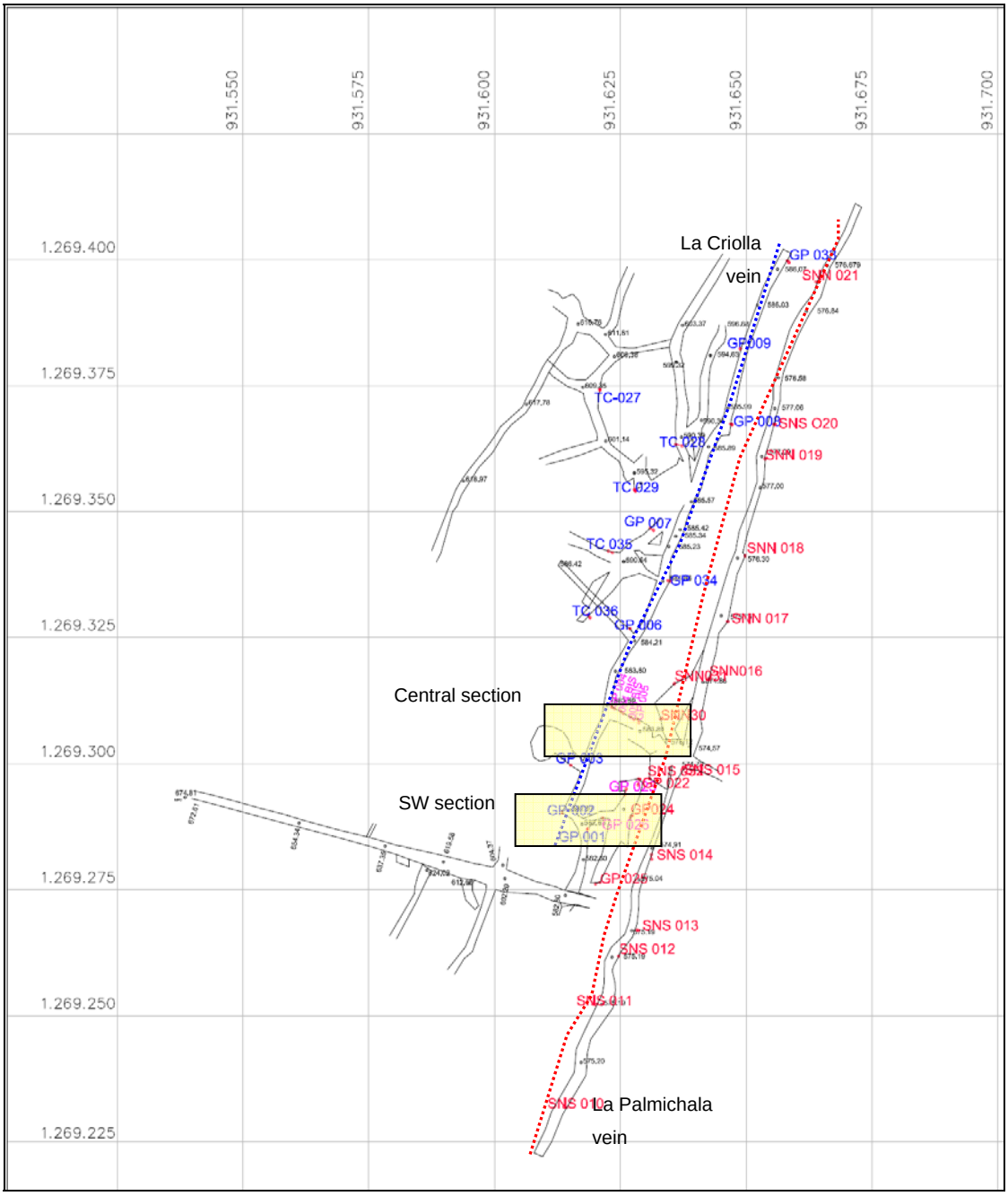


Fig. 9.3.- Samples location in “La Palmichala” underground mine. Topography updated to February 25th 2013. Coordinates in Bogotá Observatory datum.

TABLE 9.5.- SUMMARY OF THE RESULTS THE SECTION SW									
SAMPLES	COORD. IN MINE BOGOTA OBSERVATORIO			ZONES	Thickness (cm)	ANALYSES			
	X	Y	Z			Au (ppm)	Au weighted	Ag (ppm)	Ag weighted
GP-002	931611.5	1269288.5	595.72	Main tunnel	170	11.20	2.63	3.1	0.12
GP-001	931614	1269284.5	595.54	Main tunnel	145	0.84	0.17	< 0.5	0.10
GP-026	931623.5	1269285.5	596.7	Inner area	140	0.12	0.02	< 0.5	0.10
GP-023	931624	1269292	596.8	Palmichala zone	110	4.65	0.70	1.3	0.20
GP-022	931626	1269292.5	597.8	Palmichala zone	160	1.62	0.36	2.1	0.46
				Total thickness	725				
				Grade weighted to thickness			**3.88**		**0.97**

TABLE 9.6.- SUMMARY OF THE RESULTS THE SECTION CENTRAL INNER AREA									
SAMPLES	COORD. IN MINE BOGOTA OBSERVATORIO			ZONE	Thickness (cm)	ANALYSES			
	X	Y	Z			Au (ppm)	Au weighted	Ag (ppm)	Ag weighted
GP-004	931623	1269305	596.6	Main tunnel	135	1.34	0.33	1.1	0.27
GP-004bis	931621.5	1269306	596.27	Inner area	130	0.72	0.17	29.4	6.95
GP-005bis	931625.5	1269304.5	596.67	Inner area	125	2.09	0.47	2.5	0.57
GP-005	931627	1269304	596.68	Inner area	160	4.06	1.18	4	1.16
				Total thickness	550				
				Grade weighted to thickness			**2.15**		**8.95**

The data indicates that the aphanitic mafic rock has a low grade mineralization in Au (lower than 1 ppm) and irregular in Ag (1 ppm to 1 oz/t). In contrast, the mylonitic granodiorite is around 4 ppm of Au, similar to the main mineralization.

The global grade of the sections are susceptible for exploitation, but it is needed more information to correlate the sections and the size the whole structure.

9.1.2. ICP-MS multielemental analyses results

It has been undertaken a multielemental analyses by ICP-MS, by “total” digestion (4 acids), including 65 determinations. It has been chosen the elements of interest for this research: Au, Ag, Cu, Pb, Zn, As, Sb, Hg, Bi, Se, Te, Mo, Co, Ni, and Tl. In the next table is listed the statistical parameters of these elements, the global elements are listed in the appendix.

The average gold content obtained by this method (3.27 g/t) agrees with the fire assay results (3.58 g/t). Those values with higher content of gold imply the major differences between the two methods. The Ag values also agree with the fire assay (3.19 vs. 3.80 ppm). The base metals result also correlates between methods.

TABLE 9.7.- STATISTICAL PARAMETERS OF THE MULTIELEMENTA ANALYTICAL RESULTS. LA PALMICHALA CHANNEL SAMPLES

	Au	Ag	Cu	Pb	Zn	As	Sb	Hg	Bi	Se	Te	Mo	Co	Ni	Tl
	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Mean	3270	3.19	9.66	15.5	32.9	177	0.26		0.1	0.3	0.06	0.5	10.5	59.6	0.09
Median	2630	2.87	6.8	12.2	24.2	173	0.23		0.08	0.3	0.06	0.48	9.15	53.3	0.08
Mode	2580	#N/A	#N/A	10.6	16.6	#N/A	0.17		0.11	#N/A	0.06	0.38	8.9	#N/A	0.09
Std dev.	2258	1.66	9.87	11.8	21.6	75.5	0.15		0.09		0.03	0.17	5.73	40.3	0.04
Max.	8880	7.51	55.2	61.6	111	343	0.77	<10	0.38	0.3	0.12	1.08	28.9	188	0.26
Min.	185	1.04	1.66	1.75	10.7	36.3	0.06	<10	0.02	0.3	0.02	0.23	1.6	9	0.03

The results of the cyanicide elements As, Sb, Hg, Te and Se are really low, excepting the As content. Arsenic content is moderate to low, suggesting that it is not a big trouble. It is remarkable that these elements slightly correlate with Ag and Au, but indicate that the gold and silver are linked to the As. The Sb also slightly correlates with Au and Ag, and higher with the As, suggesting a lithogeochemical link among these elements, including the Bi.

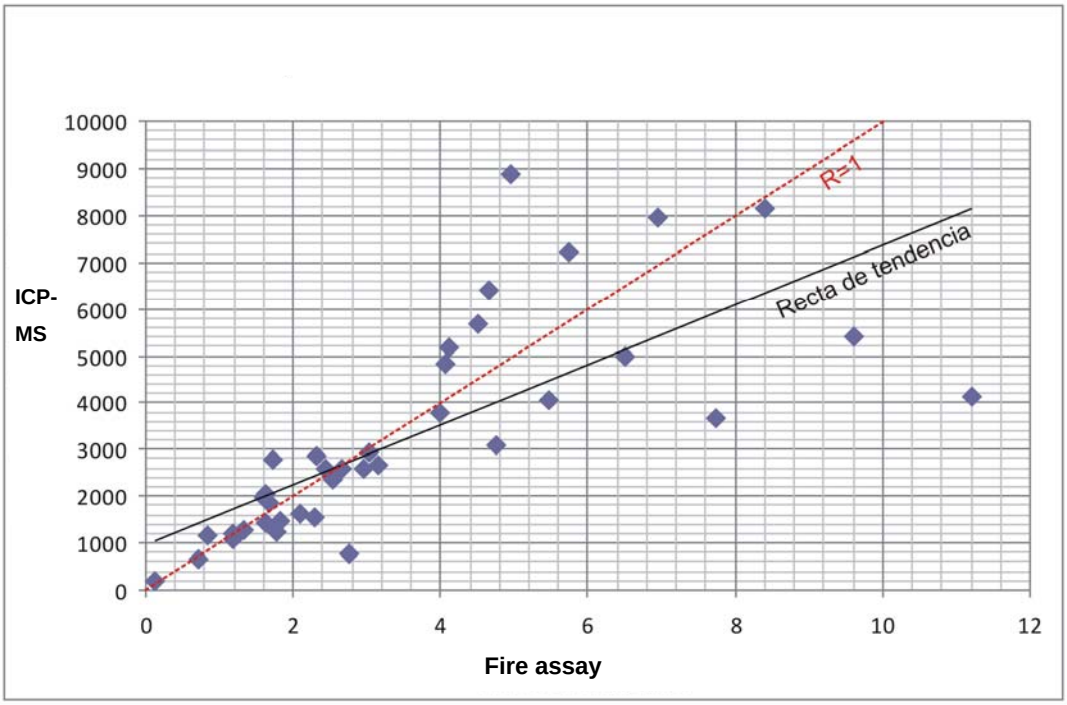
TABLE 9.8.- CORRELATION MATRIX AMONG THE ELEMENTS. PALMICHALA CHANNEL SAMPLES

	Au	Ag	Cu	Pb	Zn	As	Sb	Bi	Se	Te	Mo	Co	Ni	Tl
Au	1													
Ag	0.942	1												
Cu	0.069	0.188	1											
Pb	0.404	0.435	0.078	1										
Zn	-0.175	-0.169	0.391	-0.033	1									
As	0.565	0.636	0.269	0.242	-0.129	1								
Sb	0.524	0.584	0.207	0.286	-0.085	0.722	1							
Bi	0.593	0.592	0.111	0.859	0.002	0.319	0.399	1						
Se	0.157	0.164	0.201	0.291	0.041	0.222	0.074	0.425	1					
Te	0.347	0.260	0.129	0.225	0.001	0.194	0.408	0.282	0.169	1				
Mo	-0.002	0.016	-0.056	-0.040	-0.099	0.204	0.322	0.019	0.131	0.199	1			
Co	0.128	0.199	0.559	-0.049	0.679	0.401	0.255	0.112	0.190	0.064	0.053	1		
Ni	0.042	0.104	0.434	-0.116	0.639	0.442	0.195	-0.047	0.132	0.013	0.096	0.906	1	
Tl	0.449	0.463	0.339	0.047	0.180	0.305	0.387	0.275	0.058	0.194	0.271	0.369	0.305	1

It is remarkable the correlation close to 1 of the gold and silver. In contrast, there are not correlation between Pb and Ag, as in currents base metal ore, indicating that the galena is not argentiferous.

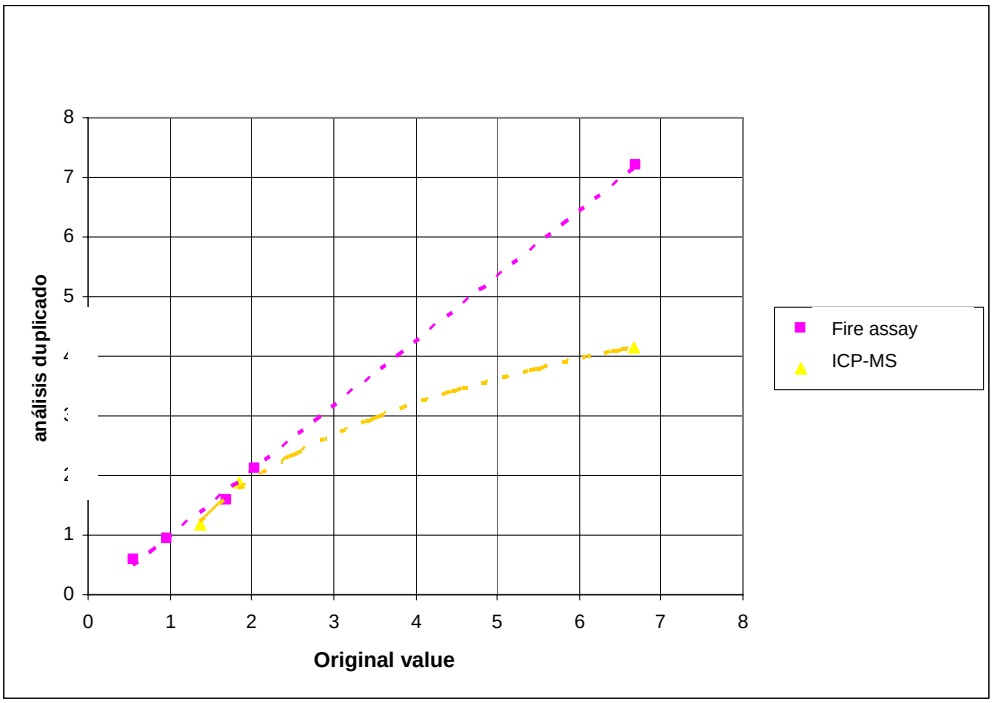
Contrasting the Au and Ag result

There are difference in the results obtained for gold and silver in both methods, as can be expected. The major differences are in the higher content of Au. The values have been plotted in the graphic below.



Picture 9.4.- Correlation plot of Au content for both methods ICP and fire assay.

The comparison of the results with the laboratory duplicates, it can be observed that the fire assay duplicates fix very well with the original data in the tendency line. The duplicates in the multielements for gold are not conclusive as there are not duplicates in the whole range of data. It is considered the values obtained by fire assay as more accurate, due to the sample weight in the assay.



Picture 9.5.- Correlation plot of Au content for both methods ICP and fire assay.

9.1.3. Conclusions

The Au and Ag analyses of the 38 samples of La Palmichala provide the following results:

- The Au grade ranges from 11.2 to 0.12 ppm, three samples < 1 ppm, eight samples > 5 ppm, being the mean 2.7 ppm. These data confirm the historical grade of the exploitation in the concentrator plant, that was in 2012 4.1 to 8.5 ppm.

- The Ag values are mostly low, < 0.5 to 29.4 ppm, six samples > 5 ppm, being the mean 2.4 ppm.

- The base metal grades are very low, it implies the absence of poly-metallic sulphides in the mineralization.

The content in deleterious elements is low, only the arsenic is slightly moderate. There is a correlation among the As, Au and Ag.

Considering the results by separate of the two main structures under mining, it can be summarized as follows:

La Criolla vein: it was sampled (15 samples) in the level 595 in the main tunnel and some room exploitations following the dip of the vein. The Au grades range from 0.84 to 11.20 ppm, the weighted mean by the thickness is 3.12 g/t, for an average thickness of 131 cm. the Ag weighted mean is 2.16 g/t. The Au grade distribution suggests a central area < 3 ppm, following the dip of the vein.

La Palmichala vein: it has been sampled (19 samples) in the sublevel 585 and some room exploitation until the 595 level. The Au grade ranges from 4.35 to 9.62 ppm. The weighted mean by the thickness is 4.24 g/t, for an average thickness of 114 cm. The Ag weighted grade is 4.33 g/t. The grade distribution suggests a higher grade in the NE and SW, > 5 ppm. And lower than 5 ppm in the mined area between the levels 595-585.

According to a thicker fragile structure, La Criolla and La Palmichala veins occurs at the footwall and hanging wall of a major section. This section includes granodiorites and aphanitic mafic rocks. A complementary sampling on these sections was undertaken, in crossing tunnels, level 595, separated by 20 m in the SW and Central areas of the Palmichala underground mine.

- In the SW section, it was defined a 7.25 m thick structure. The Au weighted mean grade is 3.88 g/t, the Ag grade is 0.97 g/t.

- The Central section defined a 5.5 m thick structure. The Au weighted mean grade is 2.15 g/t, the Ag grade is 8.95 g/t.

The results for the sections are interesting but it is needed to establish its continuity for the whole Palmichala mineralization area. But it can be assumed the possibility of an area susceptible for be mined of 5-7 m thickness.

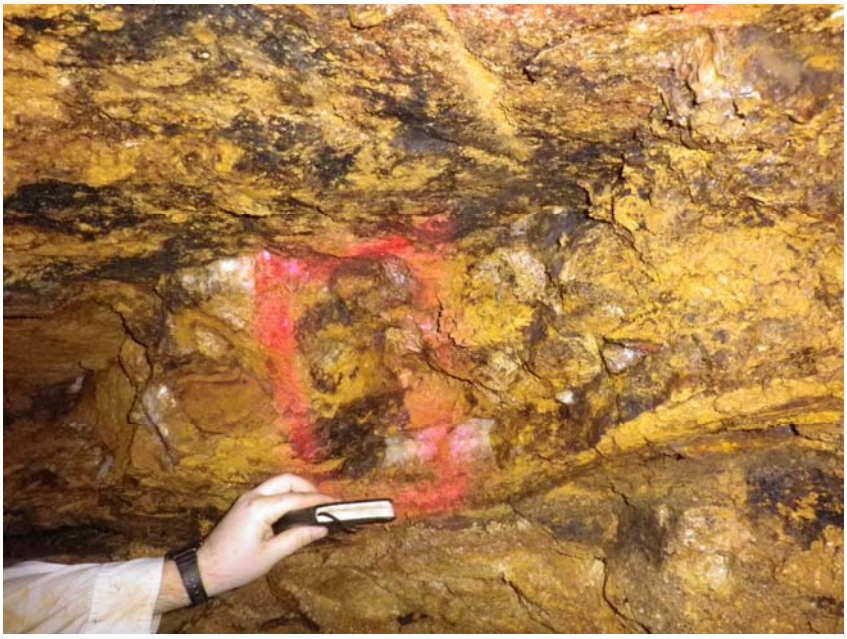
9.2. EXPLORATION AND SAMPLING AT LA PALMICHALA PROPERTY

In addition to the Palimichala mine investigation, it was undertaken a field reconnaissance of the mining occurrence in the mining property. These occurrences are abundant, mostly located in the East of the permit.

The climate resulted in the genesis of a thick soil and alteration cover on the igneous rocks, the prairie and autochthonous forest make the outcrops scarce. However, the igneous rocks of Segovia Batholith are on the whole permit, and can be identified at the bottom of the ravines and some isolated outcrops.

The auriferous veins outcrop in some ravines (El Cristo and El Sapo mines) or in the slopes of some hills as resistant outcrops (area of Bedoya mine). However, the quartz is usually found as blocks or fragments in the soil, called “riegos”, as a geological sign for the miners to find the veins.

The already existing mines are labors developed in strike or crossings (“crucero”); “picadas”, ramps with dip opposite to the vein dip for intersection; “apiques”, ramps following the dip of the vein. In addition to the mining works, there are some channels and panning in some streams. It also has been identified some works on hillside by high pressure water mining, but these are not undertaken since last decade. These are small and not very deep artisanal works; some of them are stopped or abandoned. In the table below are listed the artisanal works identified.



Picture 9.1.- mine drift on quartz vein in Crisanto mine. Sample CR-03.

The table 9.7 summarizes the artisanal works that have been studied during the field work, being the vein field occurrences listed in the table 9.8.

TABLE 9.7.- ARTISANAL MINING WORKS IN THE PALMICHALA PERMIT.										
FIELD POINT	MINE WORKS	COORDS. UTM (WGS84)			DESCRIPTION	Vein orientation			THICKNESS (cm)	SAMPLE
		X	Y	Z		bearing	Dip	Dip sense		
148	María Auxiliadora	533700	777159	675	Adit	NW	45	SW	25	
150	Tutumal	534228	777153	667	Adit, 50 m to the vein	NW	45	NE	40	
152	Crisanto	534343	777209	653	Adit, 10 m to the vein	120	18	SW	55	CR-01, CR-02, CR-03
153	Octavio	534499	777329	607	Adit, 70 m to the vein	40	10	SE	5	WP-153
154	La Hondura	534379	777412	613	Adit collapsed					
155	El Cristo	534291	777611	610	Adit and concrete mine tower					WP-155
157	Chócolo	534307	777706	618	Adit in dip, 13 m	180	0		30	CH-01, CH-02, CH-03, CH-04
159	Tunnel El Cristo 2	534413	777761	607	Adit					
161	Sapo	534267	777571	612	Mine dump	80	45	S	50	WP-161
162	Sapo	534251	777564	618	Adit and concrete mine tower					
163	La Murcielaguera	534177	777583	619	Adit in vein	60	10	NW	30	
164	Abandoned works	534101	777715	633	High pressure water works	36	50	NW		WP-163
165	El Guamo	534032	777686	639	Adit in dip, 20 m					
167	Quiceno	533879	777761	658	Adit, Bedoya vein?	20	40	SE	200	WP-167
171	La Bedoya	533772	777558	647	Adit in dip, azimuth N20ºE					
172	Tunnel de la Criolla	533647	777432	658	Adit of La Criolla					
173	Mine	534207	777612	639	Adit collapsed					

TABLE 9.7.- ARTISANAL MINING WORKS IN THE PALMICHALA PERMIT.

