June 2011

# **TECNICAL REPORT NI 43-101**

# PROPERTY ASSESMENT ON THE ANDIÑUELA GOLD PROJECT. LEON REGION, SPAIN

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REPORT



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# 1.0 SUMMARY

#### **1.1 Technical summary**

This Technical Report is prepared for Auropean España S.L., a wholly owned subsidiary of Auropean Ventures Inc. (hereafter "Auropean") by Golder Associates Global Ibérica S.L.U. (hereafter "Golder").

The overall objective of the work is to complete an independent sampling to confirm the occurrence of gold in the properties that form the Andiñuela project, and to produce a Technical Report compliant with Canadian NI 43-101 standards.

The Qualified Person (QP) authoring and signing this Techincal Report is Sergio Tenorio, European Geologist (#820), PGeo, who visited the property on January 26, 2011 and inspected and sampled some of the mineral occurrences within the property.

The Andiñuela project comprises two licenses, namely P.I. Caia and P.I. Gala, in the province of Leon (NW Spain). The licenses cover a total of 4,560 ha centred on the village of Andiñuela, at 6°18′51" W, 42°27′32" N (GM).

The licences have been awarded to Fernando de la Fuente Consultores (FFC) for a three year period ending in March 2014; with the possibility of additional successive renewals of 3 years each, and the preference for the application of exploitation concession when resources are defined.

Auropean Ventures Inc. announced on 18 January 2011 that the company had reached an agreement to earn 100% interest in the Andiñuela project from FFC. Under the terms of the agreement, an initial 75% interest can be earned by Auropean paying FFC a total of  $\in$  135,000 plus the equivalent of  $\in$  170,000 in Auropean issuing shares and expending a total of 3 M $\in$  on the project over a five year period. Auropean will earn 100% interest by paying FFC a further  $\in$  150.000; issuing shares valued at  $\in$  150.000 to FFC; and securing funding to take the project to production. The property is subject to a 2% NSR with a 1% buyback on a sliding scale based on the price of gold at the time. In year one, Auropean has to pay FFC  $\in$  10,000 plus the equivalent of  $\in$  10,000 in stock and expend  $\in$  200,000 on the project.

There are no State Royalties to pay on gold revenues. The corporate tax is 25%. The annual landholding tax cost is approximately € 1,000.

The agreement is being operated through Auropean España S.L., a corporation incorporated under the laws of Spain on 15 January 2010. FFC is the operator of the investigation.

The area hosts a number of workings from which Romans extracted gold. These workings are developed in hard rock, in alluvium and in colluvium.

Paved and unpaved roads provide ready access to the area, characterised by gentle hills, steeper to the north and south, in the Turienzo River valley, with elevations ranging between 965 m and 1,638 m. Climate is Mild-fresh Mediterranean and annual rainfall is approximately 1,000 mm/m<sup>2</sup> with snowfall common in winter.

The project area is almost un-populated, containing only a few small settlements. The principal activity is farming and the main extent of the soil is covered by pasture, brush, and in some areas pine tree forest.

Regarding the geological setting, Andiñuela is in the West Asturian-Leonese Zone (WALZ), more particularly in the Somoza Anticlinorium, within the Mondoñedo Nappe, one of the domains in which the WALZ is subdivided.

The two licenses that form the Andiñuela project cover the Lower Cambrian Los Cabos Formation of the Somoza Anticlinorium, here represented by white, beige or grey quartzites, sandstones, quartzose shales and grey and black shales, in beds of millimetre- to meter-tick layers, and locally of conglomerates and limestones. These beds are folded with north-verging axial planes; ranging in azimuth form 85° to 135°, and have a variable dip to either north or south.





The licenses also cover part of the Compludo Thrust, a regional structure developed on the axial plane of the Somoza Anticlinorium.

The Cambrian Vegadeo limestones have not been recognised within the licences although they are reported on adjacent terrain in narrow bands, at the hanging wall contact of the Compludo Thrust.

The only record of gold mining in the area goes back to Roman times when over 7 Mm<sup>3</sup> of bedrock material were extracted from more than 20 pits and workings within and around the Andiñuela project area. According to reports by Junta de castilla y León (JCL), Romans also worked over 34 M m<sup>3</sup> of Tertiary and Quaternary alluvial material along the Turienzo River, downstream from the project area". No other mining is known since them.

Primary mineralization was mined in small to medium sized pits, although some can be as large as 400 m long, 100 m wide and 15 m depth. Known gold mineralization in hard rock occurs in quartz veins and breccias with traces of sulphides (principally pyrite and arsenopyrite), iron oxides and hydroxides, scorodite and native gold. Chlorite, muscovite, sericite, cryptomelane, pyrrhotite, marcasite and sphaleryte do also occur as accessory minerals in some workings.

These veins are hosted in hydrothermally altered, low-grade metamorphosed sediments of the Los Cabos Formation. The thickness of the veins ranges from a few millimetres to 5 m. The breccia zones can be up to 8 m thick and sometimes they exhibit fragments of the host rock affected by silicification and chloritization. Other thinner veins, and later barren veins, are identified with variable directions.

Gold is also reported in alteration zones along fractures that can be followed for 2 to 3 km along strike.

There is a clear structural control in the primary mineralization, with all the Roman pits elongated in approximately N-120-E and N-160-E directions, all fitting within an east trending band. This is interpreted as mineralization occurring in quartz veins developed on the north flank of the Somoza anticlinorium close to its axial plane, although its possible association with a shear zone has to be investigated. Its relationship with preferential lithologies is also a possibility but this will require facies mapping at the permits scale to be confirmed.

Other mineralization present in adjacent areas outside the licences are Fe, Pb, Sn and W, but they are related to different rocks and mineralizing processes.

Previous exploration is very limited. It consisted of stream and soil geochemistry by BRGM (1990) and rock sampling at the Roman workings (SEVELAR, BP 1983-1984, JCL1985-1986). No drilling is known to have taken place to test any of the mineralization.

An independent sampling programme was undertaken by Golder to sample the same outcrops with the best samples obtained by previous explorers in these licenses. The results from the sampling confirmed that there is gold present in veins, obtaining a maximum grade in chip sampling of 1.25 g/t Au. The maximum historical grades recorded from the sampling at the workings are 2.9 g/t Au (JCL 1986 from a "pit west of Andiñuela", the accurate location being unknown) or 1.94 g/t Au (BP, at Corta del Agua).

Other models for gold mineralization are defined that have not been explored. All the known rock sampling has been focussed on testing the gold content of quartz veins. The presence of mineralization in the host rock, not associated with quartz veins but controlled by sedimentary or tectonically generated porosity and the presence of gold-trapping components (White River Model) is worth investigating. The presence of gold in an alteration band along several kilometres is an indication that this is possible.

Given the extensive, and effective, Roman mining of alluvial and colluvial gold, this type is not considered currently a target for the project.

Other styles of gold mineralization that need to be investigated are those related to hidden intrusive rocks and its interaction with the host rock (either the sediments or the limestones near the Compludo Thrust), and also bedding parallel mineralization in the pelitic sediments at the hinges of the folds in interbedded quartzites and shales (saddle reef model).





The project does not affect any environmentally protected areas.

The main concern for the development of the exploration program is the richness in archaeological sites due to the importance that the area had in Roman times and historical sites in relation to the Camino de Santiago pilgrim way. These archaeological sites do not have a current legal frame of protection, but it is recommended to consider them before doing any earth removal and reporting the plan in advance to the culture authorities in order to seek their advice.

The presence of two wind farms to the southwest is also noted and their presence may curtail certain exploration activities. However, it is up to the Junta de Castilla y León to resolve any conflict that arises.

# 1.2 Conclusions

An independent sampling programme by Golder confirms the existence of gold in the Roman workings, in quartz veins with minor oxides and sulphide mineralization. Native gold is also reported in the literature. The maximum grade obtained from the sampling by Golder was 1.25 g/t Au over 10 m along a breccia zone. Golder considers that this sampling is in the veins or parts of veins not mined by Romans and that higher grades can be obtained from hidden veins.

The area is under-explored and worth investigating by drilling below the workings, but also with regional grass roots exploration to identify new mineralized zones and to investigate new models, among others:

- Vein related mineralization. This is the only proven mineralization but there are still questions to resolve, like the grade distribution within the veins and the definition of the set of veins with highest grades.
- Intrusive-related gold mineralization.
- Gold in fold hinges (saddle reef model) in inter-layered quartzitic and pelitic rocks.
- Gold in tectonic structures with no development of quartz veins.
- Low grade, high volume gold in microveins
- Low grade, high volume gold in host rocks.

The Andiñuela project area is at a very early stage of investigation and is considered to have the potential for finding a new significant gold deposit if new models are tested.

#### 1.3 **Recommendations**

Golder recommends that the licences be explored and that adjacent properties are included in the project, starting the research for the already known and other models of mineralization at an early stage with a grass roots exploration phased approach. The recommended program would be performed in three phases, each depending upon success of previous phase.

Phase 1 would concentrate on a detailed geological study of the mineralised trends, including structural, lithological and alteration mapping. This study would be complemented with rock sampling of the workings and outcrops along the trends and detailed multi-element soil and stream sediment geochemistry. The cost of this phase is estimated to be of approximately € 200,000.

During Phase 2 the focus would be the follow-up with additional trenching and drilling of the targets identified during Phase 1 and the generation of new targets with the use of geophysics. The cost of this second phase is estimated to be of approximately € 725,000.

Once mineralization is confirmed and its economic potential recognised, Phase 3 includes the evaluation to prefeasibility level. The cost estimated for this second phase is in the region of 2 M€.





# 2.0 INTRODUCTION & TERMS OF REFERENCE

#### 2.1 Preamble

This Technical Report is prepared for Auropean España S.L., a wholly owned subsidiary of Auropean Ventures Inc. (hereafter "Auropean") by Golder Associates Global Ibérica S.L.U. (hereafter "Golder").

The overall objective of the work is to complete an independent sampling to confirm the occurrence of gold in the properties that form the Andiñuela project, and to produce a Technical Report compliant with Canadian NI 43-101 standards.

This technical report has been prepared according to the guidelines set out under the National Instrument "Form 43-101F1 Technical Report" for the Standards of Disclosure for Mineral Projects. The Qualified Person (QP) responsible for the preparation of this Technical Report is Sergio Tenorio, European Geologist (#820), PGeo, ICOGA.

Andiñuela is made up by two properties in the Leon Province, NW Spain, granted to Fernando de la Fuente Consultores (FFC) for base and precious metals, among other commodities, and optioned by Auropean.

Sergio Tenorio, the Qualified Person (QP) responsible for this report, visited the property on 26 January 2011 and inspected and sampled some of the mineral occurrences within the property. At that time, the licenses had not been granted. On 27 January 2011 Sergio Tenorio had an interview with the Mining Authority and continued the contacts with successive telephone conversations and e-mail communications until the final granting to FFC on 28 March 2011.

For the preparation of this report the following information has been used:

- Office review of legal and technical documentation with Fernando de la Fuente (of FFC) on 24 January 2011. This review included technical documentation from previous explorers.
- Field inspection of the property on 26 January 2011.
- Results form Auropean rock sampling.
- Interview with Mr. Roberto García Fernández, head of Servicio Territorial de Industria, Comercio y Turismo (Sección de Minas) of the DELEGACIÓN TERRITORIAL DE LA JUNTA DE CASTILLA Y LEÓN EN LEÓN (The "Mining Authority").
- Technical documentation obtained from the Spanish Geological Survey (IGME) and from the Junta de Castilla y León (JCL).
- Environmental information provided by Ms. Carmen Ordoñez, an environmental consultant for Golder.

#### 2.2 Terms of reference

All units of measure (see Table 1) used in this report are in the metric system, unless stated otherwise. The contained metal abundances for gold are expressed in grams per tonne (g/t), unless stated otherwise. Currencies outlined in the report are in Euro ( $\in$ ) unless otherwise stated. The word "tonnes" always refer to metric tons.

Table 1 also explains the meanings of the abbreviations used in this report.

The term "Mining Authority" refers to Sección de Minas of the Servicio Territorial de Industria, Comercio y Turismo, Delegación Territorial de la Junta de Castilla y León.

The term "Property" refers to the investigation Permits Gala and Caia, granted to FFC and optioned to Auropean.



#### Table 1: Units of measure and abbreviations UNITS OF MEASURE

Centimetre	cm
Degree	•
Degrees Celsius	°C
Euro	€
Gram	g
Grams per tonne	g/t
Hectare (10,000 m <sup>2</sup> )	ha
Kilogram	kg
Kilometre	km
Kilotonnes	Kt
Kilovolt	kV
Meter	m
Micrometer (micron)	μm
Millimetre	mm
Millimetre per square meter	mm/m <sup>2</sup>
Million	M
Million Euro	€M
Million Tonnes	Mt
Million US\$	US\$ M
Ounce	oz
Percent	%
Parts per million	ppm
Parts per billion	ppb
	ct
Station	St

#### ABBREVIATIONS

> Greater than < Less than
ALS ALS Laboratory Group or any of its laboratories
AuropeanAuropean Ventures Inc. or Auropean España S.L.
CE Mining Concession ("Concesión de Explotación")
CM Mining Square or "Cuadrícula Minera" (20° lat by 20° lon)
csv Comma separated values
FFC Fernando de la Fuente Consultores
GMGreenwich Meridian
Golder Golder Associates Global Ibérica S.L.U.
IGME Instituto Geológico y Minero de España (Spanish Geological Survey)
JCL Junta de Castilla y León
masl
OPOpen pit
P.IInvestigation Permit ("Permiso de Investigación")
QPQualified Person
QAQCQuality assurance and quality control
TSX-VTSX Venture Exchange
WALZWes Asturian-Leonese Zone





# 3.0 **DISCLAIMER**

This Property Assessment Technical Report was prepared for Auropean España S.L. (Auropean) by Golder Associates Global Ibérica S.L.U. (Golder). The report is based in whole or in part on information and data provided to Golder by Fernando de la Fuente Consultores (FFC) and/or third parties and public information accessed by Golder.

Golder represents that it exercised reasonable care in the preparation of this report and that the report complies with published industry standards for such reports, to the extent such published industry standards exist and are applicable. However, Golder is not responsible for confirming the accuracy of information and data supplied by FFC or third parties and that Golder does not attest to or assume responsibility for the accuracy of such information or data. Golder also does not attest to or assume responsibility for the accuracy of any recommendations or opinions contained in this report or otherwise expressed by Golder or its employees or agents, which recommendations or opinions are based in whole or in part upon such information or data.

The recommendations and opinions contained in this report assume that unknown, unforeseeable, or unavoidable events, which may adversely affect the cost, progress, scheduling or ultimate success of the project, will not occur.

Any discussion of legal issues contained in this report merely reflects technical analysis of Golder and does not constitute legal opinions or the advice of legal counsel.

#### **3.1** Reliance on other experts

For technical information on the geology and mineralization at the Andiñuela Property, Golder has relied on several reports and map descriptions prepared by the Geological Survey of Spain (IGME) and by the Junta de Castilla y Leon (JCL). Following the field inspection of the property, Golder does not rely on the interpretation of the existence of some Tertiary sediments. This is discussed in Section 7.2.

For the historical exploration, Golder has relied on the information made available by FFC and Golder has not made attempt to verify or confirm the accuracy of the information and data supplied, and does not attest to or assume responsibility for the accuracy of such information or data. Comments on its reliability are made on Sections 6.0 to 14.0.

For the preparation of Section 18.0 Golder has relied on the internal report prepared for Golder by Ms. Carmen Ordoñez, environmental geologist, with more than 30 years experience in environmental projects relating to the mining industry and with a good knowledge of the local regulations and authorities.

# 4.0 PROPERTY DESCRIPTION AND LOCATION

#### 4.1 Location

The Andiñuela project area is located in the Maragatería region of the province of Leon in the northwest of Spain, at approximately 25 km west of the population centre of Astorga and 45 km southwest of Ponferrada (Fig. 1).

The area extends along a large part of the north half of sheet N<sup>o</sup> 192 ("Lucillo"), of the Spanish 1:50,000 map distribution system, defining a U-shaped polygon, some 12 Km by 6 Km, open to west, centred about the village of Andiñuela (6°18′ 51″ W, 42°27′ 32″ N – GM-).

The licences of the Andiñuela project affect the municipality of Santa Colomba de Somoza, Lucillo de Somoza, Ponferrada and Molinaseca.





# 4.2 Description of the property

The prospect is made up by two claims under the category of Investigation Permit ("Permiso de Investigación, P.I.") granted to FFC on 28 March 2011 for a period of three years. The characteristics of the licences are listed in Table 2.

CLAIM	NUMBER	MINING SQUARES (CM)	HECTARS	COMMENTS		
P.I. CAIA	15,214	83	2,339	The original application was for 3,098 Ha		
				(110 CM)		
P.I. GALA	15,215	79	2,221	The original application was for 2,617 Ha		
				(93 CM).		

#### Table 2: List of properties of the Andiñuela project

The limits of the properties are defined by parallels and meridians, referred to Greenwich meridian, incorporating full "Cuadrículas Mineras" (CM), each defined as a polygon of 20" in latitude and 20" in longitude.

