CHINA GOLD INTERNATIONAL RESOURCES CORP. LTD.

中國黃金國際資源有限公司

（根據加拿大英屬哥倫比亞法例成立的有限責任公司）
（香港股份代號：2099）
(多倫多股份代號：CGG)

海外監管公告

經修訂的甲瑪銅多金屬矿項目的資源更新報告

中國黃金國際資源有限公司（**"本公司"**）於溫哥華時間2012年3月31日（即香港時間2012年4月1日）向加拿大 SEDAR (www.sedar.com) 遞交了關於本公司位於中華人民共和國西藏自治區的甲瑪銅多金屬矿項目（"甲瑪項目"）日期為2012年3月16日的經修訂的資源更新報告（**"修訂報告"**）。此修訂報告取代本公司於2011年10月10日在香港發佈的日期為2011年10月6日的關於甲瑪項目的報告。

詳細內容請參閱附件內的公告。

承董事會命
中國黃金國際資源有限公司
主席
孫兆學先生

香港，2012 年 4 月 1 日

截至本公佈日期，執行董事為孫兆學先生、宋鑫先生、吳占鳴先生及江向東先生；非執行董事為劉冰先生；及獨立非執行董事為赫英斌先生、陳雲飛先生、Gregory Clifton Hall 先生及 John King Burns 先生。

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BEHRE DOLBEAR

founded 1911 MINERALS INDUSTRY ADVISORS

CHINA GOLD INTERNATIONAL RESOURCES CORPORATION LIMITED

RESOURCE UPDATE REPORT ON THE JIAMA COPPER-POLYMETALLIC PROJECT IN METRORKONGKA COUNTY, TIBET AUTONOMOUS REGION THE PEOPLE'S REPUBLIC OF CHINA

LONGITUDES 91°43'06"E - 91°50'00"E
LATITUDES 29°37'49"N - 29°43'53"N

(BEHRE DOLBEAR PROJECT 11-344)

16 MARCH 2012

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1.0 SUMMARY

1.1 INTRODUCTION

This independent resource update report (Report) is prepared for China Gold International Resources Corporation Limited ("China Gold International" or "Company"), a Canadian company whose shares are dually listed on the Toronto Stock Exchange (TSX) and on the Stock Exchange of Hong Kong Limited (SEHK) to meet the filling requirements under Canadian and Hong Kong securities laws. China National Gold Group Hong Kong Limited (China Gold Group HK) is the largest shareholder of China Gold International and currently owns approximately 39.3% of the listed shares. The Report covers the mineral resource estimate for the 2010 drilling program at the Jiama copper-polymetallic project (Jiama Project) in the Tibet Autonomous Region of the People's Republic of China ("PRC" or "China").

The Jiama Project is located within the well-known Gangdise Copper Metallogeny Belt in Central Tibet, China, around 60 kilometers (km) east of Lhasa City along the Sichuan-Tibet Highway. The Jiama Project is owned and operated by Tibet Huatailong Mining Development Company Limited (Huatailong), which is wholly owned by China Gold International Resources Corporation Limited.

Jiama is a large, skarn-type mineralization dominated porphyry copper-polymetallic deposit complex with well-developed hornfels-type mineralization. The Phase I project, including two open pits and one processing plant, has been completed and started trial production in April 2010 and commercial production in September 2010. Up to May 31, 2011, about 1.3 million tonnes (Mt) of ore was mined and 1 Mt of ore has been processed. It has produced around 26,000 tonnes of concentrate that contains about 5,422 tonnes (t) of copper metal, 128 kilograms (kg) of gold, and 13,406 kg of silver.

A 76 hole drilling program, totaling 45,537 meters (m) were completed in 2010, focused on the extensions to the north and west and center zone of the main skarn and hornfels ore bodies where previous drill holes have yielded significant inferred copper, molybdenum, gold, and silver resources, as seen in the Jiama Independent Technical Report (ITR) prepared by Behre Dolbear Asia in March 2010. The 2010 drill program successfully defined and upgraded the copper, molybdenum, gold, and silver resources. This new resource estimate report is prepared based on the 2010 drilling program.

Access to the Jiama Project site is excellent. Surface water is sufficient to support the planned production. A new 110 kilovolts (kV) power transmission line has been constructed to connect the Jiama Project site to the Central Tibet power grid. The Tibet government and China State Grid have been executing a power-supply development plan that includes building several new power generation plants and connecting the Central Tibet power grid to the national power grid in Qinghai Province, China, by the end of 2011. When this development plan is completed, the supply of electricity will be sufficient for Phase I mine production as well as for the Phase II expansion at Jiama. The Jiama Project has been designated as one of the most important projects in Tibet and has been granted priority in electricity supply by the Tibet government. However, power shortage for production, especially during the dry winter months, could be experienced. The power grid and the interconnect to the power grid was completed by the date of this report.

Huatailong holds two valid mining licenses and two valid surrounding exploration licenses totaling 145.4951 square kilometers (km^2) for the Jiama Project. The Jiama mining license was consolidated in 2007 from four mining licenses held by different operators in accordance with the Chinese government's consolidation policy for mining properties; the Niumatang mining license adjacent to the Jiama mining license was issued to Huatailong in July 2010. All currently defined mineral resources and ore reserves are covered by these mining and exploration licenses.

1.2 GEOLOGY

The Jiama copper-polymetallic deposit is a large skarn-type dominated porphyry mineralization system with well-developed hornfels-type and well-zoned mineralization and alteration characteristics. The skarn-type copper-polymetallic mineralized body is controlled mostly by an interlayer structural zone between the underlying Upper-Jurassic Duodigou Formation marbles and the overlying Lower-Cretaceous Linbuzong Formation hornfels. The lower-grade, copper-polymetallic mineralized hornfels-type and porphyry mineralized bodies have been encountered in the overlying Linbuzong Formation hornfels and underlying Duodigou Formation marbles. Both hornfels-type and porphyry-type deposits are potentially large; however, their distribution and economic meaning will need to be determined by further drilling and technical studies.

1.3 MINERALIZATION

The I1 mineralized body controlled by the interlayer structural zone is the primary skarn-type mineralized body in the deposit. This mineralized body is stratiform, tabular, or lenticular in shape. It strikes west-northwesterly and dips to the northeast. The upper part of the mineralized body has a steeper dip angle, averaging around 60°, whereas the lower portion of the mineralized body has a much flatter angle, averaging around 10°. The I1 mineralized body is approximately 3,000m long along strike and over 2,500m wide in the dip direction. Its thickness generally ranges from 10m to 50m, with a maximum intercepting thickness of 280.70m.

Seven other smaller mineralized bodies (I2 to I8) have also been modeled, but they are generally not well defined by the current drilling data in the Jiama Project deposit.

Copper is the most important economic metal in the deposit. Other metals with economic value include molybdenum, lead, gold, silver, and zinc. These metals are distributed differently in the deposits. In general, the copper grade is higher at the upper and northwest portions and lower in the northeast portion. Molybdenum seems negatively correlated with copper, with higher grades in the northeast portion of the deposit. Gold and silver have a distribution pattern similar to that of copper in the deposit. Lead and zinc are only enriched in the upper part at the southwest portion of the I1 mineralized body that was part of the historical mining targets. Contents of harmful elements, such as arsenic, antimony, and mercury, are generally low in the deposit and will not cause a problem for marketing concentrate produced from the deposit.

Metallic minerals in the deposit include chalcopyrite, bornite, molybdenite, tetrahedrite, galena, sphalerite, chalcocite, digenite, covellite, native copper, pyrite, marcasite, pyrrhotite, magnetite, limonite, malachite, and azurite. Nonmetallic minerals include garnet, diopside, wollastonite, tremolite, epidote, quartz, feldspar, biotite, sericite, muscovite, chlorite, calcite, anhydrite, fluorite, and kaolinite. The metallic minerals occur as disseminations, massive aggregates, or stockwork in the skarns.

Oxidation occurs only at the near surface portion of the deposit. The majority of the defined mineral resources are in the unoxidized sulfide zone.

Standalone quartz-diorite porphyrite gold mineralization has been found within the Jiama property area in the 2010 drilling program. It occurs in the quartz-diorite porphyrite dyke in the hole of ZK4504. There are two gold mineralization intercepts in this hole. The first mineralized body is 10m thick. The second mineralized body is 13.06m thick. The discovery of these gold bearing intercepts shows the potential for other gold mineralization within the Jiama Project mining district.

1.4 MINERAL RESOURCE

The current mineral resources of the Jiama Project were estimated by the Mineral Resource Research Institute of the Chinese Academy of Geological Sciences using the Micromine® computer mining software system and then reviewed by Dr. Robert Cameron of Behre Dolbear Asia, Inc. (Behre Dolbear). The Jiama drill hole database as of the end of December 2010 and a geological model developed by geologists at the Mineral Resource Research Institute (Resource Institute) of Chinese Academy of Geological Sciences was used for the work. The geological database consists of 300 diamond drill holes (DDH) including 22 historical DDH holes with a total drilled length of 120,196.92m and 10 historical surface trenches with a total channel-sampled length of 349m completed by Huatailong in 2008 to 2010.

There have been four separate models developed and reviewed for this report to estimate the skarn (shallow and steep models), hornfels, and porphyry-type mineral resources as of June 30, 2011. Behre Dolbear believes that the Jiama Project currently has approximately 64.6 Mt of Measured, 941.4 Mt of Indicated, and 170 Mt of Inferred in-situ Mineral Resources conforming to the definitions in the 2004 Edition of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2004 JORC Code). No Mineral Reserves conforming to JORC standards have been estimated in this report, as the Jiama Project is currently working on new mine plans, production schedules, and economic analysis to include the additional mineralization that will be defined in a subsequent technical report.

The JORC-compliant mineral resources for the Jiama Project are summarized in Table 1.1 and Table 1.2. These resource estimates are also compliant with the CIM standards and Canadian National Instrument (NI) 43-101. Cut off grades used for the resource summary are 0.3% copper or 0.03% molybdenum or 1% lead or 1% zinc.

TABLE 1.1
BEHRE DOLBEAR'S JORC MEASURED AND INDICATED MINERAL RESOURCES ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 2011
(CUT OFF GRADE FOR THE RESOURCE ESTIMATE IS 0.3% COPPER OR 0.03% MOLYBDENUM OR 1% LEAD OR 1% ZINC)

Model	Category	Tonnes (kt)	Average Grade					
			Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)
Shallow Skarn	Measured	60,579	0.82	0.057	0.33	15.47	0.04	0.03
	Indicated	210,722	0.75	0.061	0.29	14.07	0.03	0.02
	Meas+Ind	271,301	0.77	0.060	0.30	14.38	0.03	0.03
Steep Skarn	Measured	4,012	0.76	0.031	0.27	17.59	0.31	0.18
	Indicated	18,971	0.76	0.032	0.26	17.62	0.30	0.17
	Meas+Ind	22,983	0.76	0.032	0.26	17.61	0.30	0.17
Hornfels	Measured	0	0.00	0.000	0.00	0.00	0.00	0.00
	Indicated	655,089	0.27	0.037	0.03	1.04	0.01	0.01
	Meas+Ind	655,089	0.27	0.037	0.03	1.04	0.01	0.01
Porphyry	Measured	0	0.00	0.000	0.00	0.00	0.00	0.00
	Indicated	56,596	0.11	0.056	0.01	0.74	0.01	0.01
	Meas+Ind	56,596	0.11	0.056	0.01	0.74	0.01	0.01
All Models	**Total**	**1,005,969**	**0.41**	**0.044**	**0.10**	**5.00**	**0.02**	**0.02**

TABLE 1.2
BEHRE DOLBEAR'S JORC INFERRED MINERAL RESOURCE ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 2011
(CUT OFF GRADE FOR THE RESOURCE ESTIMATE IS 0.3% COPPER OR 0.03% MOLYBDENUM OR 1% LEAD OR 1% ZINC)

Model	Category	Tonnes (kt)	Average grade					
			Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)
Shallow Skarn	Inferred	94,325	0.61	0.056	0.23	11.66	0.02	0.02
Steep Skarn	Inferred	26,012	0.71	0.026	0.21	17.88	0.35	0.15
Hornfels	Inferred	39,460	0.23	0.039	0.03	1.02	0.01	0.01
Porphyry	Inferred	10,356	0.13	0.058	0.01	0.74	0.01	0.01
All Models	**Total**	**170,153**	**0.51**	**0.048**	**0.17**	**9.48**	**0.07**	**0.04**

Behre Dolbear would note that mineral resources do not have demonstrated economic viability. Behre Dolbear would also note that the inferred resource estimates have a great amount of uncertainty as to their existence and economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher resource category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or pre-feasibility studies, or economic studies except for preliminary assessment or a scoping study, as defined under the NI 43-101. Investors are cautioned not to assume that all of the inferred resources exist, or are economically or legally mineable.