FIELD POINT	MINE WORKS	COORDS. UTM (WGS84)			DESCRIPTION	Vein orientation			THICKNESS (cm)	SAMPLE
		X	Y	Z		bearing	Dip	Dip sense		
176	El Mocho	533606	777707	696	Adit in dip					
177	Tunnel	533548	777652	687	Adit abandoned					
179	Palmichala	533447	777177	689	Adit in vein Palmichala					
180	vein Palmichala	533441	777162	688	Works on Palmichala vein	30	40	SE		

TABLE 9.8.- QUARTZ VEIN OUTCROPS IN LA PALMICHALA PERMIT

FIELD POINT	LOCATION	COORDS. UTM (WGS84)			DESCRIPTION	Vein orientation			THICKNESS (cm)	SAMPLES
		X	Y	Z		Bearing	Dip	Dip Sense		
149	Quartz blocks	534209	777208	668	Quartz crystalline and brecciated					
151	Quart vein	534306	777193	661						
156	El Cristo vein	534282	777608	605	Outcrop of vein El Cristo	35	40	SE	100	WP-156
158	Vein outcrop	534410	777770	609	Quartz vein bearing Fe oxide and pyrite	30	44	SE	50	WP-158
160	Vein outcrop	534414	777784	609	Quart vein bearing pyrite, abandoned adit	80	30	N	150	WP-160
166	Vein outcrop	533930	777784	679						
168	Bedoya vein?	533883	777751	660	Quartz vein	20	40	SE	200	
169	Bedoya vein?	533850	777680	655	Quartz vein	20	35	SE	100	
170	Bedoya vein?	533868	777737	661	Thick quartz vein	90	15	N	300	WP-170
174	Delicias vein	533610	777656	688	Delicias vein, small adit	100	45	N	40	
175	Vein outcrop	533565	777667	696	Quarz block					WP-175
178	Criolla vein	533432	777194	689	Brecciated quartz block					
180	Palmichala vein	533441	777162	688	Palmichala old works					

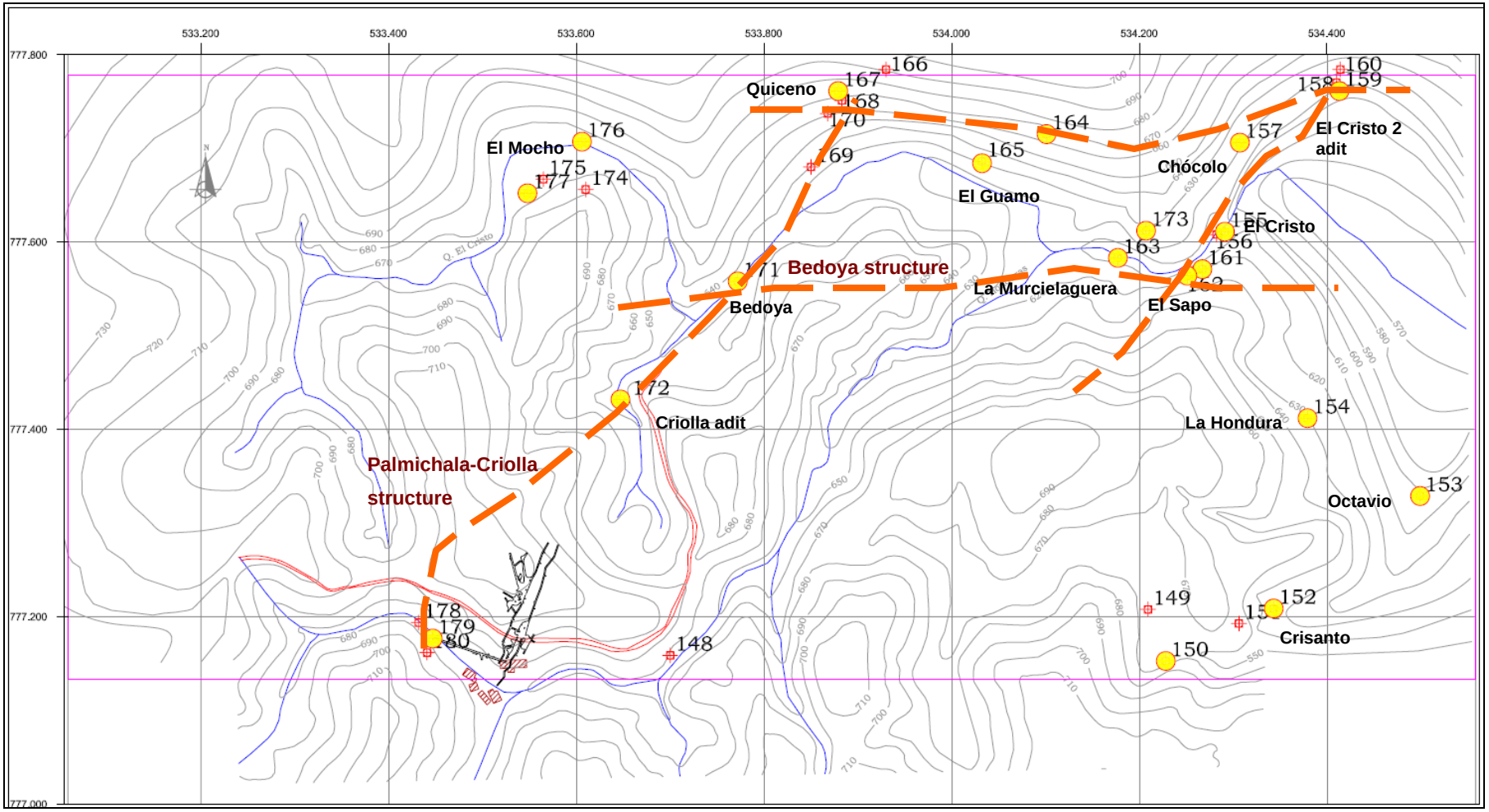


Fig. 9.6.- La Palmichala property with the vein systems identified and the underground mine projected on surface. Palmichala-Criolla belongs to El Silencio system and Bedoya structure to La Providencia system. Coordinates in WGS-84.

9.2.1. Analytical results

Crisanto mine (station 152)

It is located in the southern limit of La Palmichala permit (UTM WGS84 X=534343, Y=777209). The works are developing an adit to mining a N20ºE strike, gentle dip (15-20º SE) quartz vein, 20-55 cm thick. It is not straight, with changes in the strike to N120ºE. The quartz is crystalline, occurs some geodes of prismatic quartz. Pyrite is abundant in the unaltered zones, but it is usually oxide. The mine tunnel azimuth is SW more than 50 m, below the Remedios town. Some SE ramps follow the dip of the vein.

Three channels were taken from the mine drift, the results are listed below:

TABLE 9.9 A.- CRISANTO MINE SAMPLING FEATURES

ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
CR-01	Channel	55	120	18	SW
CR-02	Channel	30	180	20	E
CR-03	Channel	25	25	20	SE

TABLE 9.9 B.- CRISANTO MINE SAMPLING RESULTS

SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
CR-01	**6360**	5.13	4.39	25.3	8.4	**427**	0.19	< 10	0.05	0.1	0.06	1.05	0.4
CR-02	**5230**	5.78	3.32	67	15.2	84.6	0.1	< 10	0.03	< 0.1	0.03	0.47	< 0.1
CR-03	**9110**	9.43	22.9	48.3	39	**752**	0.22	< 10	< 0.02	0.1	0.03	2.48	< 0.1

The Au content is high, higher than 5 g/t.The other components content are low, with a ratio Au/Ag of 1. As content is moderate, being the higher values the pyrite rich samples.

Octavio Mine (station 153)

It is located in the eastern boundary of the Palmichala permit (UTM WGS84 X=534499, Y=777329). It is a 70 m long drift, developed to the South, cross-cutting sub-horizontal quartz veins with pyrite. The quartz veins, 5-15 cm thick, few meters length as the tension planes are relief by these discontinuous planes. In general, the veins bearing NE-SW, 10-20º dipping to SE. Lateral tunnels departs from the main adit.

Picture 9.2.- Octavio mine quartz vein. Sample WP-153

The results of a 10-12 cm thick quartz vein is listed below:.

TABLE 9.10 A.- OCTAVIO MINE SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-153	Chips	5	40	10	SE

TABLE 9.10 B.- OCTAVIO MINE SAMPLING RESULTS													
SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
WP-153	170	0,619	12,7	14,1	46,6	63,1	0,16	< 10	0,1	< 0.1	0,06	0,84	0,2

The results are not important in gold content, but the 170 ppb of Au imply an auriferous character of the quartz vein.

El Cristo mine (station 155)

This abandoned mine has a concrete mine tower (UTM WGS84 X=534291, Y=777611). The vein is N35ºE, dipping 40º to SE. The vein is outcropping in the area, 1 m thick and quartz crystalline tectonized structure. The mine adit is flood. The mineral dumps in the area indicate the quartz bearing pyrite and some galena and sphalerite.

Two samples were taken as chips of the outcropping quartz vein (WP-156) and the mineral dump (WP-155). The results of El Cristo are listed in the table:

TABLE 9.10 A.- EL CRISTO MINE SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-155	Ore fragments				
WP-156	Chips	100	35	40	SE

TABLE 9.10 B.- EL CRISTO MINE SAMPLING RESULTS													
SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
WP-155	**2040**	3	6,08	26,5	18,7	187	0,61	< 10	0,1	< 0.1	< 0.02	0,33	0,2
WP-156	18	0,592	1,48	16,2	23,7	4,7	0,06	80	< 0.02	< 0.1	0,05	0,26	0,2

The quartz mine dump provides interesting gold results, slightly higher than 2 g/t. The As value is also over the average, but not very high. Pb and Zn are low, while has been identified polymetallic sulfides. The quartz chips from the outcropping vein is very Au low content, as the quartz is milky and sulfide were not identified.

Chócolo mine (station 157)

It is located in the NE corner of the permit (UTM WGS84 X=534307, Y=777706) currently under mining. The mine adit is 13 m in dip towards N320ºE. At this depth a subhorizontal vein was intersected by another vein N70ºE, dipping 35º SE and 30 cm thick. This vein turns subhorizontal, dipping 5-10º S-SE. The thickness varies from 30 to 50. The mineralization is a quartz vein with pyrite and some galena.

It has been sampled in the mine drift and quartz blocks from a lateral tunnel on mineralization with galena. The results are:

TABLE 9.11 A.- CHÓCOLO MINE SAMPLING FEATURES

ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
CH-01	Channel	30	180	0	
CH-02	Channel	40	180	5	E
CH-03	Ore fragments				
CH-04	Channel	30	70	30	SE

TABLE 9.11 B.- CHÓCOLO MINE SAMPLING RESULTS

SAMPLE	Au	Ag	Cu	Pb	Zn	As	Sb	Hg	Bi	Se	Te	Mo	W
	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
CH-01	**1910**	7,81	29	329	466	115	0,47	< 10	2,52	< 0.1	0,43	0,48	0,4
CH-02	**3230**	8,56	9,54	313	115	86,8	0,38	< 10	5,71	< 0.1	0,31	0,28	0,3
CH-03	**>10000**	**78,1**	14,3	**2220**	**1580**	**598**	5,64	100	9,73	0,6	1,16	0,23	< 0.1
CH-04	**1300**	8,44	7,24	205	154	77,6	0,25	10	3,59	< 0.1	0,58	0,24	0,2

Fig 9.3.- Chócolo mine, the quartz mine varies from subhorizontal to 35º dip. Sample CH-04.

The four samples provide high values of Au, being the quartz chips over 10 g/t. This sample is also 2.54 Oz of Ag and significant Pb and Zn values. The Hg value is below 1 ppm, probably related to sphalerite. In general, Ag content is three times higher than the average results of La Palmichala exploitation, but it could be related to Pb, because this is also higher than the average values determined.

To NE of mine, there are some scattered vein outcrops. The station 158 is located in the NW corner of the permit (UTM WGS84 X=534410, Y=777770). The quartz vein is N30ºE, dipping 44ºSE, 50 cm thick. The sample result is listed below:

TABLE 9.12 A.- OUTCROP 158 SAMPLING FEATURES

ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-158	Chips	50	30	44	SE

TABLE 9.12 B.- OUTCROP 158 SAMPLING RESULTS													
SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
WP-158	981	1,79	4,69	6,03	33,5	193	0,14	< 10	0,04	< 0.1	< 0.02	0,24	< 0.1

The vein is auriferous, 1 g/t. The As value is also high, similar with the average of the mineralization.

Picture 9.4.- Quartz vein outcrop in the NE corner. Station 160.

Close to 158 is 160 (UTM WGS84, X=534414, Y=777784), N80ºE, dipping 30º N. The sample is rich in pyrite and 1.5 m thick. The vein sample was made by chips of the outcropping body. The results are listed below:

TABLE 9.13 A.- OUTCROP 160 SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-160	Chips	150	80	30	N

TABLE 9.13 B.- OUTCROP 158 SAMPLING RESULTS													
SAMPLE	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
WP-160	469	1,62	16,7	24,2	46,8	79,9	0,26	< 10	0,42	0,2	0,26	0,8	< 0.1

El Sapo mine (station 162)

El Sapo mine is aligned with El Cristo along the same stream (U TM WGS84, X=534251, Y=777564). The adit is flood, and preserves a concrete mine tower. The vein is 0.5 m thick, bearing N80ºE, dipping 45º towards the South. The mining dump was sampled, results listed in the table:

TABLE 9.14 A.- EL SAPO MINE DUMP SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DEEP	TOWARDS
WP-161	Ore fragments	50	80	45	S

TABLE 9.14 B.- EL SAPO MINE SAMPLING RESULTS												
Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	As ppm	Sb ppm	Hg ppb	Bi ppm	Se ppm	Te ppm	Mo ppm	W ppm
3520	7,33	11,5	615	91,8	379	0,33	< 10	0,89	< 0.1	0,05	0,37	0,4

The results correlate with the miners’ information about the galena occurrence. The Au is 3.5 g/t, being the Ag higher than 7 g/t, also considerable in arsenic and lead.

La Murcielaguera mine (station 163), upstream El Cristo, was closed. The information provided by the local miners indicates us a subhorizontal veins with high contents in an artisanal underground (room and pillars and mining drifts) exploitation of 100x100 m. It is one of the more ancient mines in Remedios but not developed in depth.

In the southern hillside of the stream can be identified exploitation of gold (in the saprolite of the hillside) by the use of high pressure water that. The station 164 is located on small outcrops of quartz vein, bearing N36ºE, and dipping 50 º towards NW. A sample of chips was taken in that place:

TABLE 9.15 A.- STATION 164 SAMPLING FEATURES					
ID	SAMPLE TYPE		VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-163	Ore fragments		36	50	NW

TABLE 9.15 B.- STATION 164 SAMPLING RESULTS													
SAMPLE	Au	Ag	Cu	Pb	Zn	As	Sb	Hg	Bi	Se	Te	Mo	W
	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
WP-163	**7060**	33,7	46,2	58,1	50	256	0,23	10	17,2	0,6	8,72	0,62	2

It can be appreciated high content of gold, over 7 g/t. Ag is also high. The Te value is 8.72 ppm, high for the regional features.

Quiceno mine (Station 167)

It is located close to the northern limit of the permit. This mine is developed on a 2 m thick banded quartz vein and tectonized granodiorites. The vein bearing is N20ºE, dipping 40º to ESE. It is 100 m length outcropping to SW until Bedoya adit. In the Quiceno adit has been taken quartz chips with pyrite, the results are listed below:

TABLE 9.16 A.- QUICENO MINE SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-167	Ore fragments	200	20	40	SE

TABLE 9.16 B.- QUICENO MINE SAMPLING RESULTS													
SAMPLE	**Au ppb**	**Ag ppm**	**Cu ppm**	**Pb ppm**	**Zn ppm**	**As ppm**	**Sb ppm**	**Hg ppb**	**Bi ppm**	**Se ppm**	**Te ppm**	**Mo ppm**	**W ppm**
WP-167	133	1,64	52,4	10,9	24,4	54,6	0,28	< 10	0,15	< 0.1	0,41	1,42	1,9

The gold content is low, but slightly auriferous regarding to 133 ppb of Au. A complementary sampling of this exploitation is needed, undertaken some channels on the drift and tunnel sides.

Picture 9.5.- Outcrop of La Bedoya vein. Station 169.

The continuation to the SE of the Bedoya vein outcrops reaches massive quartz veins, 1-3 m thick, slightly tectonized. The veins are limited with a fault plane N20ºE, dipping 35-40º ESE. In the station 170, occur planes of tectonic reactivation, bearing N90ºE and gently dipping 10-15º to North. The fragments of the vein were sampled:

TABLE 9.17 A.- STATION 170 SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-170	Chips	300	90	15	N

TABLE 9.17 B.- STATION 170 SAMPLING RESULTS													
SAMPLE	Au	Ag	Cu	Pb	Zn	As	Sb	Hg	Bi	Se	Te	Mo	W
	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
WP-170	225	0,813	12,9	15,7	36,4	44,4	0,16	< 10	0,05	< 0.1	0,11	0,73	2,7

There is a clearly auriferous character in this sample, 225 ppb Au; being relevant as the outcrops is massive quartz vein with scarce oxides.

To the NW corner of the permit there are traces of Delicias vein occurrence, bearing N100ºE, dipping 45-50º to NNE. Ancient works were developed on this vein. A quartz block was sampled in the station 175:

TABLE 9.18 A.- STATION 175 SAMPLING FEATURES					
ID	SAMPLE TYPE	LENGTH (cm)	VEIN ORIENTATION		
			BEARING	DIP	TOWARDS
WP-175	Chips		100	45	N

TABLE 9.18 B.- STATION 175 SAMPLING RESULTS													
SAMPLE	Au	Ag	Cu	Pb	Zn	As	Sb	Hg	Bi	Se	Te	Mo	W
	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm
WP-175	203	1,13	2,02	2,94	25,5	4,4	0,02	< 10	0,06	< 0.1	< 0.02	0,28	< 0.1

9.2.2. Conclusions

In summary, during the field reconnaissance of La Palmichala permit has been identified a lot of mineralizations. These mineralizations are (or were) under mining in artisanal works, limited to the upper levels.

The outcrops are poor because of the thick soil and regolith. However, it were identified very interesting auriferous quartz veins.

The veins recognized belong to three vein systems:

- System NE-SW: dipping 40-50º to SE. The most continuous veins in the permit belongs to that system, as Bedoya or El Cristo. It is the same system of the two veins under mining in La Palmichala.

- Subhorizontal system: thin veins, gently dipping 15º to E, SE or S.

- System E-W: not very thick veins, bearing N70-90ºE, gently dipping to S, sometimes to the N.

In addition, it must be included Delicias vein, WNW-ESE, but only recognized in one case.

All the samples of the mineralization, channels, chips and fragments are remarkable in Au, independently to the vein sampled. The extension and variety of vein mineralization suggest an important auriferous potential. The Ag and base metal content are low, with only a few samples containing galena and sphalerite.

10. DRILLING

In La Palmichala mine property has not been undertaken any new drilling campaign under supervision of Green Mine International Corp or the issuer of this report.

It was conducted a drilling campaign on La Palmichala and Santa Cruz properties by Procoloro Resources Inc., in the 90’s, being around 45.000 m of drilling. Some of the drilling information was published (Rodriguez Alvarez, 2007), but in the permit of Yurani, 2 km SW of La Palmichala. The information correlates with La Palmichala-Criolla structure.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

The length of the sampling channels has been variable, ranging from 225 to 85 cm. It has been tried to cover the whole length of the mineralization from hanging to footwall of the structure, independently of the nature of the mineralization (massive quartz, alternation of quartz veins and deformed host rocks or argillized bands of tectonic reactivation). When the channel was made on the exploitation drifts (mine drift, “tambores”, etc) its length is the real thickness of the vein. In contrast, in the side of the galleries, the total length is longer than the real thickness, so it was calculated by the dip of the vein.

The weights of the samples range from 46.65 to 16.37 kg, being 37.47 the average (table 11.1). It has been taken 2.5 kg of sample per 10 cm of channel that can be considered representative for this type of mineralization.

TABLE 11.1.- SUMMARY OF SAMPLES OF LA PALMICHALA UNDERGROUND MINE (CHANNEL SAMPLING)

SAMPLE	LENGHT (cm)	WEIGHT (kg)	THICKNESS (cms)
GP-001	145	41,34	114,3
GP-002	170	39,082	170
GP-003	130	37,588	130
GP-004	135	46,226	135
GP-005	160	35,128	160
GP-006	165	46,442	165
GP-007	140	35,802	140
GP-008	130	42,094	83,6
GP-009	225	36,47	156,3
SNS-010	110	46,65	76,4
SNS-011	150	39,142	114,9
SNS-012	160	38,292	122,6
SNS-013	120	33,898	91,9
SNS-014	185	39,774	135,3
SNS-015	145	39,132	104,3
SNN-016	155	34,762	107,7
SNN-017	165	43,646	118,7

TABLE 11.1.- SUMMARY OF SAMPLES OF LA PALMICHALA UNDERGROUND MINE (CHANNEL SAMPLING)			
SNN-018	110	44,032	55
SNN-019	120	35,066	80,3
SNN-020	105	31,67	67,5
SNN-021	125	36,276	89,9
GP-022	160	36,024	131,1
GP-023	110	38,8	70,7
GP-024	180	35,56	137,9
GP-025	140	37,71	140
GP-026	140	37,668	140
GP-004bis	130	42,664	130
GP-005bis	125	31,33	125
TC-027	190	30,164	155,6
TC-028	180	39,14	137,9
TC-029	160	31,094	160
SNN-030	220	40,046	147,2
SNN-031	190	35,98	164,5
SNS-032	125	35,564	125
GP-033	85	16,372	54,6
GP-034	170	36,786	120,2
TC-035	170	38,944	130,2
TC-036	160	37,51	113,1
Average value	***149,61***	***37,47***	***121,10***
Max. value	***225,00***	***46,65***	***170***
Min. value	***85,00***	***16,37***	***54,64***

The sampling was planned as a regular grid, with 1 sample per 10 m of tunnel. However, the mine prop, exploitation areas not showed in the map, accessibility, etc., means that the sampling in some areas was undertaken when it was possible. Where the area was accessible it was undertaken a regular sampling. The resulting sampling provides an approximation of the grade distribution and the potential resources. The section of the mineralization can be well determined in 160 m along the vein strike and ranging in elevation from 610 to 587. This is the section currently under exploitation, being open to SW and NE in strike and in depth along the vein dip. To the top it has been already exploited the mineralization, but it is still lot of areas able to be mined in this sector. The unavailability of a good topography in the upper levels made

impossible to locate samples over the 610 m level.

11.1. SAMPLES HANDLING

The sampling channels were marked with fluorescent spray paint, with the label of identification visible in case to a later or secondary sampling. The rock was sampled by using hammer and chisel. The whole area painted was homogeneously sampled. Due to the fragmentation of the vein, the big fragments were reduced to introduce an homogeneous sample, representative of the whole thickness of the vein. The regular sampling has been undertaken at any sampling point to maintain the homogeneity and representativeness of the sample.

All the samples were gathered by spreading a tarp beneath the sample point, to avoid floor contamination, being immediately introduced in sample bags. Each sample bag was labeled, inside by introducing code into a small plastic bag and outside by permanent marker. Finally the samples were sealed on site by using nylon cable ties. Each sample fills two bags of approximately 15-20 kg.

The sample bags were transported by the extractive facilities of the mine. Because of the protection of the sample bags, these were introduced in high capacity plastic bags. Once outside the mining areas, the samples were controlled, classified and stored in a locked room. The locked room access was always under the CRN technicians, the samples were stored until transportation to the Laboratory.

Fig. 11.1.- On the left: Sample gathered on a tarp to avoid pollution (sample GP-005 bis). On the right: Channel on mineralized quartz vein (sample GP-004).