The perimeter for each of the claims is defined by the union of the points indicated in Table 3 for P.I. Caia and Table 4 for P.I. Gala (see Figure 1 and Figure 12):

# LATITUDE LONGITUDE 42° 29′ 00" 6° 25′ 20" 42° 29′ 00" 6° 16′ 20" 42° 27′ 20" 6° 16′ 20" 42° 27′ 20" 6° 21′ 00" 42° 28′ 40" 6° 21′ 00" 42° 28′ 40" 6° 25′ 20"

#### Table 3: Points defining the perimeter of P.I. CAIA

#### Table 4: Points defining the perimeter of P.I. GALA

LATITUDE	LONGITUDE
42° 27´ 00"	6° 25′ 20"
42° 27´ 00"	6° 21′ 00"
42° 27′ 20"	6° 21′ 00"
42° 27´ 20"	6° 16′ 40"
42° 26´ 40"	6° 16′ 40"
42° 26′ 40"	6° 16′ 20"
42° 26´ 00"	6° 16′ 20"
42° 26´ 00"	6° 20′ 20"
42° 26´ 20"	6° 20′ 20"
42° 26´ 20"	6° 25′ 00"
42° 26´ 00"	6° 25′ 00"
42° 26´ 00"	6° 25′ 20"

The original applications included a larger area, as indicated in Table 2. The zones excluded correspond to ground included in prevailing properties, now cancelled, whose mineral rights will be offered through a public tender.

On 18 January 2011 Auropean reached an agreement with FFC to earn 100% interest in the project (see details in section 4.3).





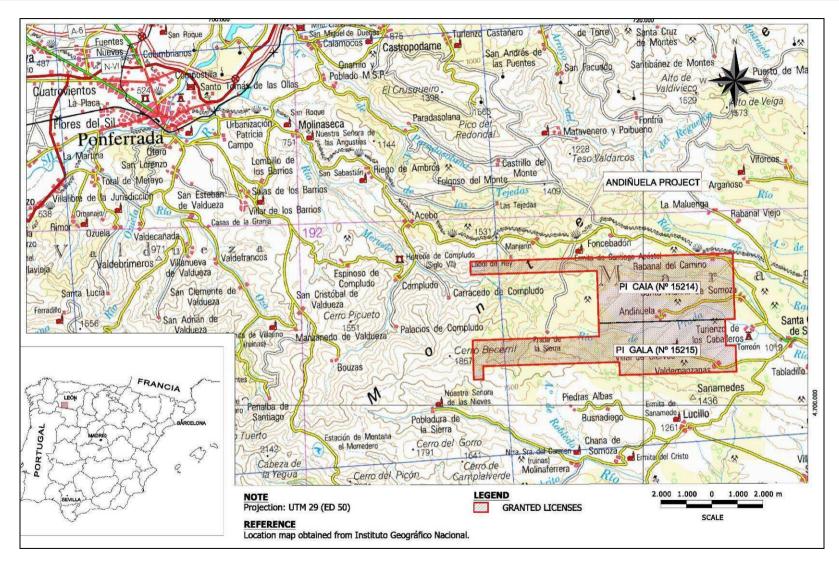
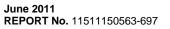


Figure 1 Location map for Andiñuela area: PI CAIA and PI GALA







The Mining Authorities have no requested grant deposits.

There are no State Royalties to pay on gold revenues. The corporate tax is 25%. The annual landholding tax cost is of approximately  $\leq$  1,000. The property is subject to a 2% NSR to be paid to FFC, with a 1% buyback (see Section 4.3)

Golder has reviewed the legal documents with FFC and understands that the licenses are in good standing.

No mineral reserves or resources have been defined in the claims.

There are several surface workings, with minor underground developments dating back to Roman times which reportedly produced gold associated with quartz veins and sulphides, and also from alluvium deposits. The distribution of the mineral occurrences as indicated by IGME, and the main Roman workings, are shown in Figure 5.

No other mining is known in the proximity of the claims except a quarry for gravel between the villages of Santa María de Somoza and Santa Colomba de Somoza, 1.3 Km east of P.I. Caia.

#### 4.3 Concession, agreements and surface rights

FFC has the right to explore the property until 29 March 2014, including trenching and drilling, subject to the authorization of annual work plans.

Successive renewals for additional periods of up to three years each can be applied for. Any mining would have to be done after applying for an Exploitation Concession ("Concesión de Explotación") for which FFC would have priority rights as long as the investigation permits are in good standing.

Auropean Ventures Inc. announced on 18 January 2011 that the company had reached an agreement to earn 100% interest in the Andiñuela project from FFC. Under the terms of the agreement, an initial 75% interest can be earned by Auropean paying FFC a total of  $\leq$  135,000 plus the equivalent of  $\leq$  170,000 in Auropean issuing shares and expending a total of 3 M $\in$  on the project over a five year period. Auropean will earn 100% interest by paying FFC a further  $\leq$  150.000; issuing shares valued at  $\leq$  150.000 to FFC; and securing funding to take the project to production. The property is subject to a 2% NSR with a 1% buyback on a sliding scale based on the price of gold at the time. In year one, Auropean has to pay FFC  $\leq$  10,000 plus the equivalent of  $\leq$  10,000 in stock and expend  $\in$  200,000 on the project.

The agreement is being operated through Auropean España S.L., a corporation incorporated under the laws of Spain on 15 January 2010.

The operator of the investigations is FFC. Should there be a change in title holder or in the operator it should be approved by the Mining Authority.

Under the Spanish mining regulations, the tenure of the land is not included in the mining title granted with an Investigation Permit or with the subsequent Exploitation Concession. All the operations (including investigation) need to have access agreed with landowners.

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

#### 5.1 Accessibility

Access to the property is easy by paved road LE-142, between Astorga and Andiñuela (Fig. 1). Other paved and non paved roads and tracks are distributed across the project area, allowing the access to all the property.





# 5.2 Topography

The project is located in the foothills of the Montes de Leon range. This is a cordillera that crosses the area from southwest to northwest. This relief favours the presence of steep valleys. The area has an abrupt topography, which tends to be more gently to the southeast.

In the prospect area, the topography is very steep in the northwest and in the southeast. The area in between corresponds to the valley of the Turienzo River (Photograph 1), characterised by more gently hills with flat and elongated valleys that run parallel towards the Turienzo River. The average altitude is in the order of 1,000 m with the highest elevations being Cerro de la Escrita (1638 m) in the south and Cerro del Pico (1559 m) in the north. The lowest elevation is 965 m, at the point where the Turienzo River leaves the property, in the east.

Most of the area is drained by the Turienzo River, a tributary of the Tuerto River. Only a small area in the south is drained by the Tuerto River.

The drainage occurs through a reticular system of small runoffs, which drain the snowmelt in winter and rainfall during the rest of the year.



Photograph 1 Panoramic view, looking North, of the Andiñuela area.

# 5.3 Climate

The climate is influenced by the proximity to the Cantabrian Range and the Montes de Leon, with features a Mild-fresh Mediterranean climate. It is characterised by cool temperatures with big daily variations. Summers are hot and dry and winters are cool, with frequent frost.

The annual rainfall is approximately 1,000 mm/m<sup>2</sup>, irregularly distributed during the year, being at a minimum in summer and a maximum during spring and winter. It often snows in winter.

# 5.4 Soils, vegetation and land use

Soils for the majority consist of Inceptisols, with silty matrix, undulated slope, moderate permeability and slow run off. They do not have differentiated horizons and from an agrologic point of view they correspond to C Group, Class VI and VII. These soils were dedicated to dry land cereals crop but this practice is now almost nonexistent in the locality.

Most of the area now consists of scrubland and grazing land.

A few small areas of oak grove can be observed next to creeks and in the old Roman pits, representing the relicts of the autochthonous vegetation. Some pine tree plantations exist in the west.

A few irrigation crops can be found in some valleys.

The subdivision of the property is very high with 90% of the plots being of less than 0.5 ha, but there is a large part of the surface occupied by Public Utility Forest (or scrublands) in Spanish called "Monte de Utilidad Pública", a consortium between the JCL and the municipality.





#### 5.5 Local resources

Lucillo had 228 inhabitants and Santa Colomba de Somoza 248 inhabitants in 2009, representing 1.35 and 1.39 inhabitants per Km<sup>2</sup> respectively. We can say therefore that the area is almost uninhabited with a continuing negative tendency. Several settlements and small villages are included or are very close to the property area, the population being in general old or seasonal. These settlements are Villar de Ciervos, Valdemanzanas, Andiñuela, Rabanal del Camino, Prada de la Sierra and Turienzo de los Caballeros (Figure 1).

The principal activity in the area is farming. The industry sector is here symbolic, only represented by a quarry at Santa Colomba and another one at Murias de Pedredo, and recently wind farms. Tourist activity is another source of local income, represented by rural hotels along the "Camino de Santiago" (see Section 18.2.2)

Coal mining and slate quarrying occur within this region and, together with the coal and gold mining activities in the nearby Asturias region, could supply a work force for any future mining operations.

#### 5.6 Infrastructure

Two power lines of 220 kV and 132 kV cross the northwest of P.I. Caia (Photograph 2). A series of windmill are present in the SW, in part in P.I. Gaia (see photograph in cover page).

A paved road goes east to west close to the north limit of P.I. Gaia and, from Santa Colomba de Somoza, different paved roads enter into the east half of the permits. Non paved roads allow the access to the rest of the area.

The area is at approximately 30 km from the nearest highway (highway A-6) to either the west (joining it at Ponferrada) or the east (joining it at Astorga).

The nearest airport is Leon Airport, approximately 60 km away.



Photograph 2 Powerline crossing the NW of Andiñuela area

# 6.0 HISTORY

The only record of mining in the area goes back to Roman times when over 7 Mm<sup>3</sup> of bedrock material were extracted from more than 20 pits and workings within and around the Andiñuela project area. The Romans also worked over 34 M m<sup>3</sup> of Tertiary and Quaternary alluvial material along the Turienzo River, downstream from the project area. No other mining is known since then.





The area has been investigated for Au at the end of the 20<sup>th</sup> Century by SEVELAR S.A. a Spanish family-owned company. The extent of the investigation is unknown. The only record of this investigation refers to 9 samples of rock of which four samples exceed 1 g/t Au, the peak value being 1.94 g/t Au. No location for these samples is available.

BP Minera España was evaluating the SEVELAR properties in 1983-84. BP did a reconnaissance of some of the Roman workings and did collect 19 rock samples within the property that analysed for Au. We do not have the details of the type of sampling, preparation or analytical method, but only duplicate values for each sample.

The results of this sampling are discussed in Section 12.2. As part of this reconnaissance, BP also did a scaled mapping of the main Roman workings that they visited, with some geological notes. The pit mapping and geology is considered appropriate for the purpose of the current work and the sampling can only be regarded by way of guidance.

In 1985-1986 JCL sampled the main pits of the area. Sampling was done by Estudios y Proyectos Mineros, a Spanish consulting company. The report for that sampling is not available, but only a list with results of samples from three different laboratories, with no coordinates, and a list with the same numbers of samples and a place name and descriptions but no coordinates either. Five out of thirty-three samples with place locations corresponding to the area are in excess of 1 g/t Au, the highest value being 2.9 g/t Au. A discussion on the results and its validity is presented in Section 12.2.

In 1990 SEIEMSA (BRGM) conducted a regional stream sediment and orientation soil sampling programme. The streams sediment survey did not cover most of the property area, leaving out coverage of the main Roman workings. Maps are available with plots for SiO<sub>2</sub>, TiO<sub>2</sub>, Sr and Au.

From the maps consulted at FFC office we could see that the soil geochemistry survey covers an area of 3.4 km<sup>2</sup> with a sampling grid of 100 m by 50 m in the central part of P.I. Caia, including a large part of the Roman workings. The same company also did a test on five profiles in which soil samples were collected every 5 meters. Results are available for Au and As. The location of the profiles is not available.

Both the soil and streams geochemistry give some guidance for future geochemical exploration. The streams geochemistry define lithological zones and alterations. We can not observe a good regional As-Au correlation in the streams geochemistry results, but this correlation is good in some of the detail soil profiles by SEIEMSA. In these profiles we can also see that arsenic seems to concentrate down the slopes of the hills, the gold being more restricted to the possible source. A consideration is that these results are defining probable subsurface enriched zones. A more in-depth analysis of the results would provide a beter guidance to focus further investigations.

There are references to investigations done by Rio Tinto Minera but the extent and nature of the investigation is not known.

Before reaching an agreement with FFC, Auropean did a field reconnaissance of the area, including two rock samples at two roman workings.

# 7.0 GEOLOGICAL SETTING

#### 7.1 Regional geology

The Andiñuela prospect is located in Hercinian materials that cover most of the western part of the Iberian Peninsula, within the so called Hesperian Massif. This is subdivided in five geo-structural zones (see Fig. 2). Andiñuela is located in the west of the West Asturian-Leonese Zone (WALZ), more particularly in the Somoza Anticlinorium, within the Mondoñedo Nappe.

In the structural scheme of the Iberian Massif, the WALZ represents the transition between the foreland areas (Cantabrian Zone) in the east, and the internal zones (Central Iberian Zone), in the west.



The WALZ is characterised by an association of fold nappes, ductile thrusts and foliations. The Mondoñedo Nappe is one of the three domains in which the WALZ is subdivided on the basis of the tectonostratigraphy and plutonometamorphism. The internal structure of the Mondoñedo Nappe is dominated by the Mondoñedo anticlinorium structure (D1), its basal thrust (D2) and the effects of late folding on both (D3); D1 to D3 being Hercinian deformations (see Section 7.1.2).

#### 7.1.1 Lithology

The lithostratigraphic sequence ranges from Lower Cambrian to Lower Carboniferous.

In this part of the WALZ the stratigraphy of the Paleozoic rocks range from Lower Cambrian to Silurian, with a clear domain of detrital sediments.

The Lower Cambrian is represented by the Cándana-Herrería Formation that outcrops, south of the Andiñuela area, as a northwest trending narrow band with an important internal deformation, limited to the north and south by two important tectonic structures.

North of the Cándana-Herrería Formation there is a large tectonostratigraphic structure known as the Somoza Anticlinorium, in which the Andiñuela area is located. This structure has narrow bands of Cambrian limestones (Caliza de Vegadeo) in its core and a monotonous sequence of Cambrian to Ordovician detrital material on the flanks, known as Los Cabos Formation, the sequence ending in Lower Ordovician quartzites. Los Cabos Formation dominates the area. It is made by quartzites, sandstones and shales, locally with white and black marls and limestones, all showing intense tectonic deformation.

A northwest trending thrust structure, known as Compludo Thrurst, has been developed at the core of the anticline enabling the Cambrian Vegadeo limestone to outcrop in discontinuous and narrow bands. The sequence north and south of this thrust is reported to be different (IGME 1981).

The northern sequence is characterised by the presence of a quartzitic interval at its base (Compludo quartzite) of up to 250 m thick, made by metric-thick beds of yellowish quartzites with intercalations of grey sandy shales. This is followed by the typical Los Cabos Formation, here characterised by yellowish grey shales with decimetre-thick layers of quartzites and sandstones. IGME, 1981, reports the presence of finely laminated levels, rich in albite and chlorite, which are interpreted as being of possible volcanic origin. The pelitic component increases towards the east.

The Los Cabos sequence south of the Compludo Thrust is described as consisting of more monotonous alternations of shales and quartzites and sandstones, with a more important presence of the pelitic component. A set of diabase laccoliths outcrops in the south of the Somoza Anticlinorium.

The succession ends with the Maluenga Quartzite (Low-Mid Ordovician), a level that can be of up to 120-130 m thick, made of quartzite beds of 30-50 m thick with thin layers of shales and thinner quartzite beds. This sequence is followed by a package of black sediments with minor detrital component of Mid-upper Ordovician age that is covered by a new package of Upper Ordovician quartzose sandstones of some 150 m thick over which Silurian ampelitic sediments are disposed.

Tertiary and Quaternary continental sediments can be found over the Paleozoic materials in valleys, small basins and foothills.

#### 7.1.2 Structure

The WALZ is characterised by the association of fold-nappes, ductile thrusts and foliations. They were formed as a result of three principal compressive deformation phases, coeval with various stages of regional metamorphism and syn- and post-tectonic granitoid plutonic intrusions. The intensity of the deformation and metamorphism increases from the foreland Cantabrian zone, in the east, to the internal zone of the Variscan orogenic belt, in the west (Fig. 2).





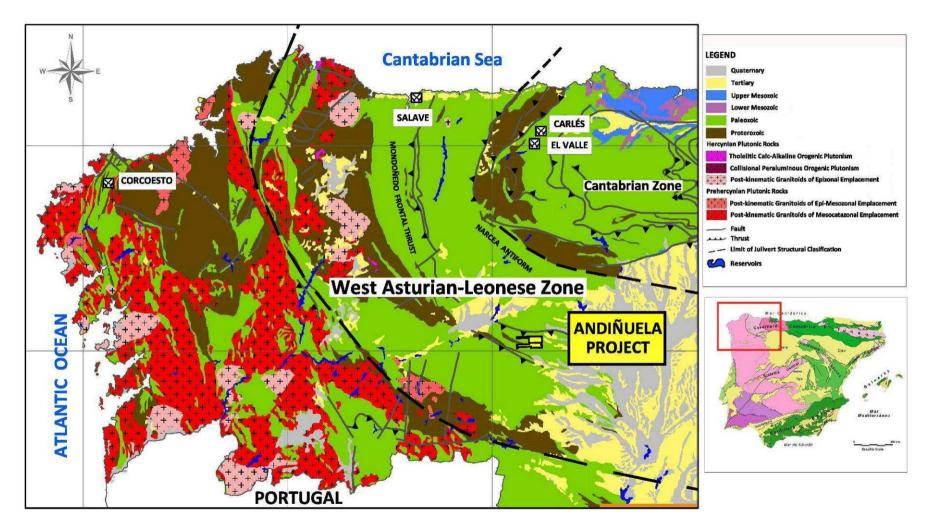


Figure 2 Regional geology with indication of the location of Andiñuela project





The three phases of compressive deformation (D1 to D3) are regionally recognised. They are characterised as follows:

D1.- This phase generates folds of different order of magnitude, with a well developed axial-planar tectonic foliation (S1). The geometry of the folding is variable, depending upon the location, the nature and disposition of the affected materials. Folds are recumbent in the west, changing to inclined folds in the east. As a function of the lithology, they are mostly cylindrical folds in the thick quartzitic rocks and similar folds in the alternations and phyllitic rocks. Their axes are sub-horizontal and their vergence is to the foreland (north, in the Andiñuela area)

D2.- This deformation phase is characterised by the development of ductile thrusts in the western sectors and brittle-ductile thrusts to the east. Thrusts are sub-parallel to D1 fold axial surfaces and cut across them at low angles. This deformation generates other minor structures as crenulations, a fracture cleavage (S2), mineral lineation stretching, folds with curved hinges and shear folds.