Behre Dolbear's review indicates that drilling, sampling, sample preparation and analysis, and quality control have followed standard industry practice.

Behre Dolbear believes the mineral resource estimation database, procedures, and parameters applied by the Resource Institute to the Jiama Project to be generally reasonable and appropriate. The geological constraints were adequately considered in their estimation of the resource. Behre Dolbear believes that the data density requirements for 331 and 332 block definition used for the Chinese estimates are generally more aggressive than normally used for JORC Code resource estimation for similar deposits and has adjusted the estimates in Table 1.1 and Table 1.2 to account for this fact.

It is also Behre Dolbear's opinion that the Resource Institute has done good work in determining the global in-situ resource. Behre Dolbear feels the grade and tonnage estimates are a reasonable estimate of the overall resource.

1.5 CONCLUSIONS AND RECOMMENDATIONS

The Jiama Project deposit is a large copper-polymetallic porphyry deposit with well-defined mineral resources. In addition, there is a large defined inferred resource and hornfels-type copper-polymetallic resources, and the additional exploration potential, especially the porphyry mineralization potential. The currently defined mineral resources and ore reserves will likely be increased in the future by additional exploration work.

The following are Behre Dolbear's recommendations for future work at the Jiama Project:

- **Exploration** – Further in-fill drilling and step-out drilling are likely to significantly increase the currently defined mineral resources and ore reserves for the Jiama Project. Behre Dolbear, however, does not consider additional drilling a high priority task at the current stage of the Jiama Project development, as the defined ore reserves are sufficient to support the mining operation. If mining operations over the next several years prove to be successful, Huatailong should consider increasing the currently planned production capacity of the Jiama Project, and additional drilling to increase the mineral resources and ore reserves of the Jiama Project may become necessary. Cost for the additional drilling could range from less than RMB20 million (US$3.08 million) to more than RMB50 million (US$7.71 million).

- **Resource Estimation** – It is Behre Dolbear's opinion that the Resource Institute has done good work in determining the overall grade and tonnage of the mineral resource and feels the grade and tonnage estimates in the models are a reasonable estimate of the overall resource. Behre Dolbear would recommend some directional drilling with oriented core to augment the data for future feasibility level mine planning work (particularly the skarn models) to incorporate more directionally oriented grade structures and to reduce the overall localized averaging of the block grades.

- **Variography Review** – The estimation procedures and resource categorization used for the resource update were those recommended by Dr. Deng in 2010 and are adequate for the current resource update. After future in-fill and step-out drilling programs are completed, Behre Dolbear recommends that the variography should be reviewed again in detail and appropriate adjustments made to both the grade estimation parameters and to mineral resource categorization.

2.0 INTRODUCTION

China Gold International is a Canadian mining company whose shares are dually listed on the TSX with a trading symbol CGG and on the SEHK with a trading symbol 2099. China Gold Group HK currently owns approximately 39% of the listed shares of the Company and is the largest shareholder.

The Company proposes to prepare an Independent Resource Estimate Report for the 2010 drilling program to be filed on the TSX and on the SEHK under Canadian and Hong Kong securities laws.

The Jiama Project is in Phase 1 of production in Metrorkongka County, the Tibet Autonomous Region, China. The Jiama Project is currently owned and operated by Huatailong, which is wholly owned by the China Gold International Resources Corporation through its subsidiary company registered in the British Virgin Islands (BVI).

The Company engaged Behre Dolbear Asia, Inc., a wholly owned subsidiary of the Behre Dolbear Group Inc. (Behre Dolbear), as their independent technical advisor to undertake an independent technical review of the Jiama 2010 drilling program and to prepare an Independent Technical Review (ITR) in connection with the Company's filling on the SEHK and TSX pursuant to applicable securities reporting requirements.

This report has been prepared in accordance with the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (Listing Rules). Mineral resources and ore reserves of the Jiama Project have been reviewed in accordance with the Australasian JORC Code. As China Gold International is a public company listed on the TSX in Canada, mineral resources and ore reserves reported under the Australasian JORC Code have also been reconciled with mineral resources and mineral reserves under the CIM Standards. The report format follows the reporting requirements under NI 43-101.

Behre Dolbear's project team for this technical review consists of senior-level professionals from Behre Dolbear's offices in Beijing, China and Denver, Colorado, USA. Behre Dolbear personnel contributing to the study and to this ITR include:

Project Manager – Dr. Yingting (Tony) Guo is the Vice President of Behre Dolbear Asia, Inc. and Vice President of Behre Dolbear & Company, Ltd., the Canadian subsidiary of the firm. He has over 22 years of professional experience in the mineral industries. He has worked on gold, copper, iron, industrial mineral and coal projects/mines in China, Mongolia, Africa, United States, and Canada. Dr. Guo's business expertise includes mineral resource exploration, assessment, acquisition, and project management. Dr. Guo has participated in and managed several gold, copper, and coal exploration projects in China for the last 10 years. His credentials include a Bachelor of Science Degree in Geology from the Nanjing University as well as a Doctors Degree in Geology and Exploration from China University of Mining and Technology. He is a registered Professional Geoscientist from the Province of British Columbia, Canada. Dr. Guo has been involved in several (independent) technical reports for the Stock Exchange of Hong Kong (SEHK) and Toronto Stock Exchange (TSX) in recent years.

Resource/Reserve Geologist – Dr. Robert E. Cameron has over 30 years of experience in geostatistical analysis of ore reserves, computerized mine planning, mine design, computerized studies for mine production optimization, ultimate pit limit optimization, mine efficiency studies, equipment selection and utilization and operations research. He has completed geostatistical estimations or resource and reserve reviews or audits on over 200 properties worldwide during his career. Most recently, Dr. Cameron served as Vice President, Technical Services for Frontier Mining Ltd. and was responsible for overseeing all technical, engineering, and review for project development for Frontier Mining in Kazakhstan. Dr. Cameron's responsibilities also included ex-pat oversight of the day-to-day operations of the Naimanjal Mine, a heap leach gold project in Kazakhstan as well as initial geostatistical resource and reserve assessment of potential mine acquisitions for Frontier Mining in China, Indonesia, and Central Asia. Dr. Cameron also had responsibility for supervising, reviewing and quality assurance of all ore reserve work performed by Behre Dolbear as their Director and Vice President of Geostatistics and Mine Planning from 1992 to 1999. Currently, Dr. Cameron is a Registered Member of the Society of Mining, Metallurgy and Exploration and a Member and Qualified professional Member of the Mining and Metallurgical Society of America in mining and ore reserves. He routinely reviews and audits geostatistical calculations, ore reserves statements, minerals resources statements, computerized minerals models, mine designs, and their forward looking cash flow projections.

Dr. Cameron has extensive experience in geostatistics, computerized mine planning and ore reserve estimation using classical and geostatistical ore reserve modeling, selection of mining related computer software, ore reserve audits, computer applications, mineral commodity studies, computer modeling of commodities, and remediation of abandoned mine sites. Additionally, he has a vast knowledge of the full range of mine planning computer software including Techbase, Datamine, MedSystem, Gemcom, Surpac, Vulcan, and Whittle pit optimization. In addition, he has a wide range of knowledge in computer applications, programming, database development and design, computer communications, web site design and network design and implementation.

Project Advisor – Mr. Bernard J. Guarnera is the President and Chairman of Behre Dolbear Group Inc. He is a Certified Mineral Appraiser, with extensive experience in the valuation of mineral properties and mining companies. He is a registered Professional Engineer, a Registered Professional Geologist and a Chartered Professional (Geology) of the Australasian Institute of Mining and Metallurgy. Mr. Guarnera has over 30 years of professional experience, and his career has included senior-level positions in exploration and development at a number of major U.S. natural resource companies. Mr. Guarnera meets all the requirements for "Competent Person" in Australia and "Qualified Person" in Canada.

The sources of information for this report includes unpublished technical reports for the Jiama Project prepared by the Mineral Resource Research Institute (Resource Institute) of the Chinese Academy of Geological Sciences in Beijing, China in November 2009, June 2010, April 2011, and Behre Dolbear's professionals site visits to the Jiama Project and interviews with the Jiama Project management and technical personnel as well as outside consultants. It also includes the basic Jiama Project information from the Behre Dolbear ITR for the Jiama Project dated June 2010. The Resource Institute possesses a Class A exploration license for solid minerals issued by the Ministry of Land and Resources of China and has been engaged by Huatailong to manage the exploration work and resource estimation of the Jiama Project.

The Independent Qualified Person, Dr. Robert Cameron, in preparing this report, visited the Jiama Project from April 6 to April 10, 2011. Dr. Robert Cameron, Ph.D., carried out the review and assessment of mineral resource estimations by the Resource Institute based on the database, geological interpretation, and historic data provided by the Company and its staff. Dr. Yingting Tony Guo also visited the Jiama Project during this time.

2.1 UNITS, DEFINITIONS, ABBREVIATIONS, AND CONVERSION FACTORS

The metric system is used throughout this report. The currency used is the Chinese Renminbi (RMB) or Yuan and/or the United States dollar (US$). The exchange rate used in the ITR is RMB6.481 for US$1.00, the rate of the People's Bank of China prevailing on June 8, 2011.

Table 2.1 is a glossary of some the statistical and mining terms. Table 2.2 and Table 2.3 list the common abbreviations and conversion factors used for this report.

TABLE 2.1
GLOSSARY OF SELECTED TERMS

Term	Definition
Adit	A horizontal tunnel or drive, open to the surface at one end, which is used as an entrance to a mine.
Correlogram	A statistical tool that measures how similar samples are likely to be with various separation distances. The correlogram as used in this report is computed by standardizing the spatial covariance by the standard deviation of the head and tail values.
Kriging	A statistical weighted average process whereby the grade of a block is estimated by weighted average from surrounding assay or composite samples. The weights are established to minimize the error of the estimate.
Nugget (as used in variography)	The variance of samples taken at the same location or with zero separation between the two samples.
Range (as used in variography)	The distance at which the variogram model reaches a constant value
Spherical Model	A form of equation used to approximate the variogram function for input to other tools such as kriging.
Sill	The total variance of widely spaced samples, approximately equal to the variance of the statistical population in general.
Stope	An underground excavation from which ore is being extracted.
Variogram	A statistical tool that measures how similar samples are likely to be with various separation distances. The plot of a variogram shows variance versus distance between samples.
Variography	A statistical analysis technique where statistics are calculated as a function of the spatial location of the data points.

TABLE 2.2
LIST OF ABBREVIATIONS

Abbreviation	Meaning
AAS or AA	Atomic Absorption Spectroscopy
Ag	Silver
Au	Gold
CIM	Canadian Institute of Mining Metallurgy and Petroleum
Cu	Copper
DDH	Diamond Drill Hole
g	grams
GPS	Global Positioning System
gpt or g/t	grams per tonne
HKSE or HKEx or SEHK	Hong Kong Stock Exchange
ID^2	Inverse Distance squared
ITR	Independent Technical Report
JORC	Joint Ore Reserves Committee
kg	kilogram
km	kilometers
km^2	square kilometer
kV	kilovolt
kVA	kilovolt Ampere
kW	kilowatt
m	meters
m^2	square meters
m^3	cubic meters
M	million
Ma	Million years
Mo	Molybdenum
MSL	elevation above mean sea level
Mt	million tonnes
Mtpy or Mtpa	million tonnes per year
NPV	Net Present Value
Pb	Lead
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RMB	Chinese renminbi or Yaun
tonnes or t	metric tonnes
t/m^3	tonnes per cubic meter
tpd	tonnes per day
tpy or tpa	tonnes per year
TSX	Toronto Stock Exchange
VAT	Value Added Tax
Zn	Zinc

TABLE 2.3 **CONVERSION FACTORS**
1 US$ = RMB6.481

3.0 RELIANCE ON OTHER EXPERTS

Behre Dolbear has relied on certain technical information for the Jiama Project prepared by the Company, Huatailong, and the Resource Institute. Specifically, Behre Dolbear has accepted the drilling data, mine sampling data, assays, and block models as prepared by the Company and the Resource Institute for this report; however, Behre Dolbear has made adjustments to the block models and the mineral resource tonnage and grade estimates where necessary to ensure compliance with JORC and CIM reporting standards and definitions.