Fig. 11.2.- Sealed procedure during sampling (sample SNN-030).

The transportation was made by a vehicle under supervision of the CRN technicians. The transfer to the laboratory transport was arranged in the town of “El Hatillo”, in a certified transport under supervision of ActLabs. The samples were under ActLabs custody until final destination in the laboratory facilities in Río Negro.

11.2. SAMPLES PREPARATION AND ANALYSES

The samples preparation and the analyses were made by Actlabs in their laboratory of Río Negro (Colombia).

The samples were weighted, dried and crushed (jaw crusher) up to 90 % passing 2 mm. Once homogeneous, the samples were splitted (250 g) and pulverize (mild steel) to 95% passing 105 µm. Finally, it was analyzed 30 g of this last sample.

The Au has been analyzed by FA (fire assay), being using the gravimetric when the result was higher than 5 ppm. The AA (atomic absorption) was undertaken for Ag, Pb, Zn and Cu. A complementary ICP multi-element assay has been made for the definition of elements that could influence the metallurgical processes as the As, Se, Te, Hg, Sb, etc.

The quality control of the laboratory, it was made duplicates, standards and blanks by the Actlabs laboratory.

12. DATA VERIFICATION

CRN specialists (PhD Geologists) have been supervising on site the samples collection discussed on this report. The field investigations, mapping, samples collection, structural definition, etc. was made be the CRN geologists with the assistance of the Green Mine Solutions SAS professionals.

Dr. Palero Fernández and Dr. González Roldán visited the Palmichala mine from 21st to 26th of January. The CRN specialists interviewed the Palmichala management staff and determined the final sampling, mapping and fieldwork procedure. The sampling in the underground mine was undertaken from 22nd to 23rd by the direct supervision of CRN geologists under the specifications of the CIM guidelines. The fieldwork reconnaissance and sampling was made from 24th to 25th by the CRN geologists. All the works were assisted by confidence local miners and the Green Mine Solutions SAS team.

The reliability of the sampling is considered that fulfilled the guideline for best practices, being representatively of the whole rock. The samples delivery to the certified laboratory was made under the supervision of the CRN specialists, and the shipment occurs accordingly to the assaying laboratory practices. The assay results quality control was made by statistical treatment by the study of the control samples. The analytical quality control has been developed by CRN specialist, independently of Green Mine International Corp.

The Actlabs certified laboratory performed sample blanks, duplicates and reference materials for each batch of samples. The analysis of the duplicates was made by statistical treatment.

In opinion of the qualified person, the procedures developed by the CRN geologists secure the reliability of the sampling, data acquisition and field interpretations.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

It has not been undertaken minerallurgical tests or mineral processing test. However, it has been checked the current minerallurgical processes that has been applied to the mineral coming from La Palmichala mine.

14. MINERAL RESOURCE ESTIMATES

The resource estimation has been undertaken in two separates areas:

- The area currently under mining, where the sampling has been developed and the structure is known. There has been considered a vertical difference between the levels of 100 m (level 585 to 485). Palmichala has already mined around 100 m in vertical level from the outcropping vein to the current level of exploitation (level 685 to 585). These resources have been defined as indicated resources.

- Palmichala-Criolla structure has been identified in the property in the field points 166, 167, 168, 169 and 171 (tables 9.7 and 9.8). The continuity of the structure has been considered departing from the northern edge of the current exploitation until the boundary of the permit (total length of 550 m) and a vertical difference in depth of 200 m between levels (level 640 to 440). There is needed more mapping, drilling and sampling on these structure to obtain reliable calculations. These resources have been defined as inferred resources.

The results for the sections between the Palmichala and Criolla veins could imply an area liable for be mined of 5-7 m thickness, with around 3 g/t of Au. It is needed to establish its continuity for the whole property.

The resources are summarized in the table below:

TABLE 14.1.- INDICATED AND INFERRED RESOURCES IN LA PALMICHALA PROPERTY

Location	Length (m)	Thickness (m)	Depth (m)	Density (t/m^3)	Tonnes (t)	Grade (g/t)	Resources Oz troy
Indicated resources in the Palmichala mine	175	6.00	*155	2.767	450,329	3.0	43,435
Inferred resources in the permit	550	6.00	**311	2.767	2,839,772	3.0	273,902

* 100 m between vertical levels (40º of average dip)
** 200 m between vertical levels (40º of average dip)

The inferred resources have been considered in depth only for 200 m in level for the unexploited areas. Indicated resources have been determined in a 100 m in level for the area of the exploitation where the first 100 m were already mined.

It is remarkable that the Palmichala-Criolla structure belongs to “El Silencio” system were the exploitations reached 1,200 m in depth following the dip. This data suggest that the Palmichala-Criolla structure could continue in depth, if the continuity is determined, as El Silencio orebody. In the case of similar continuity in depth of the structure and Au content, the reserves could be increased to more than 2,000,000 ounces troy for Palmichala-Criolla structure in the Palmichala property.

The resources are limited to the Palmichala and Criolla veins in the property. There are outcropping veins and old mines with Au grade similar to these obtained in La Palmichala sampling. These veins can correlate as showed in fig 9.6 of this report, but it is needed additional mapping, drilling and sampling to define the structures in the property.

15. MINERAL RESERVE ESTIMATES

The information obtained in this research is not enough to undertake reserve estimation.

The project initial resources estimation, the mining experience in the region, the already existing mining facilities available in the area and the administrative documentation of the owner imply a interesting mining potential of La Palmichala property.

16. MINING METHODS

The current mining method is tunnels following the strike of the quartz veins and a rough rooms and pillars technique of irregular distribution, following the dip (up or down) of the mineralized structure. The pillars dimensions are variable and randomly.

The current exploitation is made in two levels following the strike of the orebody. The access tunnel (“Apique principal”) is 118 m long with N108ºE azimuth, in three stretches (Fig. 16.1) of increasing steepness of 40º, 43º and 54º.

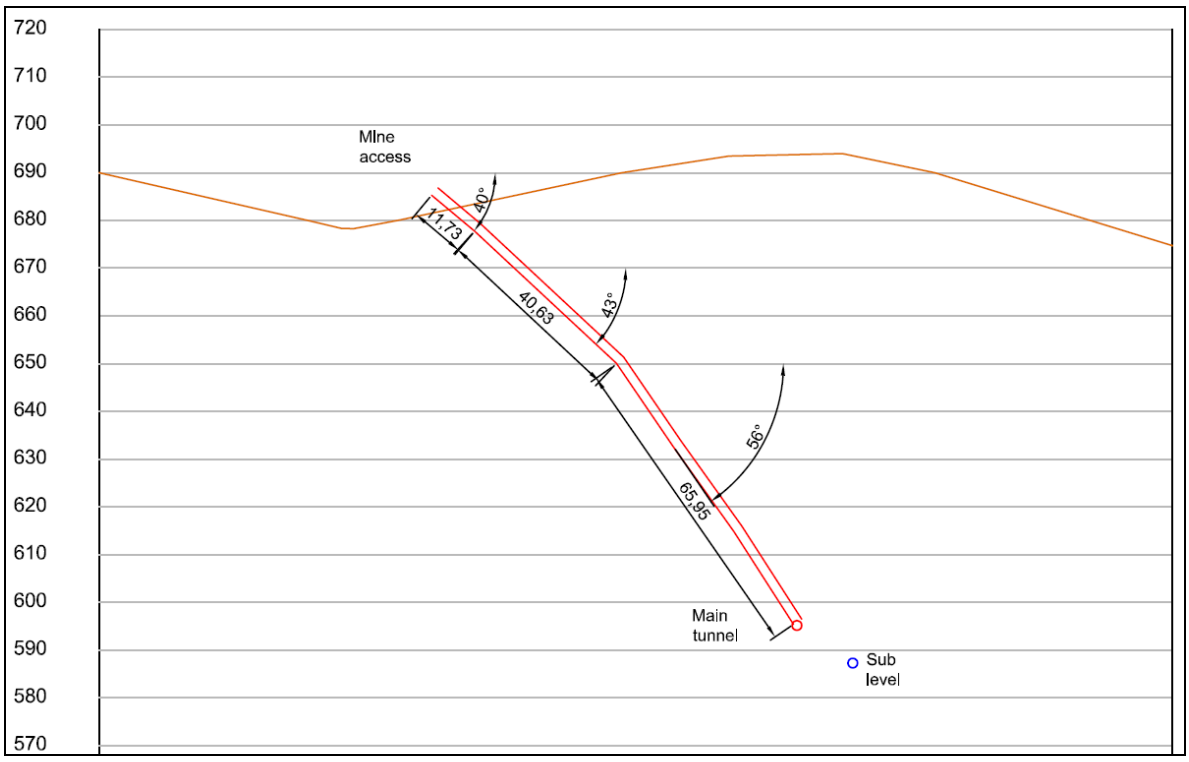


Fig. 16.1.- Entry gallery section.

Departing from the entry gallery, the main tunnel is developed to the N22ºE, of 138 m length. Its average level is 597. It is the access for personnel and mine transportation with slope of 2” vs. ¼ “. The main tunnel follows the strike of the Criolla vein. At 38 m from the entry of the main tunnel, there is an secondary gallery that connects with the sublevel exploitation, named “Apique interno”.

The sublevel is 11 m below the main tunnel level, at the level 585. It is developed to the north 108 m (azimuth 22º) and 60 to the south (azimuth 210º). This sublevel is following the Palmichala vein strike.

It is three areas of mining out of the tunnels:

- A room of 300 m^2, over the level of the main tunnel in the area called “tambores 1 and 2”, named Tambor La Criolla. Levels 600 to 620.
- A second room of 60 m^2, in the area between the veins at the SW, level 595.
- A third room of 270 m^2, in the area between the veins, departing from the “apique interno” of 12 m length.

In addition, there have been exploited 5 levels, 3 to the North of the entry tunnel, and 2 to the South of the entry tunnel. The tunnel and drift sections are irregular, average of 1.8 x 1.8 m (3.24 m^2), but 1.5 m x 10 m (15 m^2) in the rooms (“tambores”).

16.1. MINING EQUIPMENT AND PRODUCTION

In the table 16.1, it is listed the current mining equipment of Palmichala mine. The production is 35 t per day, in three shifts of 8 h, seven days per week, with 53 total workers.

TABLE 16.1.- LA PALMICHALA MINING EQUIPMENT

Units	Equipment
1	Oil electrical transformer, high and low. Siemens de 75KvA
1	Diesel compressor. Sullair, of 185CFM, 100 psi
1	Pump 3hp. Barnes
2	Pump 15hp. Barnes
1	Winch drum tower 20’’, wire 180 m of ¾’’, motor Siemens of 20hp 1750 rpm, gear-motor tecnotrans
1	Mining hopper of 20m^3
1	Hydraulic hammer. Toyo

The internal transportation of mineral inside the exploitation is made by wheelbarrow in the tunnels. The extraction is made by the entry gallery in a mine wagon of 600 kg capacity on wooden rails, 60 cm width.

The mining is made by perforation and blasting, using column hammers (Jacklegs) for perforation, 5 ft length. The blasting is made by using Indugel Plus (26mm x 250mm), the trigger of the explosive is made by fuse and detonator (“fulminante”). The consumption of explosives is 1.013 kg of Indugel (4.52 boxes of Indugel), 12.3 rolls of fuse (250 m per roll) and 19.2 boxes of detonators (100 units per box).

The mine ventilation is made by buffalo blowers. The main ventilation is made by a 6 hp ventilator outside the mine by a 12” diameter pipe. Inside the mine is an auxiliary 3 hp ventilator, introducing the air to the mine drifts by a 6” diameter pipe.

17. RECOVERY METHODS

Since the last 40 years, La Palmichala mine has been one of the most economically profitable in Remedios area, despite of being exploited and have a mining beneficiation at low scale.

In the 70’s the exploitation was limited to the altered zones, by extracting the richest mineral with a rate of 2 t/day. It was beneficiated by using amalgamation with 20 ball mills. The process consists of homogenization of the mineral in a jaw crusher to lower ½ in. The mineral and the mercury are added to the ball mills of 70 kg capacity, using iron-manganese balls of 1-2 in. The grinding was undertaken up to 3-4 h, recovering the amalgam by panning. The recovery rate was below 40 %.

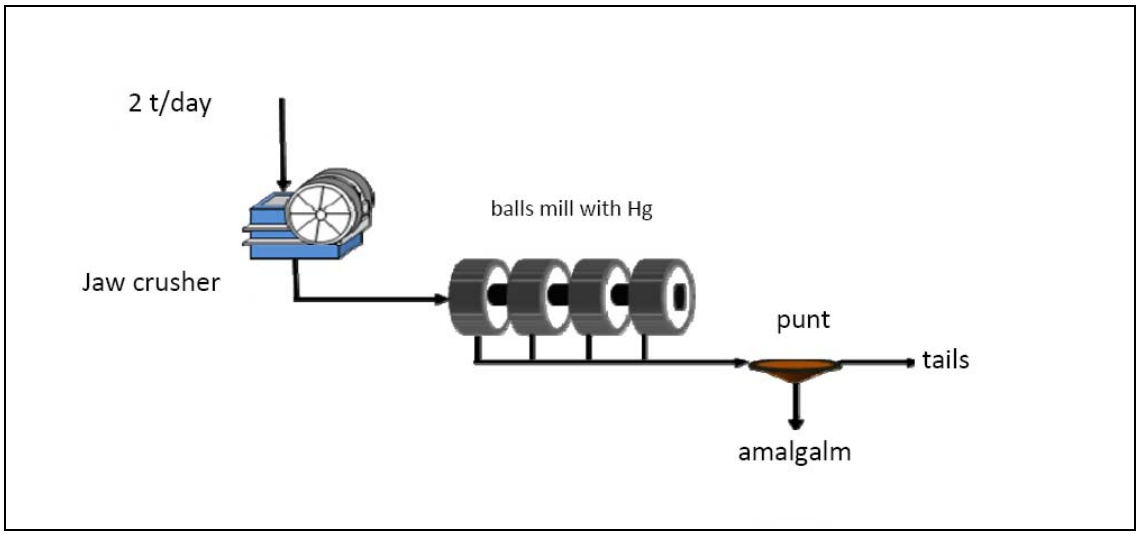


Fig. 17.1.- Initial beneficiation system.

According to the increasing production of the mine, the mine beneficiation plant was enlarged, introducing more stages that improved its capacity. To the mill and amalgamation processes as added a sieve to increase the capacity of the crusher, and a system for cyanidation by filtering for lixiviation of the ball mills to increase the recovery. The cyanidation was made during 30 days, being the gold recovered by precipitation using zinc dust (Merrill-Crowe process). The production was then augmented to 5 t/day.

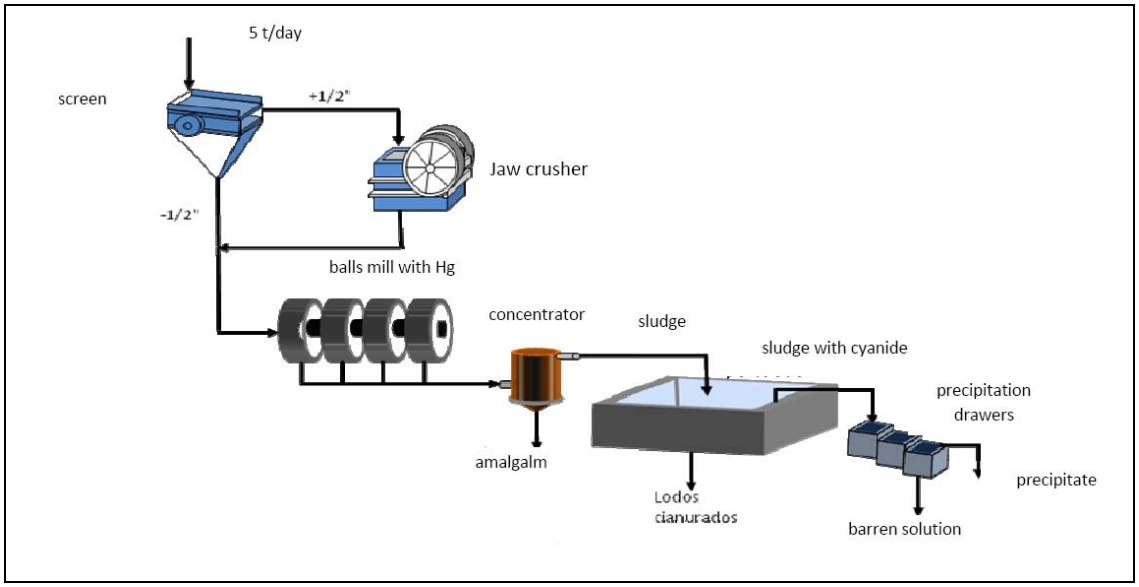


Fig. 17.2.- Beneficiation system, enhanced by cyanidation.

In the 90’s, the beneficiation process was improved, but still as a batches system. The main changes were:

- A primary crusher with balls mill of continuous feeding
- A concentration system with a jig and a german table
- Grinder for fine size before cyanidation

After the crusher, the material was conducted to a balls mill that was feeding the jig concentrator. The overflow feed a shaking table and the underflow separated the gold and bigger sulfides. The concentrates were re-milled and amalgamated in the balls mill, being the tailings of the shaking table were milled for feeding of the cyanidation process. The mud of the mills was separated in the shaking table for recovery of the residual mercury. The process rate was 8 t/day.

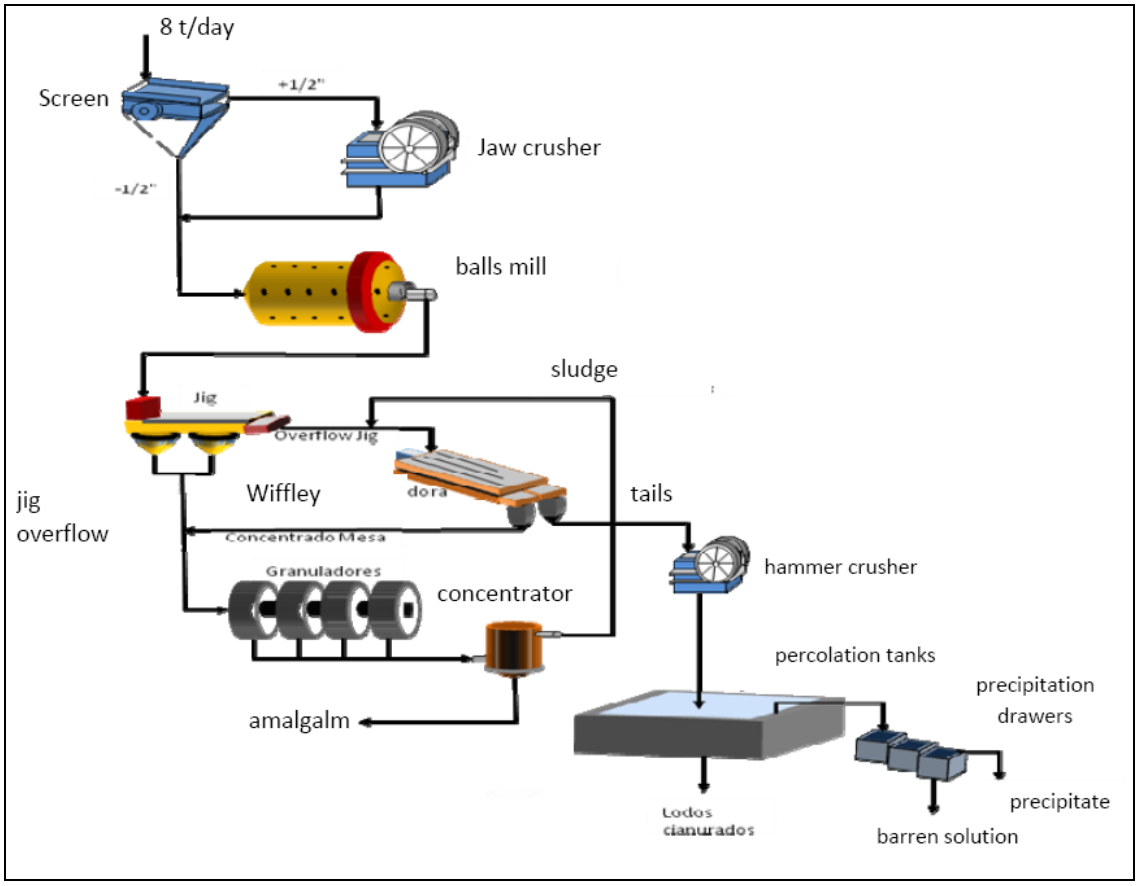


Fig.17.3.- Beneficiation processes during the 90's.

Despite of enhance of the plant, the global efficiency in gold recovery was below the 60 %. Then the Laboratory of Materials of the National University of Colombia started a research for determination of the better design for gold recovery. The gravimetric concentrator, amalgamation and cyanidation were determined as the best processes by using a laboratory scale study and a composite of samples from the mine operation at that time. The characterization of the original sample is:

TABLE 17.1.- ORIGINAL COMPOSITE OF SAMPLES FROM LA PALMICHALA. LABORATORY OF MATERIALS STUDY

Mesh	% pulp/pulp retained	Au free (g/t)	Au associated (g/t)	Au Total (g/t)	Ag Total (g/t)
+48	17.63	28.0	28.0	56.0	35.6
+64	19.19	12.3	12.0	24.3	18.0
+100	15.68	7.0	12.0	19.0	14.0
-100	47.50	6.3	12.0	18.3	13.0
	$\sum\left(Au * \frac{p}{p}\right)$	**11.58**	**14.82**	**26.40**	**18.10**

The concentration study in Wilfley table was carried by the variation of the water flow and inclination angle, being the density parameters 26 % and particle size of 48-80 mesh. Results obtained below:

TABLE 17.2.- RESULTS OBTAINED IN THE OPTIMIZATION OF THE WILFLEY TABLE DESIGN

Water (l/min)	Inclination (°)	Concentrated (%)	Au (g/t)	Ag (g/t)
2	6	12.8	133	82
	7	6.2	299	170
	8	4.8	420	240
3	6	10.3	161	88
	7	9.0	186	106
	8	3.2	600	374
4	6	8.1	200	102
	7	6.1	294	170
	8	4.8	396	224

The results on Au and Ag content in the current on the table were lower than 10 g/t. The jig concentrator tests vary the percentage in solids on the pulp and the amplitude of the shaking. The grain size was determined in 48-80 mesh, 240 shakes per minute and loading 2 kg of sample. The results are listed below:

TABLE 17.3.- RESULTS ON JIG CONCENTRATOR TESTS

Solids in pulp (%)	Amplitude (cm)	Concentrated (%)	Au (g/t)	Ag (g/t)
30	1.9	7.5	64	26
	1.4	9.6	66	30
	0.5	10.9	66	28
40	1.9	8.6	68	30
	1.4	11.0	68	28
	0.5	12.8	66	30
50	1.9	10.7	70	28
	1.4	12.6	68	26
	0.5	15.1	68	26

The higher content in gold in the jig tails was lower than 2 g/t, being Ag around 10 g/t. in the amalgamation tests, the better results are in the table below:

TABLE 17.4.- RESULTS OF AMALGAMATION TESTS				
Mill time (h)	**Hg (%)**	**Solids in pulp (%)**	**Au (g/t)**	**Recovery (%)**
1.5	7.0	50	242	58

The Au content, not in amalgamation, in the residual mud was 174 g/t. This material was used for testing in the cyanidation with mechanical shaking, with lixiviation lapse and concentration of cyanide variations. The best result of dissolution was obtained with 40 h of shaking and initial cyanide concentration of 1.5 kg NaCN/t_{min}. The recovery in the test was 91.3 %. The results are summarized in the table below:

TABLE 17.5.- RESULTS ON CYANIDATION TESTING				
Shaking time (h)	**Consumption [NaCN] kg/t**	**Pulp solids (%)**	**RPM**	**Dissolution Au (g/t)**
40	2.0	25	60	158.8

During 2004, the lixiviation system was change to a cyanidation with mechanical shaking, being also modified the precipitation method by the Merrill-Crowe, boxes with zinc dust in a free oxygen atmosphere. This change provides the decrease from 30 to 3 days of lixiviation time lapse with the recovery of the gold in the mud.