D3.- This deformation is quite penetrative at a mesoscopic scale and does not generates metamorphic changes. During this phase longitudinal faults and large open upright folds are generated. Their axes are parallel to those of the D1 deformation although their axial surfaces are sub-vertical, giving rise to the uprighting of precedent structures. Crenulation foliation (S3) overprints earlier foliations.

The Mondoñedo Fold nappe is the most significant of the D1 structures in the western area of the WALZ, with an inverted limb of up to 20 Km in length. In detail this nappe represents an anticlinorium with a number of kilometre-scale second order anticlines and intervening synclines. The base of the nappe corresponds to a basal ductile thrust generated during D2 deformation phase and other originally horizontal shear zones were also formed in the inverted limbs of D1 recumbent folds. During the third phase of deformation (D3) the basal thrust of the Mondoñedo nappe was folded.

A later phase of deformation (D4) is proposed for the formation of the so-called radial or transversal folds. These are gentle, upright folds whose axis strike perpendicular to the trend of the structures formed during previous phases of deformation. In the phyllitic sediments this late phase of deformation led to the formation of kink bands and systems of fractures and joints and to the reactivation of older thrusts and faults.

#### 7.1.3 Metamorphism

As consequence of the deformation described above, all the Paleozoic materials were subject of an epi- to meso-zonal low-grade metamorphic process that does not exceed green schist facies.

Some thermal metamorphism is described in the Los Cabos Formation northwest of the project area, although the intrusive rocks do not outcrop.

#### 7.2 Local Geology

The two licenses that form the Andiñuela project are set on the Lower Cambrian Los Cabos Formation of the Somoza Anticlinorium, covering part of the Compludo Thrust, developed on the axial plane of the Somoza Anticlinorium (See Fig. 3).

The Los Cabos Formation is represented by white, beige or grey quartzites, sandstones, quartzose shales and grey and black shales, in beds of millimetre- to meter-tick layers, and locally levels of conglomerates. These beds range in azimuth from 85° to 135° having a variable dip to either north or south and are affected by D1, D2 and D3 structures. D4 late fractures are also recognised.

The exposure of the bedrock is very limited and thus mapping and correlation between individual beds is difficult. Soil cover can be > 1 m thick.

There are several Roman workings in the licenses that provide a better exposure of the rocks, although it is still very limited due to debris cover of the walls in the pits, soil and dense vegetation. When observed, the attitude of the beds is very steep.





#### TECNICAL REPORT NI 43-101. ANDIÑUELA GOLD PROJECT. LEON (SPAIN)

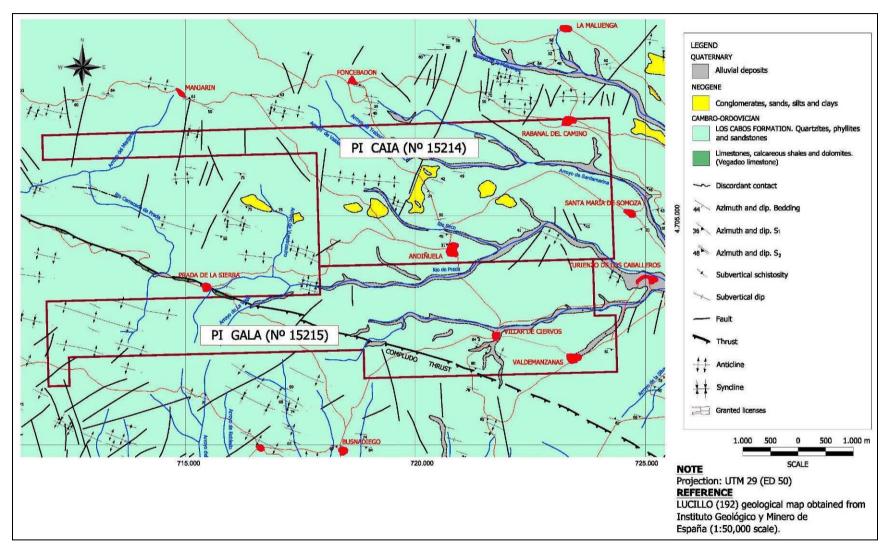


Figure 3 Local geology of PI CAIA and PI GALA





Quartz veins, from millimetre- to decimetre-thick are recognised in the pits and some quartz float can also be observed away from the workings. These veins contain trace or weak disseminations of sulphides (arsenopyrite dominant) and oxides and are reported to host the mineralization worked by the Romans.

The Cambrian Vegadeo limestones have not been recognised within the licences although they are reported very close, in narrow bands at the hanging wall contact of the Compludo Thrust.

There are frequent and widely dispersed small and thin Quaternary colluvial deposits and foothills associated with the Los Cabos Formation, and also alluvium, discordant over the Los Cabos Formation, eroded themselves during the Quaternary, and easily recognised because of their reddish colour.

Along the valleys it is possible to see piles of large pebbles with no fine fraction, locally called "moruecas", which correspond to piles of Neogene material washed by Romans in search of the gold.

The 1/50.000 geology map published by IGME shows a series of small Miocene deposits of sands, clays, conglomerates and silts. We have to say that these deposits are nearly coincident with the Roman pits and that they have not been recognised during the field visit by Golder.

The main tectonic feature in the area is the Compludo Thrust, which crosses P.I. Gala in a northwest trending direction. A series of minor folds have been mapped along the same trend. Late north-northeast to northeast trending fractures cut previous tectonic accidents.

# 8.0 DEPOSIT TYPES AND EXPLORATION CRITERIA

#### 8.1 Deposit type and models

The gold mineralization known in the area is associated with quartz veins and breccias or it is in placers and colluvium deposits. The main target in the Andiñuela project is the mineralization in the hard rock (Figure 4).

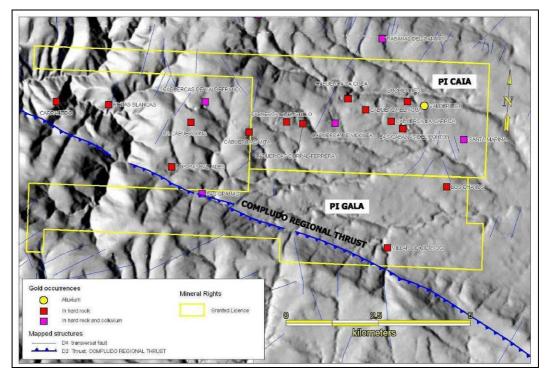


Figure 4 Distribution and type of gold occurrences and its relation to structures over shaded topography from IGME.





Gold mineralization in the veins and host rocks has been confirmed in the property, although the presence of gold away from the veins is certainly not well established. Large tonnage-low grade finely disseminated gold in veins and country rock is a target whose presence has not yet been discovered.

The distribution and shape of the Roman workings (Figure 5) can be interpreted as confirming the presence of a clear structural control on the primary mineralization, with all the pits occurring within an east trending direction, trending elongated at approximately N-120-E and N-160-E. This is interpreted as mineralization occurring in quartz veins developed on the north flank of the Somoza anticlinorium close to its axial plane, but it is possible that they are associated with a shear zone. Its relation with preferential lithologies is also a possibility but this will require facies mapping at the permit scale to be confirmed.

It is recognised by the author that other models for Au mineralization are possible in the area:

The Andiñuela project is in the same structural belt and sequence as Salave (17.95 MT@ 2.92 g/t Au -1.68 M ozs- in measured plus indicated resources). This gold deposit is described as Au mineralization in a gabbro hosted by the Los Cabos Formation. Mineralization is mainly in the gabbro, although it also extends to the host shales.

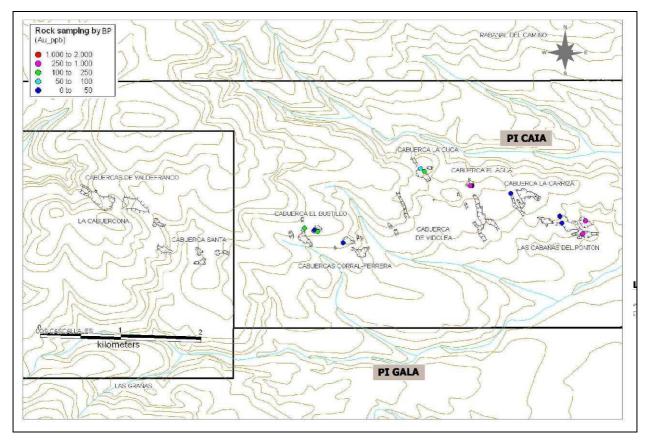


Figure 5 Distribution of roman workings in hard-rock and rock geochemistry results

The only intrusive rocks described near the project correspond to a complex of diabase laccolites close and parallel to the south flank of the Somoza anticlinorium. Iron enrichment is associated with these rocks. No other intrusive rocks have been described in or around the project, but thermal metamorphism has been described not far from the project area and consequently, the presence of gold mineralization at depth cannot be discarded in relation to plutonic activity. Indeed quartz veins with W and Sn mineralization exist in relation to this alteration. Despite the limestones of the Vegadeo Formation being absent at surface, they might exist at depth in the hangingwall of the Compludo Thrust. If they are close to, or intersected by a mineralizing intrusive, this formation could host skarn-related mineralization (El Valle-Boinás model, in the Cantabrian Zone).





Other possible styles of Au mineralization, still not identified in the project area, could be the occurrence of gold in ductile rocks, at the hinges of the folds with alternation of competent quartzites and ductile shales. This style has been described at the Valongo Anticline, near Oporto (Portugal) in Lower Ordovician rocks, of the same age as the Los Cabos Formation (Couto, H. & Borges, F.S., 2005).

Lastly, it is proposed a model for investigation consisting on hydrothermal gold mineralization, with lithological and structural controls without generation of quartz veins, similarly to what is reported for the White River area, in central western Yukon (MacKenzie, D.J. & Craw D., 2010).

Other mineralization present in adjacent areas consist of Fe, Pb, Sn and W, but they are related to different rocks and mineralizing processes.

All the models described are illustrated in Figure 6.

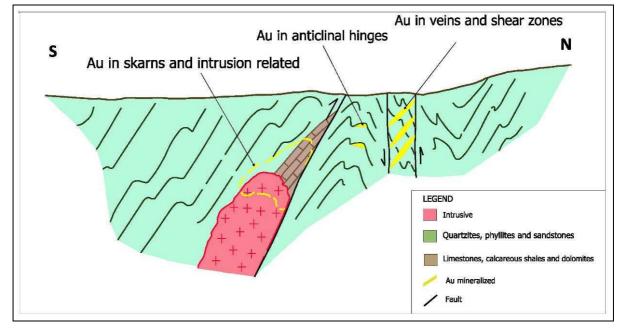


Figure 6 Exploration models for Andiñuela

# 8.2 Exploration Criteria

The scarcity of outcrops and extensive soil cover in the area will greatly influence the exploration methodology for the two licences. This needs to be largely based on streams and soil multi-element geochemistry and trenching before defining any potential drill targets.

The Roman pits and workings need to be cleared of bush and debris for detailed mapping and sampling. Once the structure of the veins is well established, diamond drilling to test the continuity at depth and study the grade distribution between the veins is recommended.

Streams and soil geochemistry will help to identify new mineralised zones and the use of multi-elements can help to define lithology and structural zoning as well as to identify possible alteration haloes.

Regional geophysics and mapping is recommended to investigate the intrusive-related potential mineralization. Airborne magnetics and radiometrics can also help to identify structural and lithological controls and alterations in relation to mineralization.





#### 9.0 **MINERALIZATION**

The gold mineralization known in the licences and adjacent areas occurs as either veins, hosted in Los Cabos Formation, or in small colluviums and placers.

The description that follows is based on the field observations made by the author and descriptions of the different occurrences of the area contained in the IGME database.

#### 9.1 Hard rock mineralization

Romans mined primary mineralization in small to medium sized pits, although some can be as large as 400 long, 100 m wide, 15 m depth. As aforementioned the pits are elongated following a dominant N-120-E direction but, in the centre of P.I. Caia, the dominant direction of the pits is N-150-E. Fourteen of these workings have been identified so far in PI Caia or PI Gala (see Fig. 4 and 5).

The primary mineralization occurs as very fine to millimetre-sized dissemination of pyrite, arsenopyrite (native gold is also reported in literature) and in cracks in both hydrothermal quartz and in the host rock. In the case of the cracks, these are filled with arsenopyrite, pyrite, native gold, goethite, scorodite and sometimes minor galena and sphalerite. Gold mineralization might also occur in supergene argillization. Pyrrhotite and chalcopyrite is also reported in Cabuerca la Cuca, pyrrhotite and scheelite in La Cabuercona and tourmaline, ankerite and marcasite in Villar del Ciervo.

The most frequent occurrence of gold is in irregular veins and boudins sub-parallel in an east trending band coincident with the hinge of the Somoza Anticlinorium, developed commonly with directions of N-080-E to N-130-E in the south flanks of the minor folds, although the veins also exist in the hinges of the folds and in north flanks.

The veins are often brecciated and sometimes they are folded and affected by S2 cleavage. Milky and grey quartz are frequently coeval as zebra-like texture in the veins.

The thickness of the veins ranges from a few millimetres to up to 5 meters. The breccia zones can be up to 8 m thick and sometimes they exhibit fragments of the host rock affected by silicification and chloritization.

Other veins of smaller thickness (from few centimetres to 40 cm) and less deformed, can be observed with directions N-S, 30<sup>o</sup> 45<sup>o</sup>, 60<sup>o</sup> 80<sup>o</sup>, 160<sup>o</sup> 180<sup>o</sup>.

Sometimes, the mineralized veins are cut by fractures or veins of barren quartz in sub-vertical tension cracks, mainly with azimuths 0° 20° and 150° 180°.

Gold is also reported in alteration zones along fractures that can be followed for 2 to 3 km along strike.

The extent of the mineralization in the host rock, adjacent to the veins, is unknown.

The alteration consists on silicification and local brecciation of the host rock. Local supergene argillization along fractures, down to up to 3 m, is observed in some pits. Ferruginous goethite crusts and iron oxides and scorodite coating and staining are frequent in fractures. Goethite is also forming part of the cement in some breccias.

A particular case is the mineralization at Villar del Ciervo. We could not find the working during the field inspection but it is described (IGME) as a 4 m by 8 m working in a sinistral shear zone with irregular veins of up to 4m thick, trending N-025-E and dipping 67°E. The same author indicates that the mineralised structure can be followed for about 1 Km in both directions from aerial photographs.

# 9.2 Colluvial and alluvial mineralization

In addition to the primary mineralization, the Romans also mined very fine gold grains in the fine fraction of alluvial placers and colluvial deposits.

Mineralized colluvial deposits are often coincident with the primary veins and evidence of mining of both types of mineralization is described at several points like Cabuerca de Vidolea, Rabanal del Camino,





Cabuercas de Valdefranco, Las Grañas or Santa María (see Fig. 4). The colluviums consist mainly of gravel with very heterometric and angular fragments of quartz, quartzite and sandstone, in grey and brownish sandy-silt matrix, often with ferruginous crusts. Four out of fourteen primary occurrences in the project area have coincident colluvium mineralization.

The alluvial deposits are Upper Miocene to Neogene fossil deposits discordant over the Los Cabos Formation, made of sub-horizontal conglomerates in channels among sands and silts in a proximal alluvial fan facies, and eroded themselves by Quaternary slope movements and streams. The maximum thickness of these deposits is 40-60 m, observed east of P.I. Caia but close to the limit of the permit. Only one alluvial deposit (Valderiego) is described as occurring on these properties.

#### **10.0 EXPLORATION**

Past exploration is commented on in Section 6.0.

There is no exploration done by FFC or Auropean on these properties other than a field reconnaissance and rocks sampling of Andiñuela and adjacent areas. Only two rock samples are in the limits of the Andiñuela licences, with Au grades of 0.021 g/t in Las Cañas y el Pontón and <0.005 g/t in Cabuerca La Carriza.

Golder, as part of this report, visited several of the Roman workings and sampled three of them with the only purpose of confirming the presence of gold. The results are commented in Section 12.2.

#### 11.0 DRILLING

There is no drilling known in the area.

# 12.0 SAMPLING METHOD AND APPROACH

#### 12.1 Soil and streams sampling

There is no information on the characteristics of the soil and streams sediment sampling or on the preparation and analytical procedures followed by SEIEMSA (BRGM).

# 12.2 Rock samples

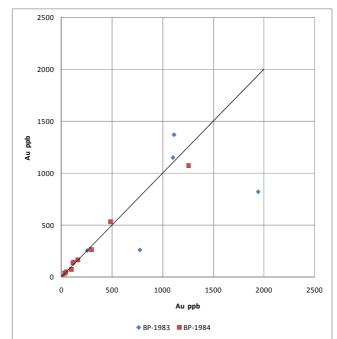
There is no information either on the rock sampling method or the type of samples collected by previous explorers.

The locations are not accurate and the results can only be considered as indicative of the Au grades that can be expected.

The results of the rock sampling by BP appear in tables in pairs, reported in ppb. Graph 1 shows a scatter plot for these samples indicating the survey they correspond to. It is clear that the sampling done in 1983 has a very big dispersion in the duplicate results, with a better precision being obtained in 1984. It is unknown whether the precision refers to sample or pulp duplicates, to inter-laboratory controls or to different analytical methods.

In view of the small amount of samples and the uncertainties about its origin, it has been considered not worth doing additional geostatistical analysis of these data.