This report also relies on information for the geology, permits, and quality control and quality assurance sections provided by Dr. Yingting (Tony) Guo, Vice President of Behre Dolbear Asia, Inc. and Vice President of Behre Dolbear & Company, Ltd. Dr. Guo was an employee of China Gold prior to joining Behre Dolbear and still holds a minor stock interest in the company. Dr. Guo owns a less than a 0.01% interest in China Gold. The authors of this report have reviewed all of Dr. Guo's sections, prior to inclusion of the material into the report.

In regards to the exploration, mining, and environmental permits, the authors were provided with copies of the documents and they were reviewed. We note that Behre Dolbear is not qualified to express a legal opinion with respect to the property titles and current ownership and possible encumbrance status, and therefore, disclaims direct responsibility for such titles and status data.

4.0 PROPERTY DESCRIPTION AND LOCATION

The Jiama Project is located in Metrorkongka County, the Tibet Autonomous Region in China (Figure 4.1), approximately 68 km east-northeast of Lhasa, capital city of Tibet. Lhasa has a population of approximately 400,000 and is the political, economic, cultural, and transport center in Tibet.

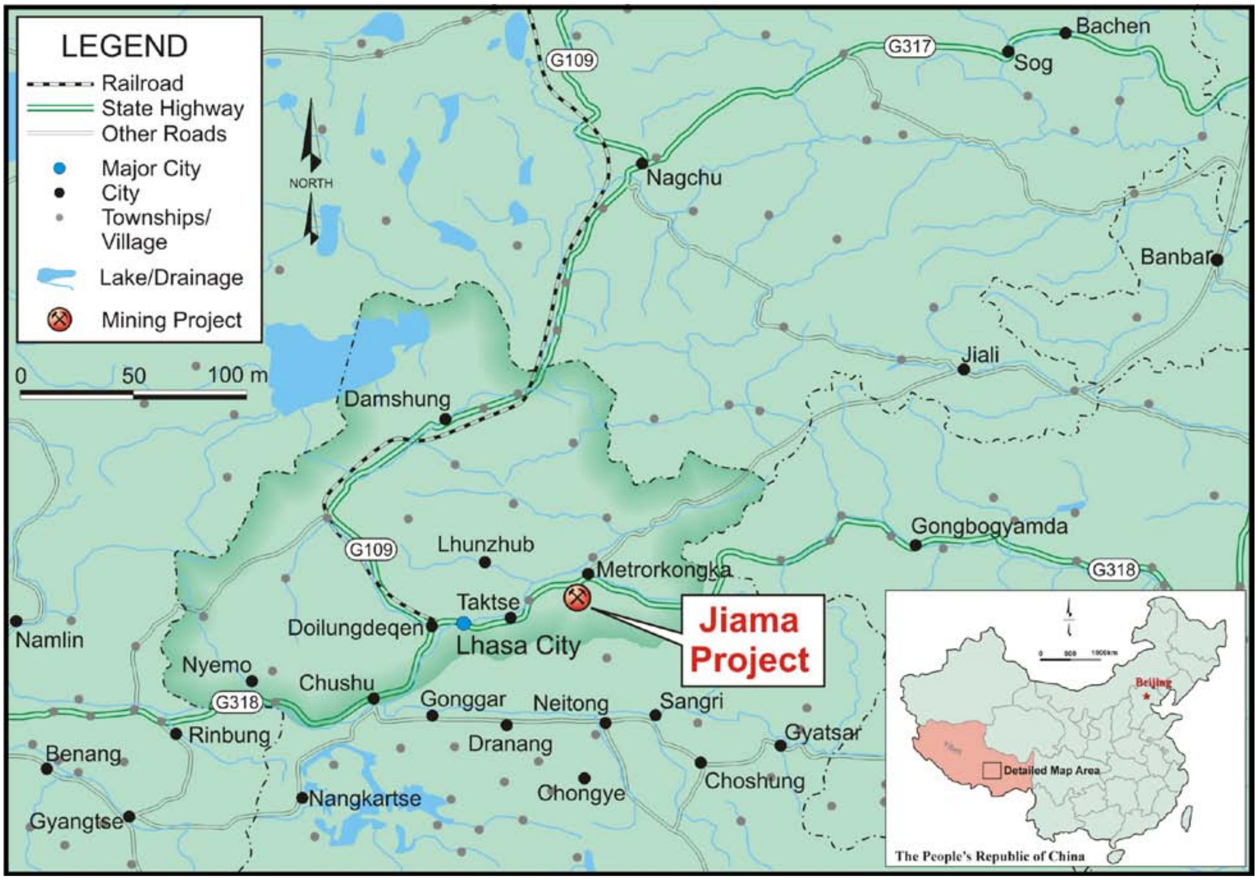


Figure 4.1. Location of the Jiama Project
(After the Behre Dolbear 2010 ITR Report)

The Jiama Project is currently owned and operated by Tibet Huatailong Mining Development Company Limited, which is indirectly 100% owned by China Gold International Resources Corporation. The Jiama Project currently holds two permits for mining rights and two permits for exploration rights.

The Jiama Project mining license, with an area of 2.1599 km^2 for the Jiama Project, is held by Huatailong; the license is valid until July 2, 2013 and extendable, thereafter. The license number is 5400000820009 that was issued by the Land and Resource Department of Tibet Autonomous Region. The horizontal license boundary is defined by 18 corner points, and its vertical boundary is between the mean sea level (MSL) elevations of 4,100m and 5,300m. The production rate specified on the mining license is 2.0 Mtpa or approximately 6,600 tpd based on 300 working days per annum. This mining license was consolidated in 2007 from four mining licenses held by different operators in accordance with the Chinese government's consolidation policy for mining properties.

The Niumatang mining license, with an area of 0.7352 km^2 and located at the northwest side of the Jiama Project mining license, is for the Niumatang open pit mining portion of the Jiama Project. The license is valid until July 15, 2015 and extendable thereafter. The license number is C5400002010073210070276 that was issued by the Land and Resource Department of Tibet Autonomous Region. The horizontal license boundary is defined by 11 corner points, and its vertical boundary is between the MSL elevations of 4,100m and 5,000m. The production rate specified on the mining license is 0.9 Mtpa or approximately 3,000 tpd based on 300 working days per annum. Behre Dolbear notes that the permitted production rate is lower than the 6,000 tpd production rate planned for the Niumatang open pit mining operation and Huatailong will need to revise the mining license to the appropriate production rate.

The Jiama exploration license surrounding two mining licenses, with an area of 76.19 km^2 (exclusive from the mining permits), is also held by Huatailong. The license number is T54520080702010972 that is issued by the Land and Resource Department of Tibet. This license expires on March 1, 2013 and is extendable thereafter. The license area is defined by 6 corner points and is approximately 8 km to 11 km long in the east-west direction and 6 km to 11 km wide in the north-south direction. The license area is located within the longitudes from 91°43’06”E to 91°50’00”E and the latitudes from 29°37’49”N to 29°43’53”N.

All the currently defined mineral resources for the Jiama Project are covered by the Jiama/Niumatang mining licenses and the Jiama exploration license.

In addition to the Jiama/Niumatang mining licenses and Jiama exploration license, Huatailong also holds the exploration license for the Bayi Ranch area located southwest of the Jiama mining/exploration licenses. This license has an area of 66.41 km^2 and was issued by the Land and Resource Department of Tibet. The license number is T54520080702010979. The license expires on March 1, 2013 and is extendable thereafter.

The two mining licenses and two exploration licenses for the Jiama Project cover a total area of 145.50 km^2.

Figure 4.2 shows the location of the two mining licenses and the two exploration licenses currently held by Huatailong.

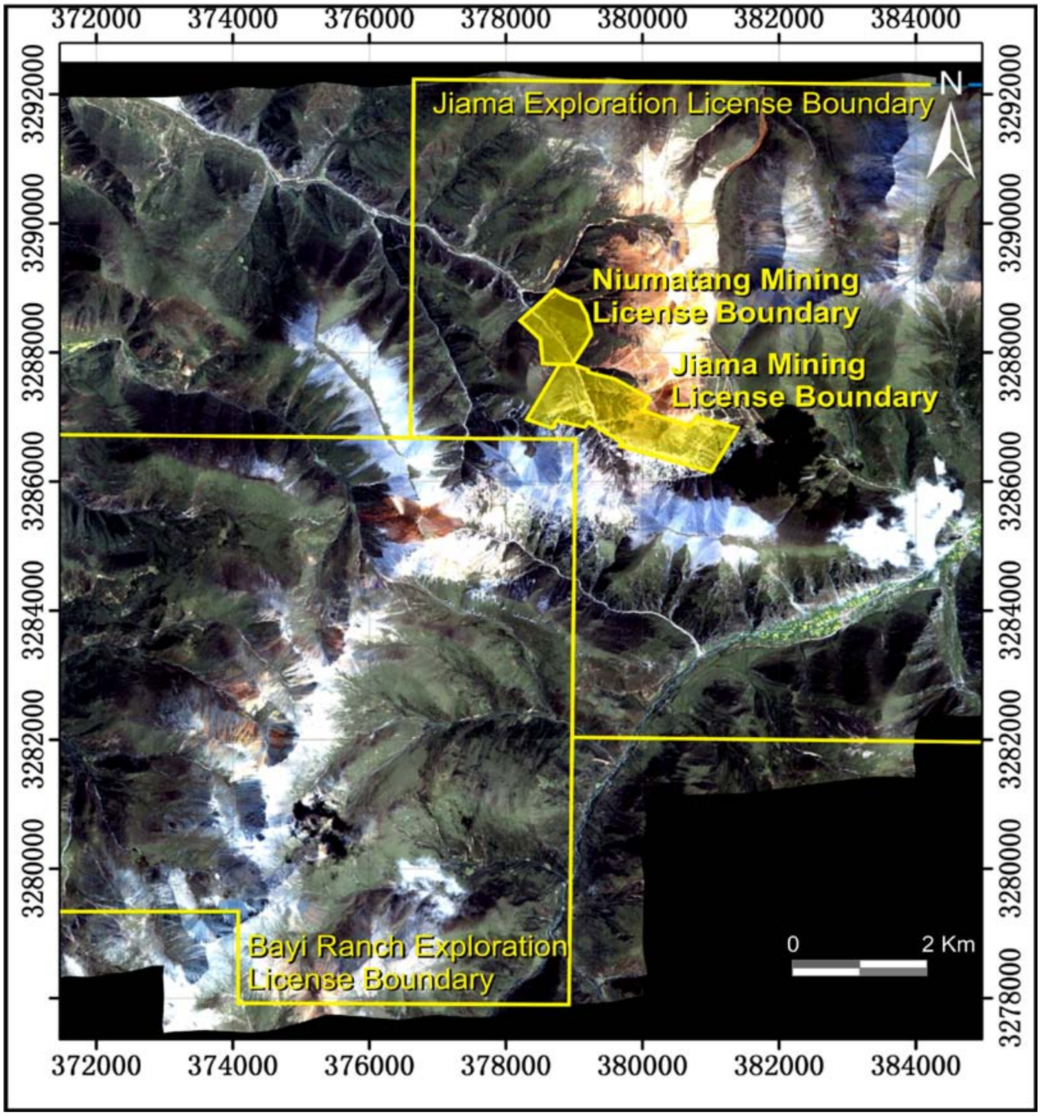


Figure 4.2. Location of the mining/exploration licenses held by Huatailong (After the Behre Dolbear 2010 ITR Report)

Behre Dolbear has reviewed the copies of the mining licenses and exploration licenses provided by Huatailong and considers that they are valid and typical of mining and exploration licenses issued by relevant governmental agencies in China.