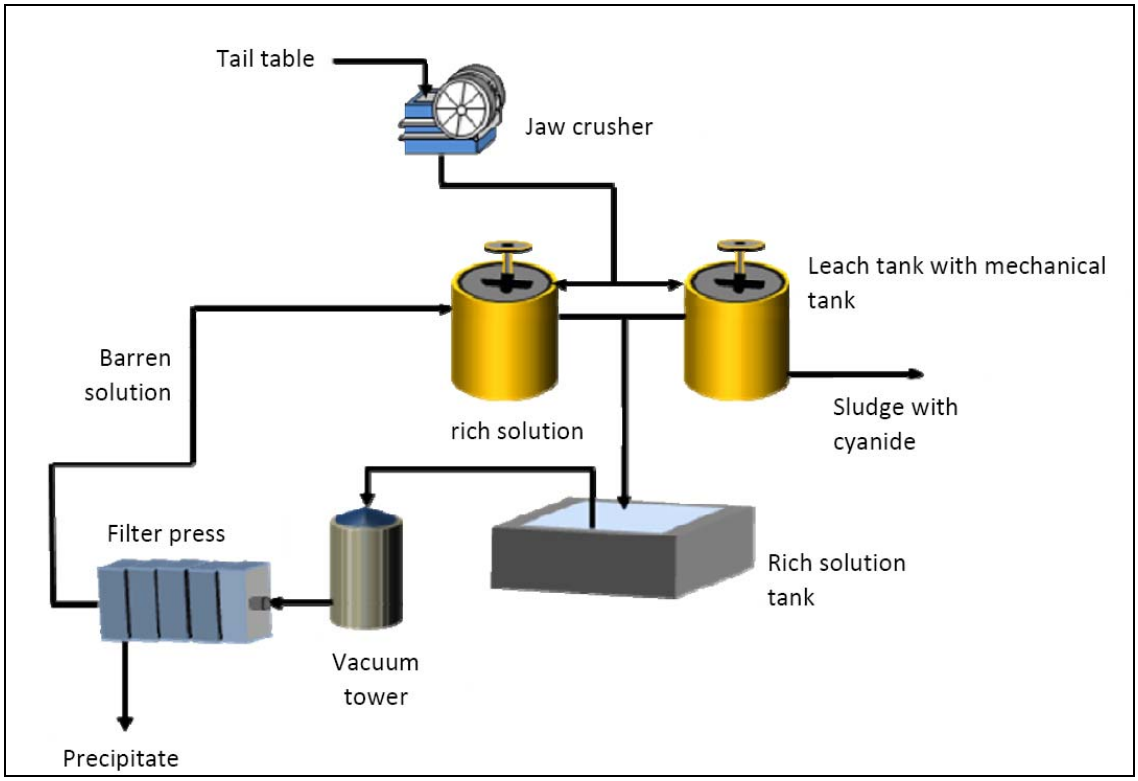


Fig. 17.4. Cyanidation and precipitation system after 2004.

Currently, the exploitation and mineral processing is developed by an external company of mining operations, extracting 35 t/day. The beneficiation is undertaken in the plant Quintana, in the road to Santa Isabel, 30 minutes from Remedios. The plant of Quintana equipments are conventional, regarding to this type of mineralization as crushing, classification, wet mill, gravimetric concentration, flotation, re-grinding, lixiviation and precipitation. This plant is not using mercury at any of its stages. Below are listed some of the metallurgical data from October to December of 2012. .

In the tables 5 and 6 are listed the dry tones milled, tones concentrated in the Jig and flotation, the contents, gold recovery and gold in tails.

TABLE 17.5.- GOLD CONTENT AND TONNES PROCESSED IN OCTOBER 2012.											
Tones	**Au (g/t)**	**Jig (t)**	**Au in Jig (g/t)**	**Flot. (t)**	**Au in flotation (g/t)**	**Tails (t)**	**Au in tails (g/t)**	**Mill Au (g)**	**Jig Au (g)**	**Flotation Au (g)**	**Tails Au (g)**
14,3	3,7	0,2	189,9	0,2	58,0	13,9	0,5	52,5	35,1	11,1	6,3
43,9	3,6	0,4	190,8	1,1	61,0	42,4	0,3	159,4	76,4	69,9	13,1
31,4	4,0	0,5	130,7	0,7	65,5	30,3	0,6	125,8	59,6	47,2	19,1
31,5	5,8	0,2	685,7	0,8	58,0	30,6	0,5	182,1	123,4	44,6	14,1
20,8	4,3	0,2	206,2	0,6	51,0	20,0	0,5	90,3	49,6	31,4	9,4
31,1	7,2	0,4	363,0	0,6	84,0	30,1	0,5	224,5	162,9	46,3	15,4
Av.	**4.8**		**294.0**		**63.0**		**0.5**				

TABLE 17.6.- GOLD CONTENT AND TONNES PROCESSED IN DECEMBER 2012.											
Tones	**Au (g/t)**	**Jig (t)**	**Au in Jig (g/t)**	**Flot. (t)**	**Au in flotation (g/t)**	**Tails (t)**	**Au in tails (g/t)**	**Mill Au (g)**	**Jig Au (g)**	**Flotation Au (g)**	**Tails Au (g)**
27,1	6,2	0,1	1690,6	0,5	65,0	26,6	0,4	166,8	124,9	30,4	11,4
26,3	4,9	0,1	1285,4	0,6	90,0	25,6	0,2	128,4	68,8	55,8	3,8
37,7	6,6	0,1	245,8	2,4	88,0	35,2	0,2	246,9	30,9	208,6	7,4
40,0	5,6	0,3	584,0	1,3	53,0	38,4	0,2	223,7	146,6	70,2	6,9
42,0	6,8	0,2	884,3	1,4	69,0	40,4	0,4	285,1	174,4	94,5	16,2
20,4	5,9	0,1	456,0	1,0	58,0	19,3	0,2	119,7	55,7	60,3	3,7
43,8	6,5	0,2	905,0	1,3	66,0	42,4	0,2	286,7	197,4	82,5	6,8
27,0	4,4	0,1	281,9	1,1	62,0	25,8	0,5	119,1	37,8	68,9	12,4
14,8	4,7	0,1	324,6	1,0	37,0	13,7	0,3	70,0	30,0	36,2	3,8
41,6	4,7	0,2	484,0	1,3	48,0	40,0	0,4	194,9	118,1	62,0	14,8
28,3	4,3	0,2	271,3	1,2	54,2	27,0	0,4	121,5	45,8	65,5	10,2
30,8	5,9	0,2	501,2	1,2	63,0	29,3	0,7	182,4	82,4	78,6	21,4
13,9	5,6	0,1	334,6	0,6	78,0	13,2	0,4	77,2	28,2	44,3	4,8
27,6	5,8	0,1	673,8	1,3	49,0	26,2	0,7	160,9	80,4	61,9	18,6
Av.	**5.6**		**637**		**63.0**		**0.4**				

From October to December 2012, it is an average increase in the head of the process, with increasing content in the jig. It could be related to and augmentation of the free gold or association to mineralization with bigger particle liberation. From results it can be inferred that in the concentration process, the gold recovery is around 90 %. The table 7 lists the cyanidation results on December 2012.

TABLE 17.7.- GOLD RECOVERY BY CYANIDATION					
DATE	**Jig (t)**	**Flotation (t)**	**Au entry cyanidation (g)**	**Au recovery (g)**	**Au loss cake (g)**
14 to17 Dec.	0,702	6,152	1005,17	893,29	54,7
20 to 22 Dec.	0,474	3,402	502,72	478,87	15,5
23 to 27 Dec.	0,873	6,558	733,3	679,30	57,8

The average gold recovery in the lixiviation is higher than 90 %, it implies a non-refractory ore behavior.

18. PROJECT INFRASTRUCTURE

The Palmichala mine (semi-industrial exploitation) is currently under exploitation. The access, electrical supply, water management, etc. are totally operative.

The project implementation will need to be improved on the current supply, enhancing all the general infrastructures adapted to the future exploitation.

This report includes the budget for a geological and mining engineering project.

19. MARKET STUDIES AND CONTRACTS

Gold has become a save heaven for many investors and even through the years Gold has kept its value. In 1931 the United States created the Federal Reserve Bank to control the US economy. But instead of stabilizing the US economy it created an industrial nation control by credit. The power of the US dollars has lost 95% of its purchase power. The dollar was backed by Gold from 1913 to 1971. Since 1971 the US Dollar is no longer backed by Gold. The Gold reserves of the US are not big enough to justify all the US Dollars that the USA has printed since 1971. Now the Federal Reserve Bank issues United States Treasury Bonds and writes a check against these Treasury Bonds to print Dollars. The United States Treasury Bonds are just one piece of paper backing another piece of paper. If the United States stops paying these Treasury Bonds like Germany and many European counties did after the Second World War, the US Dollar will collapse (Russell et al., 2012a).

In 1971 president Nixon abandoned the Gold standard, after the French started to drain the Gold reserve of the United States. Since 1971 the obligation of the United State are higher than the value of the US Dollar. The US Dollars is no longer a stable currency (Dobbs, et al., 2012).

United States spending is out of control while the Gold purchasing power has kept its value. In 1971 you needed $2,900 USD or 83 ounces of Gold to buy a standard Mustang. In 2011 you need $39,000 USD or 83 ounces of Gold to buy a full loaded Mustang plus gas for 1 year. This sample shows that UD Dollars have lost 97 % of its value in the last 30 years, while Gold kept its value (Morgan et al., 2012).

TABLE 19.1.- GOLD PURCHASE POWER IN TIME

Year	**1971**	**2011**		**What can you buy**
Gold Power	83	83	100%	Standard Mustang
US Dollars	2,900	39,000	7%	Full Loaded Mustang

1971 Standard Mustang = 2011 Mustang = 83 Ounces of Gold

2,900 USD = 39,200 USD = 83 Ounces of Gold

The dollar value has lost it purchasing power. The US Dollar is back up by the US worker. The more the US Government spent the more the US worker needs to work to pay for the spending. When US dollars loses it power, so does stocks, Bonds and any other type of saving in US currency. The United States is running almost a crisis deficit.

US Dollars used to be the number one reserve currency of the world. Many countries used to hold US Dollars to diversified and hedge their currency. Now many countries like China and Russia are starting to diversified. They are looking at the second reserved currency which is Gold. (Browne et al., 2012)

The United States went from a credit nation to a debit nation. United States produces very little but consumes 4/5 of the production all paid by US Dollars that are losing value every day. The United States produces less than what they import. Countries worldwide make the product that that United States needs and they pay for those products in US Dollars back up by US Treasury Bonds. Exports of goods and services in April 2011 were $175.6 Billion while imports of goods and services were $219.2 billion. The US Economy depends on the kindness of other countries to survive. United States is exporting or producing a lot less than what they importing (Klapwijk et al., 2011).

The goods deficit with Canada decreased from $2.6 billion in March to $2.5 billion in April. Exports decreased $2.0 billion (primarily automotive, parts, and accessories and computer accessories) to $23.7 billion, while imports decreased $2.1 billion (primarily crude oil, passenger cars, and civilian aircraft) to $26.2 billion.

The goods deficit with China increased from $18.1 billion in March to $21.6 billion in April. Exports decreased $1.5 billion (primarily soybeans; passenger cars; and civilian aircraft, engines, equipment, and parts) to $8.0 billion, while imports increased $2.0 billion (primarily apparel; household goods; and toys, games, and sporting goods) to $29.6 billion.

The goods deficit with Japan decreased from $6.1 billion in March to $3.6 billion in April. Exports decreased $0.5 billion (primarily metallurgical grade coal, medicinal

equipment, and organic chemicals) to $5.2 billion, while imports decreased $3.0 billion (primarily automobiles, parts and accessories and computer accessories) to $8.8 billion. US Census June 2011 (www.census.gov).

Fig 19.1.- US International Trade in Goods and Services.

All currencies over time that are not backed up by something solid have lost value:

TABLE 19.2.- CURRENCIES LOST VALUE

Country	Year	Lost value
Brazil	1992-1994	100%
Mexico	1994-1995	50%
Japanese Jen	1996	24%
Russian Rubles	1998	70%

The United States has been living with very high standards paying for with US Dollars that are not back up by any solid substance. The demand for dollars is decreasing and is possible one day US Dollars will not be accepted. Over the last 5,000 years Gold has held its value and is still the number 2 currency accepted worldwide. (www.census.gov).

Many analysts say that the stock market, the housing and the US dollar are in a bubble. All this are over value and losing value fast. Gold is an asset that anybody can own and it has sustained its value for over 5,000 years (Eeden et al., 2012).

Many USA analysts agree that Gold is the only solid assets every person should have. They also agree that every person should have between 5% and 50% of Gold as part of their portfolios. Buying Gold is easier than buying stocks or real estate. It is also easier to sell. Gold is becoming an insurance policy (Russell et al., 2012b).

Nina Koeppen said on February 25, 2011 that “the sovereign-debt crisis and inflation support European demand for metals as a safe-haven” (Russell et al., 2012c).

Randall W. Forsyth compare the USA with Greece by saying: “Are the Greek and US debt problems are reaching similar criticism and concern” (Koeppen and Fairless, 2011).

Gold has been a solid hedge against the US Dollar. The value of US dollars have decline from 2001 to 2004 30%, and is declining every day. The US Government deficit totaling trillions of dollars, the cost of prolongs war against terrorism and the massive trade deficit is creating a huge burden on the US economy. US dollars are worth less and less every day and any investment that is back up in US dollars are worth less and less too. While the US Dollar decline in 2003 and 2004 Gold value increased. Gold has been a safe-haven in times of war, political strife and uncertainty. During 9/11 stock market close and stocks decline in value. Gold offers outstanding profit potential and appreciation. During the “bubble” of 2000 the price of Gold was stable and increase more than 40%, while many stock value evaporated.

Matthew Lynn stated that: “On the one hand, there are the gold bugs, for which the metal is the one true currency. Where is everyone going to flee for safety? To gold, of course. As rates start to rise, and fighting inflation becomes the main task of central bankers rather than warding off another great depression, the price of the precious metal will soar. That will be the blow-out phase of the 12-year bull market. It might happen next year, or it might be 2013. And gold might hit $2,500 an ounce or $3,000. Or even more” (Forsyth, 2011).

In conclusion the price of Gold will continue to be above $1,500 US Dollars as long as the United States and the European Union economy continue to be slow. It is predicted that the economy of both this nations will not recover for 5 to 10 years; therefore we can predict that the price of Gold will be stable above $1,500 US Dollars.

The biggest buyer of Gold in Colombia is El Banco de La Republica de Colombia (The Bank of Colombia) and La Palmichala has sold its Gold to this Bank for over 10 years. We do not need at the moment any market strategies or special requirement to enter this very well establish market.

This reliable information provided in this section of the report is reliable and includes reliable projection for the future of Gold. This confirms that the “qualified person” agrees with these studies and analyses and that the results support the assumptions on the technical report.

Green Mine Solutions SAS a register company in Colombia and part of Green Mine International has entered into an agreement to operate the mine La Palmichala and as part of the agreement Green Mien Solutions will renegotiate the cost of processing the material of La Palmichala at the Quintana processing plant. Green Mine Soltuions SAS will split the profit 50% -50% with the owner of the mine entering into a joint venture with the owner of the mine. The terms of the contract are within the industry norms.

20. ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL IMPACT

La Palmichala has been a legal mine in production since 2004. Every mine in Colombia has to do the PTO-Works Planning (*Plan de Trabajo y Obras)*. On this report the mine is require to do a PMA-Environmental Planning (*Plan de manejo ambiental*).

La Palmichala was required to describe and to follow a set standard of rules to keep the operating license. La Palmichala is not doing any cyanide treatment on the property. This reduces the waste and the danger of any pollution in the nearby areas. La Palmichala has all its license and environmental permits up to date and has followed all the required rules to be in operations.

The require treatment of waste and disposal of sterile materials has been reduce by processing the material at la Quintana processing plant. The water inside the mine is pump out of the mine before any work start in the tunnels. This reduces any contamination of the water from blasting or mining residue.

Green Mine Solutions SAS is working with Colombiana de Biocombustibles SAS to grow Higuerilla, a plant that produces oil that can be used to produce Biodiesel. At the moment Green Mine Solutions SAS is already producing Biodiesel and this biodiesel is being used in mines in Colombia. Biodiesel emit less carbon dioxide and is friendlier to the environment than regular diesel. The seeds of Higuerilla are being planted in the nearby communities creating employment and giving stability to these areas.

There are no reclamation bonds or post performance bonds required in the area but Green Mine Solutions SAS has already stated to grow Higuerilla and Sacha Inche a plant that produces high quantities of Omega 3, 6 and 9 in the nearby areas. This will reduce any cost of remediation or reclamation needed when the mine closure.

Green Mine Solutions SAS is working with the communities around the area to create agriculture jobs. These jobs will create stability and create new industries producing Sacha Inche oil and Biodiesel that will help the communities to survive after the mine closes. The cost and requirement of the mine closure will be reduced to a minimum because the remediation and reclamation has been done during the exploitation.

21. CAPITAL AND OPERATING COSTS

The mine La Palmichala is currently under operation, producing 6 kg of Gold per month, extracting 35 tons/month of mineral. Current costs are:

TABLE 21.1.- CURRENT COST PER MONTH	
ITEM	CAD $
Maintenance	8,399
Diesel	560
Supplies	1,232
Energy	7,279
Explosive	10,078
Oils	2,104
Wood	1,680
Labor	95,243
Total	126,575*

Cost per ton per month	69.78

If there are 1,365 tonnes of mineral per month the cost will be 69.78 CAD per ton per month.

TABLE 21.2.- MINERAL AND STERILE PER MONTH	
Mineral (Ton)	455
Sterile (Ton)	910
Total	1,365
Relation (Mineral/sterile)	2

21.1. NEW BUSINESS PLAN IN TWO STAGES

The business plan has been design to be accomplished in a set of two phases that will last for 12 months. In the **first phase** Green Mine Solutions SAS will take over the operation of La Palmichala. This phase will be accomplished in the first 3 months of operation.

To be able to accomplish this phase Green Mine Solutions SAS will need to invest the following amount in equipment and working capital increase the production of la Plamichala from 1,050 ton per day to 1,500 ton per day this will increase our gold production from 6 kilos to almost 9 kilos per month.

TABLE 21.3.- EQUIPMENT COSTS NEEDED FOR THE FIRST STAGE

EQUIPMENT	UNITS	($) CAD
Transformer 500 kvA	1	15,000
Pump 15 HP	1	3,000
Principal Ventilator	1	2,000
Spare Ventilator	1	2,000
Compressor	1	15,000
Jackleg	3	
Riles of 45 lb x 6m, 55Q	150 m	7,000
Equipment	1	13,000
Joy tools	1	3,500
Gas meter	1	3,500
Mine wagon	2	11,000
	TOTAL	75,000
Working Capital needed 3 months		525,000
Total Needed for the First Stage		**600,000**

In the **second phase** we will start our geological exploration which will include more drilling and to increase our resources estimated and our reserves. This stage will last 8 months. The estimated budget and equipment needed for this phase is:

TABLE 21.4.- GEOLOGICAL BUDGET FOR 8 MONTHS

ITEM	CAD ($)
Geophysical survey	72,800
Geological Mapping	8,000
Local Geologist	80,000
Local manpower	3,000
Equipment	11,200
Laboratory costs	135,000
Consultants	90,000
TOTAL	**400,000**

TABLE 21.5.- BUDGET FOR GEOLOGICAL EQUIPMENT	
DRILLING EQUIPMENT	CAD ($)
Atlas Copco Diamec 232	200,000
Multipurpose equipment	250,000
Compressor	70,000
Total	520,000

TABLE 21.6.- BUDGET FOR INCREASE OF THE EXPLOTATION OF LA PALMICHALA MINE	
ITEM	BUDGET CAD $
Review of available data	1,500
Geotechnical and Hydrogeological Studies	7,400
Analysis of possible exploitation techniques (open-pit, underground, or mix)	9,000
Plan of Production and operation	5,000
Infrastructures of transport	5,600
Production	3,000
Equipment, transport	3,700
Mineral treatment	6,300
Ventilation study and installation	5,500
Total Feasibility Study	47,000
Restoration plan	7,200
TOTAL Engineering Cost	**54,200**

TABLE 21.7.- TOTAL BUDGET		
ITEMS		**CAD ($)**
Phase One		600,000
Phase Two		
Geological Budget	400,000	
Engineering	54,200	
Drilling equipment	520,000	
Total Phase two	974,200	
	TOTAL	**1,574,200**

Stage three will start after more resources and reserves have been identified. The budget for this stage will depend on the resources and reserves determined.

22. ECONOMIC ANALYSIS

La Palmichala mine has been in production for the last two centuries. The goal will be to do enough geological study to verify enough resources and reserve to justify an investment and create a plan to extract these reserves from the ground in a clear and ecological way using green energy methods and creating jobs in the community by growing Higuerilla that produces Biodiesel and Sacha Inche that produces Omega oil 3, 6 and 9.

The additional phase three of study will be implemented if later geological studies can corroborate the old drilling campaign and increase the resources estimation.

The government imposes a 5% royalty for gold. La Palmichala is not processing the gold to final stage but is paying this royalty to the processing plant operator.

Unless Green Mine International Corp started processing the product to a final stage all the royalties will be paid by the processing plant. Only after a complete geological and engineering feasibility study can the decision could be made to put a cyanide processing plant.

The price of Gold should be above 1,500 USD per ounce for the next 5 to 10 years.

The breakeven point is after 12 months.