Graph 1 Scatter plot of duplicate analysis by BP (1983 & 1984 surveys

Auropean did a reconnaissance sampling in two of the pits. The samples were sent to ALS laboratory in Seville (Spain) for preparation and comminution and, from here, sent by the laboratory for.

After reception in the laboratory, samples sere jaw-crushed to 70% <2mm, and a riffle-split of up to 250 g pulverized pulverised to  $85\% <75 \ \mu$ m.

Sub-samples were then prepared by the laboratory and sent for Au and ICP analytical determination to other laboratories of ALS Group. Au analyses were done with a 30 g Fire Assay and Atomic Absorption determination with LOR 5 ppb (Lab code Au-AA23). Thirty-three other elements were analysed by ICP-AES after a four acid digestion.

# 13.0 SAMPLE PREPARATION, ANALYSIS AND SECURITY

There is no information on the preparation and analytical methods used by previous explorers.

# **14.0 DATA VERIFICATION**

Golder carried out an independent sampling programme on 26 January 2011. The objective was to confirm the presence of gold in the properties. Sampling was therefore selective, focused on the best results or more attractive locations described by previous explorers. The results cannot be, therefore, interpreted to be representative of the mineralization in any specific location.

A total of 7 samples were collected from three different Roman workings. The aim of the work was to sample the same outcrops than those sampled by BP, but this was not always possible because of doubts about the real location of previous sampling in the terrain. All the samples correspond to chips taken from the veins and host rocks. An exception is sample GA-A-02, which corresponds to a sample of float taken at the bottom of Cabuerca el Bustillo Pit. Sample location, type and descriptions are indicated in Table 5 and their location





and results in relation to previous BP sampling can be seen in Figure 11 to Figure 10. Complete results can be consulted in Appendix  $A^1$ .

SAMPLE	x	Y	Au (ppm)	DESCRIPTION
GA-A-01	718393	4705228	0.057	Cabuerca El Bustillo. Selective sampling of N-S sub vertical veinlets of 1-2 cm thick with some oxides. Traces of arsenopyrite. W Rabanal Roman pit (Fig.11).
GA-A-02	718403	4705215	0.052	Cabuerca El Bustillo. Floats of quartz with some oxides and possible fragment of arsenopyrite in W Cabana Roman pit (Fig. 11).
GA-A-03	720851	4705745	0.278	Cabuerca del Agua. Quartz with traces of arsenopyrite and iron oxides and scorodite in fractures. The sample is from a quartz N050E vein conjugated to another N120E (Fig. 8).
GA-A-04	729860	4705740	1.245	Cabuerca del Agua. Chip sample along 10m in a N120E quartz breccia with schist with box work and pseudomorph oxides after sulphides. Corta del Agua Roman pit (Fig. 8).
GA-A-05	722232	4705090	0.029	Las Cabañas-Pontón Roman pit. Quartz veinlets with oxides in quartzite and oxidised schist. The veinlets and oxides follow a fragile deformation and are also affected by fractures. Intense limonitization and manganese in fractures. Corta 1 Roman pit (Fig. 7).
GA-A-06	722237	4705072	0.005	Las Cabañas-Pontón Roman pit. Next to sample GA-A-05. Grey quartz with arsenopyrite in breccia with milky quartz. Oxides in fractures. Corta 1 Roman pit (Fig. 7).
GA-A-07	722185	47050203	0.073	Las Cabañas-Pontón Roman pit. Sample from what seems to have been a gallery, now collapsed, at Corta 1 Roman pit. Material sampled is a white quartz with tourmaline and weak disseminations of arsenopyrite (<0.5%) and quartzite with scorodite and oxides in fractures and voids. (Fig. 7.). Sample collected by FF.
GA-S-01			<0.00 5	Standar - Quartz sand blank. Shea Clark Smith / MEG LABS S108008X – 694
GA-S-02			0.699	Standar - Au, Ag, Cu Standard. Shea Clark Smith / MEG LABS S108004X – 2340

 Table 5: Sampling for data verification by Golder

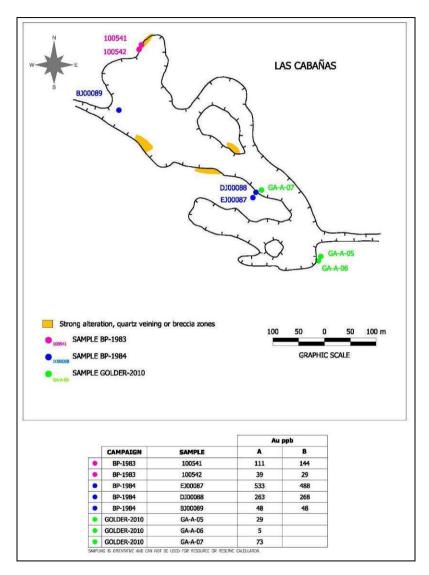
Results confirm the low to moderate grades of the sampled material, with best grade at Cabuerca del Agua, where one 10 m chip sample returned 1.25 ppm Au (sample GA-A-04. See Figure 8). By comparing the results with previous sampling by BP we can conclude that the independent sampling confirms the presence of gold and the level of grades reported by BP.



<sup>&</sup>lt;sup>1</sup> Appendix B also contains results of samples from a different project that were included in the same batch



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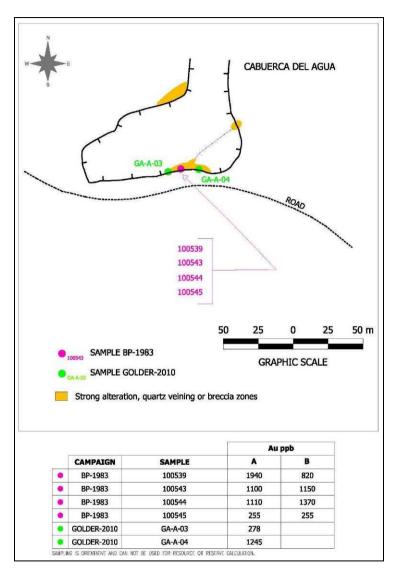


Figure 8 Sample results at Cabuerca del Agua pit





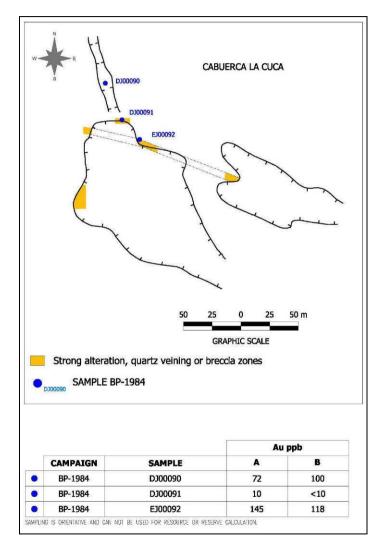


Figure 9 Sample results at Cabuerca La Cuca pit

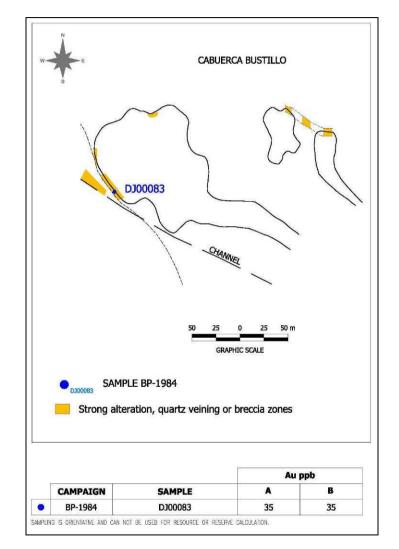
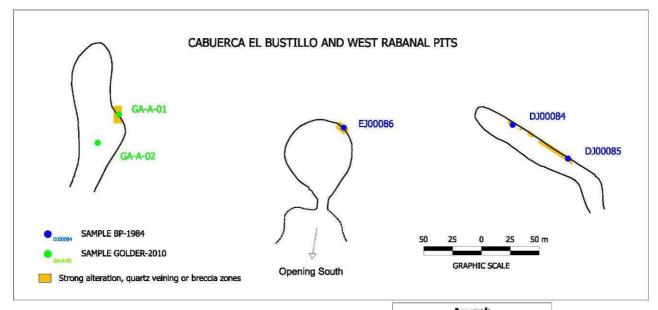


Figure 10 Sample results at Cabuerca Bustillo pit







			Au ppb		
	CAMPAIGN	SAMPLE	A	В	
•	BP-1984	DJ00084	37	37	
•	BP-1984	DJ00085	163	163	
•	BP-1984	EJ00086	113	113	
•	GOLDER-2010	GA-A-01	57		
•	GOLDER-2010	GA-A-02	52		

SAMPLING IS ORIENTATIVE AND CAN NOT BE USED FOR RESOURCE OR RESERVE CALCULATION.

Figure 11 Sample results at Cabuerca el Bustillo and West Rabanal pits

#### 14.1 Sample preparation, analysis and security of Golder sampling

All samples except one were collected by Sergio Tenorio (ST), of Golder Associates. Sample GA-A-07 was taken by Fernando de la Fuente, of FFC, under the inspection of ST.

All samples collected were described and packed in plastic bags by ST, and sent to ALS-Chemex laboratory in Seville (Spain). ALS-Chemex is part of ALS Laboratory Group.

At Golder's Madrid office, samples were weighted, and one blank and one standard included and packed by Sergio Tenorio.

The transport to the laboratory in Seville was with a pick-up service organised by ALS Laboratory Group.

Once at the laboratory, samples were bar-coded and weighted. Drying was considered not necessary by the local laboratory manager.

Samples were then jaw-crushed to 70% <2mm, and then the entire sample or sub-sample of up to 1 kg (obtained by riffle-split) pulverised to  $85\% <75 \mu m$ .

Sub-samples were then prepared by the laboratory and sent to ALS-Chemex laboratory in Vancouver for ICP-MS analysis and Romania for Au analysis.

Au analyses were done with a 30 g Fire Assay and Atomic Absorption determination with LOR 5 ppb.





A suite of 48 elements were also analysed with ICP-MS after a four acid digestion.

Results were provided by the laboratory as "pdf" and "csv" formats (see Appendix B).

#### 14.2 Quality assurance and quality control of Golder sampling

#### 14.2.1 Laboratory controls

ALS has developed a Quality Management System that complies with the requirements of International Standard ISO 9001:2008 and implements QAQC procedures at all stages of the process, including routinely screen controls during the sample preparation of at least one sample per shift at each of the sample preparation stations.

The laboratory routinely inserts every fifty samples, a duplicate taken from the coarse crushed material to create a pulverizing duplicate.

For the analytical quality control, blanks, standards and pulp duplicates are inserted.

The laboratory routinely inserts their own standards at random intervals, blanks at the beginning of each analytical run, and analyze duplicates at the end of the batch.

For the batch of Golder sampling, the analytical control test performed by the laboratory consisted of a total of 6 analyses for ICP- multi-element of 4 standards, 6 analyses for Au of 4 standards and 3 analyses of blanks for Au and ICP. There are, in addition, 2 duplicate analyses of pulps from the batch for all the elements.

Appendix B contains the results of the analytical quality control performed by the laboratory. Following are comments on the results.

All the blank and standard results are within the bounds, except for isolated results of As (Standard MRGeo08), one low value of Ba (standard GMB3961 c), common high values of Ge (Standards GMB3961 c, GMB905-5) or common low Ge (standard GEOMS-03).

Pulp duplicates show poor precision of Ag, with values commonly outside the upper and lower bounds and similarly occurs in one duplicate for which As, Bi and Ge are outside or at the bounds.

In the analysis of geochemical samples ALS expects to achieve a precision and accuracy of plus or minus 10% (of the analyte concentration)  $\pm 1$  Detection Limit (DL) for duplicate analyses. This is 5%  $\pm 1$  DL for high grade samples.

#### 14.2.2 Golder control

Golder additionally added one blank and one Cu-Au-Ag standards in the batch. Both standards were provided by FFC and correspond respectively to standards S108008X and S108004X, prepared by Shea Clark Smith / Minerals Exploration & Environmental Geochemistry.

The results of the Au-Cu-Ag standard introduced by Golder (S108004X) returned Ag and Cu in the range of the 95% confidence, and a gold grade of 0.699 ppm, above the 0.688 ppm certified as upper bound for the 95% confidence limit (see Table 6 and Graph 2) and also above the highest range of values (0.695 ppm) but below the highest result (0.72 ppm) obtained in the round robin test in which the certificate for the standard was based (see Appendix D).





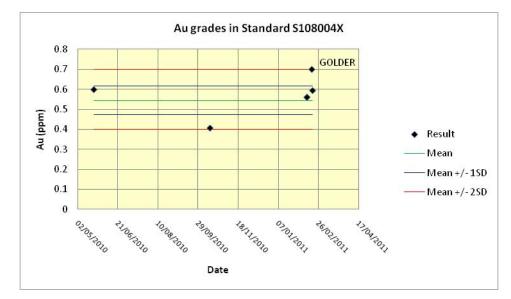
	Au (ppm) <sup>(1)</sup>	Cu (ppm) <sup>(2)</sup>	<b>Ag (ppm)</b> <sup>(2)</sup>		
CRTIFIED IN ROUND-ROBIN TEST (Shea Clark Smith)					
MEAN	0.544	215	0.06		
STANDARD DEVIATION	0.072	19	0.09		
RANGE OF VALUES – HIGH	0.695	239	0.27		
RANGEO OF VALUES-LOW	0.451	183	0.00		
95% CONFIDENCE LIMITS	0.401 to 0.688	177 to 253	<0.5		
RESULTS OF GOLDER CONTROL SAMPLING (Lab: ALS)					
	0.699	228	0.13		

#### Table 6: Geochemical Reference of Cu-Au-Ag Standard S108004X

<sup>(2)</sup> Ag & Cu analysis in Round Robin Test: 4-acid /ICP/OES; in ALS: 4-acid /ICP/MS

Other assays for this standard in the same laboratory returned Au grades between 0.405 ppm and 0.598 ppm. Table 7 shows the results we are discussing and Graph 2 illustrates these results in relation to the certified statistics for the standard.

Table 7: Results for standard S108004X included by FFC in the different batches analysed at ALS					
BATCH	Au_ppm	Ag_ppm	Cu_ppm	Date	
SV10051310	0.598	0.17	223	22/05/2010	
SV10131651	0.405	0.14	219	14/10/2010	
SV10197146	0.56	0.13	249	12/02/2011	
SV10197147	0.559	0.14	230	12/02/2011	
SV11009631	0.593	0.14	240	19/02/2011	
Results of Golder Control Sampling					
SV11018284	0.699	0.13	228	18/02/2011	



Graph 2 Analytical results for Au in the Standard S108004 inserts by FFC and Golder, analysed by ALS Laboratory





Taking into consideration the good results for the analytical control performed by the laboratory (see Section 14.2.1), Golder considers that the deviation in the results of the Cu-Au-Ag standard inserted by the client are very close to the upper bound and that it might be due to sample heterogeneity more than to a calibration problem, and considers that the results reported in the batch are acceptable for the purpose of this work.

For the precision and accuracy expected to be achieved by the laboratory (plus minus 10%  $\pm$ 1 DL), and knowing that the DL for Au is 0.005 g/t Au, the repeat of the highest result obtained in the sampling (1.245 g/t Au in sample GA-A-04) it would be considered "acceptable" if a repeat of the sample returned grades in the range of 1.116 to 1.375 g/t Au.

# **15.0 ADJACENT PROPERTIES**

There are no adjacent properties with mining infrastructure or mineral resources reported, other than a sand quarry to the east.

However, there are a number of adjacent prospecting licences (Figure 12) whose legal situation on 27 February 2011 was as follows:

- PI Nuevo Milenio (nº 14904).- of Canteras Maragata. This is in part cancelled.
- P.I. Marina 4<sup>a</sup> 3<sup>a</sup> Fracción (nº 14863).- Of Grupo Viloria. In process of renewal.
- P.I. Río Carracedo (15059).- This permit had been investigated by Outokumpu and renounced on 11 February 2004. After the official cancellation the area has to be offered for a public tender.
- CD Ponferrada X (N<sup>o</sup> 12398CE).- of Minero Siderúrgica. This license is alive.
- Santa Colomba (Nº 15164).- For a particular application for Ornamental rock, still not granted.

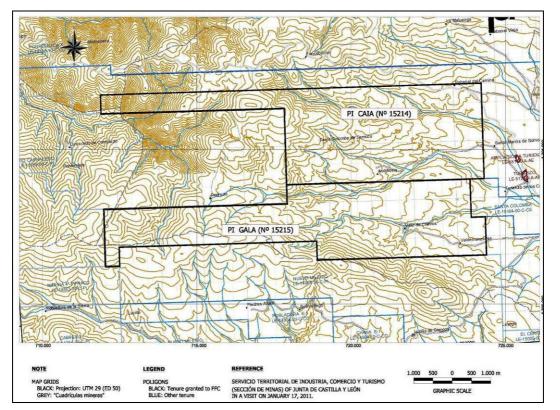


Figure 12 Mineral rights map





# 16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

There are no mineral processing or metallurgical test results to report.

#### 17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

There are no mineral resources or mineral reserves to report.

# **18.0 OTHER RELEVANT DATA AND INFORMATION**

#### **18.1 Environment protection areas**

Andiñuela is not affected by any environmental designations, either nationally or regionally.

The nearest site is LIC-ZEPA "Montes Aquilanos", located 5 Km south of the project (Figure 13).

The presence of wolfs (*Canis Lupus*) are noted in the region, but despite being a protected species in other regions, they can be hunted in this area.

#### **18.2 Cultural heritage**

The granting title of the licenses establishes instructions for not doing excavations, drilling or any other action that might affect the terrain, in catalogued archaeological sites without previous authorization by the Servicio Territorial de Cultura of the Junta de Castilla y León. It is also noted the presence of the pilgrim walking "Camino de Santiago" and other Roman and public paths that are also worth to consider previous to any earth movement or occupation. Following is a brief review of each of these aspects.