To renew an exploration license, all exploration permit fees must be paid, and the minimum exploration expenditure should have been made for the area designated under the exploration permit. To renew a mining permit, all mining permit fees, resource taxes, and resource compensation levies must be paid to the state for the area designated under the mining permit. The renewal application should be submitted to the relevant state or provincial authorities at least 30 days before the expiration of a permit.

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

The Jiama Project is located in a mountainous area with MSL elevations ranging from 4,350m to 5,410m in the Tibet Plateau. The topography in the area is characterized by steep slopes, high elevation, and big elevation differences. About half of the surface area at the Jiama Project is covered by shrub bushes and grasses, and the other half of the surface area is covered by soil and fallen rocks formed from freezing, erosion, and weathering. The soil and fallen rock cover is generally only a few meters thick.

The area has a typical continental plateau climate. The summers (also the rainy season) are relatively humid and cool, and the winters are dry and extremely cold. The temperature difference between day and night is large. Winter conditions prevail from October through March. July and August are the only frost-free months in any year. Average annual precipitation is approximately 500 millimeters (mm) that occurs mostly as rain from June to September.

There are some sparsely-populated Tibetan inhabitants within the Jiama Project area, with most of the land being used for low-intensity yak and sheep grazing. The primary crop in the area is highland barley.

Access to the Jiama Project area is excellent. A newly-paved access road of approximately 8 km connects the Jiama Project site office and processing plant to the Sichuan-Tibet Highway (G318) in the north. The distance from the turning point to Lhasa in the west is approximately 60 km, and the distance to the Metrorkongka county town in the east is approximately 8 km. Lhasa is connected to other locations in China by railroad, highways, and air. There are a number of daily flights from Lhasa to Chengdu, Beijing, and other cities in China. Concentrates produced from the Jiama Project will be trucked to the Lhasa rail station and then shipped by rail to the current smelter customer in the Gansu Province ,China and may be shipped to other places in China in the future.

Electricity for mine production at the Jiama Project is provided by a newly constructed, 110 kV electricity transmission line from the Metrorkongka substation located approximately 20 km north of the Jiama Project area. Electricity supply in the central Tibet region was generally insufficient for mining operations in the past. The Tibet government and Central Government of China have been executing a power-supply development plan for the period from 2006 to 2010. Several new power generation plants have been constructed, and the Central Tibet power grid will be connected to the national power grid in China. Electricity supply will be sufficient for the Phase I mine production as well as for the Phase II expansion at the Jiama Project, when the development plan is completed. Prior to that, however, the mine could experience power shortages for production. The Jiama Project has been designated as one of the most important projects in Tibet and has been granted priority in electricity supply by the Tibet government.

Although water is scarce in the general area, the Jiama Project area has obtained sufficient surface water rights to support the planned mining and processing operation. Fresh water for production and for the mine camp will be obtained from the Chikang River that is a tributary of the Lhasa River. Water from the flotation tail thickeners and the tailing filtering system will be recycled for the use in production.

A significant portion of the mining personnel for the Jiama Project came from other China National Gold Group Corporation and/or from other mining operations outside Tibet. Huatailong has also recruited a significant number of local Tibetan workers and some of them were being trained outside Tibet for the Jiama Project during Behre Dolbear's site visits in December 2009 and April 2011.

6.0 HISTORY

There were some small-scale historical lead mining activities at the Jiama Project site before the 1950s. Geological work conducted from 1951 to 1990 delineated a 3,600m long copper-lead-zinc mineralization zone, mostly by surface trenching at the Jiama Project area. Preliminary mineral resource estimation was also conducted. More detailed exploration work was conducted by the No. 6 Geological Brigade (Brigade 6) of the Tibet Geology and Mineral Resource Bureau between 1991 and 1999, when 16 exploration lines, with an azimuth of 30° and numbered as Lines 31, 23, 15, 7, 0, 4, 8, 12, 16, 24, 32, 48, 72, 80, and 96 from northwest to southeast, were designed to explore the deposit. A total of 31 DDH with a total drilled length of 10,091m were drilled during the period, along with the development of 407.5m of adits and 16,474 cubic meters (m^3) of surface trenches. Twenty-two of the Brigade 6 DDH holes with a total drilled length of 6,518m and 10 surface trenches with a total sampled length of 349m were used in the current resource estimation as these holes/trenches are located in the defined mineralized zones and contain reasonable-quality assay data.

Based on the Brigade 6 work, four mining licenses within the current Jiama Project mining license boundary were issued to different mining operators and four mining operations were established, including:

- **Lines 15-0 Mining License:** The license was issued to the Jiama Township government that organized the Jiama Township Fupin Development Company Limited to conduct mining activity at Jiama. A 300 tpd concentrating plant was built and mining started in 2004. A total of 14 adits were developed for mining. It was estimated that a total of 49,000 tonnes of ore was mined, with a mining loss of 9,200 tonnes, to the end of June 2006. Mine production after June 2006 is unknown.

- **Lines 0-16 Mining License:** The license was issued to Lhasa Mining Company. Both open pit mining and underground mining were conducted in the license area by the property owner. Open pit mining above the MSL elevation of 4,780m started in 1995, and a total of 10 adits with a level height ranging from 16m to 40m between the MSL elevations of 4,606m and 4,780m were developed before 2006. Mine production to the end of 2005 was estimated at 130,000 tonnes, with mine production since January 2006 unknown.

- **Lines 16-40 Mining License:** The license was issued to Brigade 6. A joint venture company, Tibet Jiama Mining Development Company Limited, between Brigade 6 and Henan Rongye Trading Company Limited, was established to conduct the mining operation. Mining started in 2003. A concentrating plant with a processing capacity of 850 tpd was built in 2006. It was estimated that the total mined and lost mineral resources were 109,000 tonnes to the end of June 2006. Production after June 2006 is unknown.

- **Lines 40-80 Mining License:** The license was issued to the original Tibet Huatailong Mining Development Company Limited. No concentrating plant was built for this mining license. Mining started in 2005. The estimated mine production from three mining adits was 80,000 tonnes to June 20, 2006, with an estimated mining loss of 8,900 tonnes. Mine production since June 2006 is unknown.

As the exact total historical mine production figure is unknown, the Resource Institute has conducted a systematic survey of the existing underground adits and mined-out stopes within the above mining license areas, and the volume calculated from the surveyed stopes has been used to deduct the consumed mineral resources for the Jiama Project.

Mining activities by the previous operators were stopped by the Tibet government on April 1, 2007 in the four mining license areas. In accordance with an agreement between the Tibet government and China National Gold Group Corporation, the four mining licenses as well as the exploration licenses in the surrounding areas were consolidated by the reorganized Huatailong in late 2007, with China Gold Group HK as the primary shareholder.

Since acquiring the consolidated mining and exploration licenses, Huatailong conducted an extensive exploration program in 2008, completing 150 DDH holes, with a total drilled length of 50,616.65m. In 2009, 47 qualified DDH holes totaling 18,745.45m of further in-fill drilling were completed in the proposed open pit mining area at Niumatang, located at the northwestern side of the defined mineralization zone, and step-out drilling was conducted to the northeast of the mineralized zone. The 2008-2009 drilling results, combined with limited historical data, constituted the basis for the resource estimation for the Jiama Project in the Behre Dolbear's 2010 ITR.

Based on the 2008 to 2009 exploration results, Huatailong conducted a further extensive exploration program in 2010, completing 82 DDH holes, with a total drilled length of 45,537.22m. The drilling program has significantly expanded the mineral resources of the Jiama Project. The 2010 drilling results, combined with 2008 to 2009 drilling data, constituted the basis for the current resource estimation for the Jiama Project in this Behre Dolbear 2011 ITR.

The new Jiama Project started construction in June 2008. The original underground mine workings, as well as three smaller processing plants with processing capacities ranging from 300 tpd to 850 tpd that existed before consolidation, were abandoned and the processing plants were dismantled and reclaimed by Huatailong. The associated tailing storage facilities (TSF) will also be reclaimed by Huatailong. The processing plant with processing capacity of 800 tpd has been rehabilitated and will be used to process the lead-zinc ore in the later period of 2011.

During Behre Dolbear's site visit in April 2011, the Phase I 6,000 tpd flotation processing plant and related TSF was completed and in operation. The smaller Tongqianshan pit was in production. Pre-production stripping for the larger Niumatang pit was near completion, and construction of the primary underground haulage tunnel at a MSL elevation of 4,261m and the secondary underground ore haulage tunnel at a MSL elevation of 4,087m was completed. It was reported by Huatailong that the Phase I concentrator trial production started in April 2010, full Phase I mining and processing operating of the Jiama Project started in late July 2010, and commercial production started in September 2010. The Jiama Project has become one of the largest copper-polymetallic mining operations in China in terms of its proposed ore production rate, total metal production, and mineral resources considered compliant under the Australasian JORC Code and the CIM Standards.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGICAL SETTING

The Tibet Plateau is the youngest orogenic belt in the world. Subduction and collision between the Indian Plate and Eurasian Plate from Late Mesozoic to Cenozoic time, commonly referred to as the Himalayan Orogeny, has created the world's youngest and highest mountain ranges. The complicated tectonic evolution, during this period of time as well as during the preceding, Yanshanian Orogeny, has created a series of near east-west-trending structural zones in the plateau, with associated multiple-stage magmatism and related mineralization (Figure 7.1). From south to north, these structural zones include the Indian Plate (I), the Yalung Tsangpo Suture Zone (YS), the Gangdise-Nianqing Tanggula Terrane (II), the Bangong Lake-Nu River Suture Zone (BS), Qiangtang-Sanjiang Complex Terrane (III), and the Jinshan River Suture Zone (JS). The Gangdise-Nianqing Tanggula Terrane is subdivided, from south to north, into the Gangdise Yanshanian-Early Himalayan epicontinental volcanic arc (II1), Nianqing Tanggula faulted dome (II2), Cuoqin-Namucuo Late Yanshanian back-arc basin (II3), and Bange-Jiali Early Yanshanian epicontinental volcanic arc (II4).

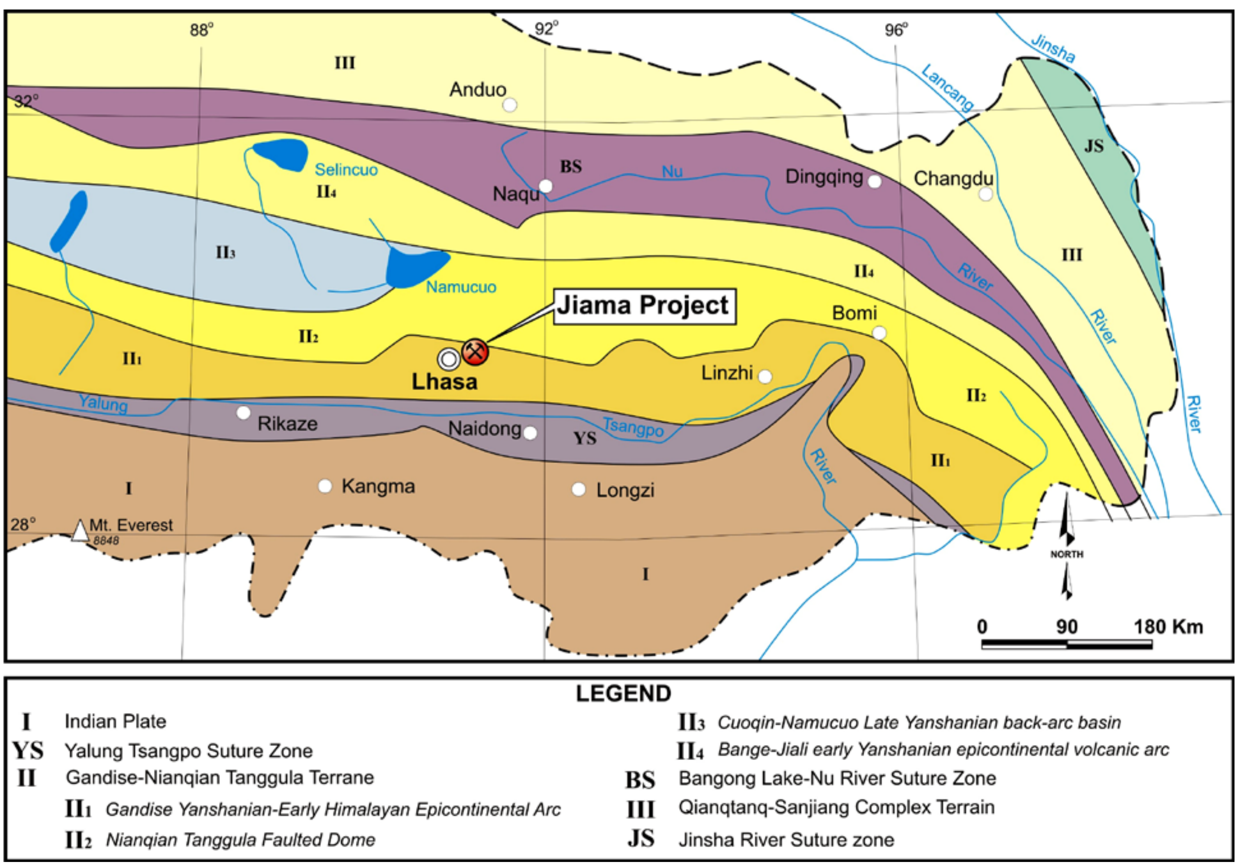


Figure 7.1. Tectonic setting of the Jiama Project
(After the Behre Dolbear 2010 ITR Report)