TABLE 22.1.- CASH FLOW LA PALMICHALA FOR 12 MONTHS												
ITEM	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
TON PER MONTHS	1.050	1.050	1.050	1.575	1.575	1.575	2.100	2.100	2.100	2.100	2.100	2.100
GOLD/MONTH IN KG	6,3	6,3	6,3	9,5	9,5	9,5	12,6	12,6	12,6	12,6	12,6	12,6
SALES CAD ($)	251.370	251.370	251.370	377.055	377.055	377.055	502.740	502.740	502.740	502.740	502.740	502.740
SALES CAD ($)	251.370	251.370	251.370	377.055	377.055	377.055	502.740	502.740	502.740	502.740	502.740	502.740
REVENUE FROM AGRICULTURE				68.500	68.500	34.250	34.250	34.250	34.250	34.250	34.250	34.250
TOTAL REVENUE CAD ($)	251.370	251.370	251.370	445.555	445.555	411.305	536.990	536.990	536.990	536.990	536.990	536.990
OPERATION EXPENSE CAD ($)	38.061	38.061	38.061	57.092	57.092	57.092	76.122					
MANPOWER CAD ($)	54.421	54.421	54.421	81.632	81.632	81.632	163.264	163.264	163.264	163.264	163.264	163.264
ADMINISTRATION CAD ($)	73.000	73.000	73.000	73.000	73.000	73.000	146.000	146.000	146.000	146.000	146.000	146.000
PROCESSING IN QUINTANA CAD ($)	75.411	75.411	75.411	113.117	113.117	113.117	150.822	150.822	150.822	150.822	150.822	150.822
NEW EQUIPMENT CAD ($)	33.203	3.465	10.500	2.940	10.500	8.400						
GEOLOGIST CONSULTANT **CAD ($)**				50.000	50.000	50.000	50.000	50.000	50.000	50.000	50.000	
ENGINEERING **CAD ($)**						54.200						
EQUIPMENT FOR DRILLING **CAD ($)**				$ 520.000								
AGRICUTURE EXPENSES **CAD ($)**	50.000	50.000	25.000	25.000	25.000	25.000	25.000	25.000	25.000	25.000	25.000	25.000
SOCIAL WORK **CAD ($)**	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000	5.000
TOTAL EXPENSE CAD ($)	**329.096**	**299.358**	**281.393**	**927.780**	**415.340**	**467.440**	**616.208**	**540.086**	**540.086**	**540.086**	**540.086**	**490.086**
REVENUE CAD ($)	**(77.726)**	**(47.988)**	**(30.023)**	**(482.225)**	**30.215**	**(56.135)**	**(79.218)**	**(3.096)**	**(3.096)**	**(3.096)**	**(3.096)**	**46.904**
CAPITAL NEEDED CAD ($)	**1.574.200**											
CASHFLOW CAD ($)	**1.496.474**	**1.448.485**	**1.418.462**	**936.236**	**966.451**	**910.316**	831.098	828.001	824.905	821.809	818.712	865.616

23. ADJACENT PROPERTIES

The biggest Gold produces next to La Plamichala is La Gran Colombia. La Gran Colombia purchase the Segovia Assest 20 km away from La Plamichala in August 2010. This operation includes El Silencio, Providencia and Sandra K gold mines. La Gran Colombia stated its second stage to increase the production of Gold to 200,000 ounces annually. The phase one involved the modernization of Maria Dama which involved the improvement and modernization of the processing plant from 517 t/day (2011) to 1,500 t/day.

The second phase of the Segovia expenses includes the development of a new and modern mine at Las Verticales and the construction of a new 2,500 t/day processing facility. The capital requirement for this expansion was obtain by a 100 Million CAD Linked Note that closes on October 30, 2012.

La Gran Colombia not only processes its own material but also processes third party material from artisanal miners in the area which account for 20% of the total material process.

Colombia has become one for the countries with the biggest growing opportunity in Latin America with free trade agreement with 48 countries and a government support of foreign investment.

Colombia has a great potential to grow to become a giant producer of Gold like Peru and Chile. The country produces 80 Million Ounces of AU since pre-colonial times and didn’t experience the 1980 boom that Peru and Chile had.

Colombia has a complete infrastructure and all the services for exploration and mining development. The mining laws have been establish and are respected and enforce. There are daily direct flights to mayor cities in the USA, Canada and Europe.

Other mayor World Mining leaders that that have exploration and exploitation properties in Colombia include BHP Billition, AngloGold Ashanti, Vale and more than

15 new Canadian companies in the last 5 years.

Mining contribute to 2.2% of the GPT and 23.7 % of the country export in 2010. The mining code allows for the same right for national and foreign investors.

24. OTHER RELEVANT DATA AND INFORMATION

At the close of this report, Green Mine International Corp is negotiating the acquisition of the drilling campaign of Procoloro Colombia SAS database. According to the information, there is more than 45,000 m of drilling information.

Some of this information is plotted in an research report by the formerly, managing geologist in Procoloro (Rodríguez Alvarez, 2007).

25. INTERPRETATION AND CONCLUSIONS

The field and underground works suggest that the vein system is continuous until the end of the property, 550 m to the NE from the end of the current exploitation. The structure is continuous in depth, the current mining operation is 100 m in depth from the mine access, and old drilling information could imply its continuation, at least, 100 m from the current operation level.

At La Palmichala vein, the weighted mean by thickness is 4.24 g/t, being the average thickness of 114 cm.

At La Criolla vein, the weighted mean to the thickness is 3.12 g/t, being the average thickness 131 cm.

According to a thicker fragile structure, La Criolla and La Palmichala veins occurs at the footwall and hanging wall of a major structure. This section includes granodiorites and aphanitic mafic rocks. The section in the SW of the mine is 7.25 m thick, where the Au weighted mean grade is 3.88 g/t. The section in the central part of the mine defined a 5.5 m thick structure, where the Au weighted mean grade is 2.15 g/t.

The results for the sections between the Palmichala and Criolla veins could imply an area liable for be mined of 5-7 m thickness, with around 3 g/t of Au. It is needed to establish its continuity for the whole property.

The resources are summarized in the table below:

TABLE 25.1.- INDICATED AND INFERRED RESOURCES IN LA PALMICHALA PROPERTY

	Length	Thickness	Depth	Density	Tonnes	Grade	Resources
Location	**(m)**	**(m)**	**(m)**	**(t/m^3)**	**(t)**	**(g/t)**	**Oz troy**
Indicated resources in the Palmichala mine	175	6.00	*155	2.767	450,329	3.0	43,435
Inferred resources in the permit	550	6.00	**311	2.767	2,839,772	3.0	273,902

* 100 m between vertical levels (40º of average dip)
** 200 m between vertical levels (40º of average dip)

The inferred resources have been considered in depth only for 200 m in level for the unexploited areas, and 100 m in level for the area of the exploitation where the first 100 m are already mined. It is remarkable that the Palmichala-Criolla structure belongs to “El Silencio” system were the exploitations reached 1,200 m in depth following the dip. This data suggest that the Palmichala-Criolla structure could continue in depth, if the continuity is determined, as El Silencio orebody. In the case of similar continuity in depth of the structure and Au content, the reserves could be increased to more than 2,000,000 Oz troy for Palmichala-Criolla structure in the Palmichala property.

The resources are limited to the Palmichala and Criolla veins in the property. There are outcropping veins and old mines with Au grade similar to these obtained in La Palmichala sampling. These veins can correlate as showed in fig 9.6 of this report, but it is needed a drill campaign and geological work.

26. RECOMMENDATIONS

26.1. EXPLORATION CAMPAIGN

Because of the wide mining in the area, small scale and artisanal, with some panning and channels in the streams, the geochemical techniques for exploration are not recommended. It seems that exclusively the lithogeochemical sampling on outcrops could be useful. In this case, additional sampling, in special on Quiceno mine, can complete the sampling of the structures in the Permit.

The geophysical techniques on exploration for surface research are the most adequate, in special the electromagnetic methods. The veins features imply a resistive behavior when those are well formed; conductive, in case of be tectonized with fissure water and filled with clay. The occurrence of disseminated sulfides in the mineralization, in special pyrite, can provide a decay signal in chargeability. Therefore, the lineal anomalies of conductivity-resistivity overlapped with the capacitance, could be a combination to determine the occurrence and extension of mineralizations.

The geophysical profiles orientation must be NW-SE, covering the three vein system recognized. Due to the geometry of the quartz veins, the separation between profiles bust be lower than 100 m, being the electrode distance 20 m. Delicias system will be undetermined by this setting, so it could be defined crossed profiles with major spacing.

26.2. DEFINITION OF THE RESOURCES IN THE PALMICHALA PERMIT

In addition to the works that have to undertake in the mine and the Palmichala permit, the first stage is to evaluate the mineral resources in the project to guarantee its feasibility. The most favorable as potential are is the current mine, that is an active exploitation and the structures are accessible. A positive factor of the orebody is that

all samples analyzed provide auriferous character to the rock.

A second item for the owner is to establish basic costs of exploitation, permitting identifies an economical ratio for productive or unproductive areas. Then it will be suitable for a profitable mining plan.

26.2.1. La Palmichala mine planning

At this stage, the investigations in the underground mine must be focused in the definition of the resources. Prior to the increase of the production and infrastructures to enhance the mine, the works must identify enough resources to justify the investment. To fulfill the subjects, there must be developed the activities listed below:

- The recovery of La Criolla adit and tunnels. It must be defined the resources from this level to the 595 level, around 50-70 m height among levels. It is also needed to enhance the mine ventilation and a second entry to the underground mine. It is also interesting to recovery the rooms between these levels to obtain channel samples on the old mining drift.

- To recognize and survey the rooms and drifts accessible between La Criolla and level 585. It is relevant to identify the old exploitations on the veins La Criolla and Palmichala, accessible or not.

- To develop the NE drift of the level 595 on the vein, around 100 m in strike. This tunnel is located on La Criolla vein, so it must be made connection adits between the veins reaching La Palmichala vein and recognizing the inner area between both veins. These connection adits must be developed each 20 m, sampling the mine drift for grade control.

- The connection between veins must be enhanced in depth to make a new tunnel below the current level of 585 m. In depth it is necessary to develop another exploitation level to increase resources. The Sublevel 585 (on La

Palmichala) must be a secondary or auxiliary exploitation and develop connections to La Criolla vein for research this vein and the inner area between both veins. It must be taken samples for grade control in each advance. The connection and La Criolla sections must be sampled also.

- The information of the Procoloro drill campaign must be obtained. If the information of this campaign is confirmed it could be planned the exploitation in depth and strike.

As complementary works in the exploitation, it is recommended:

- Currently, the mine drift advances each meter. It is recommended to increase the advance to 2 m per blast.

- It is needed to install the rails and mine wagons for loading. It can be used small wagons of frontal discharge at this moment, maintaining the load point of the main entry tunnel.

- It is recommended the training of a sampling team. They must be train to sample in the mine, to guarantee the confidence of this work.

- The underground topography has to be updated frequently, to have a base map for planning and analysis of the information. It is needed to update the resources of the mine.

All these works will imply a considerable improvement in the resources estimation, for developed the planning for exploitation and new planning for infrastructures.

26.2.2. Exploration in La Palmichala property

There are a lot of mineralized areas and small works in La Palmichala permit. Most of these works provided interesting results. There are a few old mine works that are

flooded, these works must be recognized:

- Bedoya mine entry. This mine is developed, NE of La Palmichala, in a structure in the same strike as Palmichala and Criolla veins. It is also in line with other mining works and outcrops to the NE, known as Quiceno mine. The Quiceno mine drift must be also sampled.

- El Cristo mine entry. This mine it is developed in a different vein as Palmichala-Bedoya structure. Chips of mineral in an external dump provided 2 g/t of Au. The dump is not small and the outcrops in the surroundings suggest an important structure.

- El Sapo Mine. This exploitation is close to El Cristo, but the vein outcropping in the area is in different orientation. This point looks to correlate to La Bedoya in E-W strike. It is recommended to identify the structure, a sample of chips in a mine dump was 3.5 g/t in Au.

The topography of the mining works must be defined, being systematically samples in the mine drift. Depending on the location and extension of the mining works, these could increase the resources of the mining project. The development of the mining drift in these small works is needed to re-define the resources.

The sub-horizontal veins in the eastern part of the permit provide interesting Au contents. It could be undertaken some drilling in the north of Crisanto mine of west of Chócolo mine identifying the extension of the mineralization.

The geophysical campaign proposed in the exploration issue of this report, can provide information about the extension of the main structures. Some drill for recognition can be defined after the geophysics.

Departing from the results obtained on these works, it would be planned the exploration works for the resources definition.

26.3. IMPROVEMENT OF THE CURRENT EXPLOITATION

A first stage for a short-term increase of the mining production implies the next recommendations:

- The sections of mining drifts and rooms must be homogeneous and its dimensions adapted, at least, to the law requirements of minimum height of 1.8 m (Decree 1335 of Ministry of Mines and Energy, year 1987, that establish the rules of hygiene and industrial security for the underground mining in Colombia).
- It is recommended to rectify and continue the drift, tunnels and rooms, with these dimensions and reduce the horizontal curves to develop a transportation system of mine wagon on rails with 1.5 t capacity. This implies the change of the current wooden rails in the entry tunnel and adaptation to the new mine transportation.
- It is recommended to evaluate the adaptation of the entry tunnel for a double wagon system. In this case, it would be necessary to undertake a different entrance for the personnel.
- In the purpose of initial increase of the production, for a first six months stage it is necessary the following equipments:

TABLE 26.1.- PROPOSED EQUIPMENT

1	Transformator 500 kvA
1	Pump 15 HP
1	Main ventilator
1	Auxiliar ventilator
1	Compressor
3	Jackleg
150 m	Rails of 45 lb x 6m, 55Q
1	Mine winch tower
1	Joy tools
1	Gas receiver
2	Mine wagons

26.4. LABORATORY FOR GRADE CONTROL

It is needed to characterize the ore mined and to obtain at different stages of transformation in the beneficiation system, it is proposed the execution of a basic laboratory analysis of gold and silver by traditional technique called "fire assay", which is still the preferred option for laboratories around the world, as well as professionals in charge of exploration, mining and processing of precious metals, to identify the quantitative results for total precious metal.

The analysis consists in the mixing of the previously pulverized mineral with fluxing agents including lead oxide (litharge) for melting at temperatures close to 1200° C. The lead monoxide is reduced to elemental lead, which collects the precious metal. When the melt temperature decreases, lead remains in the bottom, while a vitreous slag appears in the top. Precious metals are separated from the lead by a process called cupellation.

For the monitoring of the mineral extracted, it has been defined a basic list of laboratory equipments, initial costs, monthly operation, and implantation suggestion based on the previous infrastructures in La Palmichala.

The laboratory proposed is defined in the Appendix IV of this report.

26.5. THE BENEFICIATION PROCESS

- The tails of the bulk process of beneficiation provides Au contents around 0.5 g/t, relatively high. For the diminution of the Au tails content it is proposed a systematic sampling of the flotation mud, to identify the possible gold occurrence.

- If it is confirmed a fine grain gold in the mud, it would be necessary a centrifugal concentrator, after the flotation process. This equipment has a low operating and maintenance costs.

- If there is not fine grain gold in the tails, the process of flotation must be optimized, researching the best operating conditions, pH, kind of reactive and dosage, entry conditions of pulp, air injection and mechanical shaking.

- The Au content in the solid tails of cyanidation can be higher than 50 g, equivalent to 7 g/t contents. A concentrate study in the plant is proposed to determine the best conditions of lixiviation. Then it is necessary to evaluate the particle size, cyanide concentration, oxygen in the system, time lapse and pH.

- To build plant facilities in La Palmichala to avoid expensive truck transportation costs and to control the beneficiated material. It is necessary a mineralogical and metallurgical study, with the objective of a conceptual design.

- After the initial study it would be necessary a pilot scale tests of the mining operations, for the basic engineering of the plants and for economical analyses, previous to a final engineering design.

27. REFERENCES

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March 12th 2013

CRN, S.A.

DOCUMENT II

APPENDIX

APPENDIX I

LA PALMICHALA LICENSE TITLE

AGENCIA NACIONAL DE MINERÍA

GERENCIA DE CATASTRO Y REGISTRO MINERO

CERTIFICADO DE REGISTRO MINERO

Expediente: T59005
RMN: GARM-01

MODALIDAD: LICENCIA DE EXPLOTACION

Vigencia Desde: Mayo 2 de 1991 Hasta: Diciembre 8 de 2004

Fecha y Hora de registro: Mayo 2 de 1991 00:00:00

TITULARES
CORDOBA VELASQUEZ ARCANGEL DE J.

IDENTIFICACIÓN
CC 15535183

ÁREA TOTAL: 96 Hectareas y 7500 Metros Cuadrados
MINERALES: ORO

MUNICIPIOS: REMEDIOS (ANTIOQUIA)

DESCRIPCIÓN DEL ÁREA

AREA 1
PUNTO ARCIFINIO: CONFLUENCIA DE LAS QUEBRADAS EL CRISTO Y SAN PEDRO
NORTE: 1269640,0000
ESTE: 932880,0000
PLANCHA IGAC: 117

ALINDERACIÓN

Coordenada Norte	Coordenada Este
1269640,0000	932880,0000
1269245,8200	932644,0200
1269245,8200	931144,0200
1269890,8200	931144,0200
1269890,8200	932644,0200

ANOTACIONES

Anotación : 1
Fecha Anotación: 2 de Mayo de 1991
Tipo Anotación : LICENCIA EXPLORACION
Fecha Ejecutoria: null
Documento : RESOLUCION
Número: 7190 Fecha: 28 de Febrero de 1991
Expedido por : REGIONAL BOGOTA
Lugar : MEDELLIN
Especificación : OTORGAMIENTO

Anotación : 2
Fecha Anotación: 9 de Diciembre de 1994
Tipo Anotación : LICENCIA EXPLOTACION
Fecha Ejecutoria: null

CERTIFICADO DE REGISTRO MINERO	Expediente: T59005 RMN: GARM-01
MODALIDAD: LICENCIA DE EXPLOTACION	
Vigencia Desde: Mayo 2 de 1991 Hasta: Diciembre 8 de 2004	Fecha y Hora de registro: Mayo 2 de 1991 00:00:00

Documento : RESOLUCION Número: 3035 Fecha: 2 de Noviembre de 1994

Expedido por : REGIONAL BOGOTA

Lugar : MEDELLIN

Especificación : OTORGA LICENCIA DE EXPLOTACION

Anotación : 3 Fecha Anotación: 24 de Agosto de 1995

Tipo Anotación : CESION PARCIAL DE DERECHOS Fecha Ejecutoria: null

Documento : RESOLUCION Número: 3880 Fecha: 3 de Agosto de 1995

Expedido por : REGIONAL BOGOTA

Lugar : MEDELLIN

Especificación : APROBAR CESION PARCIAL DE DERECHOS

Anotación : 4 Fecha Anotación: 20 de Diciembre de 2001

Tipo Anotación : SIN DEFINIR Fecha Ejecutoria: 10 de Diciembre de 2001

Documento : RESOLUCION Número: 45 Fecha: 29 de Noviembre de 2001

Expedido por : REGIONAL BOGOTA

Lugar : BOGOTA D.C.

Especificación : SE ADOPTA EL NUEVO SISTEMA DE REGISTRO MINERO NACIONAL, EL CODIGO: 91-00297-00059-02-00000-00 CAMBIA A: GARM-01

Anotación : 5 Fecha Anotación: 4 de Diciembre de 2008

Tipo Anotación : CESION TOTAL DE DERECHOS Fecha Ejecutoria: 10 de Noviembre de 2008

Documento : RESOLUCION Número: 018282 Fecha: 9 de Octubre de 2008

Expedido por : REGIONAL BOGOTA

Lugar : MEDELLIN

Especificación : ARTICULO PRIMERO. APROBAR LA CESION DEL 90 % DE LO DERECHOS MINEROS QUE LE CORRESPONDEN A LA SOCIEDAD PROCOLORO COLOMBIA LTDA A FAVOR DEL SENOR ARCANGEL DE JESUS CORDOBA. ARTICULO SEGUNDO APROBAR LA CESION DEL 5 % DE LOS DERECHOS MINEROS QUE LE CORRESPONDEN A LA SOCIEDAD AMG SOCIEDAD MINERA LTDA A FAVOR DEL SENOR ARCANGEL DE JESUS CORDOBA VELASQUEZ

CERTIFICADO DE REGISTRO MINERO	Expediente: T59005 RMN: GARM-01
MODALIDAD: LICENCIA DE EXPLOTACION	
Vigencia Desde: Mayo 2 de 1991 Hasta: Diciembre 8 de 2004	Fecha y Hora de registro: Mayo 2 de 1991 00:00:00

********** FIN DE ESTE DOCUMENTO

AGENCIA NACIONAL DE MINERÍA

VICEPRESIDENCIA DE CONTRATACIÓN Y TITULACIÓN
GERENCIA DE CATASTRO Y REGISTRO MINERO

Código de expediente: T59005
Código RMN: GARM-01
N.º de documento: CONIG-05-02-2013
Tipo de anotación o inscripción: CERTIFICADO R.M.N.

Fecha: 2013 (Año) 02 (Mes) 08 (Día)

	Inscribió	Gerente
Nombres y apellidos	ORLANDO [illegible]	[illegible]
Firmas		

Ministerio de Minas y Energía República de Colombia

APPENDIX II

LABORATORY CERTIFICATES

AND

ANALYTICAL RESULTS

Quality Analysis ... *Innovative Technologies*

Date Submitted: 05-Feb-13
Invoice No.: A13-01291
Invoice Date: 20-Feb-13
Your Reference:

Green Mine Solutions
100 King St. West Suite 56019
Toronto Ontario
Canada

ATTN: Kate Blancato

CERTIFICATE OF ANALYSIS

44 Pulp samples were submitted for analysis.

The following analytical package was requested: Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A13-01291**

Notes:
Assays are recommended for values >10,000 for Cu and Au. Due to matrix change used in AR-MS analysis, the detection limts for Au has been modified to 5ppb. The AU from AR-MS is only semi-quantitative. For accurate Au data,fire assay is recommended.

CERTIFIED BY :

Emmanuel Eseme , Ph.D.
Quality Control

ISO/IEC 17025
SCC Accredited
LAB 266
LAB 266
Accrédité CCN

ACTIVATION LABORATORIES LTD.