#### 18.2.1 Archaeological sites

The area has been highly populated during the second Iron Age and the High Roman Empire during which the area was considered of high strategic and economic importance due to the rich gold deposits it contained.

Close to Santa Colomba, the most significant mine is at El Soldan, where the residence of the imperial mines guard was placed.

The "Normas Subsidiarias Provinciales de Planeamiento Urbanístico" (province wide regulation of the special municipality planning conditions), also describes in the inventory of the archaeological and historical sites the presence of remains of a roman aqueduct at Santa Colomba.

The roman workings inventoried within the Andiñuela project area are those described in Table 8

# Table 8: Roman workings in the project area included in the General Inventory of Archaeological and Historical sites

Roman working	X	Y
Corte del Ramallal	720632	4706400
Cabuerca de Cecas	720292	4705643
Cabuerca del Agua	720736	4705642
Prada	716941	4702700
Cuevas del Abedul	720889	4705159
Cabuerca la Carriza	721516	4705214
Las Llameronas	723412	4704611
Las Caballas Pontón	721843	4705035





Roman working	X	Y
Cabuerca Vioblea	719970	4705056
Estupin	720673	4706405

There was an important Roman paved road that joined Asturica Augusta (today Astorga) with Braccara Augusta (today Braga, in Portugal). There was also a second order Roman road connecting Astorga with the mining centers along the valley, including the Villa del Soldan.

Although it is not classified, there is a livestock trail ("Vía Pecuaria") that follows approximately the Camino de Santiago.

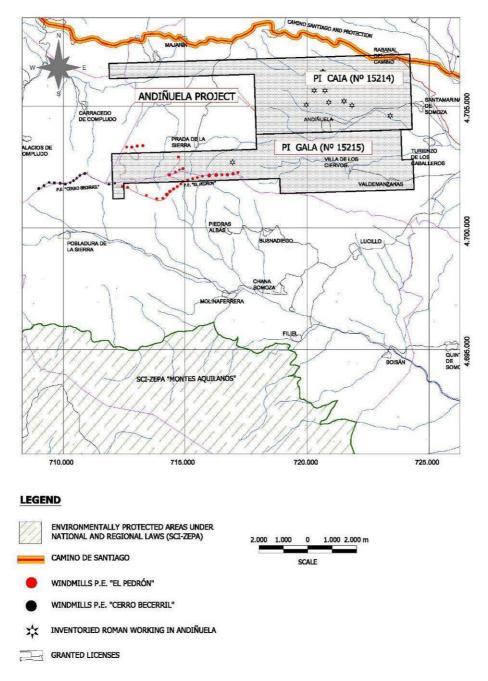


Figure 13 Map showing environmental designations, archaeological sites, cultural heritage elements and wind mills





#### 18.2.2 Camino de Santiago

The "Camino de Santiago" is an ancient pilgrim route to the tomb of St. James (Santiago in Spanish) in Santiago de Compostela, in the northwest of Spain. Indeed, the Camino de Santiago is a large network of routes similar to a river system in which the main course is the "Camino Francés" that is fed by routes coming from France, and many other places in the eastern and southern Spain.

The Camino Francés crosses a big part of the municipality of Santa Colomba de Somoza, going across the villages of Rabanal del Camino, Foncebadón and Manjarín, in the north of the Andiñuela Area and affecting the very northeastern corner of P.I. Gala.

There are nine monuments catalogued along the Camino Francés in the municipality of Santa Colomba de Somoza:

- Roble del Peregrino
- Ermita del Santo Cristo
- Antiguo Hospital
- Casa de cuatro esquinas
- Fuente
- Iglesia de Santa María
- Fuente
- Posada del Peregrino y
- Negrillo.

None of these sites are located within the limits of the permits.

Although it is not formally established in the regulations to apply, it is being applied a strip of 100 m around the elements listed and the edge of the route.

#### 18.2.3 **Protection of archaeological and historical sites and regulation to apply**

None of the archaeological sites listed in Table 8 have a legal figure of protection clearly defined.

The extent of this protection has to be defined in the municipal urban planning regulations ("planes de ordenación minera"). Neither Santa Colomba de Somoza nor Lucillo have their own urban planning regulations and therefore the province wide regulations apply (see Section 18.2.1).

The only site in provincial catalogue of protected sites corresponds to the remains of the Roman aqueduct near Santa María de Colomba, outside of the limits of the Andiñuela project area.

The legal rules to apply are:

- Ley 12/2002 de 11 de Julio de Patrimonio Cultural en castilla y León
- Decreto 324/1999, de 23 de Diciembre, por el que se delimita la zona afectada por la declaración del conjunto histórico del camino de Santiago (Camino Francés)
- Plan Regional de ámbito territorial del camino de Santiago a su paso por la Comunidad de castilla y León





## 18.3 Wind farms

There are two wind farms called P.E. "EL PEDRÓN" and P.E. "CERRO BECERRIL" located close to or within the project area. The terrains demarcated for the authorization of these farms coincides in part with the land granted with P.I. Gala and this could generate conflicts when doing any investigations. The location of the wind turbines is shown in Fig. 13.

It is up to Servicio Territorial de Industria de la Junta de Castilla y León to determine the compatibility of use of the ground and to resolve any conflict raised.

## **19.0 INTERPRETATION AND CONCLUSIONS**

The Andiñuela Project consists of two licenses, namely P.I. Caia and P.I. Gala, in the province of Leon (Spain). The two licenses cover an area of 4,560 ha of a prospective ground in which the presence of gold has been confirmed by an independent sampling programme carried out by Golder.

The licences have been awarded to FFC for a three year period ending in March, 2014; with the possibility for additional successive renewals of 3 years each, and the preference for the application of exploitation concession when economic resources are delineated.

Auropean Ventures Inc. announced on January 18, 2011 that the company had reached an agreement to earn 100% interest in the Andiñuela project from FFC. Under the terms of the agreement, an initial 75% interest can be earned by Auropean paying FFC a total of  $\in$  135,000 plus issuing the equivalent of  $\in$  170,000 in Auropean shares and expending a total of 3 M€ on the project over a five year period. Auropean will earn 100% interest by paying FFC a further  $\in$  150,000; issuing shares valued at  $\in$  150.000 to FFC; and securing funding to take the project to production. The property is subject to a 2% NSR with a 1% buyback on a sliding scale based on the price of gold at the time. In year one, Auropean has to pay FFC  $\in$  10,000 plus the equivalent of  $\in$  10,000 in stock and expend  $\in$  200,000 on the project. There are no State Royalties to pay on gold revenues. The corporate tax is 25%. The annual landholding tax cost is approximately  $\in$  1,000.

The area hosts a number of workings from which gold had been extracted by Romans. Mining of gold was in hard rock and in concentrations in alluvium and colluvium.

Given the extensive, and effective, Roman mining of alluvial and colluvial gold, this is not considered currently a target for the project, but mineralization in hard rock, for which different models have been developed has not yet been explored. This opens great potential for the discovery of a significant deposit in the region.

Known gold mineralization in hard rock occurs in quartz veins and breccias with traces of sulphides (principally pyrite and arsenopyrite); iron oxides and hydroxides; scorodite and native gold. Other minerals are present as accessory or have a local occurrence. These veins are hosted in hydrothermally altered and low-grade metamorphosed Lower Ordovician sediments (quartzites, sandstones and shales of the Los Cabos Formation), along a west trending band parallel to the Compludo Thrust, in the core of the Somoza Anticlinorium, in the Mondoñedo Nappe of the West Asturian-Leonese Zone of the Hesperian Massif.

The thickness of the veins is variable and the orientation follows different groups of directions. It is still to be defined which group of veins favour the mineralization of gold.

Previous exploration is very limited. It consists of streams and soil geochemistry and rock sampling at the Roman workings.

Independent sampling by Golder aimed at repeating the best samples collected by previous explorers, has confirmed that there is gold present in the veins and breccias, obtaining a maximum grade in chip sampling of 1.25 g/t Au over 10 m along a breccia zone. The maximum historical grade recorded from the sampling at the workings is 1.94 g/t Au (BP, at Corta del Agua) or 2.9 g/t Au (EPM 1986 from a "pit west of Andiñuela", the accurate location being unknown).





All the known rock sampling has been focussed to test the gold content of quartz veins but the mineralization in the host rock and structural trends with no developments of quartz veining has not yet been investigated.

Other styles of gold mineralization that need to be investigated are those related with hidden intrusive rocks and its interaction with the host rock (either the sediments or the limestones under the Compludo Thrust), and also bedding parallel mineralization in the pelitic sediments at the hinges of the folds in interbedded quartzites and shales (saddle reef model), and mineralization with tectonic structures and lithological controls with not or minor development of quartz veins,

The area contains very small settlements and it is almost un-populated. The principal activity is farming and the main extent of the soil is covered by pasture, brush, and in some areas pine tree forest.

The presence of two wind farms in the south-western part of the project area may curtail exploration activities in that area.

The project is not affected by any environmentally protected areas.

The main concern for the development of the exploration program is the richness in archaeological sites due to the importance that the area had in Roman times and historical sites in relation to the Camino de Santiago pilgrim way. These archaeological sites do not have a current legal frame of protection but it is recommended to consider them before any earth removal and to report the plan in advance to the culture authorities in order to seek their assent. This is also a condition, referring the Roman workings, in the granting document of the licenses issued to FFC.

## 20.0 RECOMMENDATIONS

Golder recommends that the licences be actively explored and that adjacent properties be included in the project.

The research for the already known and other models of mineralization should be started at an early stage. A first phase in the study would include:

- Vein related mineralization. This is the only proven mineralization but there are still questions to resolve, like the grade distribution within the veins and the definition of the set of veins with highest grades. This will require trenching, drilling, mineralogy and a comprehensive structural analysis as the most important tools.
- Intrusive-related gold mineralization. This can be done with regional gravity, studies of alteration and drilling.
- Au in fold hinges in inter-layered quartzitic and pelitic rocks (saddle reef model). Investigating this will require facies analysis, rock sampling and detailed structural mapping.
- Low grade, high volume, gold in micro-veins and host rocks. This can be investigated with trenching and drilling.

All these models can be investigated with a grass roots exploration approach that includes:

- Detail study and sampling of the Roman workings. This will require accurate mapping after bush clearance and ground refurbishment.
- Rock sampling and structural study of the veins, for a later statistical treatment and determination of the sets with better grades.
- Drilling underneath the Roman workings, to determine the down-dip and lateral extents of the mineralization, as well as the host rock content in precious metals.
- Regional gravity to investigate possible hidden intrusive rocks and deep structures.





- Airborne magnetics-radiometrics to investigate regional structures, alteration haloes and support geology and facies mapping in soil covered regions.
- Structural mapping and interpretation.
- Detailed streams and soil geochemistry in all the extent of the project area.
- Trenching and drilling for follow-up of the geochemical anomalies.
- Ground geophysics to support structural and lithological studies.

The recommended program would be performed in three phases.

 During Phase 1 the program would concentrate on a detailed geological study of the mineralised trends, including structural, lithological and alteration mapping. This study would be complemented with rock sampling of the workings and outcrops along the trends and detailed multi-element soil sampling. The cost of this first phase of exploration is estimated to be of approximately € 200,000, split as indicated in Table 9: Budget for the proposed program in Phase 1

## Table 9: Budget for the proposed program in Phase 1

ACTIVITY	COST (K€)
Streams geochemistry (250 samples)	15
Soil geochemistry (1,500 samples)	100
Mapping and structural studies	20
Trenching and lithogeochemistry (250 samples)	25
Petrography, mineralogy	5
Office, management, reporting	10
General costs and contingency (15%)	25
TOTAL Phase 1	200

2) During Phase 2 the focus would be the follow-up with additional trenching and drilling of the targets identified during Phase 1 and the generation of new targets with the use of geophysics.

The cost of this second phase is estimated to be of approximately  $\in$  725,000, split as indicated in Table 10

## Table 10: Budget for the proposed program for Phase 2

ACTIVITY	COST (K€)
Gravity (627 st)	50
Airborne geophysics (magnetics-radiometrics) (280 Km)	30
Soil geochemistry (500 samples)	30
Mapping and structural studies	10
Ground geophysics (20 km magnetics, DC, others)	20
Trenching and lithogeochemistry (70 samples)	30
Drilling (includes geochemistry) (1,000 m DC; 3,000 RC)	385
Petrography, mineralogy	5





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ACTIVITY	COST (K€)
Metallurgy	25
Office, management, reporting	50
General costs and contingency (15%)	90
TOTAL Phase 2	725

3) Once mineralization is confirmed and its economic potential recognised, Phase 3 includes the evaluation to pre-feasibility level. The cost estimated for this third phase is in the region of 2 M€.





## 21.0 REFERENCES

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## 22.0 REPORT SIGNARTURE PAGE

GOLDER ASSOCIATES GLOBAL IBÉRICA S.L.U.

EFFECTIVE DATE: 8 June 2011

del Olmo

Sergio Tenorio European Geologist (#820) PGeo Arturo Gutienez del Olm Managing Director

ST/BB/st

Inscrita en el Registro Mercantil de Madrid, en el tomo 18.050 general de la sección 8 del Libro de Sociedades, folio 10 hoja nº M-312111 Inscripción Primera NIF B-83371633

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## 23.0 CERTIFICATION OF THE AUTHOR

I, Sergio Tenorio, of Madrid Spain, do hereby certify that as the author of this "**Technical report. Property assessment on the Andiñuela gold project, Leon Region, Spain**", dated 8 June 2011; I hereby make the following statements:

- I am employed as a Senior Geologist with Golder Associates Global Ibérica S.L.U. with a business address at C/ José Abascal nº 45, 28003 Madrid (Spain).
- I am a graduate of Universidad Complutense de Madrid, (Bachelor of Geology, 1984).
- I am a member in good standing of the European Federation of Geologists (EFG) (Member number 820) and have a good standing title of Professional Geologist Specialist in Mineral Resources, issued by the Spanish Official College of Geologists.
- I have practiced my profession continuously since graduation.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
- My relevant experience with respect Andiñuela project includes over 26 years in exploration, mining geology and grade estimation, with experience in gold mineral properties in Spain, Portugal and Iran. Other expertise includes base metals, uranium, iron, bauxite and heavy minerals.
- Over the last five years my relevant experience for the purpose of this Technical Report is:
  - Project Geologist for Lomero Au-Zn deposit, for Cambridge Minerals
  - Project Geologist for Don Benito Uranium project, for Mawson
  - Detailed revision and assessment on the plan for 2010-2011. Agua Blamca Ni-Cu mine, Spain, for Rio Narcea Recursos (Lundin)
  - Audit of Banjas Au Property, Portugal, for Petaquilla Gold
  - NI 43-101 Technical Report. Preliminary assessment on the Salave gold project, Asturias Region, Spain for Asturgold.
  - NI 43-101 Technical Report Property Assessment of Barxa Au property in Spain for Auropean Minerals S.L. (in progress)
  - Review and report for various other Au and U exploration and mining concessions.
- I am responsible for the preparation of this Technical Report titled "Technical report. Property assessment on the Andiñuela gold project, Leon Region, Spain", dated 8 June 2011
- I visited the Property for 1 day on January 26, 2010.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.





I am independent of the Issuer as defined by Section 1.4 of the Instrument. I have read National Instrument 43-101 and the sections for which I am responsible in this Technical Report have been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Dated 8 June 2011

Sergio Tenorio (E.G. #820) PGeo

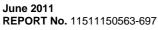




## **APPENDIX A**

## Analytical results of independent sampling by Golder

(Note: part of the results correspond to a different project)







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### To: GOLDER ASSOCIATES GLOBAL IBERICA S.L.U GOLDER ASOCIATES GLOBAL IBERICA S.L.U C/ JOSE ABASCAL 45, MADRID MADRID 28003

Page: 1 Finalized Date: 18-FEB-2011 Account: GOLICA

## CERTIFICATE SV11014284

Project: 11511130563 P.O. No.: GA-11511150563							
This report is for 18 Rock sar	This report is for 18 Rock samples submitted to our lab in Seville, Spain on						
2-FEB-2011. The following have access to data associated with this certificate:							
SERGIO TENORIO							

SAMPLE PREPARATION						
ALS CODE	DESCRIPTION					
WEI-21	Received Sample Weight					
LOG-22	Sample login – Rcd w/o BarCode					
LOG-24	Pulp Login – Rcd w/o Barcode					
CRU-QC	Crushing QC Test					
PUL-QC	Pulverizing QC Test					
CRU-31	Fine crushing – 70% <2mm					
SPL-21	Split sample – riffle splitter					
PUL-32	Pulverize 1000g to 85% < 75 um					

	ANALYTICAL PROCEDUR	ES
ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA-AA finish	AAS
Au-AA25	Ore Grade Au 30g FA AA finish	AAS
ME-MS61	48 element four acid ICP-MS	

To: GOLDER ASSOCIATES GLOBAL IBERICA S.L.U ATTN: SERGIO TENORIO GOLDER ASOCIATES GLOBAL IBERICA S.L.U C/ JOSE ABASCAL 45, MADRID MADRID 28003

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.