7.2 LOCAL GEOLOGY

The Jiama Project is located in the central-south portion of the Gangdise-Nianqing Tanggula Terrane (Figure 7.1). Stratigraphy outcropping in the Jiama Project area consists primarily of passive epicontinental clastic-carbonate rocks, including Upper-Jurassic Duodigou Formation limestones and marbles, Lower-Cretaceous Linbuzong Formation sandstones and slates, and locally, Quaternary colluviums and alluviums (Figure 7.2). Some mafic, intermediate to felsic dikes have been observed in outcrops and in drill holes, but no large intrusive bodies have yet been identified. It is believed, however, that a large granitic intrusive body exists at depth in the area and that it has provided the intense heat source for the metamorphism and also the mineralizing solutions for the copper-polymetallic mineralization. Because of the placement of the granitic intrusion, a large portion of the Duodigou limestones have been metamorphosed to marbles, and the Linbuzong clastic rocks have been largely metamorphosed into hornfels.

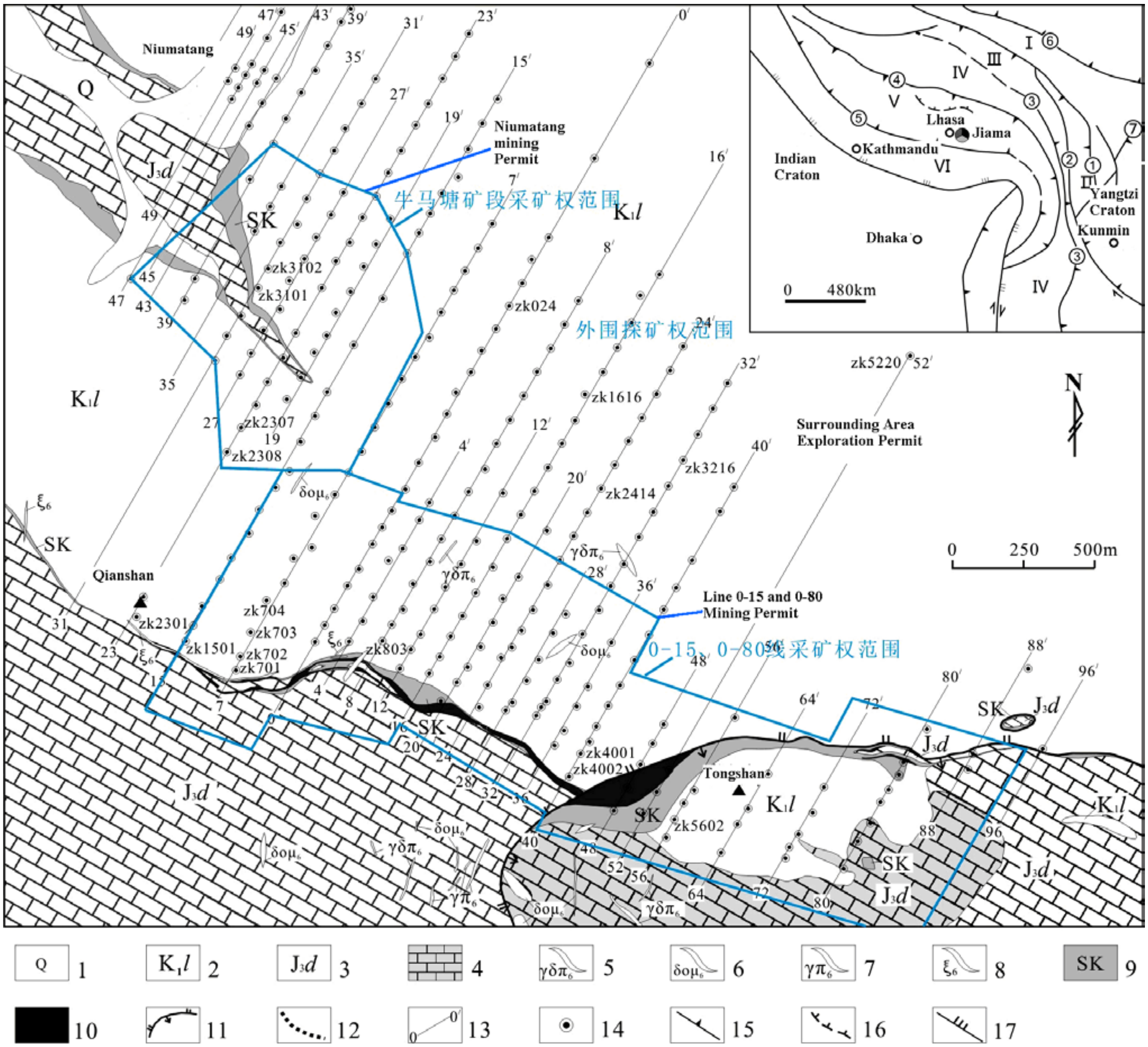


Figure 7.2. Geology and drill holes of the Jiama Project area

(The entire map is within the boundary of the current Jiama exploration license)

1 – Slope Residual and Alluvial sediments of Quaternary; 2 – Slate and hornfels of Lower Cretaceous Linbuzong Fm; 3 – Limestone and marble of Upper Jurassic Duodigou Fm; 4 – Skarn altered marble; 5 – Grano-diorite porphyry dyke; 6 – Quartz-diorite poryphrite dyke; 7 – Granoporphyry dyke; 8 – Granoaplite dyke; 9 – Skarn; Skarn-type Deposit; 11 – Gliding nappe fault; 12 – Lead-Zinc Deposit boundary; 13 – Exploration line and number; 14 – Drilling hole; 15 – Craton margin belt and its subduction direction; 16 – Cceanic crust obduction nappe front; 17 – Major craton boundary thrust fault; ① Ganzi-Litang fault; ② Jinshajiang-Ailaoshan fault; ③ Lancang River fault; ④ Bangonghu lake-Nujiang fault; ⑤ Indian River-Yaluzangbujiang fault; ⑥ Kunlun South-Machen fault; ⑦ Longmen Mountain fault; Ⅰ, Kakaxili-Bayankala plate; Ⅱ, Yidun-Xiangcheng plate; Ⅲ, Karakorum-Happy Ridge-Qamdo plate; Ⅳ, Qiangtang-Tanggula-Baoshan plate; Ⅴ, Gangdise-Nyainqentanglha-Tengchong plate; Ⅵ, Himalayan plate (after Resource Institute's 2011 ITR Report)

7.3 DEPOSIT GEOLOGY

Skarns with associated copper-polymetallic mineralization were formed at the contacts of the intrusives and the Duodigou marbles as well as in the interlayer structural zone between the Duodigou marbles and the Linbuzong hornfels. Less intensive copper-polymetallic mineralization was formed within the Linbuzong hornfels and lower grade molybdenum-copper polymetallic porphyry mineralization were formed within the granoporphyry intrusive in the Duodigou marbles.

Structures in the area consist of thrust and detachment faults as well as associated anticlines and synclines. The interlayer fracture zone between the Duodigou marbles and Linbuzong hornfels could be a detachment fault, as it is steeply-dipping (averaging around 60°) at the upper portion and flatter (averaging around 10°) at the lower portion.

7.4 SKARN-TYPE COPPER-POLYMETALLIC MINERALIZATION

Copper-polymetallic mineralization at Jiama is primarily hosted by skarns distributed along an interlayer structural zone between the Duodigou marbles and the Linbuzong hornfels. This zone is stratiform, tabular, or lenticular in shape and comprises the primary mineralized body (I1) in the deposit. It strikes west-northwest and dips to the northeast. The upper part of the mineralized body has a steep dip angle, averaging around 60° to 70°, whereas the lower portion of the mineralized body is much flatter, with an average dip of around 10° to 20°. The I1 mineralized body is approximately 3,000m long along the strike direction and 2,500m wide along the dip direction. Its thickness ranges from 10m to 50m, with the maximum intercepted thickness of 281.7m. This mineralized body was defined by over 275 drill holes (Figure 7.3).

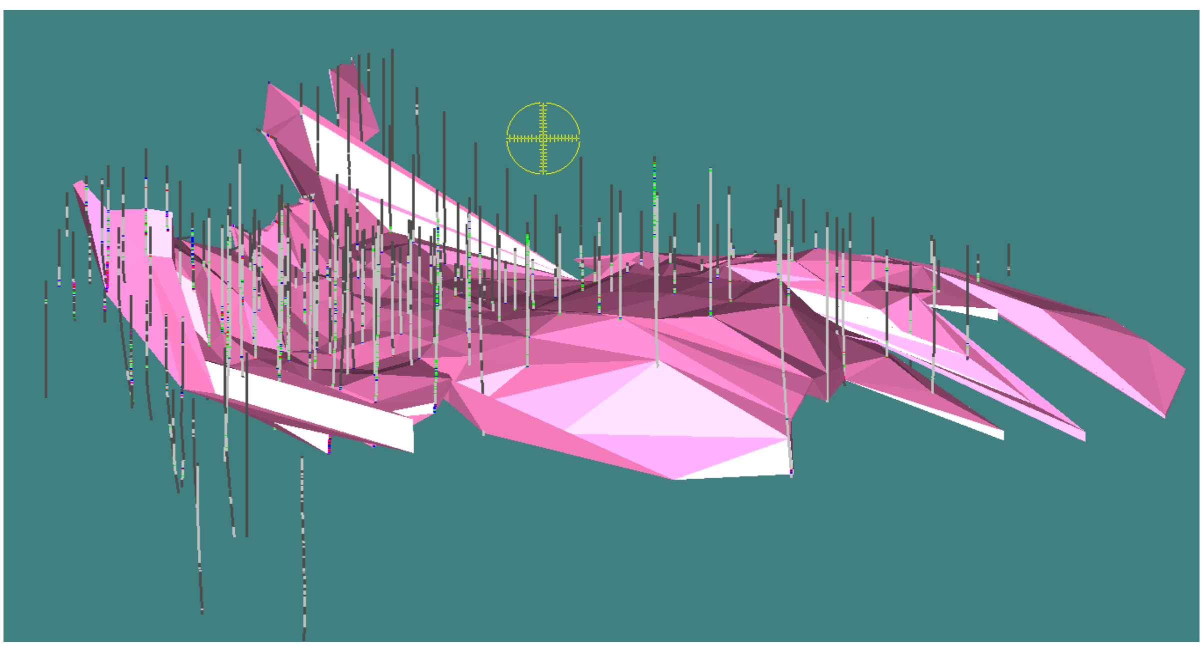


Figure 7.3. 3D view of the I1 mineralized body for the Jiama Project
(The view is looking at 240° rotated azimuth with a dip angle of minus 15°. The yellow circle at the upper middle part of the diagram has a diameter of 200m) (after the Behre Dolbear 2010 ITR Report).