1336 Sandhill Drive, Ancaster, Ontario Canada L9G 4V5 TELEPHONE +1.905.648.9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Activation Laboratories Ltd. Report: A13-01291

Analyte Symbol	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Rb	Sr
Unit Symbol	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.01	0.02	0.01	0.1	1	0.5	1	0.01	0.1	0.1	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.5
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GP-001	12.7	0.3	2	0.006	2.71	2.40	0.31	< 0.02	3.01	5.6	44	171	2350	5.13	22.2	139	27.2	75.7	5.64	< 0.1	180	< 0.1	10.4	36.7
GP-002	4.9	0.1	2	0.002	0.91	0.57	0.13	0.14	5.13	2.7	11	24.1	4560	2.81	4.7	24.6	3.28	20.6	1.52	< 0.1	115	< 0.1	4.4	75.2
GP-003	4.5	< 0.1	2	0.001	1.07	0.35	0.04	0.04	5.04	2.1	5	6.1	5500	1.62	1.7	9.6	1.66	34.9	0.92	< 0.1	46.3	< 0.1	1.0	83.3
GP-004	8.2	0.3	2	0.002	1.75	1.26	0.22	0.03	3.58	4.6	26	134	3760	3.32	17.6	126	11.5	59.4	2.67	< 0.1	176	< 0.1	7.2	32.8
GP-005	1.6	0.2	2	0.004	0.65	0.61	0.30	0.11	2.71	2.7	12	42.4	2670	3.59	14.2	90.8	10.1	31.2	1.40	< 0.1	251	< 0.1	9.0	30.3
GP-006	3.1	0.2	2	0.003	1.21	0.49	0.17	0.06	6.46	3.1	9	19.6	7920	2.86	5.5	30.3	2.94	23.5	1.22	< 0.1	142	< 0.1	5.7	53.8
GP-007	9.3	0.3	2	0.004	1.04	0.76	0.15	0.08	3.73	1.7	13	27.1	3970	3.43	4.9	32.5	3.50	46.2	3.10	< 0.1	193	< 0.1	5.1	59.9
GP-008	2.3	0.2	2	0.004	2.10	0.46	0.21	0.03	5.65	3.1	8	21.9	7440	3.43	8.2	55.7	12.9	16.6	1.09	< 0.1	216	< 0.1	6.3	78.6
GP-009	9.2	0.5	2	0.009	0.93	1.41	0.37	0.23	2.73	3.1	29	18.5	1810	2.66	8.9	21.9	7.30	46.0	3.82	< 0.1	83.4	< 0.1	14.7	34.4
SNS-010	2.2	0.4	2	0.005	1.26	0.79	0.39	0.11	4.53	3.7	15	39.6	4530	4.30	12.3	70.3	15.3	46.5	1.83	< 0.1	253	< 0.1	13.9	76.0
SNS-011	5.5	0.5	2	0.005	1.15	1.28	0.39	0.11	4.55	5.8	25	42.1	2940	2.94	15.5	62.0	55.2	62.3	2.74	< 0.1	164	< 0.1	12.6	52.2
SNS-012	5.8	0.4	2	0.006	0.98	1.07	0.31	0.08	3.80	5.7	21	97.8	2610	3.13	14.1	129	9.73	65.9	2.66	< 0.1	263	< 0.1	10.3	33.2
SNS-013	0.3	< 0.1	2	0.002	0.37	0.06	0.04	0.27	2.44	0.7	1	5.4	2380	0.94	1.6	9.0	2.07	40.2	0.18	< 0.1	36.3	< 0.1	0.9	16.4
SNS-014	6.7	0.7	2	0.005	0.95	1.19	0.38	0.11	2.90	5.5	26	85.8	2950	4.65	16.9	110	18.9	28.4	2.77	< 0.1	330	< 0.1	12.8	36.4
SNS-015	1.9	0.3	2	0.006	0.97	0.72	0.37	0.07	2.29	3.0	13	28.6	3820	3.70	8.3	57.9	4.91	11.0	1.47	< 0.1	239	< 0.1	13.4	30.2
SNS-016	2.6	0.4	2	0.004	1.15	0.71	0.33	0.09	2.15	2.2	11	17.3	3870	4.11	8.5	51.7	5.94	17.4	1.60	< 0.1	235	< 0.1	12.0	37.2
SNS-017	2.0	0.3	< 1	0.011	1.67	0.80	0.48	0.32	4.46	5.0	18	42.9	4390	3.57	17.0	91.5	21.6	38.3	1.82	< 0.1	278	0.3	14.0	79.6
SNS-018	1.5	0.3	2	0.003	0.64	0.46	0.21	0.38	1.80	1.3	7	17.4	2530	5.50	13.7	54.0	6.38	13.4	1.00	< 0.1	343	< 0.1	7.3	29.8
SNS-019	2.3	0.1	2	0.002	2.61	0.30	0.10	0.03	7.54	2.8	6	22.4	> 10000	3.02	5.8	42.5	2.70	10.7	0.70	< 0.1	124	< 0.1	3.2	102
SNS-020	4.9	0.3	2	0.005	2.07	0.75	0.24	0.08	5.31	4.1	15	46.8	8610	3.81	11.7	64.3	9.85	23.1	1.68	< 0.1	241	< 0.1	8.4	81.7
SNS-021	8.4	0.6	2	0.007	1.24	1.33	0.37	0.21	2.45	3.5	23	64.8	2910	4.03	15.4	84.4	20.9	37.8	2.95	< 0.1	223	< 0.1	14.1	74.2
GP-022	2.0	0.3	2	0.004	0.92	0.66	0.33	0.05	2.74	3.1	13	33.1	3080	3.54	14.1	91.6	20.6	16.6	1.44	< 0.1	185	< 0.1	11.4	33.3
GP-023	4.5	0.2	2	0.004	0.61	0.64	0.22	0.07	3.51	2.2	12	28.0	3640	2.76	7.8	52.6	5.05	15.8	1.87	< 0.1	155	< 0.1	7.9	33.8
GP-024	5.0	0.4	2	0.005	0.75	0.81	0.28	0.05	3.17	2.3	13	26.1	2580	2.52	7.3	36.9	5.63	24.3	1.72	< 0.1	133	< 0.1	10.6	31.2
GP-025	7.5	0.6	2	0.005	0.87	1.13	0.37	0.05	2.58	3.3	18	39.6	2350	2.79	10.0	70.5	9.27	34.6	2.40	< 0.1	229	< 0.1	14.4	26.2
GP-026	19.9	0.4	2	0.007	4.02	3.17	0.25	< 0.02	5.34	11.1	65	283	2020	4.24	28.9	188	8.77	111	6.96	< 0.1	88.1	< 0.1	9.0	71.8
GP-004 BIS	3.4	0.4	3	0.006	1.27	1.02	0.50	0.02	3.89	3.2	17	13.7	4320	2.12	6.0	25.0	7.22	22.5	2.22	< 0.1	88.8	< 0.1	18.4	40.3
GP-005 BIS	2.4	0.2	2	0.003	1.23	0.57	0.27	0.04	3.56	2.2	10	22.4	4140	2.62	7.4	54.4	8.78	20.9	1.29	< 0.1	126	< 0.1	9.3	42.4
TC-027	3.5	0.1	2	0.003	0.30	0.30	0.06	0.11	0.14	0.7	5	15.0	906	2.29	10.4	21.8	5.60	56.8	0.80	< 0.1	95.9	< 0.1	2.2	5.2
TC-028	5.2	0.1	2	0.002	0.50	0.31	0.06	0.07	12.0	2.5	5	15.0	7730	2.88	12.1	29.5	4.89	24.0	1.91	< 0.1	141	< 0.1	1.9	152
TC-029	8.5	0.3	2	0.004	0.84	0.68	0.17	0.05	4.59	2.1	11	23.5	5480	2.84	4.5	28.7	2.41	13.5	2.08	< 0.1	151	< 0.1	6.1	60.3
SNN-030	2.9	< 0.1	2	0.002	0.41	0.40	0.16	0.09	1.35	1.1	8	21.2	2160	4.63	11.0	40.3	7.82	15.1	0.95	< 0.1	169	< 0.1	5.8	16.1
SNN-031	3.3	0.2	2	< 0.001	0.74	0.44	0.15	0.10	2.47	1.9	8	26.8	4260	3.21	8.9	47.1	4.07	18.1	1.06	< 0.1	247	< 0.1	5.2	33.8
SNS-032	2.8	0.2	2	0.002	0.42	0.46	0.18	0.03	2.59	1.9	8	11.8	2400	2.04	6.4	18.9	2.89	33.0	1.17	< 0.1	113	< 0.1	6.3	21.8
GP-033	14.9	0.8	2	0.005	1.94	2.14	0.42	0.25	3.57	6.5	42	134	3210	3.91	16.0	93.7	11.4	51.8	4.67	< 0.1	209	< 0.1	17.4	86.4
GP-034	3.1	0.2	2	0.001	1.66	0.40	0.14	0.10	3.71	3.0	8	30.4	6900	3.84	9.4	71.8	4.30	19.0	0.90	< 0.1	274	< 0.1	4.4	49.1
TC-035	8.2	0.2	2	0.001	0.97	0.55	0.12	0.05	3.39	2.0	8	11.9	4650	2.40	4.2	18.7	2.06	10.7	1.67	< 0.1	103	< 0.1	3.9	46.5
TC-036	4.8	0.2	2	0.002	0.62	0.57	0.16	0.06	4.81	2.5	9	18.1	3680	2.22	4.3	19.4	2.58	14.8	1.35	< 0.1	105	< 0.1	5.6	30.5
STM-01	0.4	< 0.1	2	0.004	0.03	0.28	0.13	11.2	0.01	0.7	14	10.7	68	3.89	0.4	2.2	36.0	185	1.11	< 0.1	205	3.9	3.9	1.7
STM-02	0.3	< 0.1	2	0.003	0.03	0.17	0.10	10.6	0.01	0.1	7	5.3	67	1.78	2.1	3.3	34.3	905	0.51	< 0.1	61.5	2.2	3.0	2.5
STM-03	2.2	0.3	2	0.010	0.25	0.63	0.17	3.23	0.09	2.3	83	33.4	310	3.72	18.2	18.1	59.2	2210	1.89	< 0.1	108	0.5	6.0	4.6
STM-04	1.0	< 0.1	2	0.042	0.02	0.09	0.05	29.9	0.08	< 0.1	1	2.3	192	10.2	13.4	3.5	201	> 10000	0.81	0.1	300	11.2	1.5	1.3
STM-05	1.5	< 0.1	2	0.008	0.13	0.35	0.14	30.7	0.18	0.6	10	4.1	142	4.84	7.2	2.9	41.5	> 10000	1.26	< 0.1	152	6.1	5.5	6.7
STM-06	0.2	< 0.1	2	0.005	0.02	0.09	0.03	169	0.03	< 0.1	3	3.1	74	6.70	18.1	3.4	139	3590	0.36	< 0.1	122	0.9	0.8	1.3

Activation Laboratories Ltd. Report: A13-01291

Analyte Symbol	Y	Zr	Nb	Mo	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.1	0.1	0.01	0.002	0.01	0.02	0.05	0.02	0.02	0.02	0.5	0.5	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GP-001	3.33	4.0	< 0.1	0.40	1.63	0.15	< 0.02	2.21	0.17	< 0.02	0.11	18.7	5.1	10.5	1.3	4.72	0.8	0.4	0.8	0.1	0.7	0.1	0.4	< 0.1
GP-002	9.05	1.1	< 0.1	0.48	3.01	0.10	< 0.02	0.96	0.22	0.12	0.06	8.2	3.0	6.79	0.9	4.20	1.2	0.8	1.6	0.3	1.8	0.4	1.0	0.1
GP-003	9.87	0.5	< 0.1	0.25	1.84	0.46	< 0.02	0.28	0.11	< 0.02	< 0.02	2.4	5.9	11.8	1.5	6.47	1.6	0.8	2.1	0.3	2.1	0.4	1.0	0.1
GP-004	6.82	2.7	< 0.1	0.66	1.41	0.38	< 0.02	0.85	0.24	< 0.02	0.07	13.9	5.0	10.9	1.4	5.52	1.2	0.8	1.4	0.2	1.5	0.3	0.7	< 0.1
GP-005	5.48	3.1	< 0.1	0.44	3.66	0.40	< 0.02	0.63	0.23	< 0.02	0.07	23.0	3.5	7.85	1.0	4.32	1.0	0.5	1.1	0.2	1.2	0.2	0.6	< 0.1
GP-006	12.8	1.3	< 0.1	0.59	1.73	0.34	< 0.02	0.78	0.19	< 0.02	0.06	10.7	4.1	9.42	1.3	5.92	1.7	1.2	2.4	0.4	2.8	0.5	1.4	0.2
GP-007	6.03	1.4	< 0.1	0.64	2.43	0.09	< 0.02	0.85	0.35	< 0.02	0.05	10.2	2.8	5.76	0.8	3.26	0.9	1.4	1.2	0.2	1.3	0.2	0.6	< 0.1
GP-008	11.6	1.9	< 0.1	0.57	1.50	0.17	< 0.02	0.47	0.14	< 0.02	0.04	13.2	3.9	9.09	1.3	5.68	1.6	1.3	2.2	0.4	2.4	0.5	1.3	0.2
GP-009	6.32	1.7	< 0.1	0.71	2.28	0.38	< 0.02	0.82	0.17	0.06	0.32	28.0	8.6	16.5	1.9	7.36	1.4	0.5	1.5	0.2	1.4	0.3	0.8	0.1
SNS-010	6.82	4.3	< 0.1	0.38	5.55	0.54	< 0.02	1.88	0.49	0.11	0.27	23.4	4.2	8.98	1.2	5.05	1.2	0.9	1.4	0.2	1.5	0.3	0.8	0.1
SNS-011	8.77	3.3	< 0.1	0.36	4.03	0.86	< 0.02	0.33	0.29	0.02	0.17	28.0	9.4	19.1	2.3	9.02	1.7	0.7	1.9	0.3	1.9	0.4	1.0	0.1
SNS-012	7.42	2.7	< 0.1	0.50	2.23	0.88	< 0.02	0.87	0.32	< 0.02	0.15	20.2	4.8	10.4	1.4	5.66	1.3	0.5	1.5	0.3	1.7	0.3	0.9	0.1
SNS-013	3.53	0.2	< 0.1	0.23	1.05	0.55	< 0.02	0.08	0.06	< 0.02	< 0.02	1.9	4.4	8.77	1.1	4.38	0.9	0.3	0.8	0.1	0.8	0.1	0.4	< 0.1
SNS-014	6.17	4.3	< 0.1	1.08	3.23	0.39	< 0.02	1.97	0.77	0.09	0.15	22.5	4.8	10.2	1.3	5.34	1.1	0.6	1.3	0.2	1.4	0.3	0.7	< 0.1
SNS-015	4.01	4.7	< 0.1	0.38	3.07	0.04	< 0.02	1.16	0.21	0.03	0.14	21.6	2.5	5.64	0.7	3.11	0.7	0.5	0.9	0.1	0.9	0.2	0.5	< 0.1
SNS-016	4.50	2.2	< 0.1	0.55	5.34	0.06	< 0.02	1.24	0.40	0.06	0.15	19.5	2.0	4.41	0.6	2.51	0.7	0.5	0.8	0.1	1.0	0.2	0.6	< 0.1
SNS-017	7.40	2.4	< 0.1	0.63	4.82	0.57	< 0.02	1.10	0.33	0.06	0.09	26.3	5.3	11.7	1.6	6.56	1.4	0.8	1.4	0.2	1.5	0.3	0.8	0.1
SNS-018	3.57	2.4	< 0.1	0.45	7.51	0.15	< 0.02	0.45	0.65	< 0.02	0.11	12.6	1.7	3.58	0.5	1.99	0.5	0.4	0.7	0.1	0.8	0.2	0.4	< 0.1
SNS-019	17.7	1.2	< 0.1	0.63	2.34	0.05	< 0.02	0.26	0.13	< 0.02	0.04	6.9	4.2	10.2	1.5	7.13	2.4	1.8	3.2	0.6	3.9	0.8	2.1	0.3
SNS-020	15.1	2.2	< 0.1	0.38	2.54	0.11	< 0.02	0.87	0.36	0.03	0.23	15.5	4.8	10.9	1.5	6.91	2.0	1.0	2.7	0.5	3.4	0.7	1.8	0.2
SNS-021	4.92	3.4	< 0.1	0.31	6.14	0.36	< 0.02	0.85	0.41	0.08	0.34	24.4	4.4	9.13	1.2	4.67	1.0	0.6	1.1	0.2	1.1	0.2	0.6	< 0.1
GP-022	3.27	4.0	< 0.1	0.32	2.93	0.12	< 0.02	1.21	0.17	< 0.02	0.10	22.3	3.0	6.52	0.8	3.29	0.7	0.6	0.8	0.1	0.7	0.2	0.4	< 0.1
GP-023	6.06	1.4	< 0.1	0.65	4.18	0.08	< 0.02	1.47	0.16	< 0.02	0.08	14.7	2.9	6.47	0.9	3.70	0.9	0.7	1.1	0.2	1.4	0.3	0.7	< 0.1
GP-024	4.69	1.7	< 0.1	0.65	2.81	0.23	< 0.02	1.00	0.34	< 0.02	0.12	19.4	3.8	8.27	1.1	4.35	0.9	0.6	1.1	0.2	1.1	0.2	0.6	< 0.1
GP-025	6.68	3.0	< 0.1	0.38	4.73	0.42	< 0.02	1.21	0.29	< 0.02	0.21	23.8	4.4	9.27	1.2	4.85	1.1	0.6	1.4	0.2	1.5	0.3	0.8	< 0.1
GP-026	9.00	2.0	< 0.1	0.41	1.29	0.15	0.02	0.30	0.11	< 0.02	0.10	21.9	13.3	28.0	3.5	13.7	2.4	0.8	2.5	0.4	2.3	0.4	1.1	0.1
GP-004 BIS	10.2	1.8	< 0.1	0.65	1.04	0.28	< 0.02	2.77	0.07	0.04	0.18	29.8	4.9	10.8	1.4	5.97	1.5	1.1	1.9	0.3	2.3	0.5	1.2	0.2
GP-005 BIS	6.41	1.9	< 0.1	0.35	1.56	0.10	< 0.02	1.58	0.16	< 0.02	0.09	16.3	2.4	5.59	0.8	3.37	0.9	0.7	1.2	0.2	1.5	0.3	0.9	0.1
TC-027	5.52	0.6	< 0.1	0.45	2.27	0.37	< 0.02	0.33	0.18	0.04	0.05	13.3	3.8	8.06	1.0	4.00	0.9	0.7	1.1	0.2	1.2	0.2	0.6	< 0.1
TC-028	22.0	0.8	< 0.1	0.42	2.41	1.04	0.03	0.30	0.25	< 0.02	< 0.02	4.9	11.0	25.3	3.4	15.0	4.0	4.3	4.6	0.8	5.1	1.0	2.5	0.3
TC-029	9.11	1.4	< 0.1	0.53	1.93	0.16	< 0.02	1.14	0.33	< 0.02	0.09	11.9	3.8	8.26	1.1	4.79	1.4	1.5	1.7	0.3	2.0	0.4	1.1	0.2
SNN-030	2.22	1.3	< 0.1	0.49	3.43	< 0.01	< 0.02	1.00	0.19	< 0.02	0.08	9.1	0.9	2.00	0.3	1.16	0.3	0.4	0.4	< 0.1	0.5	< 0.1	0.2	< 0.1
SNN-031	7.22	1.6	< 0.1	0.23	4.23	0.07	< 0.02	0.61	0.38	< 0.02	0.07	8.6	2.1	4.53	0.6	2.80	0.8	0.5	1.2	0.2	1.6	0.3	0.9	0.1
SNS-032	5.47	1.8	< 0.1	0.32	2.36	0.43	< 0.02	0.60	0.16	< 0.02	0.09	11.4	3.8	8.59	1.1	4.74	1.1	0.4	1.3	0.2	1.3	0.2	0.7	< 0.1
GP-033	7.59	3.2	< 0.1	0.65	7.20	0.58	< 0.02	1.24	0.36	< 0.02	0.57	30.0	6.4	13.5	1.8	7.15	1.5	0.8	1.7	0.3	1.8	0.4	1.0	0.1
GP-034	13.8	2.1	< 0.1	0.62	5.35	0.10	< 0.02	0.44	0.13	< 0.02	0.04	9.0	3.1	7.38	1.1	4.96	1.7	1.2	2.3	0.4	3.4	0.7	1.9	0.3
TC-035	8.73	1.0	< 0.1	0.47	3.03	0.06	< 0.02	0.43	0.19	< 0.02	0.04	8.8	4.3	9.14	1.2	5.32	1.4	0.8	1.8	0.3	2.1	0.4	1.1	0.1
TC-036	8.55	1.0	< 0.1	0.69	2.97	0.09	< 0.02	1.10	0.30	< 0.02	0.07	9.8	3.0	6.84	1.0	4.36	1.2	0.7	1.6	0.3	2.0	0.4	1.1	0.2
STM-01	1.08	0.8	< 0.1	1.61	37.6	3.67	0.09	2.33	29.2	3.18	0.02	27.0	2.9	5.32	0.8	2.90	0.6	0.1	0.5	< 0.1	0.4	< 0.1	0.1	< 0.1
STM-02	0.31	0.2	< 0.1	0.50	52.3	28.2	0.07	1.63	20.1	1.91	< 0.02	8.3	1.9	3.72	0.4	1.49	0.3	< 0.1	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1
STM-03	3.57	0.7	0.1	1.07	11.6	63.8	0.07	1.10	6.13	0.64	0.06	7.9	3.3	6.15	1.0	4.11	0.9	0.2	0.9	0.1	0.9	0.2	0.5	< 0.1
STM-04	0.33	0.9	0.1	0.31	> 100	> 1000	1.10	2.10	46.4	9.43	0.04	< 0.5	0.6	1.17	0.1	0.54	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
STM-05	1.30	0.7	0.2	0.92	77.7	450	0.52	1.62	25.8	5.55	0.22	2.9	2.8	5.74	0.7	2.77	0.5	0.1	0.4	< 0.1	0.4	< 0.1	0.2	< 0.1
STM-06	0.36	0.4	0.2	0.50	48.5	139	0.34	0.55	1.35	3.70	< 0.02	0.6	0.7	1.37	0.2	0.65	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analyte Symbol	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
Detection Limit	0.1	0.1	0.1	0.05	0.1	0.001	5	0.02	0.01	0.1	0.1	10
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GP-001	0.2	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1170	0.09	3.33	4.3	0.6	< 10
GP-002	0.7	< 0.1	< 0.1	< 0.05	0.2	< 0.001	4120	0.03	21.7	0.9	0.2	< 10
GP-003	0.7	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	2050	< 0.02	6.71	0.2	< 0.1	< 10
GP-004	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1280	0.06	6.73	2.8	0.3	< 10
GP-005	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	4830	0.06	16.1	2.4	0.4	< 10
GP-006	1.0	0.1	< 0.1	< 0.05	0.2	< 0.001	1230	0.06	10.6	1.0	0.3	< 10
GP-007	0.4	< 0.1	< 0.1	< 0.05	0.2	< 0.001	2930	0.07	12.0	1.0	0.3	< 10
GP-008	0.9	0.1	< 0.1	< 0.05	0.2	< 0.001	1180	0.04	5.90	1.6	0.3	< 10
GP-009	0.6	< 0.1	< 0.1	< 0.05	0.2	< 0.001	2370	0.15	20.2	4.5	0.9	< 10
SNS-010	0.6	< 0.1	< 0.1	< 0.05	0.6	< 0.001	7210	0.11	18.7	6.0	1.1	< 10
SNS-011	0.7	< 0.1	< 0.1	< 0.05	0.3	< 0.001	2580	0.11	21.9	5.7	1.0	< 10
SNS-012	0.7	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1450	0.09	15.9	4.2	1.0	< 10
SNS-013	0.3	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	770	< 0.02	61.6	0.4	0.2	< 10
SNS-014	0.4	< 0.1	< 0.1	< 0.05	0.4	< 0.001	2670	0.13	23.1	3.3	0.6	< 10
SNS-015	0.3	< 0.1	< 0.1	< 0.05	0.4	< 0.001	3790	0.11	13.5	2.6	0.6	< 10
SNS-016	0.4	< 0.1	< 0.1	< 0.05	0.4	< 0.001	5670	0.10	17.1	4.4	0.7	< 10
SNS-017	0.5	< 0.1	< 0.1	< 0.05	0.5	0.001	5400	0.10	36.2	4.0	0.6	< 10
SNS-018	0.3	< 0.1	< 0.1	< 0.05	0.3	< 0.001	8150	0.07	43.6	2.5	0.5	< 10
SNS-019	1.5	0.2	< 0.1	< 0.05	0.2	< 0.001	1080	0.03	4.20	1.1	0.2	< 10
SNS-020	1.3	0.2	< 0.1	< 0.05	0.3	< 0.001	3100	0.11	7.98	1.5	0.3	< 10
SNS-021	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	7950	0.15	21.6	4.6	0.9	< 10
GP-022	0.3	< 0.1	< 0.1	< 0.05	0.4	< 0.001	1430	0.09	10.6	5.1	0.9	< 10
GP-023	0.5	< 0.1	< 0.1	< 0.05	0.5	< 0.001	6420	0.08	10.0	2.5	0.4	< 10
GP-024	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1960	0.09	8.13	3.1	0.6	< 10
GP-025	0.5	< 0.1	< 0.1	< 0.05	0.3	< 0.001	5160	0.12	12.4	3.8	0.8	< 10
GP-026	0.7	< 0.1	< 0.1	< 0.05	0.1	< 0.001	185	0.08	1.75	6.6	0.6	< 10
GP-004 BIS	0.8	0.1	< 0.1	< 0.05	0.4	< 0.001	665	0.14	5.32	4.5	0.6	< 10
GP-005 BIS	0.6	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1630	0.07	6.85	3.3	0.6	< 10
TC-027	0.4	< 0.1	< 0.1	< 0.05	0.4	< 0.001	2850	0.03	16.8	1.0	0.2	< 10
TC-028	1.5	0.2	< 0.1	< 0.05	< 0.1	< 0.001	2580	0.05	11.1	0.6	0.3	< 10
TC-029	0.7	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1860	0.07	8.49	1.2	0.4	< 10
SNN-030	0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	3670	0.08	11.0	0.9	0.2	< 10
SNN-031	0.6	< 0.1	< 0.1	< 0.05	0.2	< 0.001	4070	0.08	15.7	0.9	0.3	< 10
SNS-032	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1560	0.06	6.61	2.0	0.3	< 10
GP-033	0.7	< 0.1	< 0.1	< 0.05	0.3	< 0.001	8880	0.26	25.1	4.8	0.8	< 10
GP-034	1.3	0.2	< 0.1	< 0.05	0.2	< 0.001	4990	0.04	29.1	2.1	0.3	< 10
TC-035	0.8	< 0.1	< 0.1	< 0.05	0.2	< 0.001	2770	0.04	7.18	0.8	0.2	< 10
TC-036	0.8	< 0.1	< 0.1	< 0.05	0.2	< 0.001	2590	0.10	15.2	1.0	0.3	< 10
STM-01	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	445	0.03	> 5000	0.8	< 0.1	110
STM-02	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	54	0.03	> 5000	0.8	< 0.1	150
STM-03	0.3	< 0.1	< 0.1	< 0.05	0.3	< 0.001	66	0.07	4800	0.7	0.8	10
STM-04	< 0.1	< 0.1	< 0.1	< 0.05	0.1	< 0.001	170	0.11	> 5000	0.4	< 0.1	310
STM-05	0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	479	0.13	> 5000	0.8	0.2	190
STM-06	< 0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	569	0.05	2230	0.3	< 0.1	50