Colin Ramshaw, Vancouver Laboratory Manager



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## To: GOLDER ASSOCIATES GLOBAL IBERICA S.L.U GOLDER ASOCIATES GLOBAL IBERICA S.L.U C/ JOSE ABASCAL 45, MADRID MADRID 28003

Page: 2 - A Total # Pages: 2 (A - D) Plus Appendix Pages Finalized Date: 18-FEB-2011 Account: GOLICA

## Project: 11511130563

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	Au-AA25 Au ppm 0.01	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0.01	ME-MS61 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-M561 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-MS61 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05
GA-8-01 GA-8-02 GA-8-03 GA-8-04 GA-8-05		0.33 2.20 2.34 0.90 0.80	0.958 4.42 0.087 0.013	25.4	79.3 4.17 6.71 0.64 0.17	0.65 0.66 0.54 0.32 8.21	>10000 2020 >10000 963 711	180 80 70 30 680	1.02 1.30 0.84 0.36 8.94	1080 151.0 114.5 11.95 1.75	0.02 0.01 0.01 0.01 0.01 0.16	0.06 0.09 0.09 0.03 0.05	28.5 85.4 47.8 13.30 107.5	58.6 3.1 1.7 1.2 5.0	15 34 26 24 69	4.29 3.10 1.47 0.92 23.6
GA-B-06 GA-B-07 GA-B-08 GA-B-09 GA-A-01		0.86 0.49 0.83 2.62 0.58	0.006 0.019 0.009 0.053 0.057		0.15 0.44 0.22 0.49 0.03	0.44 0.79 0.25 0.33 0.68	320 >10000 1460 240 47.6	30 10 20 20 90	0.86 3.37 1.18 3.88 0.25	1.05 0.07 40.3 2.05 0.08	0.01 0.01 0.01 <0.01 0.01	0.02 0.26 0.10 0.18 0.02	3.16 21.1 3.29 19.55 17.05	8.2 25.6 24.5 82.3 8.7	15 12 13 35 16	1,33 0.27 0.33 0.10 0.20
GA-A-02 GA-A-03 GA-A-04 GA-A-05 GA-A-06		0.56 1.43 0.83 0.47 0.51	0.052 0.278 1.245 0.029 0.005		0.06 0.70 12.05 0.21 0.08	0.23 0.66 3.05 0.81 1.86	55.2 2040 4100 456 41.4	60 150 390 180 630	0.11 0.36 1.72 0.62 0.25	0.10 0.14 106.5 0.67 0.40	0.01 0.01 0.02 0.01 0.01	<0.02 0.33 1.94 0.08 0.04	17.65 10.90 69.0 16.05 38.7	1.5 4.1 14.3 5.7 1.5	28 34 52 24 33	0.17 0.26 0.78 0.35 0.30
GA-A-07 GA-S-01 GA-S-02		0.14 0.08 0.08	0.073 <0.005 0.699		0.23 0.01 0.13	1.29 0.31 0.64	2100 2.8 2.2	370 50 120	0.68 <0.05 0.08	0.06 0.03 0.11	0.04 0.01 0.04	0.20 <0.02 <0.02	24.6 8.61 9.62	1.9 0.2 0.4	18 3 4	0.50 0.08 0.15



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ALS Laboratory Group, SL

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## Project: 11511130563

Sample Description	Method	MEMS61	ME-MS61	ME~MS61	ME-MS61	ME-MS61	ME-MS61	ME-MS61	МЕ-МS61	ME-MS61						
	Analyte	Cu	Fe	Ga	Ge	Hf	In	K	La	Li	Mg	Mn	Mo	Na	Nb	Ni
	Units	ppm	%	ppm	ppm	ppm	ppm	%	ррт	ppm	%	ppm	ppm	%	ppm	ppm
	LOR	0.2	0.01	0.05	0.05	0.1	0.005	0.01	0.5	0.2	0.01	S	0.05	0.01	0.1	0.2
GA-B-01		26.0	11.55	3.04	0.16	0.1	0.101	0.24	13.8	13.0	0.02	155	20.1	<0.01	1.5	26.6
GA-B-02		28.2	3.00	2.59	<0.05	0.2	0.008	0.15	48.9	11.4	0.02	167	5.32	<0.01	1.3	9.9
GA-B-03		29.5	3.67	1.92	0.09	0.2	0.016	0.08	26.3	10.2	0.04	123	3.73	0.01	0.5	4.0
GA-B-04		13.7	1.96	1.02	<0.05	0.1	<0.005	0.04	5.5	6.7	0.03	99	2.15	<0.01	0.4	4.5
GA-B-05		42.8	6.24	20.9	0.21	2.5	0.055	1.81	47.1	89.5	0.74	264	4.17	0.31	17.3	17.0
GA-8-06		8.8	5.07	1.05	<0.05	0.1	<0.005	0.09	1.6	43.1	0.02	131	0.91	<0.01	0.4	24.8
GA-8-07		181.5	>50	0.81	2.20	0.2	0.012	0.03	10.6	0.9	<0.01	115	3.69	0.01	0.9	41.8
GA-8-08		125.0	11.80	0.64	0.11	<0.1	0.006	0.02	1.4	2.4	<0.01	244	1.27	<0.01	0.3	58.3
GA-8-09		725	24.7	0.70	0.57	0.1	<0.005	0.01	6.7	2.1	<0.01	54	14.95	<0.01	0.7	166.0
GA-A-01		7.8	0.79	1.18	<0.05	0.4	<0.005	0.22	8.7	0.8	0.02	120	1.10	0.07	0.7	3.4
GA-A-02		7.3	1.19	0.99	<0.05	0.3	<0.005	0.12	7.7	0.6	0.01	120	1.79	<0.01	0.8	2.6
GA-A-03		9.9	2.03	2.33	<0.05	0.3	0.009	0.26	4.8	1.8	0.03	98	2.31	<0.01	0.8	10.1
GA-A-04		16.4	5.26	8.86	0.15	1.3	0.076	1.34	38.4	6.5	0.14	167	2.22	0.01	3.1	27.2
GA-A-05		389	10.05	2.31	0.07	0.6	0.048	0.25	7.8	46.1	0.02	1920	2.63	<0.01	1.4	16.8
GA-A-06		28.6	1.62	4.84	<0.05	2.4	0.015	1.17	18.4	22.3	0.02	196	1.50	0.01	5.1	6.3
GA-A-07		15.0	1.87	4.29	<0.05	0.8	0.015	0.70	10.4	4.4	0.08	142	1.11	<0.01	2.5	4.6
GA-S-01		2.8	0.06	0.76	<0.05	0.2	<0.005	0.05	3.9	1.1	0.02	<5	0.10	<0.01	0.5	0.6
GA-S-02		228	0.86	1.82	<0.05	0.3	0.030	0.09	4.3	1.7	0.05	19	0.71	0.01	0.6	1.2



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Page: 2 - C Total # Pages: 2 (A - D) Plus Appendix Pages Finalized Date: 18-FEB-2011 Account: GOLICA

Project: 11511130563

Sample Description	Method Analyte Units LOR	ME-MS61 P ppm 10	ME~MS61 Pb ppm 0.5	ME-MS61 Rb ppm 0.1	МЕ-МS61 Re ppm 0.002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-MS61 Sc ppm 0.1	ME-MS61 Se ppm 1	ME-MS61 Sn ppm 0.2	ME~MS61 Sr ppm 0.2	ME-MS61 Ta ppm 0.05	ME-MS61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti % 0.005	ME-MS61 Tl ppm 0.02
GA-B-01 GA-B-02 GA-B-03 GA-B-04 GA-B-05		130 350 460 430 1220	122.5 30.6 69.8 7.1 22.9	28.0 14.7 7.4 3.9 182.5	0.006 <0.002 <0.002 <0.002 0.003	4.21 0.05 0.51 0.02 0.01	38.0 5.35 6.74 1.21 1.56	2.3 1.6 1.2 0.9 16.2	12 2 3 1 3	19.9 5.0 4.1 2.5 57.1	20.0 15.3 21.7 8.3 75.1	0.05 0.08 <0.05 <0.05 1.37	13.10 1.95 1.84 0.15 0.06	0.5 1.2 1.1 0.7 19.1	0.015 0.028 0.014 0.009 0.376	0.18 0.11 0.06 0.04 1.32
GA-B-06 GA-B-07 GA-B-08 GA-B-09 GA-A-01		490 >10000 1450 4070 120	4.8 1.4 4.7 15.3 3.1	7.9 1.8 2.3 0.7 7.9	<0.002 0.002 <0.002 0.002 <0.002	0.22 0.02 0.02 0.02 <0.02 <0.01	1.09 1.21 0.52 0.32 2.03	0.5 4.3 1.2 1.0 0.7	1 <1 2 49 1	1.6 0.3 1.0 <0.2 0.2	14.0 4.7 6.6 0.9 7.7	<0.05 <0.05 <0.05 <0.05 0.05	0.06 0.20 0.48 2.56 <0.05	0.4 2.4 0.4 0.4 3.3	0.007 <0.005 <0.005 <0.005 0.018	0.40 0.55 0.34 0.02 0.06
GA-A-02 GA-A-03 GA-A-04 GA-A-05 GA-A-06		50 170 1630 1900 230	1.6 4.5 5190 29.3 10.6	5.6 12.0 54.9 9.4 26.9	<0.002 <0.002 <0.002 <0.002 <0.002 <0.002	<0.01 0.04 0.05 0.37 0.06	3.49 10.30 49.2 7.33 4.33	0.4 1.3 6.2 2.5 3.4	1 <1 1 1 <1	0.4 0.5 1.4 0.6 0.9	2.7 3.6 20.7 30.8 15.0	0.05 0.05 0.17 0.09 0.39	<0.05 <0.05 0.13 0.05 <0.05	2.0 1.4 7.6 1.8 6.7	0.018 0.019 0.069 0.038 0.164	0.03 0.06 0.25 0.14 0.21
GA-A-07 GA-S-01 GA-S-02		320 10 30	4.1 1.0 2.0	32.6 1.3 2.6	<0.002 <0.002 <0.002	0.07 0.01 0.13	7.70 0.15 0.26	1.8 0.3 0.4	<1 <1 <1	0.9 <0.2 0.4	8.8 4.1 8.5	0.14 <0.05 <0.05	<0.05 <0.05 3.11	2.5 1.1 1.2	0.057 0.020 0.025	0.14 <0.02 0.03



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Project: 11511130563

Method Analyte Units LOR	ME-MS61 U ppm 0.1	ME-MS61 V ppm 1	ME-MS61 W ppm 0.1	МЕ⊷MS61 Ү ррт 0.1	ME-MS61 Zn ppm 2	ME-MS61 Zr ppm 0.5	
GA-B-01	0.2	8	16.9	0.8	2	1.7	
GA-B-02	1.4	9	36.4	4.6	14	5.9	
GA-B-03	1.4	8	20.8	4.9	12	4.1	
GA-B-04	0.6	4	2.9	1.5	13	2.3	
GA-B-05	5.1	119	46.0	24.4	135	84.3	
GA-B-06	0.2	3	0.8	1.7	55	1.9	
GAB07	3.3	8	1.2	20.4	347	4,4	
GA-B-08	1,1	4	0.4	3.7	97	0.8	
GA-8-09	1.8	12	0.4	7.0	61	1.0	
GA-A-01	1.2	3	1.3	2.5	3	12.8	
GA-A-02	0.6	2	1.6	0.8	<2	10.7	
GA-A-03	1.4	8	1.7	4.2	13	10.9	
GA-A-04	13.3	36	5.2	17.3	46	44.9	
GA-A-05	2.4	24	0.7	4.2	17	31.2	
GA-A-06	3.1	21	4.2	7.5	5	88.8	
GA-A-07	1.0	14	5.4	9.3	10	27.6	
GA-5-01	0.2	2	0.1	1.1	<2	7.8	
GA-5-02	0.5	4	0.3	1.6	6	12.2	



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Project: 11511130563

CERTIFICATE OF ANALYSIS	SV11014284
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Method	CERTIFICATE COMMENTS
ME-MS61	REE's may not be totally soluble in this method.



# **APPENDIX B**

Analytical quality control by the laboratory of the batch in which the independent sampling by Golder has been included





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## QC CERTIFICATE SV11014284

Project: 11511130563	
P.O. No.: GA-11511150563	
This report is for 18 Rock sam 2-FEB-2011.	ples submitted to our lab in Seville, Spain on
The following have access sergio tenorio	to data associated with this certificate:

ALS CODE	DESCRIPTION	
WEI-21	Received Sample Weight	
LOG-22	Sample login ~ Rcd w/o BarCode	
LOG~24	Pulp Login – Rcd w/o Barcode	
CRU-QC	Crushing QC Test	
PUL-QC	Pulverizing QC Test	
CRU-31	Fine crushing – 70% <2mm	
SPL-21	Split sample – riffle splitter	
PUL-32	Pulverize 1000g to 85% < 75 um	

	ANALYTICAL PROCEDUR	ES
ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23 Au-AA25	Au 30g FA-AA finish	AAS
Au-AA25	Ore Grade Au 30g FA AA finish	AAS
ME-MS61	48 element four acid ICP-MS	

To: GOLDER ASSOCIATES GLOBAL IBERICA S.L.U ATTN: SERGIO TENORIO GOLDER ASOCIATES GLOBAL IBERICA S.L.U C/ JOSE ABASCAL 45, MADRID MADRID 28003

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature: Colin Ramshaw, Vancouver Laboratory Manager



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Project: 11511130563

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mnerais								QC	CERTIF	ICATE	OF AN	ALYSIS	SV1:	L01428	4
Method Analyte Uaits Sample Description LOR		Au-AA25 Au ppm 0,01	ME-MS61 Ag ppm 0.01	ME-MS61 AI % 0.01	ME-MS61 As ppm U.2	ME-MS61 Ba ppm 10	ME-MS61 Be ppm 0.05	ME-MS61 Bi ppm 0.01	ME-M561 Ca % 0.01	ME-M561 Cd ppm 0.02	ME-M561 Ce ppm 0.01	ME-MS61 Co ppm U,1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-M561 Cu ppm 0.2
						STAN	DARDS								
GBM3961c GBM3961c Target Range - Lower Round Upper Bound CEOMS-03 Target Range - Lower Round Upper Bound CEOMS-03 Target Range - Lower Round Upper Bound OXD73 Target Range - Lower Round Upper Bound OXD74 Target Range - Lower Round Upper Bound OXD74 Target Range - Lower Round Upper Bound SE44 Target Range - Lower Round SE44 Target Range - Lower Round SE44 Target Range - Lower Round SE44 Target Range - Lower Bound SE44 Target Range - Lower Bound SE44 Target Range - Lower Bound SE44 Target Range - Lower Bound SE44	0.432 0.382 0.450 2.26 2.52 2.52 2.53 0.557 0.557 0.557 0.553	5.67 545 6.30 0.62 0.55 0.56	8.30 8.36 7.26 8.92 58.1 52.0 8.3.6 0.65 0.65 0.65 0.65 4.77 4.77 4.71 5.10	4.41 4.27 3.76 6.79 6.79 6.79 5.40 4.61 5.55 7.56 8.01 7.00 8.67	767 698 669 818 7.1 7.0 9.0 666 570 27.1 27.1 29.7 36.7	160 250 300 2390 1950 2630 2630 2630 2630 2630 2630 2630 270	0.89 0.90 2.63 2.23 2.27 2.83 1.44 1.34 1.34 3.55 2.20 3.54 3.54	22.5 10.30 16.90 22.1 0.99 0.99 0.81 1.01 0.34 0.31 0.65 0.65 0.65 0.63 0.79	3.15 3.15 2.77 3.40 1.06 1.70 2.10 0.40 0.33 2.57 2.57 2.57 2.28 2.290	20.5 22.6 23.7 0.11 0.35 23.7 0.36 0.30 2.10 2.10 2.10 2.10 2.10 2.10 2.10	51.8 48.3 43.5 53.2 207 252.9 47.0 57.4 73.8 86.6 66.6 65.6 77.5 67.1	162.0 1595 5 144.0 176.8 19.8 19.2 12.4 10.7 13.7 12.3 22.3 22.3 22.3 22.3 22.3 22.3 22.3	640 630 564 728 27 22 29 124 105 131 92 91 91 182 102	5.12 5.07 4.83 5.01 174 1.57 2.03 10.65 9.04 11.15 12.05 12.95 11.00 15.60	3000 2930 2590 3160 160 160 135.0 120.5 147.5 624 624 624 624 624 624



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(ALS) Minerals							Proj	ect: 1151	1130563						
indie: ats								QC	CERTIF	ICATE	OF AN	ALYSIS	SV1	101428	4
Method Analyte Units LOR	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ce ppm 0.05	ME-MS61 HF ppm 0.1	ME-MS61 In ppm 0.005	ME-M561 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	NE-MS61 Mg % 0.01	ME-MS61 Ma ppm 5	ME-M561 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-M561 Nb ppm 0.1	ME-MS61 Ni ppm 0.2	ME-M561 P ppm 10
						STAN	DARDS								
GBM3961c GBM3961c Targer Range - Lower Bound Upper Bound GCM508-5 Targer Range - Lower Bound CCM5-03 Targer Range - Lower Bound MRGe008 MRGe008 Targer Range - Lower Bound Upper Bound Ox073 Targer Range - Lower Bound Upper Bound Ox164 Targer Range - Lower Bound Ox164 Targer Range - Lower Bound St44 Targer Range - Lower Bound SE44 Targer Range - Lower Bound SE44 Targer Range - Lower Bound SE44 Targer Range - Lower Bound SE44	8 99 9 13 8 00 9 50 3 60 4 34 3 64 4 3 64 4 43 3 69 4 06 3 61 4 43	12 90 13 10 11 75 22 6 22 5 22 7 13 80 12 20 14 75 19 10 21 2 21 5 21 5	0 36 0 21 0 17 0 32 0 45 0 10 0 23 0 00 0 24 0 19 0 24 0 19 0 24 0 19 0 22 0 19 0 22 0 19 0 22 0 19 0 23	16 18 15 21 46 44 57 17 12 16 16 33 33 34 28 36	1290 1310 1250 065 065 065 065 065 065 065 065 065 0	0 63 0 65 0 665 3 55 2 09 3 07 1 18 1 (23 3 11 3 16 2 79 3 43	251 258 229 201 1135 1005 1240 313 256 324 431 363 495	20 5 18.2 16.8 21.0 14.9 14.7 18.4 44.5 37.6 30.4 37.6 30.4 37.6	253 274 232 255 066 076 051 051 060 130 141 124 154	897 871 780 964 493 418 552 540 483 601 554 556 630	10 60 10 70 8.97 11.10 55 8 51.7 8.34 3.42 3.05 3.83 14 90 15 90 13 65 16 75	0.63 0.68 0.55 0.75 2.50 0.12 0.02 0.12 0.00 1.84 2.18	36 32 30 39 17 20 160 20 39 147 131 163 218 218 218 225	2120 2016 1925 2350 413 376 460 53 2 48 1 55 3 672 652 617 755	290 290 330 1300 1120 1130 970 1210 1040 1040 1040 1040 1040 1040 104