Two zones within the I1 mineralized body have generally been well defined by drilling on a 100m by 100m grid. The first is the Niumatang area located at the northwestern portion of the mineralized zone between Exploration Lines 15 and 35, which will be the primary target for the open pit mining operation in the early years of the mine's life. The second is the area between Exploration Lines 0 and 40 and within the current Jiama mining license boundary, which will be the target for an underground mining operation. The mineralized body is still open to the northeast along the dip direction, representing significant additional exploration potential.

Seven other smaller mineralized bodies have also been modeled, but they are generally not well defined by the current drilling data.

The I2 mineralized body was intersected by nine drill holes between Exploration Lines 4 and 36 and consists of three small discontinuous zones located below the I1 mineralized body. The body is hosted by stratiform skarns and is dipping to the northeast. Thickness of the I2 mineralized body ranges from 1.5m to 20.9m, averaging 14.7m.

The I3 to I8 mineralized bodies are small, thin, mineralized zones located southeast of the I1 mineralized body between Exploration Lines 56 and 80 and are intersected by 2 to 10 drill holes each. These mineralized bodies are generally lenticular in shape and generally dip to the northeast. The average thickness of the zones ranges from 3m to 10m.

Copper is the most important economic metal in the deposit. Other metals of economic value include molybdenum, lead, gold, silver, and zinc. These metals are distributed differently in the deposits. In general, the copper grade is higher at the upper and northwest portions and lower in the northeast portion. Molybdenum seems negatively correlated with copper, with higher grades in the northeast portion of the deposit. Gold and silver have a distribution pattern similar to that of copper in the deposit. Lead and zinc are only enriched at the upper part at the southwest of the I1 mineralized body, which was part of the historic mining targets. Contents of deleterious elements, such as arsenic, antimony, and mercury, are generally low in the deposit and will not create any marketing issues for concentrate produced from the deposit.

Metallic minerals in the deposit include chalcopyrite, bornite, molybdenite, tetrahedrite, galena, sphalerite, chalcocite, digenite, covellite, native copper, pyrite, marcasite, pyrrhotite, magnetite, limonite, malachite, and azurite. Non-metallic minerals include garnet, diopside, wollastonite, tremolite, epidote, quartz, feldspar, biotite, sericite, muscovite, chlorite, calcite, anhydrite, fluorite, and kaolinite. The metallic minerals occur as disseminations, massive aggregates, or as stock works in the skarns.

Oxidation occurs only at the near-surface portion of the deposit. The majority of the defined mineral resources are in the unoxidized sulfide zone.

Behre Dolbear has reviewed the interpretation of the geology and copper-polymetallic mineralization of the Jiama Project by Huatailong and the Resource Institute geologists and considers that the interpretation is reasonable.

7.5 HORNFELS-TYPE COPPER-POLYMETALLIC MINERALIZATION

Compared with the skarn-type copper-polymetallic mineralization, hornfels-type copper-polymetallic mineralization at Jiama is generally lower in metal grades. It occurs in the thick tabular shape in the overlying hornfels of the Linbuzong formation. Its distribution center is between the exploration Lines 0 to 40 where it is of the maximum thickness. It is over 1,200m long in the northwest-west direction. The mineralized body becomes thicker to the north-northeast direction.

It is thinner to both northwest-west and southeast-east directions and pinches out in the southwest-west direction. It has not fully been controlled in the north-northeast direction. It trends extending north still. Along the exploration of each line, it is generally thinner in the southern end of the mineralized body and thicker in the north end of the mineralized body. It is generally 10m to 50m thick with the maximum intercepting thickness of 826m (ZK3216). The average copper grade is of 0.23% with an average grade of molybdenum 0.053%. The waste rock in the mineralized body mainly consists of the hornfels with some of the late dike intrusives (Figure 7.4). The hornfels-type mineralized body is usually shallow. Mostly it is only about 20m deep. A preliminary geological model of the hornfels-hosted mineralization was constructed by the Resource Institute, which was used as a basis for the resource estimation in this ITR.

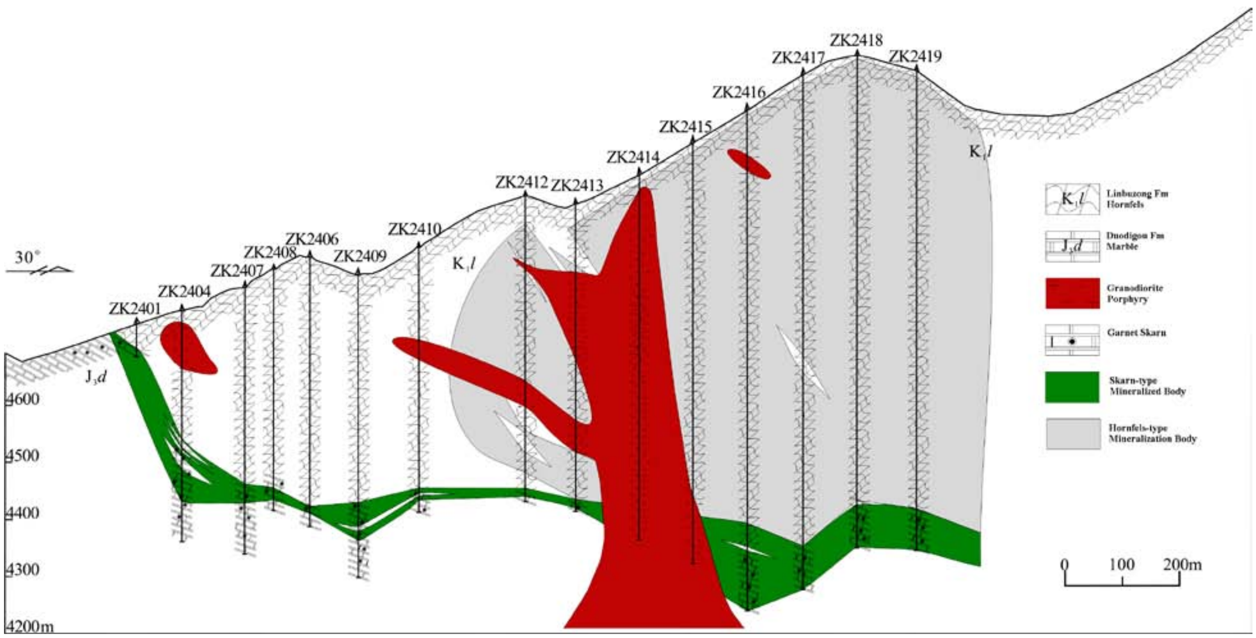


Figure 7.4. **Cross section map of Exploration Line 24 at Jiama copper-polymetallic deposits (After the Resource Institute 2011 Report)**

Figure 7.4 illustrates the hornfels-hosted copper-polymetallic mineralized body as well as the skarn-type mineralization.

The currently defined hornfels-type mineralization is a large, massive body without clear preferred direction. Copper-polymetallic mineralization generally occurs as fracture coatings in the hornfels. The metallic minerals in the hornfels-type mineralization are similar to that of the skarn-type mineralization. Chalcopyrite, bornite, molybdenite, pyrite, and pyrrhotite are the major metallic minerals with minor amounts of other minerals. Copper and molybdenum are the two important elements; copper is generally enriched in the upper portion of the mineralization and molybdenum is generally enriched in the lower portion of the mineralization.

7.6 PORPHYRY-TYPE MOLYBDENUM-COPPER POLYMETALLIC MINERALIZATION

Porphyry-type molybdenum-copper mineralized body occurs in a pipe-shape. The hosting rocks of the mineralized body are mainly granodiorite porphyry and monzogranite porphyry. The maximum intercepting thickness of the mineralized body is up to 476.73m in the hole of ZK2414 with the average copper grade of 0.25% and average molybdenum grade of 0.055%. The mineralization is still open to depth.

7.7 INDEPENDENT STAND ALONE VEIN-TYPE GOLD MINERALIZATION

Standalone independent vein-type gold mineralization has been found during the 2010 exploration program. It occurs in the quartz-diorite porphyrite dyke in the hole of ZK4504. There are two gold mineralization intercepts in this hole. The first mineralized body is 10m thick with an average gold grade of 17.15 grams per tonne (g/t) and the highest gold grade of 47 g/t. The second mineralized body is 13.06m thick with an average gold grade of 2.04 g/t and the highest gold grade of 4.28 g/t (Figure 7.5). The discovery of these gold bearing intercepts shows the potential for other gold mineralization within the Jiama Project mining district.

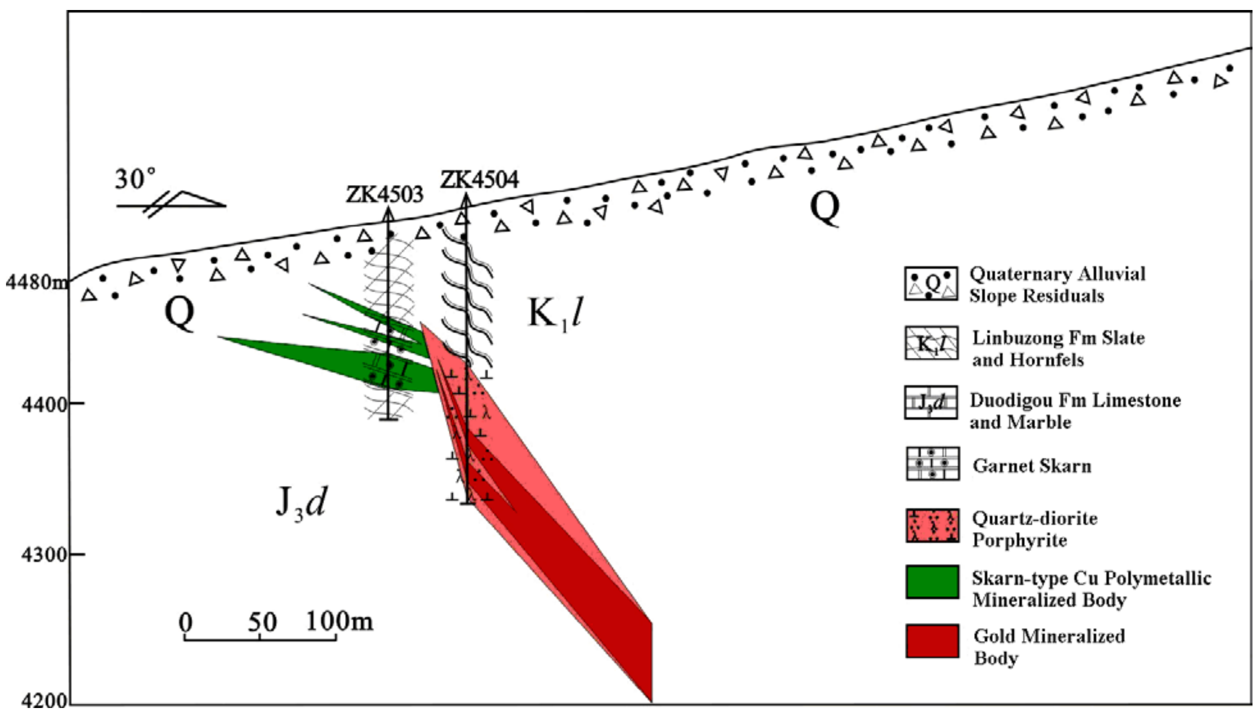


Figure 7.5. Cross section of Exploration Line 45 at Jiama copper-polymetallic mine district (After the Resource Institute 2011 Report)

8.0 DEPOSIT TYPES

The Jiama Project is a large, skarn-type, hornfels-type and porphyry-type, three-in-one copper-polymetallic porphyry deposit complex with well-developed zonation in both planar and vertical direction. The large stratiform skarn-type copper-polymetallic deposit is controlled mostly by an interlayer structural zone between the Duodigou marbles and the Linbuzong hornfels. The mineralized zone measures thousands of meters in both strike and dip directions and is still open in many places. The deposit is likely formed by contact metamorphism and hydrothermal mineralization associated with a granitic intrusion.

A lower-grade copper-polymetallic mineralization has also been encountered in the overlying Linbuzong hornfels. The hornfels-type mineralization is large; however, its economic feasibility will need to be determined by further technical studies.