Quality Control

Analyte Symbol	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Rb	Sr
Unit Symbol	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.01	0.02	0.01	0.1	1	0.5	1	0.01	0.1	0.1	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.5
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	5.3	1.0	13	0.034	0.13	0.34	0.04	1490	0.76	0.9	71	5.6	779	22.2	7.0	36.6	1060	781	4.12		365	12.8	1.8	182
GXR-1 Cert	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	16.6	14.0	275
GXR-4 Meas	11.1	1.6	6	0.135	1.33	2.54	1.54	20.4	0.76	5.6	68	44.7	125	2.47	11.6	33.2	5190	66.4	9.54		81.3	4.1	80.2	65.5
GXR-4 Cert	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0	20.0		98.0	5.60	160	221
GXR-6 Meas	27.6	1.1	7	0.053	0.35	6.23	0.98	0.26	0.12	19.7	146	63.9	857	4.50	10.8	19.7	57.6	117	9.77		207	< 0.1	55.9	25.1
GXR-6 Cert	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	0.940	90.0	35.0
SAR-M (U.S.G.S.) Meas	15.5	1.2		0.022	0.32	1.07	0.27	1.90	0.26	2.9	30	72.5	3970	2.44	8.9	37.2	297	938	4.01		32.0	0.4	21.7	25.3
SAR-M (U.S.G.S.) Cert	27.4	2.20		1.140	0.50	6.30	2.94	1.94	0.61	7.83	67.20	79.7	5220	2.99	10.70	41.50	331	930.0	16.8		38.8	0.39	146.0	151.0
Oreas 94 (Aqua Regia) Control Meas								8.47							19.5		9420	152				9.8		
Oreas 94 (Aqua Regia) Control Cert								8.77							22.9		11300	167				12.7		
GP-004 Orig	8.0	0.3	2	0.002	1.74	1.26	0.22	0.03	3.54	4.6	27	132	3730	3.27	17.5	126	11.2	56.4	2.66	< 0.1	177	< 0.1	7.3	32.6
GP-004 Dup	8.3	0.2	2	0.003	1.76	1.26	0.22	0.03	3.63	4.6	26	135	3790	3.36	17.6	127	11.8	62.3	2.68	< 0.1	176	< 0.1	7.1	32.9
SNS-017 Orig	2.0	0.3	< 1	0.011	1.61	0.79	0.48	0.31	4.06	4.9	18	42.5	4300	3.45	16.1	90.4	22.5	37.3	1.79	< 0.1	268	0.3	13.9	78.0
SNS-017 Dup	2.0	0.3	< 1	0.011	1.72	0.80	0.49	0.32	4.86	5.1	18	43.3	4480	3.68	17.9	92.7	20.6	39.4	1.86	< 0.1	288	0.3	14.1	81.1
TC-029 Orig	8.9	0.2	2	0.004	0.89	0.71	0.18	0.05	4.99	2.2	11	24.7	5760	3.00	4.7	30.3	2.47	14.6	2.15	< 0.1	158	< 0.1	6.2	63.0
TC-029 Dup	8.2	0.3	2	0.003	0.80	0.64	0.17	0.05	4.20	2.0	10	22.2	5190	2.69	4.3	27.1	2.34	12.3	2.00	< 0.1	144	< 0.1	5.9	57.5
Method Blank	< 0.1	< 0.1	< 1	< 0.001	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	< 1	< 0.5	< 1	< 0.01	< 0.1	< 0.1	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5

Quality Control

Analyte Symbol	Y	Zr	Nb	Mo	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.1	0.1	0.01	0.002	0.01	0.02	0.05	0.02	0.02	0.02	0.5	0.5	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	23.6	9.9	0.1	16.4	36.1	2.28	0.68	24.2	84.7	12.5	2.48	179	5.4	10.5		6.14	2.1	0.5	3.3	0.7	4.8			0.4
GXR-1 Cert	32.0	38.0	0.800	18.0	31.0	3.30	0.770	54.0	122	13.0	3.00	750	7.50	17.0		18.0	2.70	0.690	4.20	0.830	4.30			0.430
GXR-4 Meas	9.75	10.2	0.5	272	3.93	0.08	0.17	4.80	3.64	0.70	2.18	17.0	44.1	84.5		33.3	5.1	1.2	3.9	0.5	2.5			0.1
GXR-4 Cert	14.0	186	10.0	310	4.00	0.860	0.270	5.60	4.80	0.970	2.80	1640	64.5	102		45.0	6.60	1.63	5.25	0.360	2.60			0.210
GXR-6 Meas	5.71	15.4	< 0.1	1.68	0.961	0.05	0.05	0.91	2.26	0.02	3.36	850	10.5	29.2		10.5	2.0	0.5	1.8	0.3	1.7			0.1
GXR-6 Cert	14.0	110	7.50	2.40	1.30	1.00	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0		13.0	2.67	0.760	2.97	0.415	2.80			0.0320
SAR-M (U.S.G.S.) Meas	18.4		3.9	11.2	3.80	4.55	0.90	1.75	4.09	0.79	2.29	173	46.4	97.5										
SAR-M (U.S.G.S.) Cert	28.00		29.90	13.10	3.64	5.27	1.08	2.76	6.00	0.96	5.15	801	57.4	122.00										
Oreas 94 (Aqua Regia) Control Meas					3.81			14.2	1.71															
Oreas 94 (Aqua Regia) Control Cert					3.42			16.4	1.64															
GP-004 Orig	6.79	2.7	< 0.1	0.38	1.44	0.36	< 0.02	0.85	0.23	< 0.02	0.07	13.8	5.0	10.9	1.4	5.46	1.2	0.8	1.4	0.2	1.4	0.3	0.7	< 0.1
GP-004 Dup	6.85	2.7	< 0.1	0.93	1.37	0.40	< 0.02	0.85	0.24	0.07	0.07	13.9	5.0	10.9	1.4	5.59	1.2	0.8	1.4	0.2	1.5	0.3	0.7	< 0.1
SNS-017 Orig	7.23	1.6	< 0.1	0.63	4.76	0.54	< 0.02	1.10	0.32	0.06	0.09	25.7	5.0	11.2	1.5	6.23	1.4	0.7	1.4	0.2	1.5	0.3	0.8	0.1
SNS-017 Dup	7.57	3.1	< 0.1	0.63	4.89	0.60	< 0.02	1.10	0.33	0.05	0.10	27.0	5.5	12.3	1.7	6.88	1.5	0.8	1.5	0.3	1.6	0.3	0.9	0.1
TC-029 Orig	9.55	1.4	< 0.1	0.54	2.26	0.17	< 0.02	1.18	0.34	< 0.02	0.09	12.4	4.0	8.86	1.2	5.09	1.5	1.6	1.8	0.3	2.1	0.4	1.1	0.2
TC-029 Dup	8.66	1.3	< 0.1	0.52	1.59	0.16	< 0.02	1.10	0.33	< 0.02	0.08	11.4	3.7	7.67	1.0	4.48	1.3	1.4	1.6	0.3	1.9	0.4	1.1	0.1
Method Blank	< 0.01	< 0.1	< 0.1	< 0.01	< 0.002	< 0.01	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.5	< 0.5	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Quality Control

Analyte Symbol	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
Detection Limit	0.1	0.1	0.1	0.05	0.1	0.001	5	0.02	0.01	0.1	0.1	10
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	1.9	0.3	0.1	< 0.05	151		3330	0.35	648	3.3	31.0	2770
GXR-1 Cert	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
GXR-4 Meas	0.7	< 0.1	0.3	< 0.05	14.6		442	2.81	41.1	17.6	4.5	
GXR-4 Cert	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	
GXR-6 Meas	0.7	< 0.1	0.2	< 0.05	< 0.1			2.04	95.3	4.4	0.8	
GXR-6 Cert	2.40	0.330	4.30	0.485	1.90			2.20	101	5.30	1.54	
SAR-M (U.S.G.S.) Meas					3.7			1.14	891	13.0	2.1	
SAR-M (U.S.G.S.) Cert					9.78			2.88	982	17.2	3.57	
Oreas 94 (Aqua Regia) Control Meas									25.9			
Oreas 94 (Aqua Regia) Control Cert									30.9			
GP-004 Orig	0.4	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1380	0.06	6.58	2.6	0.3	< 10
GP-004 Dup	0.4	< 0.1	< 0.1	< 0.05	0.3	< 0.001	1170	0.07	6.89	3.0	0.3	< 10
SNS-017 Orig	0.5	< 0.1	< 0.1	< 0.05	0.5	0.001	6670	0.09	35.6	3.6	0.6	< 10
SNS-017 Dup	0.5	< 0.1	< 0.1	< 0.05	0.5	0.001	4140	0.10	36.8	4.3	0.6	< 10
TC-029 Orig	0.8	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1850	0.07	8.88	1.3	0.4	< 10
TC-029 Dup	0.7	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1870	0.07	8.09	1.2	0.4	< 10
Method Blank	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 5	< 0.02	< 0.01	< 0.1	< 0.1	< 10

Quality Analysis ... *Innovative Technologies*

Date Submitted: 05-Feb-13
Invoice No.: A13-01290
Invoice Date: 20-Feb-13
Your Reference:

Green Mines Solutions
100 King St. West Suite 56019
Toronto, Ontario
Canada

ATTN: Kate Blancato

CERTIFICATE OF ANALYSIS

17 Pulp samples were submitted for analysis.

The following analytical package was requested: Code UT-1-0.5g Aqua Regia ICP/MS

REPORT **A13-01290**

Notes:
Assays are recommended for values >10,000 for Cu and Au. Due to matrix change used in AR-MS analysis, the detection limts for Au has been modified to 5ppb. The AU from AR-MS is only semi-quantitative. For accurate Au data,fire assay is recommended.

CERTIFIED BY :

Emmanuel Eseme , Ph.D.
Quality Control

ISO/IEC 17025
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LAB 266
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Accrédité CCN

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Activation Laboratories Ltd. Report: A13-01290

Analyte Symbol	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Rb	Sr
Unit Symbol	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.01	0.02	0.01	0.1	1	0.5	1	0.01	0.1	0.1	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.5
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
WP-153	2.0	1.1	2	0.052	0.17	1.73	0.63	0.10	0.52	1.8	41	3.9	1040	2.42	7.5	3.0	12.7	46.6	5.74	< 0.1	63.1	< 0.1	30.0	104
WP-155	0.5	0.1	1	0.004	0.36	0.38	0.25	0.10	1.43	0.4	5	1.8	1410	3.12	5.1	4.0	6.08	18.7	0.88	< 0.1	187	< 0.1	7.7	25.5
WP-156	0.2	< 0.1	2	0.001	0.01	0.06	0.02	< 0.02	0.03	< 0.1	2	3.5	316	0.57	0.9	1.6	1.48	23.7	0.19	< 0.1	4.7	< 0.1	0.5	1.4
WP-158	< 0.1	< 0.1	2	0.002	< 0.01	0.02	0.01	0.04	0.01	< 0.1	4	4.1	200	2.66	8.6	2.6	4.69	33.5	0.15	< 0.1	193	< 0.1	0.1	0.6
WP-160	0.4	0.5	2	0.002	< 0.01	0.11	0.03	0.42	0.01	< 0.1	69	11.3	103	4.66	4.1	1.7	16.7	46.8	0.37	< 0.1	79.9	0.2	1.0	0.8
WP-161	1.7	0.2	2	0.004	0.09	0.41	0.29	0.89	0.24	0.2	8	2.7	380	6.75	14.8	5.8	11.5	91.8	0.93	< 0.1	379	< 0.1	9.1	4.5
WP-163	0.5	0.2	2	0.002	0.02	0.31	0.14	17.2	< 0.01	0.5	66	60.4	166	7.49	13.6	3.3	46.2	50.0	0.82	< 0.1	256	0.6	3.8	1.0
WP-167	0.3	0.1	2	0.002	0.04	0.17	0.08	0.15	< 0.01	0.2	8	13.6	223	3.19	31.3	76.9	52.4	24.4	0.56	< 0.1	54.6	< 0.1	2.6	1.2
WP-170	1.8	< 0.1	2	0.001	< 0.01	0.03	0.02	0.05	< 0.01	< 0.1	2	19.3	604	1.80	29.9	12.1	12.9	36.4	0.10	< 0.1	44.4	< 0.1	0.3	2.7
CR-01	0.2	< 0.1	1	0.002	0.02	0.24	0.16	0.05	< 0.01	< 0.1	10	2.9	666	7.59	3.5	1.1	4.39	8.4	0.85	< 0.1	427	0.1	5.0	1.0
CR-02	0.4	0.5	1	0.004	0.03	0.55	0.27	0.03	< 0.01	1.1	15	3.5	98	2.26	4.4	1.3	3.32	15.2	1.08	< 0.1	84.6	< 0.1	8.7	3.6
CR-03	0.4	1.1	1	0.002	0.01	0.48	0.12	< 0.02	< 0.01	2.2	46	8.3	2530	13.9	26.0	1.5	22.9	39.0	1.16	0.1	752	0.1	4.3	1.3
CH-01	0.9	0.5	2	0.004	0.14	0.79	0.41	2.52	0.09	1.4	29	3.2	785	3.15	8.1	1.9	29.0	466	1.75	< 0.1	115	< 0.1	11.9	6.6
CH-02	0.4	0.1	2	0.003	0.04	0.26	0.13	5.71	0.03	0.2	18	3.4	364	1.60	4.1	1.5	9.54	115	0.67	< 0.1	86.8	< 0.1	3.3	6.9
CH-03	0.1	< 0.1	2	0.002	< 0.01	0.04	0.03	9.73	0.02	< 0.1	27	3.2	70	11.1	40.0	2.7	14.3	1580	0.18	< 0.1	598	0.6	0.6	0.9
CH-04	0.6	0.3	1	0.005	0.06	0.56	0.33	3.59	0.05	0.8	24	3.3	410	1.93	4.4	1.6	7.24	154	1.26	< 0.1	77.6	< 0.1	8.1	5.4
WP-175	0.3	< 0.1	2	0.002	< 0.01	0.17	0.02	0.06	< 0.01	< 0.1	4	6.5	85	0.87	0.4	2.4	2.02	25.5	0.48	< 0.1	4.4	< 0.1	0.4	< 0.5

Analyte Symbol	Y	Zr	Nb	Mo	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.1	0.1	0.01	0.002	0.01	0.02	0.05	0.02	0.02	0.02	0.5	0.5	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
WP-153	6.23	1.8	< 0.1	0.84	0.619	0.86	< 0.02	0.32	0.16	0.06	0.30	154	15.5	27.2	3.0	10.7	1.8	0.6	1.7	0.2	1.3	0.2	0.7	0.1
WP-155	3.26	1.0	< 0.1	0.33	3.00	0.45	< 0.02	0.19	0.61	< 0.02	0.03	10.8	2.0	3.81	0.4	1.80	0.4	0.3	0.5	< 0.1	0.6	0.1	0.3	< 0.1
WP-156	0.52	0.1	< 0.1	0.26	0.592	0.92	< 0.02	< 0.05	0.06	0.05	< 0.02	36.4	0.6	1.17	0.1	0.54	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
WP-158	0.27	0.6	< 0.1	0.24	1.79	0.13	< 0.02	< 0.05	0.14	< 0.02	< 0.02	4.1	< 0.5	0.29	< 0.1	0.14	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
WP-160	0.70	0.5	< 0.1	0.80	1.62	0.56	< 0.02	< 0.05	0.26	0.26	0.02	16.3	< 0.5	0.60	< 0.1	0.28	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
WP-161	1.79	1.7	< 0.1	0.37	7.33	1.96	< 0.02	0.15	0.33	0.05	0.04	2.6	3.4	6.68	0.8	2.80	0.5	0.1	0.4	< 0.1	0.4	< 0.1	0.2	< 0.1
WP-163	1.69	1.0	< 0.1	0.62	33.7	1.14	< 0.02	0.18	0.23	8.72	0.03	63.9	2.4	4.31	0.5	1.71	0.3	0.1	0.4	< 0.1	0.4	< 0.1	0.2	< 0.1
WP-167	0.64	0.5	< 0.1	1.42	1.64	0.22	< 0.02	0.58	0.28	0.41	0.03	3.8	1.1	2.17	0.3	1.02	0.2	< 0.1	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.1
WP-170	0.53	0.1	< 0.1	0.73	0.813	0.33	< 0.02	0.08	0.16	0.11	< 0.02	21.0	1.9	2.21	0.5	1.80	0.3	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.1
CR-01	0.75	1.5	< 0.1	1.05	5.13	0.08	< 0.02	0.06	0.19	0.06	0.02	17.2	4.6	6.66	0.9	3.05	0.4	< 0.1	0.4	< 0.1	0.2	< 0.1	< 0.1	< 0.1
CR-02	7.77	0.5	< 0.1	0.47	5.78	0.03	< 0.02	< 0.05	0.10	0.03	0.05	37.2	10.4	16.4	2.2	8.67	1.6	0.4	1.7	0.2	1.5	0.3	0.8	0.1
CR-03	8.25	2.5	< 0.1	2.48	9.43	0.21	< 0.02	0.08	0.22	0.03	0.09	7.4	5.4	13.8	1.6	6.67	1.5	0.5	1.6	0.3	1.9	0.4	1.2	0.2
CH-01	3.73	1.0	< 0.1	0.48	7.81	12.3	0.04	0.31	0.47	0.43	0.06	9.1	8.3	15.7	1.8	6.62	1.2	0.3	1.1	0.1	0.8	0.2	0.5	< 0.1
CH-02	1.49	0.4	< 0.1	0.28	8.56	1.66	0.04	0.07	0.38	0.31	< 0.02	25.7	2.9	5.21	0.6	2.00	0.3	0.1	0.3	< 0.1	0.3	< 0.1	0.2	< 0.1
CH-03	0.39	1.7	< 0.1	0.23	78.1	46.9	0.20	< 0.05	5.64	1.16	< 0.02	< 0.5	< 0.5	0.55	< 0.1	0.30	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
CH-04	3.20	0.6	< 0.1	0.24	8.44	4.05	0.04	0.17	0.25	0.58	0.04	17.8	8.8	15.7	1.8	6.56	1.1	0.2	0.9	0.1	0.7	0.1	0.4	< 0.1
WP-175	0.08	0.1	0.1	0.28	1.13	0.46	< 0.02	0.07	0.02	< 0.02	0.02	5.5	< 0.5	0.54	< 0.1	0.14	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Analyte Symbol	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
Detection Limit	0.1	0.1	0.1	0.05	0.1	0.001	5	0.02	0.01	0.1	0.1	10
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
WP-153	0.6	< 0.1	< 0.1	< 0.05	0.2	< 0.001	170	0.33	14.1	6.7	2.1	< 10
WP-155	0.3	< 0.1	< 0.1	< 0.05	0.2	< 0.001	2040	0.05	26.5	2.2	0.3	< 10
WP-156	< 0.1	< 0.1	< 0.1	< 0.05	0.2	< 0.001	18	< 0.02	16.2	0.3	< 0.1	80
WP-158	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	981	0.02	6.03	0.3	0.1	< 10
WP-160	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	469	0.02	24.2	0.4	0.7	< 10
WP-161	0.2	< 0.1	< 0.1	< 0.05	0.4	< 0.001	3520	0.06	615	2.4	0.5	< 10
WP-163	0.2	< 0.1	< 0.1	< 0.05	2.0	< 0.001	7060	0.10	58.1	1.5	0.7	10
WP-167	< 0.1	< 0.1	< 0.1	< 0.05	1.9	< 0.001	133	0.04	10.9	0.5	0.2	< 10
WP-170	< 0.1	< 0.1	< 0.1	< 0.05	2.7	< 0.001	225	0.05	15.7	0.1	< 0.1	< 10
CR-01	< 0.1	< 0.1	< 0.1	< 0.05	0.4	< 0.001	6360	0.62	25.3	1.1	0.1	< 10
CR-02	0.7	0.1	< 0.1	< 0.05	< 0.1	< 0.001	5230	0.08	67.0	3.7	0.8	< 10
CR-03	1.2	0.2	< 0.1	< 0.05	< 0.1	< 0.001	9110	0.42	48.3	1.9	2.0	< 10
CH-01	0.4	< 0.1	< 0.1	< 0.05	0.4	< 0.001	1910	0.09	329	5.0	1.6	< 10
CH-02	0.1	< 0.1	< 0.1	< 0.05	0.3	< 0.001	3230	0.03	313	1.4	0.6	< 10
CH-03	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	> 10000	< 0.02	2220	0.6	0.7	100
CH-04	0.3	< 0.1	< 0.1	< 0.05	0.2	< 0.001	1300	0.06	205	4.7	1.3	10
WP-175	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	203	< 0.02	2.94	0.5	< 0.1	< 10