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

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ALS	s	Camas (Sev	11que Plata no Mozarabe	-	15 alsglobal.c	com		GOL C/J MAE	DER ASO OSE ABAS DRID MAC ect: 1151	0RID 280	LOBAL IB	ERICA 5.L	U Fi	Pi inalized (	# Pages: us Appen Date: 18-	age: 2 - C 4 (A - D) dix Pages FEB-2011 t: GOLICA 34
Sample Description	Method Analyte Units LOR	ME-MSG1 Pb ppm 0,5	ME-MS61 Rb ppm 0.1	ME-M\$61 Re ppm 0.002	ME-M561 5 % 0.01	ME-M561 Sb ppm 0.05	МЕ-MS61 Sc ppm 0.1	ME-MSG1 Se ppm 1	ME-MS61 Sn ppm 0.2	ME-MS61 Sr ppm 0.2	ME-M561 Ta ppm 0.05	ME-M561 Te ppm 0.05	ME-M561 Th ppm 0.2	ME-XISG1 Tì % 0.005	ME-MS51 Ti ppm 0.02	ME-MS61 U ppm 0.1
							STAN	DARDS								
CEM008-S Target Range - Lower Upper CEOMS-03 Target Range - Lower Upper MRCeo08 Target Range - Lower Upper OXD73 Target Range - Lower Upper Ox164 Ox164 Target Range - Lower Upper SE44 Target Range - Lower Upper SE44 Target Range - Lower Upper SE44 Target Range - Lower	Round Bound Round Round Round Round Round Bound Bound Round Round Bound Round Round Round	1925 1865 1265 2110 380 340 416 7.7 5.7 8.0 1030 1040 965 1180	70.5 71.0 60.5 74.1 123.0 115.0 141.0 63.1 66.7 68.3 196.0 217 767.0 223	0 006 0 005 0 005 0 007 < 0 002 < 0 004 < 0 005 < 0 004 <	3 89 3 71 1 33 4 10 0 17 0 14 0 19 0 04 0 03 1 05 0 31 0 31 0 37 0 37 0 35 0 35	28.6 32.9 26.3 9.4 0.25 0.17 0.35 15.95 21.5 4.36 5.12 4.06 5.64	14 5 13.3 110 14.8 8 1 7.2 8 0 15 2 12 4 15 4 15 4 15 4 12 2 12 4 15 4 15 4 13 6 13.6	6 8 9 3 4 3 2 4 3 2 4 3 2 2 1 2 2	60 65 67 40 37 50 25 21 38 45 3,8 47	92.3 92.3 817 1025 427 306 448 179.5 157.5 157.5 152.5 304 320 272 332	0.974 0.74 0.71 1.33 1.21 1.21 1.21 1.21 1.21 1.21 1.2	2 80 3 57 3 01 3 79 0 10 4 0 05 0 10 0 10 0 10 0 10 0 10 0 10 0 10	7.1 6.1 5.0 7.5 30.9 36.0 44.4 7.0 8.0 19.5 21.1 10.2 23.9	0.250 0.244 0.213 0.273 0.371 0.313 0.313 0.313 0.313 0.313 0.478 0.409 0.504 0.568	1 01 0 99 0 82 1 15 0 71 0 65 1 05 1 03 1 090 1 35 1 03 1 00 6 87 1 23	1.9 15 14 19 52 44 56 4.1 31 4.5 57 57 56 7.0



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#### Project: 11511130563 Г

Flinocale					Project: 11:	/11130303	
Minerals					Q	C CERTIFICATE OF ANALYSIS	SV11014284
Method Analyte Sample Description LOR	V ppm	E-MS61 ME-M W Y ppm ppr 0,1 0,1	Zn n ppm	ME-MS61 Zr ppm 0.5			
					STANDARDS		
GBM3961c GBM3961c Target Range - Lower Bound Upper Bound CEM908-5 Target Range - Lower Bound Upper Bound GEOM5-03 Target Range - Lower Bound WRGeo08 MRGeo08 MRGeo08 Target Range - Lower Bound Upper Bound OxID73 Target Range - Lower Bound Upper Bound OxIG4 OxIG4 Target Range - Lower Bound Upper Bound SE44 Target Range - Lower Bound	104 97 120 60 51 64 116 104 130 108 106 99	18.9 11. 19.7 11, 14.6 10, 20.0 13, 55 54, 4.0 47, 57, 57, 23.6 24, 12.1 27, 52 24, 4.3 24, 5.1 27, 5.2 24, 4.3 24, 6.1 20, 5.1 20, 5.2 20,	1 7060 7 5280 3 7880 5 246 2 207 9 257 4 50 8 40 4 54 0 805 7 818 3 712	62 1 63.6 52.6 72.4 165.0 148.0 201 60.3 44.0 60.0 104.5 120.0 92.2 126.0			

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

ALS		Camas (See			15 alsglobal.c	:om		GOL C/JI MAD	DER ASO DSE ABAS DRID MAD	0RID 2800	LOBAL IB )3	ERICA S.L	U Fi	Pli nalized [	# Pages: us Appen )ate: 18-	age: 3 – A 4 (A – D) dix Pages FEB-2011 t: GOLICA
Sample Description	Method Analyte Units LOR	Au-AA23 Au ppm 0.005	Au-AA25 Au ppm 0.01	ME-MS61 Ag ppm 0.01	ME-MS61 Al % 0,01	ME-MS61 As ppm 0,2	ME-MSG1 Ba ppm 10	ME-MS61 Be ppm 0:05	ME-MS61 Bi ppm 0.01	ME-MS61 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-M561 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-A1561 Cs ppm 0.05	ME-MS61 Cu ppm 0.2
BLANK Target Range - Lowe Uppe BLANK BLANK BLANK BLANK Target Range - Lowe	r Bound r Gound r Bound	0.005 <0.005 <0.005 0.010	<0.01 -92.01 -0.02	<0.01 <0.01 <0.01 0.02 0.41 0.36	<0.01 <0.01 <0.01 <0.01 0.02 8.92 8.75	<0.2 <0.2 <0.2 <0.2 <0.2 <0.2 0.4 1.7 1.9	10 <10 <10 <10 20	<0.05 <0.05 <0.05 <0.05 <0.05 <0.05 0.10 ICATES 1.29 1.35	0.01 <0.01 <0.01 <0.01 0.02	<0.01 <0.01 <0.01 <0.01 0.02 3.30 3.25	<0.02 <0.02 <0.02 <0.02 <0.02 0.04	0.02 <0.01 0.02 <0.01 0.02 41.0 38.7	<0.1 <0.1 <0.1 0.1 0.2 13.9 13.5	<1 1 *1 2 21 21	<0.05 <0.05 <0.05 <0.06 0,10 4.50 4.31	<0.2 <0.2 0.4 40/2 0.4 808 786
ORIGINAL DUP Target Range - Lowe Uppe ORIGINAL DUP Target Range - Lowe	r Bound r Bound r Bound		0.18 0.18 0.16 0.20	0.38 0.41 0.67 0.28 0.44 0.51		1.5 2.1 1.7 <0.2 0.7 1.2	810 960 280 270 240 319	1.20 1.44 2.72 2.74 2.54 2.54 2.92	0.11 0.15 1.06 0.54 0.75 0.85	3.10 3.45 0.95 0.94 0.89 1.00	0.07 0.12 0.07 0.07 0.08 0.05 0.19	38 3 42 3 63 2 62 6 76 7 87 1	12.0 14.5 4.0 4.0 3.7 4.3	19 23 4 4 3 5	4,13 4,86 7,54 7,12 6,91 7,75	757 837 55 48 47 56
ORIGINAL DUP Target Range - Lowe Uppe	r Bound Bound		20.1 20.1 19.10 21.1													



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minera									QC	CERTI	ICATE	OF AN	ALYSIS	SV1:	101428	4
Sample Description	Method Analyte Units LOR	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	NE-M561 Ge ppm 0.05	ME-M\$61 HF ppm 0.1	ME-M561 în ppm 0.005	ME-MS61 K % 0.01	ME-MS61 La ppm 0.5	ME-MS61 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-M561 Ma ppm 5	ME-MS51 Mo ppm 0.05	ME-MS61 Na % 0.01	ME-MS51 Nb ррт 0.1	ME-MSG1 Ni ppm 0.2	ME-M561 P ppm 10
							BL	<b>NKS</b>								
BLANK Target Range - Lowe Uppe BLANK	r Bound 🗎	<0.01	<0.05	<b>4</b> 1.05	<0.1	<0 005	<0.01	<0.5	<0.2	<0.01	<5	<0.05	<0.01	<0.1	0.2	<10
BLANK BLANK		<0.01 <0.01	0.05 <0.05	<0.05 <0.05	<0.1 <0.1	<0.005 <0.005	<0 01 <0.01	<0.5 <0.5	<0.2 <0,2	<0.01 <0.01	<5 <5	<0.05 <0.05	<0.01 <0.01	<0.1 <0.1	0.2 <0,2	<10 <10
Target Range - Lowe	r Bound r Bound	<0.01 0.02	<0.05 0.10	<0.05 0.10	<0.1 0.2	<0.005	<0.01 0.02	<0.5 1.0	<0.2 0.4	<0.01 0.02	<5 10	<0.05 0.10	<0.01 0.02	<0.1 0.2	<0.2 0.4	<10 20
							DUPL	ICATES								
ORIGINAL DUP Target Range – Lowe Uppe	r Bound r Bound	4.07 4.00 3.82 4.25	27.0 26.0 25.1 27.9	0.11 0.22 0.11 0.22	06 05 05 07	0.063 0.062 0.054 0.071	1.61 1.58 1.51 1.68	178 171 161 188	11.2 11.7 10.7 12.2	1,31 1,28 1,22 1,37	677 667 633 711	5 68 5 25 6 14 5 79	3.44 3.37 3.22 3.59	74 73 69 78	24 9 25 4 23 7 26 6	940 940 880 1000
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound															
ORIGINAL DUP Target Range – Lowe Uppe	r Bound r Bound	1.81 1.79 1.70 1.90	15.65 15.95 15.45 17.15	0.10 0.13 0.06 0.17	3.8 3.8 3.5 4.1	0 060 0 055 0 050 0 065	4.16 4.12 3.92 4.36	41.1 41.9 36.9 44.1	8.8 8.8 8.2 8.4	0.44 0.44 0.41 0.47	554 553 521 586	0.49 0.54 0.44 0.59	0.03 0.03 0.02 0.04	13,7 13,1 12,6 14,2	41 40 36 45	410 410 380 440
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound															

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ALS		Camas (Sev	irque Plata 10 Mozarabe	e naves 13 y 91 www	15 .alsglobal.c	om		GOL C/ JI MAE	DER ASO OSE ABAS ORID MAD	CIATES G SCAL 45, DRID 2800 1130563	LOBAL IB 03	BERICA S ERICA S.I	U Fi	Plu nalized C	# Pages: us Appen )ate: 18-1 Accoun	age: 3 - C 4 (A - D) dix Pages FEB-2011 t: GOLICA
									QC	CERTIF	ICATE	OF AN	ALYSIS	SV11	101428	54
Sample Description	Method Analyte Units LOR	NE-MS61 Pb ppm 0.5	ME-MSG1 Rb ppm Q,1	ME-MS61 Re ppm 0,002	ME-MS61 S % 0.01	ME-MS61 Sb ppm 0.05	ME-M561 Sc ppm Q.1	ME-M561 Se ppm 1	ME-M561 5n ppm 0.2	ME-MS61 5r ppm 0.2	ME-MS61 Ta ppm 0.05	ME-M\$61 Te ppm 0.05	ME-MS61 Th ppm 0.2	ME-MS61 Ti % 0.00S	ME-M561 TI ppm 0.02	ME-MSG1 U ppm 0.1
							BL/	ANKS								
BLANK Target Range - Lowe Uppe BLANK BLANK BLANK Target Range - Lowe	r Bound Ir Bound Ir Bound	0.7 <0.5 <0.5 5 50.8 1.0	0.1 0.1 <0.1 <0.1 0.2	<0.002 <0.002 <0.002 <0.002 <0.002 0.004	<0.01 <0.01 <0.01 =0.01 =0.01 0.02	<0.05 <0.05 <0.05 <0.05 <0.05 <0.05 0.10	0,2	1 <1 <1 5 ICATES	<0.2 <0.2 <0.2 <0.2 =0.2 =0.2 0.4	<0.2 <0.2 0.2 <0.2 <0.2 0.4	<0.05 <0.05 <0.05 <0.05 <0.05 0.10	<0.05 <0.05 <0.05 <0.05 <0.05 <0.05 0.10	<0.2 <0.2 <0.2 <0.2 50.2 0.4	<0 005 <0.005 <0.005 <0.005 <0.005 0.010	<0.02 <0.02 <0.02 <0.02 <0.02 <0.02 0.04	<0.1 <0.1 <0.1 <0.1 <0.2
ORIGINAL		112	59.5	0.003	0 47	1 35	7.3	2	2.4	1045	0.40	0.30	2.5	0.557	0.53	11
DUP Target Range - Lowe Uppe	r Bound r Bound	11.0 10.0 12.2	56.0 54.8 60.7	0.003 <0.002 0.004	0.45 0.43 0.49	1 33 1 19 1 49	7.4 6.9 7.6	2 *1 3	2.3 2.0 2.7	1025 983 1085	0.40 0.33 0.47	0.28 0.23 0.35	2.5 2.2 2.8	0.548 0.520 0.585	0.54 0.47 0.60	1.0 0.9 1.2
ORICINAL DUP Target Range - Lowe Uppe	r Bound r Bound															
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound	45.8 47.7 43.9 49.6	243 250 234 269	<0.002 0.002 40.002 0.004	0.01 0.01 40.01 0.02	1 10 1 01 0 93 1 18	8.7 8.1 7.9 8.9	<1 <1 ×1 2	2.1 2.0 1.7 2.4	14.1 13.5 12.9 14.7	1.05 1.02 0.93 1.14	<0.05 <0.05 <0.05 <0.05 0.10	8.2 8.3 7.6 8.9	0.215 0.212 0.198 0.229		23 23 21 25
ORIGINAL DUP Talget Range – Lowe Uppe	C Bound T Bound							*****		-						



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#### Project: 11511130563 Г

Minerals													
									QC CERTIFIC	ATE OF A	NALYSIS	SV1101428	34
Met Ana Sample Description LC	lyte its	ME-MS61 V ppm 1	ME-M\$61 W ppm 0.1	ME-M\$61 Y ppm 0.1	ME-MS61 Zn ppm Z	ME-M561 Zr ppm 0,\$							
							BLANKS	s					
BLANK BLANK Target Range – Lower Bour Upper Boun BLANK BLANK BLANK BLANK Target Range – Lower Bour Dupper Boun Upper Boun Upper Boun	d d d d d d d d d d d d d d d d d d d	বা বা বা বা বা হা	<0.1 <0.1 <0.1 <0.1 <0.1 0.2	<0.1 <0.1 <0.1 <0.1 <0.1 0.2	<2 <2 <2 <2 <2 <4	<0.5 <0.5 <0.5 <0.5 <0.5 <0.5 1.0							
							DUPLICAT	TES					
GRIGINAL DUP Target Range -: Lower Bour Upper Boun		129 130 122 137	1.8 1.7 1.5 2.0	93 90 86 97	70 68 64 74	14.0 14.0 12.8 15.2							
ORIGINAL DUP Target Range – Lower Boun Upper Boun													
ORIGINAL DUP Target Range – Lower Boun Upper Boun		39 39 30 42	4.8 4.6 4.2 5.2	13.7 13.5 12.8 14.4	47 46 42 51	110.0 110.0 104.0 116.0							
ORIGINAL DUP Target Range – Lower Bour Upper Boun	d ()												

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ALS) Minera	IS	Camas (Sevi Phone: +34	rque Plata 10 Mozarabe 11a) 41900 955 981 41		alsglobal.c			GOL C/ JI MAE Proj	DER ASO OSE ABAS ORID MAE ect: 1151 QC	0RID 2800 1130563 CERTIF	IOBAL 18	OF AN	U Fi ALYSIS	Pic nalized D SV11	# Pages: 15 Appen Date: 18-1 Accoun	
Sample Description	Method Analyte Units LOR	Au-AA23 Au ppm 0.00S	Au-AA25 Au ppm 0.01	ME-MS61 Ag ppm 0.01	ME-M\$61 AI % 0.01	ME-M561 As ppm 0.2	ME-MS61 Ba ppm 10	ME-MS61 Be gpm 0.05	ME-MS61 Bi ppm 0.01	ME-M561 Ca % 0.01	ME-MS61 Cd ppm 0.02	ME-M561 Ce ppm 0.01	ME-MS61 Co ppm 0.1	ME-MS61 Cr ppm 1	ME-MS61 Cs ppm 0.05	ME-MSG1 Cu ppm 0.2
							DUPL	ICATES								
ORIGINAL DUP Target Range - Lowe Uppe	r Bound Bound			0 24 0 26 0 23 0 27	2.47 2.55 2.37 2.65	96.0 98,0 92.0 102.0	420 450 300 480	1.01 1.09 0.95 1.15	0.10 0.11 0.09 0.12	21.2 21.9 20.5 22.6	0.09 0,12 0.08 0.13	39.1 42.5 38.8 42.9	3.8 4.1 3.7 4.2	16 12 12 15	5.43 5.56 5.17 5.82	6.3 7.6 6.4 7.5
ORIGINAL DUP Target Range - Lowe Uppe	Bound Bound	0.239 0.238 0.222 0.255														
ORIGINAL DUP Target Range – Lowe Upper	Round Bound	3.97 3.67 3.62 4.02														
GA-A-02 DUP Target Range - Lowe Upper	Bound Bound	0.052 0.057 0.047 0.062														