A lower-grade molybdenum-copper polymetallic porphyry-type mineralization has been intercepted within the granoporphyry dykes and intrusives in the underlying Duodigou marbles. The porphyry-type mineralization is potentially large; however, its economic feasibility will need to be determined by further drilling and technical studies.

A three-dimensional computer mineralization body model has been constructed by the Resource Institute to model the skarn-type, porphyry-type as well as the hornfels-type copper-polymetallic mineralization at Jiama and is shown in Figure 8.1.

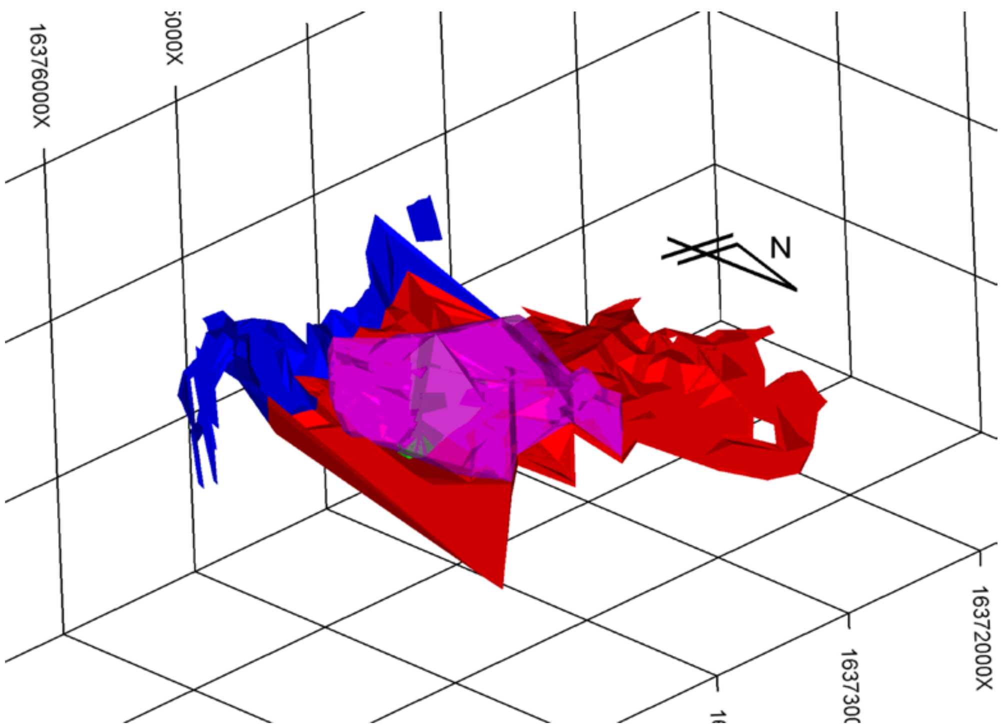


Figure 8.1. Mineralization body model at the Jiama Project
(Red – gentle slope skarn mineralized body; blue – steep skarn mineralized body; purple– hornfels mineralized body; green – porphyry mineralized body, after the Resource Institute 2011 Report)

9.0 EXPLORATION

9.1 BRIGADE 6 EXPLORATION WORK IN THE 1990S

Exploration work conducted by Brigade 6 in the 1990s included 1:2000 and 1:25,000-scale topographic survey, geological mapping, surface trenching, adit development, and DDH drilling. A total of 31 DDH holes with a total drilled length of 10,091m were completed, along with the development of 407.5m of adits and 16,474m^3 of surface trenches. Exploration work was concentrated on the near-surface portion of the mineralized zones and was conducted in accordance with the industry requirements in China at the time.

9.2 HUATAILONG EXPLORATION WORK IN 2008 TO 2010

Extensive exploration work conducted by Huatailong from 2008 to 2010 includes 1:2000-scale topographic surveying, geological mapping, and drilling of 279 DDH holes with a total drilled length of 114,899.23m. Management of the exploration work and resource estimation was contracted to the Resource Institute in Beijing.

Survey control points were established using differential GPS instruments, based on the 1954 Beijing coordinate system and the 1956 Yellow Sea elevation system. The topographic survey was conducted by total stations, and the survey results were tied to the established survey control points. The 1:2000-scale topographic survey, with a 2m contour interval, covered an area of 13.8 km^2, providing good support for the drilling and other exploration work.

10.0 DRILLING

10.1 BRIGADE 6 DRILLING IN THE 1990S

DDH drilling by Brigade 6 in the 1990s was conducted in accordance with the "Core Drilling Regulation" promulgated by the former Ministry of Geology and Mineral Resources of China. Of the 31 holes drilled with a total drilled length of 10,091.1m, only 25 with a total drilled length of 7,830.75m met the requirements under the regulation. Core recoveries ranged from 42% to 98.3% with an average of 82.7%. Six other holes (ZK4808, ZK8008, ZK9608, ZK9612, ZK3201, and ZK006) with a total drilled length of 2,260.35m were considered as not conforming with the regulations because the core recovery was too low or because the drill hole was terminated prematurely. Eventually, 25 holes meeting the regulations have been included in the database for the current resource estimation.

10.2 HUATAILONG DRILLING FROM 2008 TO 2010

10.2.1 2008 Drilling

Huatailong's 2008 drilling program was conducted from April 31 to December 9. Six drilling contractors, with a total of 36 drill rigs, completed 150 DDH holes and drilled a total length of 50,617m. Drilling was managed and supervised by the Resource Institute. Drill hole spacing was designed at 100m to 200m by 100m to 200m within the mining license boundary and increased to 200m to 400m by 100m to 400m outside the mining license. Five of the drilled holes were terminated prematurely, but three of the relatively deep holes were still included in the database for geological purposes. Excluding the redrilled intervals, the 2008 holes included in the Jiama drill hole database consist of 148 holes with a total drilled length of 48,970m.

Drilling started at the surface using 130 mm or 110 mm diameter drill bits, reducing to 91 mm or 75 mm diameter drill bits after entering into the solid rocks. Core recoveries were generally good. Core recovery for the skarn mineralized intervals ranged from 60.3% to 100%, averaging 95.3%; core recovery for the hanging walls ranged from 62.7% to 100%, averaging 95.0%; and core recovery for the footwalls ranged from 65.1% to 100%, averaging 95.3%.

Drill hole collar locations were surveyed using differential GPS survey instruments after drilling, and the downhole deviation was measured using downhole survey instruments generally at a 100m interval. Completed drill holes were plugged using cement, with a cement post maintained at the center of the drill hole collar.

Properly labeled and boxed drill cores were transported from the drill site to the core storage warehouse, where core logging, photographing, and sampling took place.

10.2.2 2009 Drilling

Huatailong's 2009 drilling consisted of 47 DDH holes with a total drilled length of 18,745.45m in the Niumatang area and the northeast of the mineralized zone. The in-fill drilling has brought the drilling density in the Niumatang area to 100m by 100m, which is sufficient to produce a resource estimate for open pit mine planning and ore reserve estimation in the area. The four step-out drill holes to the northeast have further extended the mineralized zone and increased the total mineral inventory of the Jiama deposit.

Drilling and surveying of the drill holes for the 2009 program were conducted in a similar manner as that for the 2008 drilling program. Core recoveries were generally good. Core recovery for the mineralized intervals ranged from 76.3% to 100%, averaging 96.5%; core recovery for the hanging walls ranged from 87.6% to 100%, averaging 96.3%; and core recovery for the footwalls ranged from 85.4% to 100%, averaging 96.4%.

10.2.3 2010 Drilling

Huatailong's 2010 drilling through the end of December of 2010 consisted of 82 certified DDH holes with a total drilled length of 45,553.72m. The in-fill drilling has brought the drilling density in the central area of the Jiama deposit to 100m by 100m, which is sufficient to produce a resource estimate for open pit mine planning and ore reserve estimation in the area.

Drilling and surveying of the drill holes for the 2010 program were conducted in a similar manner as that for the 2008-2009 drilling program. Core recoveries were generally good. Core recovery for the mineralized intervals ranged from 76.3% to 100%, averaging 96.5%; core recovery for the hanging walls ranged from 87.6% to 100%, averaging 96.3%; and core recovery for the footwalls ranged from 85.4% to 100%, averaging 96.4%.

Table 10.1 summarizes the drill hole information completed by Huatailong in 2010.

TABLE 10.1
2010 HUATAILONG DRILL HOLES FOR THE JIAMA PROJECT
(UNDER THE 1954 BEIJING COORDINATE SYSTEM AND THE 1956 YELLOW SEA ELEVATION SYSTEM)

Hole ID	Easting	Northing	Elevation	Dip	Azimuth	Depth (m)	Core Recovery			Number of Samples
							-1[1]	-2[2]	-3[3]	
ZK017	3,287,822.15	16,379,258.65	4,707.85	-90	0	338.45	0	97.5	88	222
ZK019	3,287,988.25	16,379,357.55	4,831.62	-90	0	383.26	99	99.5	100	214
ZK022	3,288,132.55	16,379,435.83	4,916.78	-90	0	490.1	99	93.75	99.67	247
ZK023	3,288,294.22	16,379,531.93	4,985.43	-90	0	519.87	99	99.33	100	272
ZK024	3,288,386.83	16,379,574.36	4,926.91	-90	0	675.3		99.43		506
ZK025	3,288,462.51	16,379,628.17	4,881.46	-90	0	573.68	91.37	88.48	98.73	361
ZK027	3,288,610.15	16,379,717.91	4,941.09	-90	0	681.09	91	90	98	373
ZK714	3,288,036.01	16,379,148.02	4,695.35	-90	0	209.8	100	99	99	93
ZK717	3,288,196.14	16,379,242.05	4,813.02	-90	0	341.6	94	99	97	180
ZK719	3,288,348.72	16,379,333.24	4,907.75	-90	0	465.75	99	95	99.5	266
ZK721	3,288,502.15	16,379,422.02	4,846.16	-90	0	516.95	96.33	95.89	97	321
ZK724	3,288,656.82	16,379,516.02	4,818.45	-90	0	543.1		98.84		283
ZK810	3,287,723.92	16,379,431.92	4,744.05	-90	0	303.55	99	97.42	99	177
ZK813	3,287,892.91	16,379,529.02	4,857.84	-90	0	623.93	97.33	96.67	97.57	340
ZK815	3,288,059.88	16,379,632.41	4,996.12	-90	0	599.5	90	93.83	95	336
ZK816	3,288,141.28	16,379,675.45	5,044.06	-90	0	692.2		96.83		417
ZK817	3,288,219.65	16,379,726.38	5,047.52	-90	0	696	93.4	87.75	79	456
ZK818	3,288,308.15	16,379,768.26	5,001.23	-90	0	654.4	98	95.4	99	433
ZK819	3,288,396.95	16,379,814.11	4,944.32	-90	0	665	85.75	92.63	99	331
ZK1519	3,288,491.40	16,379,165.10	4,805.00	-90	0	447.14	95	91	86	261
ZK1521	3,288,625.27	16,379,263.55	4,723.77	-90	0	419.2	98.75	93.67	100.	213
ZK1523	3,288,767.62	16,379,344.06	4,711.83	-90	0	426.81	95	98	100	215
ZK1525	3,288,767.47	16,379,346.40	4,724.21	-90	0	601.2	100	98	100	289
ZK1527	3,289,094.93	16,379,533.89	4,849.86	-90	0	739.6	100	98.5	100	160
ZK1612	3,287,644.21	16,379,612.91	4,857.52	-90	0	522.5	96	96	88	317
ZK1613	3,287,807.19	16,379,710.15	4,918.98	-90	0	663.1		98.43		331
ZK1614	3,287,888.46	16,379,758.52	4,981.97	-90	0	801.8		97.82		405
ZK1615	3,287,975.98	16,379,811.58	5,049.62	-90	0	786.44		93.78		401
ZK1617	3,288,143.17	16,379,906.22	5,126.02	-90	0	830.36	85.33	97.4		529

TABLE 10.1
2010 HUATAILONG DRILL HOLES FOR THE JIAMA PROJECT
(UNDER THE 1954 BEIJING COORDINATE SYSTEM AND THE 1956 YELLOW SEA ELEVATION SYSTEM)