Quality Control

Analyte Symbol	Li	Be	B	Na	Mg	Al	K	Bi	Ca	Sc	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Rb	Sr
Unit Symbol	ppm	ppm	ppm	%	%	%	%	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.1	0.1	1	0.001	0.01	0.01	0.01	0.02	0.01	0.1	1	0.5	1	0.01	0.1	0.1	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.5
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	5.3	1.0	13	0.034	0.13	0.34	0.04	1490	0.76	0.9	71	5.6	779	22.2	7.0	36.6	1060	781	4.12		365	12.8	1.8	182
GXR-1 Cert	8.20	1.22	15.0	0.0520	0.217	3.52	0.050	1380	0.960	1.58	80.0	12.0	852	23.6	8.20	41.0	1110	760	13.8		427	16.6	14.0	275
GXR-4 Meas	11.1	1.6	6	0.135	1.33	2.54	1.54	20.4	0.76	5.6	68	44.7	125	2.47	11.6	33.2	5190	66.4	9.54		81.3	4.1	80.2	65.5
GXR-4 Cert	11.1	1.90	4.50	0.564	1.66	7.20	4.01	19.0	1.01	7.70	87.0	64.0	155	3.09	14.6	42.0	6520	73.0	20.0		98.0	5.60	160	221
GXR-6 Meas	27.6	1.1	7	0.053	0.35	6.23	0.98	0.26	0.12	19.7	146	63.9	857	4.50	10.8	19.7	57.6	117	9.77		207	< 0.1	55.9	25.1
GXR-6 Cert	32.0	1.40	9.80	0.104	0.609	17.7	1.87	0.290	0.180	27.6	186	96.0	1010	5.58	13.8	27.0	66.0	118	35.0		330	0.940	90.0	35.0
SAR-M (U.S.G.S.) Meas	15.5	1.2		0.022	0.32	1.07	0.27	1.90	0.26	2.9	30	72.5	3970	2.44	8.9	37.2	297	938	4.01		32.0	0.4	21.7	25.3
SAR-M (U.S.G.S.) Cert	27.4	2.20		1.140	0.50	6.30	2.94	1.94	0.61	7.83	67.20	79.7	5220	2.99	10.70	41.50	331	930.0	16.8		38.8	0.39	146.0	151.0
Oreas 94 (Aqua Regia) Control Meas								8.47							19.5		9420	152				9.8		
Oreas 94 (Aqua Regia) Control Cert								8.77							22.9		11300	167				12.7		
WP-170 Orig	1.8	< 0.1	2	0.001	< 0.01	0.03	0.02	0.06	< 0.01	< 0.1	2	19.3	605	1.80	29.5	12.2	12.8	31.0	0.09	< 0.1	44.7	< 0.1	0.3	2.7
WP-170 Dup	1.8	< 0.1	2	0.001	< 0.01	0.03	0.02	0.04	< 0.01	< 0.1	2	19.3	603	1.80	30.2	11.9	12.9	41.7	0.10	< 0.1	44.1	< 0.1	0.3	2.7
CR-01 Orig	0.2	< 0.1	1	0.002	0.02	0.24	0.16	0.05	< 0.01	< 0.1	10	2.9	666	7.59	3.5	1.1	4.39	8.4	0.85	< 0.1	427	0.1	5.0	1.0
CR-01 Split	0.3	< 0.1	2	0.004	0.02	0.27	0.17	0.07	< 0.01	< 0.1	10	3.1	673	7.65	3.4	1.3	4.36	8.6	0.83	< 0.1	423	< 0.1	5.7	1.2
Method Blank	< 0.1	< 0.1	< 1	< 0.001	< 0.01	< 0.01	< 0.01	< 0.02	< 0.01	< 0.1	< 1	< 0.5	< 1	< 0.01	< 0.1	< 0.1	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.5

Quality Control

Analyte Symbol	Y	Zr	Nb	Mo	Ag	Cd	In	Sn	Sb	Te	Cs	Ba	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Detection Limit	0.01	0.1	0.1	0.01	0.002	0.01	0.02	0.05	0.02	0.02	0.02	0.5	0.5	0.01	0.1	0.02	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	23.6	9.9	0.1	16.4	36.1	2.28	0.68	24.2	84.7	12.5	2.48	179	5.4	10.5		6.14	2.1	0.5	3.3	0.7	4.8			0.4
GXR-1 Cert	32.0	38.0	0.800	18.0	31.0	3.30	0.770	54.0	122	13.0	3.00	750	7.50	17.0		18.0	2.70	0.690	4.20	0.830	4.30			0.430
GXR-4 Meas	9.75	10.2	0.5	272	3.93	0.08	0.17	4.80	3.64	0.70	2.18	17.0	44.1	84.5		33.3	5.1	1.2	3.9	0.5	2.5			0.1
GXR-4 Cert	14.0	186	10.0	310	4.00	0.860	0.270	5.60	4.80	0.970	2.80	1640	64.5	102		45.0	6.60	1.63	5.25	0.360	2.60			0.210
GXR-6 Meas	5.71	15.4	< 0.1	1.68	0.961	0.05	0.05	0.91	2.26	0.02	3.36	850	10.5	29.2		10.5	2.0	0.5	1.8	0.3	1.7			0.1
GXR-6 Cert	14.0	110	7.50	2.40	1.30	1.00	0.260	1.70	3.60	0.0180	4.20	1300	13.9	36.0		13.0	2.67	0.760	2.97	0.415	2.80			0.0320
SAR-M (U.S.G.S.) Meas	18.4		3.9	11.2	3.80	4.55	0.90	1.75	4.09	0.79	2.29	173	46.4	97.5										
SAR-M (U.S.G.S.) Cert	28.00		29.90	13.10	3.64	5.27	1.08	2.76	6.00	0.96	5.15	801	57.4	122.00										
Oreas 94 (Aqua Regia) Control Meas					3.81			14.2	1.71															
Oreas 94 (Aqua Regia) Control Cert					3.42			16.4	1.64															
WP-170 Orig	0.53	0.1	< 0.1	0.73	0.795	0.33	< 0.02	0.08	0.17	0.04	< 0.02	19.3	1.9	2.16	0.5	1.76	0.3	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.1
WP-170 Dup	0.54	0.1	< 0.1	0.73	0.831	0.33	< 0.02	0.09	0.15	0.17	< 0.02	22.7	2.0	2.26	0.5	1.84	0.3	0.1	0.2	< 0.1	0.2	< 0.1	< 0.1	< 0.1
CR-01 Orig	0.75	1.5	< 0.1	1.05	5.13	0.08	< 0.02	0.06	0.19	0.06	0.02	17.2	4.6	6.66	0.9	3.05	0.4	< 0.1	0.4	< 0.1	0.2	< 0.1	< 0.1	< 0.1
CR-01 Split	0.74	1.5	< 0.1	1.08	7.39	0.08	< 0.02	0.06	0.25	0.05	0.03	51.0	4.9	7.02	0.9	3.26	0.5	< 0.1	0.4	< 0.1	0.2	< 0.1	< 0.1	< 0.1
Method Blank	< 0.01	< 0.1	< 0.1	< 0.01	< 0.002	< 0.01	< 0.02	< 0.05	< 0.02	< 0.02	< 0.02	< 0.5	< 0.5	< 0.01	< 0.1	< 0.02	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Quality Control

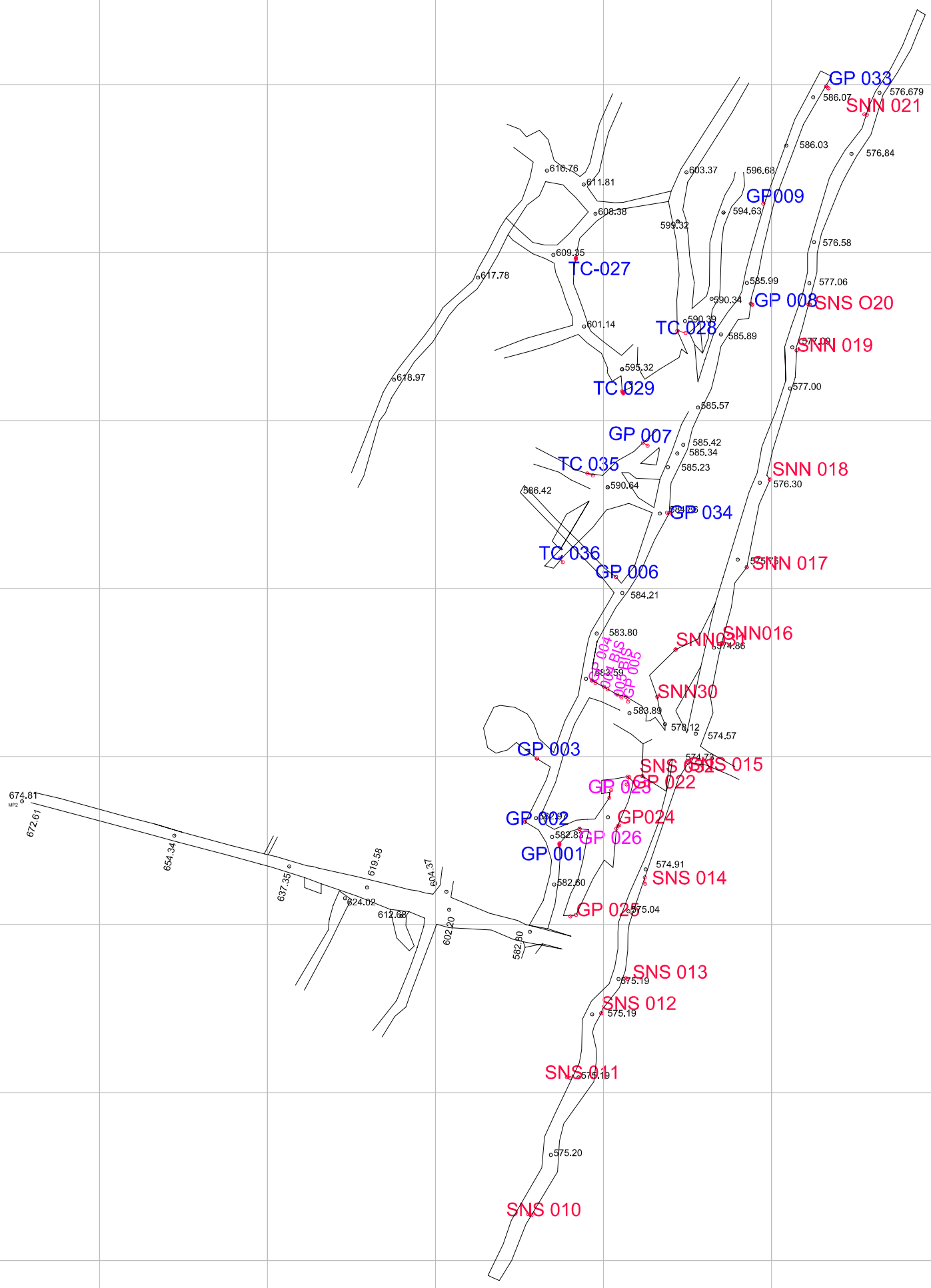
Analyte Symbol	Yb	Lu	Hf	Ta	W	Re	Au	Tl	Pb	Th	U	Hg
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppb
Detection Limit	0.1	0.1	0.1	0.05	0.1	0.001	5	0.02	0.01	0.1	0.1	10
Analysis Method	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS	AR-MS
GXR-1 Meas	1.9	0.3	0.1	< 0.05	151		3330	0.35	648	3.3	31.0	2770
GXR-1 Cert	1.90	0.280	0.960	0.175	164		3300	0.390	730	2.44	34.9	3900
GXR-4 Meas	0.7	< 0.1	0.3	< 0.05	14.6		442	2.81	41.1	17.6	4.5	
GXR-4 Cert	1.60	0.170	6.30	0.790	30.8		470	3.20	52.0	22.5	6.20	
GXR-6 Meas	0.7	< 0.1	0.2	< 0.05	< 0.1			2.04	95.3	4.4	0.8	
GXR-6 Cert	2.40	0.330	4.30	0.485	1.90			2.20	101	5.30	1.54	
SAR-M (U.S.G.S.) Meas					3.7			1.14	891	13.0	2.1	
SAR-M (U.S.G.S.) Cert					9.78			2.88	982	17.2	3.57	
Oreas 94 (Aqua Regia) Control Meas									25.9			
Oreas 94 (Aqua Regia) Control Cert									30.9			
WP-170 Orig	< 0.1	< 0.1	< 0.1	< 0.05	2.7	< 0.001	186	0.05	15.5	0.2	< 0.1	< 10
WP-170 Dup	< 0.1	< 0.1	< 0.1	< 0.05	2.6	< 0.001	264	0.05	15.8	0.1	< 0.1	< 10
CR-01 Orig	< 0.1	< 0.1	< 0.1	< 0.05	0.4	< 0.001	6360	0.62	25.3	1.1	0.1	< 10
CR-01 Split	< 0.1	< 0.1	< 0.1	< 0.05	0.5	< 0.001	7300	0.68	28.0	1.4	0.2	< 10
Method Blank	< 0.1	< 0.1	< 0.1	< 0.05	< 0.1	< 0.001	< 5	< 0.02	< 0.01	< 0.1	< 0.1	< 10

APPENDIX III

MAPS

931.550 931.575 931.600 931.625 931.650 931.675 931.700

1.269.400
1.269.375
1.269.350
1.269.325
1.269.300
1.269.275
1.269.250
1.269.225



*coordinates in Bogota Observatorio

SNS-010	Sample channel La Palmichala vein
GP-009	Sample channel La Criolla vein
GP-005	Sample channel Inner structure
575.20	Elevation at the bottom of the tunnel

CRN
CONSULTORES INDEPENDIENTES EN GESTIÓN DE RECURSOS NATURALES S.A.

Green Mine Solutions

CRN CODE: P1557MS02	PROJECT TITLE: "LA PALMICHALA" MINE		
CUSTOMER CODE:	MAP TITLE: SAMPLING IN THE UNDERGROUND EXPLOITATION OF LA PALMICHALA		
REALIZED BY: M. González	QUALITY CONTROL: J. Fernández	SCALE: 1:750	Nr: 02
REVISED BY:	APPROVED:	DATE: March - 2013	REVISED:

*coordinates in WGS-84

533.200 533.400 533.600 533.800 534.000 534.200 534.400

777.800 777.600 777.400 777.200 777.000

N

Q. El Cristo

Q. Honduras

148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180

Terrain

Streams

Mining facilities

Roads

Permit boundaries

Mining works

Outcropping veins

CRN CONSULTORES INDEPENDIENTES EN GESTION DE RECURSOS NATURALES S.A.		Green Mine Solutions	
CRN CODE: P1557MS01	PROJECT TITLE: "LA PALMICHALA" MINE		
CUSTOMER CODE:	MAP TITLE: LA PALMICHALA MINE PROPERTY SURVEY		
REALIZED BY: M. González	QUALITY CONTROL: J. Fernández	SCALE: 1:4.000	Nr: 01
REVISED BY:	APPROVED:	DATE: March - 2013	REVISED:

APPENDIX IV

LABORATORY FOR GRADE CONTROL

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Page nr

1. EQUIPMENT FOR GOLD DETERMINATION BY FIRE ASSAY

The general proceeding for the determination of precious metals in solid samples has to be developed in several stages: dry, crushing, grinding, melting, chemical process, separation and final weighted. It has been taken, 30 samples per day capacity, for the determination of the appropriate equipments.

1.1. SAMPLES PREPARATION

The samples preparation is undertaken by the processes of drying, crushing and grinding, being of high relevance because the humidity and size for later assay will depend on preparation. The equipment needed has been listed below:

TABLE 1.1.- EQUIPEMENT FOR THE SAMPLES PREPARATION

Dryer oven (by gas) Max temperature 300°C	
Jaw crusher 8”x4”	
Ring of lenses miller Bico ring miller Disc diameter 8”	

TABLE 1.1.- EQUIPEMENT FOR THE SAMPLES PREPARATION	
Compressor 110psi, tank 24 l, Engine: 2hp	
Splitter Humboldt splitter Model H3990-1095 ASTM.	

1.1.1. Melting and weighting

By the melting process the metallic phases will be separated, including gold and silver in the lead. Later, the lead is separated by thermal process on oxidizing atmosphere, generating a bottom of gold and silver. The gold and silver is chemically processed, separating the gold and final weighted. The equipment needed is listed below:

TABLE 1.2.- EQUIPEMENT FOR THE MELTING AND WEIGHTED PROCESSES	
Furnace oven Max. temperature.: 1200˚C Volume: 105 dm^3	
Cupellation furnace Max. temperature.: 1200˚C Volume: 9 dm^3	
Electronic scales Max: 1500g, d=0.1g	
Analytical scales Max: 150g, d=0,01mg	
Electrical heater 2 spots	

TABLE 1.2.- EQUIPEMENT FOR THE MELTING AND WEIGHTED PROCESSES	
Holders Legend. 4x3 Conical mold	
Cupellation holder Legend. 4x4 Circle mold	

1.2. COSTS

The costs of the equipments and accessories suggested are under the current market value.

1.2.1. Costs for equipments

In addition to the equipment listed previously, it has been defined accessory equipment for grain sizing, elaboration of cupellation, tools, compressor and systems for safety.

TABLE 1.3.- COSTS FOR EQUIPMENTS

UNITS	EQUIPMENT	Cost per unit (CAD $)	Subtotal
1	Cupellation furnace, 9dm^3	1,400	1,400
1	Melting furnace, 105dm^3	5,599	5,599
1	Gas furnace (dryer), 400dm^3	2,240	2,240
1	Electrical heater, 2 spots	28	28
1	Jaw crusher	4,479	4,479
1	Ring or lenses miller	3,919	3,919

TABLE 1.3.- COSTS FOR EQUIPMENTS			
1	Air extractor, 1mx0.5m	2,800	2,800
1	Compressor	280	280
1	Splitter	112	112
1	Electronic scale, d=0.1g	5,039	5,039
1	Analytical scale, d=0,01mg	140	140
1	Conic mold holder	84	84
1	Holders	56	56
2	Air extraction with pipes	1,680	3,359
1	Cupellator	1,960	1,960
1	Sieves 4, 10, 20, 30, 60, 100, 140, 200, 260, 325, top and bottom, USA	840	840
1	Ro-tap, con timing	840	840
		Subtotal (CAD $)	**33,175**

TABLE 1.4.- COSTS FOR IMPLEMENTS AND TOOLS			
UNITS	**IMPLEMENTS**	**Cost per unit (CAD $)**	**Subtotal**
2	Elbow gloves	22	45
2	Shoulder gloves	34	67
2	Chests protection	34	67
2	Face shield (melting)	22	45
2	Face shield (dust) 3M	112	224
1	Melting furnace tong	17	17
1	Cupellation tong	11	11
1	Beakers tong	17	17
5	Erlenmeyer 100ml	4	20
5	Erlenmeyer 250ml	5	25
5	Erlenmeyer 500ml	6	28
5	Beakers 50 ml	3	14
5	Beakers 100ml	5	25
5	Beakers 500ml	6	28
1	Burette, 50ml	6	6
1	Plastic dish	3	3
2	Spatula	3	7
1	Tools kit	112	112
		Subtotal($)	**760**

TABLE 1.5.- TOTAL COSTS FOR EQUIPMENTS, IMPLEMENTS AND TOOLS	
Costs for equipments	**33,175**
Costs for implements and tools	**760**
TOTAL	**33,935**

1.2.2. Supplies costs

The melting reagents and crucibles are the most important supplies. In the next table is defined the supplies costs for 20 g of mineral, with 120 g of reagents (42% litharge, 42% bicarbonate, 10% borax and 6% silica).

TABLE 1.6.- SUPPLIES COSTS				
ITEM	**Units**	**Cost ($) per unit**	**Consumption per sample**	**Cost ($) per sample**
Lead oxide	kg	7,5	0,05	0,373
Bicarbonate	kg	1,0	0,05	0,048
Borax	kg	1,5	0,012	0,018
Silica	kg	0,4	0,008	0,003
Silver	g	0,7	0,03	0,020
Potassium nitrate	kg	2,1	0,008	0,017
Crisol	Crisol	2,1	1,0	2,128
Cupellation	Crucible pot	0,1	1	0,056
Nitric acid	kg	0,7	0,01	0,007
Distilled water	l	1,5	0,03	0,046

Cost Total (CAD $) per sample	**2.71**

Depending on the crisol quality, it could be re-used.

1.2.3. Electrical consumption costs

The costs are estimated based on the nominal capacity of the main equipment, considering 8 h per shift, 25 days/month, being the kW/h cost of 0.140 CAD $.

TABLE 1.7.- ELECTRICAL CONSUMPTION COSTS					
ITEM	**kW**	**Operación (h/day)**	**(kw-h)/ day**	**(kw-h)/ month**	**Costs (CAD $) per month**
Furnace for melt	8,0	4	32	800	111.98
Cupellation furnace	3,0	3	9.0	225	31.49
Jaw crusher	4,0	2	8.0	200	28.00
Mills	2,5	2	5.0	125	17.50
Compressor	2,0	4	8.0	200	28.00
Extractor	1,0	4	4.0	100	12.60
Electric heater	1,3	4	5.2	130	18.20
Others	0,5	3	1.5	37.5	5.25

TOTAL costs (CAD $) / month	**253.01**

1.2.4. Maintenance costs

The maintenance costs depend mostly about the electrical devices of the furnace and melting. It has been considered 10 resistances and connections per furnace per year, and a monthly consumption of a 40 lb gas bottle.

TABLE 1.8.- MAINTENANCE COSTS			
ITEM	**UNITS/YEAR**	**Costs (CAD $) units**	**Costs (CAD $) annual**
Furnace resistance cop.	8	33.59	268.76
Furnace resistance melt	10	44.79	447.93
Connections furnace cop.	1	223.96	223.96
Connection furnace melt	1	391.94	391.94
Gas bottle	12	19.60	235.16
Others	-		111.98
		Annual costs (CAD $)	1679.63
		Average costs per month (CAD $)	139.98

1.3. ADAPTATIONS TO THE EXISTING INFRASTRUCTURE

For an adequate laboratory operation, it is needed to undertake the next items:

- An storage area for drill cores
- An office in the laboratory with the analytical scale installed properly. It has to be closed and independent of samples preparation and melting.
- To adequate an open place for the storage of the propane bottles of the dryer.

March 12th 2013

CRN, S.A.