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(ALS)	)							Proj	ect: 1151	1130563					, icebail	
Minera	15								QC	CERTI	ICATE	OF AN	ALYSIS	SV1	L01428	4
Sample Description	Method Analyte Ualts LOR	ME-MS61 Fe % 0.01	ME-MS61 Ga ppm 0.05	ME-MS61 Ge ppm 0.05	ME-MS61 Hf ppm 0.1	ME-MS61 In ppm 0.005	ME-M561 K % 0.01	ME-81561 La ppm 0,5	ME-M561 Li ppm 0.2	ME-MS61 Mg % 0.01	ME-MS61 Mn ppm S	ME-MSG1 Ma ppm 0.05	ME-MS61 Na % 0.01	ME-MS61 Nb ppm 0,1	ME-34561 Ni ppm 0.2	ME-MS61 P ppm 10
							DUPL	ICATES								
ORIGINAL DUP Tatget Range – Lowe Uppe	r Bound r Bound	1.51 1.55 1.44 1.62	8 08 8 5 1 7 83 8 76	<0.05 <0.05 <0.05 0.10	10 1.1 0.9 1.2	0 020 0 021 0 014 0 027	1.29 1.32 1.23 1.38	17.5 18.9 16.8 19.6	52.7 56.4 51.6 57.5	2.23 2.28 2.13 2.38	751 769 717 803	25.7 27.4 25.2 27.9	0 04 0.04 0.03 0.05	7.2 75 6.9 7.8	6.6 6.3 5.9 7.0	180 190 170 200
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound															
ORIGINAL DUP Taiget Range - Lowe Uppe	r Bound r Bound															
GA-A-02 DUP Taiget Range - Lowe Uppe	r Bound r Bound															

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ALS		Camas (Sev	uque Plata	e naves 13 y 91 www	15 ,aisglobal.c	:om		GOL C/J MAD	DER ASO DSE ABAS RID MAC	DRID 2800 1130563	LOBAL IB )3	ERICA S.L	U	Pli nalized D	# Pages: us Appen Date: 18-1	age: 4 - C 4 (A - D) dix Pages FEB-2011 t: GOLICA
Sample Description	Method Analyte Units LOR	ME-MS61 Pb ppm 0 5	ME-M561 Rb ppm 0,1	ME-MS61 Re ppm 0.002	ME-MS61 5 % 0,01	ME-M561 56 ppm 0,05	ME-MS61 Sc ppm 0.1	ME-M561 Se ppm 1	ME-MS61 Sn ppm 0,2	ME-MS61 Sr ppm 0,2	ME-MS61 Ta ppm 0,05	ME-M561 Te ppm 0,0\$	ME-MS61 Th ppm 0.2	ME-MS61 T) % 0.005	ME-MS61 1) ppm 0.02	ME-MS61 U ppm 0.1
							DUPL	ICATES								
ORIGINAL DUP Target Range – Low Uppe	er Bound er Bound	75.8 69.1 86.3 76.6	69.4 71.2 86.7 73.9	0.002 0.002 <0.002 0.004	1 25 1 29 1 20 1 34	5.88 6.19 5.63 6.54	30 31 28 33	2 2 41 3	0.9 0.9 0.7 1.1	426 442 412 456	0.53 0.55 0.46 0.62	<0.05 <0.05 <0.05 0.10	5,7 5,9 5,3 6,3	0.072 0.073 0.064 0.081	0.62 0.64 0.56 0.70	3.0 3.1 2.8 3.3
ORIGINAL DUP Target Range - Lowi Uppi	er Bound er Bound															
ORIGINAL DUP Target Range Low Uppe	er Bound sr Bound															
GA-A-02 DUP Target Range – Lowe Uppe	er Bound ir Bound															



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## Project: 11511130563

unera	IS								QC CERTI	FICATE OF	ANALYSIS	SV110142	84
Sample Description	Method Analyte Units LOR	МЕ-М56‡ V ppm 1	ME-MS61 W ppm 0.1	ME-MSG1 Y ppm 0,1	ME-MS6I Zn ppm 2	ME-M561 Zr ppm 0.5							
							DUPLICA	TES					
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound	17 17 15 19	1.1 1.1 0.9 1.3	89 9.3 8.5 9.7	53 57 50 80	38.7 39.1 36.5 41.3							
ORIGINAL, DUP Target Range – Lowe Uppe	r Bound r Bound												
ORIGINAL DUP Target Range - Lowe Uppe	r Bound r Bound						· · · · ·						
GA-A-02 DUP Target Range - Lowe Uppe	r Bound r Bound												
	-												

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Project: 11511130563
QC CERTIFICATE OF ANALYSIS SV11014284

CERTIFICATE COMMENTS
's may not be totally soluble in this method.



# **APPENDIX C**

Certificate of Cu-Au-Ag Standard S108004X





## Certificate of Analysis

## Shea Clark Smith

Minerals Exploration & Environmental Geochemistry P.O. Box 18325 Reno, Nevada, U.S.A. 89511-0325 Tel: 775-849-2235 Fax: 775-849-2335 Email: SheaClarkSmith@aol.com Website: SheaClarkSmith.com

## **GEOCHEMICAL REFERENCE STANDARD: S108004X**

MEAN GOLD = 0.544 95% CONFIDENCE LIMITS = 0.401 to 0.688

## MEAN COPPER = 215 95% CONFIDENCE LIMITS = 177 to 253

MEAN SILVER = 0.06 95% CONFIDENCE LIMITS = <0.5

Prepared By: Shea Clark Smith / Minerals Exploration & Environmental Geochemistry Certified By: Shea Clark Smith, MSc. (Geochemistry)., P.G. Manufactured for: MEG LABS (Carson City, NV) Date of Certification: November 1, 2008

## **Origin of Reference Material:**

Geochemical Reference Standard S108004X was prepared from sulfide ore with natural concentrations of copper of about 0.5%. Source is sulfide rock samples from a typical Arizona porphyry copper mine.

## **Method of Preparation:**

The composites were dried at 100C for 24 hours, jaw crushed, and roll crushed to -420 um. Barren quartz sand was added to dilute original copper concentrations. Gold chloride solution containing a known amount of gold was added to a slurry of the pulverized rock. The lot was milled in a ceramic-lined ball mill for 6 days. Sizing tests of the final product show >95% pass -105 um (-140 mesh). Six samples of the final product were submitted to 7 laboratories for round robin assaying by 30g/FA/AAS for gold, and 4-acid/ ICP/OES for Cu and Ag. Original gold, copper, and silver data were reported in ppm. The standard is packaged in 50 g envelopes, each envelope with a removable sticky-label.

## Summarized Assay Results: PROJECT: S108004X GOLD-COPPER STANDARD (ppm)

GOLD (ppm)			
DATA POINTS (ALL DATA)			45
MEAN (ALL DATA)			0.544
STANDARD DEVIATION (ALL	DATA)		0.072
% RSD			13.19
RANGE OF VALUES - HIGH			0.695
RANGE OF VALUES - LOW			0.451
95% CONFIDENCE LIMITS	0.401	to	0.688
COPPER (ppm)			
DATA POINTS (LAB DATA)			42
MEAN (LABS)			215
STANDARD DEVIATION (LAB	<b>S</b> )		19
CV (% RSD)			8.86
RANGE OF VALUES - HIGH			239
RANGE OF VALUES - LOW			183
95% CONFIDENCE LIMITS	177	to	253

SILVER (ppm)	
DATA POINTS (LAB DATA)	10
MEAN (LABS)	0.06
STANDARD DEVIATION (LABS)	0.09
CV (% RSD)	153.46
RANGE OF VALUES - HIGH	0.27
RANGE OF VALUES - LOW	0.00
95% CONFIDENCE LIMITS	<0.5

Trace Meta	al Data (Not	t Certified):	ALS Chem	nex ME-MS	61 (one sam	ple)			
As	Ba	Bi	Ga	Mn	Mo	Pb	Sb	Sr	
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
< 50	120	20	< 50	10	<10	<20	< 50	10	

#### **Statistical Procedures:**

Acceptable assay limits for Au, Cu, and Ag are based on the results of 6 samples shipped to each of 7 laboratories located in North America. The samples were submitted with other MEG standards in randomized order, so that as much as possible, real operating conditions were obtained from the participating laboratories. All of the data were used to determine an acceptable range, based on the mean and standard deviation of the "Lab Average Data". The acceptable reporting range is the "95% Confidence Limit", which is the mean +/- 2 standard deviations. Other statistics are provided to help the user assign viable acceptance boundries.

**Zn** ppm <20

#### Instructions and Recommendations for Use:

Submit the entire contents of one 50 g envelope in random locations in the submittal, approximately every 20-30 samples. Use of blanks (samples with "below detection" concentration of analyte) are also recommended, randomly placed every 30-40 samples. The analytical request should be the same as that used for the round robin assays that generated this certificate.

## Raw Data Used to Calculate "True" Gold Value:(ordered randomly)

Sample	Lab 1 Au ppm	Lab 2 Au ppm	Lab 3 Au ppm	Lab 4 Au ppm	Lab 5 Au ppm	Lab 6 Au ppm	Lab 7 Au ppm
1	0.57	0.430	0.47	0.6	0.525	0.596	0.68
2	0.56	0.446	0.47	0.52	0.525	0.55	0.72
3	0.56	0.478	0.49	0.55	0.514	0.526	0.70
4	0.53	0.468	0.49	0.53	0.555	0.536	0.69
5	0.56	0.424	0.48	0.62	0.569	0.543	0.67
6	0.55	0.458	0.47	0.5	0.603	0.487	0.71
7					0.463		
8					0.555		

## Raw Data Used to Calculate "True" Copper Value: (ordered randomly)

Sample	Lab 1 Cu ppm	Lab 2 Cu ppm	Lab 3 Cu ppm	Lab 4 Cu ppm	Lab 5 Cu ppm	Lab 6 Cu ppm	Lab 7 Cu ppm
1	230	176	232	226	200	209	208
2	240	170	220	234	200	212	206
3	240	184	247	242	200	217	200
4	220	198	236	248	200	223	208
5	220	175	233	244	200	217	202
6	230	192	238	242		216	204
7	220						

## Raw Data Used to Calculate "True" Silver Value:(ordered randomly)

Sample	Lab 1 Ag ppm	Lab 2 Ag ppm	Lab 3 Ag ppm	Lab 4 Ag ppm	Lab 5 Ag ppm	Lab 6 Ag ppm	Lab 7 Ag ppm
1	<2	< 3	<0.1	< 0.4	<0.2	0.3	0.2
2	<2	< 3	<0.1	< 0.4	<0.2	0.3	0.2
3	<2	< 3	<0.1	< 0.4	<0.2	0.3	0.2
4	<2	< 3	<0.1	< 0.4	<0.2	<0.2	0.2
5	<2	< 3	<0.1	< 0.4	0.2	0.4	<0.2
6	<2	< 3	<0.1	<0.4	<0.2	0.3	<0.2
7	<2						

## Major Constituents as Oxides (Not Certified)

Average of 1 sample									
Raw Data:	Al%	Ca%	Fe%	K%	Mg%	Na%	S%	Ti%	Si%
AR/ICP/MS Data (1)	0.76	0.05	0.84	0.09	0.06	0.03	0.1	0.04	
Conversion Factor	1.8899	1.3992	1.4297	1.2046	1.6579	1.348	2.4953	1.6681	2.1392
	AlO2	CaO	Fe2O3	K2O	MgO	Na2O	SO3	TiO2	SiO2
					0				estimated
% Oxide:	1.44	0.07	1.20	0.11	0.10	0.04	0.25	0.07	96.73

#### **Participating Laboratories:**

ACME Analytical Laboratories (Vancouver, BC) Activation Laboratories (Ancaster, ON) ALS Chemex (Reno, NV) American Assay Laboratories (Sparks, NV) Inspectorate America Inc. (Sparks, NV) International Plasma Labs (Richmond, BC) Eco-Tech Laboratories (Kamloops, BC) Florin Analytical Services (Reno, NV)

## Legal Notice:

This certificate and the referenced material have been prepared with due care and attention. However, Minerals Exploration & Environmental Geochemistry (MEG Labs), and Shea Clark Smith, MSc, P.G., accept no liability for any decisions or actions taken following the use of this geochemical reference material.

## Safety Notice:

A Material Safety Data Sheet (MSDS) is not required for this material. This material will not release or otherwise result in exposure to a hazaardous chemical, under normal conditions of use. Use regular precautions as for any work with fine powder material.

## Certified By:

Shea Clark Smith, MSc., P.G.

## Certificate of Analysis

## Shea Clark Smith

Minerals Exploration & Environmental Geochemistry P.O. Box 18325 Reno, Nevada, U.S.A. 89511-0325 Tel: 775-849-2235 Fax: 775-849-2335 Email: SheaClarkSmith@aol.com Website: SheaClarkSmith.com

GEOCHEMICAL REFERENCE STANDARD: S108008X (BLANK)

MEAN GOLD = <0.005 95% CONFIDENCE LIMITS = < 0.005

Prepared By: Shea Clark Smith / Minerals Exploration & Environmental Geochemistry Certified By: Shea Clark Smith, MSc. (Geochemistry)., P.G. Manufactured for: MEG LABS (Carson City, NV) Date of Certification: November 1, 2008

## **Origin of Reference Material:**

Geochemical Reference Standard S108008X was prepared from barren quartz sand.

#### **Method of Preparation:**

220 lbs of 70 mesh barren quartz sand was milled in a ceramic-lined ball mill for 2 days. Sizing tests of the final product show >95% pass -105 um (-140 mesh). Six samples of the final product were submitted to one laboratory for round robin assaying by 30g/FA/AAS for gold, and 4-acid/ ICP/OES. Original gold and multi-element data were reported in ppm.

The standard is packaged in 50 g envelopes, each envelope with a removable sticky-label.

### Summarized Assay Results: PROJECT: S108008X BLANK STANDARD (ppm)

GOLD (ppm)	
DATA POINTS (ALL DATA)	6
MEAN (ALL DATA)	<0.005
RANGE OF VALUES - HIGH	0.004
RANGE OF VALUES - LOW	< 0.003
95% CONFIDENCE LIMITS	<0.005

#### Trace Metal Data (Not Certified): ACME Analytical Labs (one sample):

Ag	As	Bi	Cu	Mn	Мо	Pb	Sb	Sr	Zn
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
<2	<0.02	<0.01	<0.001	<0.01	<0.001	<0.02	<0.01	<0.01	<0.01

## **Statistical Procedures:**

Acceptable assay limits are based on the results of 6 samples shipped to one laboratory located in North America. The samples were submitted with other MEG standards in randomized order, so that as much as possible, real operating conditions were obtained from the participating laboratories. All of the data were used to determine an acceptable range, based on the mean and standard deviation of the "Lab Average Data". The acceptable reporting range is the "95% Confidence Limit", which is the mean +/- 2 standard deviations. Other statistics are provided to help the user assign viable acceptance boundries.

## Instructions and Recommendations for Use:

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## Raw Data Used to Calculate "True" Gold Value:(ordered randomly)

Sample	Lab 1 Au ppm	Lab 2 Au ppm	Lab 3 Au ppm	Lab 4 Au ppm	Lab 5 Au ppm	Lab 6 Au ppm	Lab 7 Au ppm
1	0.004	<0.01	< 3	<0.005	0.01	< 0.01	<0.03
2	0.004	0.04	< 3	<0.005	0.01	< 0.01	< 0.03
3	0.004	<0.01	< 3	<0.005	0.48	< 0.01	<0.03
4	0.004	<0.01	< 3	<0.005	0.01	< 0.01	<0.03
5	-0.003	<0.01	< 3	<0.005	0.01	< 0.01	<0.03
6	0.004	<0.01	< 3	<0.005	0.01	< 0.01	

## Major Constituents as Oxides (Not Certified)

% Oxide:	0.60	0.01	0.09	0.06	0.03	0.01	0.00	0.00	estimated 99.19
	AlO2	CaO	Fe2O3	K2O	MgO	Na2O	<b>SO3</b>	TiO2	SiO2
Conversion Factor	1.8899	1.3992	1.4297	1.2046	1.6579	1.348	2.4953	1.6681	2.1392
AR/ICP/MS Data (1)	0.32	0.01	0.06	0.05	0.02	0.01	0	0	
Raw Data:	Al%	Ca%	Fe%	K%	Mg%	Na%	<b>S%</b>	Ti%	Si%
Average of 1 sample									

#### **Participating Laboratories:**

ACME Analytical Laboratories (Vancouver, BC) Activation Laboratories (Ancaster, ON) American Assay Laboratories (Sparks, NV) Inspectorate America Inc. (Sparks, NV) International Plasma Labs (Richmond, BC) Eco-Tech Laboratories (Kamloops, BC) Florin Analytical Services (Reno, NV)

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Certified By:

Shea Clark Smith, MSc., P.G.

At Golder Associates we strive to be the most respected global company providing consulting, design, and construction services in earth, environment, and related areas of energy. Employee owned since our formation in 1960, our focus, unique culture and operating environment offer opportunities and the freedom to excel, which attracts the leading specialists in our fields. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees who operate from offices located throughout Africa, Asia, Australasia, Europe, North America, and South America.

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