Hole ID	Easting	Northing	Elevation	Dip	Azimuth	Depth (m)	Core Recovery			Number of Samples
							-1[1]	-2[2]	-3[3]	
ZK1624	3,288,482.15	16,380,101.35	5,083.93	-90	0	851.6	100	99	66	470
ZK2414	3,287,733.06	16,379,900.85	5,003.15	-90	0	638.8	100	98.25	100	46
ZK2315	3,288,837.15	16,379,153.45	4,637.11	-90	0	297.51	97	92.5	86	209
ZK2317	3,289,002.96	16,379,251.25	4,689.56	-90	0	412.6	97	96.5	96.5	337
ZK2319	3,289,167.29	16,379,344.89	4,801.95	-90	0	652.08	96	99.29	96	176
ZK2322	3,289,332.41	16,379,434.82	4,828.91	-90	0	768.8	97	97.25	96	274
ZK2412	3,287,566.25	16,379,801.92	4,965.16	-90	0	536.7		97.41		284
ZK2413	3,287,642.26	16,379,839.21	4,953.12	-90	0	539.2	93	96.82	96	322
ZK2415	3,287,818.01	16,379,944.72	5,059.78	-90	0	737.2	100	98	100	362
ZK2416	3,287,898.16	16,379,994.93	5,116.01	-90	0	876.1	97	99.25		505
ZK2417	3,287,976.61	16,380,053.21	5,178.48	-90	0	901.3	95	95.85		492
ZK2418	3,288,063.90	16,380,089.76	5,213.39	-90	0	863.3	95	95	91	482
ZK2419	3,288,152.03	16,380,144.69	5,186.48	-90	0	840.65	95	99.36	100	456
ZK3109	3,288,921.17	16,378,960.15	4,554.56	-90	0	190.3	100	100	100	25
ZK3111	3,289,084.56	16,379,067.94	4,683.14	-90	0	338.6	100	98	98	23
ZK3116	3,289,501.30	16,379,288.60	4,749.50	-90	0	692.54	94	93.4	96	37
ZK3213	3,287,561.37	16,380,051.42	5,054.25	-90	0	789.75	94	92.4	94	415
ZK3214	3,287,657.85	16,380,087.15	5,071.36	-90	0	818.14		98.71		410
ZK3215	3,287,740.49	16,380,138.09	5,136.68	-90	0	895.6	86	98.69		453
ZK3217	3,287,917.12	16,380,231.41	5,268.94	-90	0	1,001.14	99	99.33		504
ZK3218	3,288,011.39	16,380,295.26	5,313.38	-90	0	1073	93	96.6		546
ZK3219	3,288,095.56	16,380,334.98	5,274.77	-90	0	1000.61		95		504
ZK3903	3,288,464.15	16,378,477.22	4,508.84	-90	0	118.7		100		18
ZK3905	3,289,028.50	16,378,803.19	4,582.15	-90	0	201.12	99	94	99	38
ZK3907	3,289,194.46	16,378,897.52	4,606.01	-90	0	275.32	99	92.75	92	13
ZK3909	3,289,365.42	16,378,995.15	4,641.95	-90	0	447.05	98	96	96	46
ZK3912	3,289,526.26	16,379,090.54	4,677.33	-90	0	601.68	99	96.17	100	53
ZK4007	3,286,968.43	16,379,920.47	4,993.50	-90	0	631.78	100	100	99.9	382
ZK4009	3,287,136.46	16,380,012.62	5,045.36	-90	0	749.85	99.7	98.5	97.18	421
ZK4010	3,287,230.76	16,380,071.83	5,013.85	-90	0	692.49	97.8	99.5	99.34	368

TABLE 10.1
2010 HUATAILONG DRILL HOLES FOR THE JIAMA PROJECT
(UNDER THE 1954 BEIJING COORDINATE SYSTEM AND THE 1956 YELLOW SEA ELEVATION SYSTEM)

Hole ID	Easting	Northing	Elevation	Dip	Azimuth	Depth (m)	Core Recovery			Number of Samples
							-1[1]	-2[2]	-3[3]	
ZK4011	3,287,314.66	16,380,110.59	5,023.54	-90	0	737.43	99	99	99	371
ZK4013	3,287,495.89	16,380,224.17	5,147.88	-90	0	732.13		93.6		372
ZK4015	3,287,651.40	16,380,324.57	5,215.40	-90	0	931.15	97	97		504
ZK4016	3,287,744.07	16,380,372.81	5,263.13	-90	0	965.12	97	95.2		489
ZK4302	3,288,995.52	16,378,667.26	4,514.50	-90	0	96.5	97.5	91.33	100	62
ZK4304	3,289,094.02	16,378,717.60	4,532.50	-90	0	163.21	95.5	90	97	57
ZK4306	3,289,168.72	16,378,768.14	4,551.00	-90	0	195.21	97.5	96.37	96	22
ZK4503	3,289,112.07	16,378,673.05	4,534.73	-90	0	130.9	81.1	94.85	91.92	58
ZK4504	3,289,195.10	16,378,727.92	4,551.50	-90	0	196.97	95.17	90	96	62
ZK4703	3,289,098.00	16,378,604.14	4,528.11	-90	0	93.91	69	83	24	36
ZK4704	3,289,133.92	16,378,633.46	4,531.85	-90	0	142.2	89	98.33	53	48
ZK4705	3,289,180.81	16,378,656.48	4,545.49	-90	0	164.42	89	97	89	28
ZK4707	3,289,309.45	16,378,731.84	4,567.17	-90	0	254.07		95.4		16
ZK4710	3,289,483.91	16,378,834.26	4,605.88	-90	0	429.83	98	93.14	95	20
ZK4712	3,289,644.16	16,378,927.98	4,665.00	-90	0	617	95	94	100	80
ZK4802	3,286,605.41	16,379,929.00	5,000.52	-90	0	500.7	99.4	99.05	98.91	463
ZK4806	3,286,752.05	16,379,989.97	5,047.82	-90	0	571.06		97.2	95.4	351
ZK4808	3,286,856.12	16,380,093.34	5,083.82	-90	0	798.15	98.5	98.67	98.85	432
ZK4902	3,289,168.26	16,378,588.51	4,537.74	-90	0	172.41	96.5	95	97	35
ZK4903	3,289,228.83	16,378,632.17	4,550.75	-90	0	178.7		98		23
ZK5204	3,286,666.46	16,380,090.18	5,119.27	-90	0	499.48	97.5	87.05	96.88	457
ZK5220	3,286,747.32	16,380,136.89	5,145.28	-90	0	841.7	99.9	91.9	94.4	422
ZK5604	3,286,631.55	16,380,181.15	5,187.89	-90	0	479.78	99.4	98.1	97	421

[1]Mineralized intervals
[2]Hanging wall waste
[3]Footwall waste

10.3 DISCUSSION

As the primary skarn-type mineralized body has a steep dip angle (averaging 60°) at the upper (southwest) portion and is flatter (with an average dipping angle of 10°) at the lower (northeast) portion at the Jiama Project and as the drill holes were drilled vertically, the true thickness of the mineralized zone at the location of a drill hole is approximately 0.50 and 0.98 times the drilled intercepted mineralized zone length for the upper steeply-dipping zone and the lower flatter zone, respectively.

These drilling results defined the lateral extents and metal grade distribution of the skarn-type mineralization for the Jiama Project and formed a solid basis for the skarn-type mineral resource and mineral reserve estimates. The drilling results have also provided a preliminary basis for the modeling of the hornfels-type mineralization and porphyry type mineralization.

11.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 BRIGADE 6 WORK IN THE 1990S

Sample preparation and analysis for the Brigade 6 samples in the 1990s was conducted by the Tibet Central Laboratory of the Ministry of Geology and Mineral Resources of China in accordance with relevant regulations at that time. No detailed information was available for the sample preparation procedures and metal grade determination methods. However, Behre Dolbear believes that the assay results are acceptable based on their similarities with the samples taken in 2008 to 2010 by Huatailong.

11.2 HUATAILONG WORK FROM 2008 TO 2010

Sample preparation and analysis for the Huatailong core samples was undertaken by the Southwestern Metallurgic Geology Analytical Center (Southwest Center) in Chengdu, Sichuan Province, which is an accredited laboratory by the Chinese National Accreditation Board for Laboratories (CNAL). The Southwest Center set up a sample preparation facility in the Huatailong core storage warehouse. Sample preparation was undertaken by the Southwest Center personnel. Samples were prepared by a two-stage crushing and one-stage grinding procedure to reduce the size of sample particles to minus 200 mesh (0.074 mm). Sample splitting was not performed until the particle size was reduced to approximately 1 mm. A ground sample of approximately 400 grams (g) was sent for analysis in Chengdu; a duplicate ground sample of approximately 500 g as well as the coarse rejects was kept in the core storage warehouse.

Sample analysis was undertaken by the Southwest Center using the standard analytic methods specified in "The Quality Administration Standards for Analysis in Geological and Mineral Resource Laboratories" (DZ0130-94) promulgated by the former Ministry of Geology and Mineral Resources of China. Gold grades were determined by an aqua regia plus fluoride digestion, reactivated carbon concentrating, and atomic absorption spectroscopy (AAS) procedure. Copper, lead, zinc, molybdenum, and silver grades were determined using an aqua regia plus hydrofluoric acid plus perchloric acid digestion and Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES) or AAS procedure. All samples were analyzed for the above six metals.

Some composite samples were also used to determine the concentration of tungsten, cobalt, nickel, cadmium, tin, gallium, niobium, rhenium, arsenic, antimony, bismuth, mercury, selenium, tellurium, germanium, indium, thallium, and sulfur by ICP-AES and other analytic methods.

None of the Huatailong employees, officers, directors, or associates was involved in the sample preparation. Behre Dolbear considers the sample preparation procedures, analytic method, and security utilized to be appropriate for this type of copper-polymetallic deposit.

12.0 DATA VERIFICATION

12.1 BRIGADE 6 WORK IN THE 1990S

Assay quality control/quality assurance (QA/QC) programs for the Brigade 6 samples included regular internal check assays, external check assays, and analysis of standard reference materials and blank samples. Assay quality was considered good based on a review conducted by the Tibet Central Laboratory; however, no detailed information was available for Behre Dolbear's review.

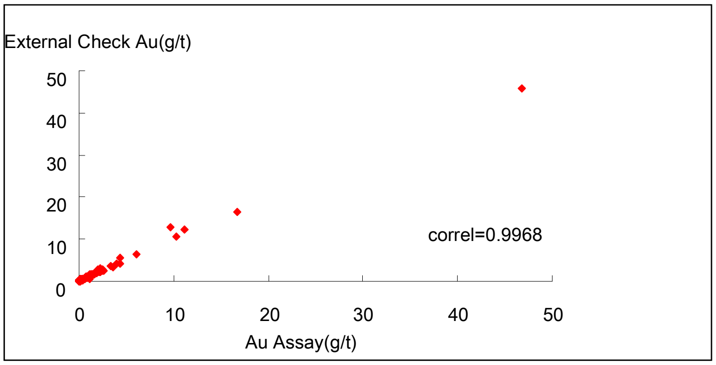
12.2 HUATAILONG WORK IN 2008 AND 2009

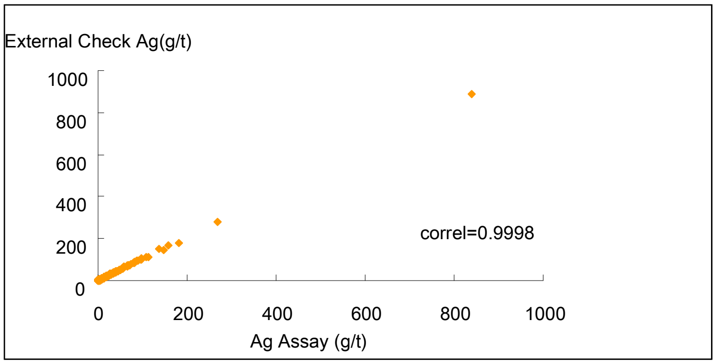
QA/QC programs for the Huatailong samples included regular internal check assays, external check assays, and analysis of standard reference materials and blank samples.

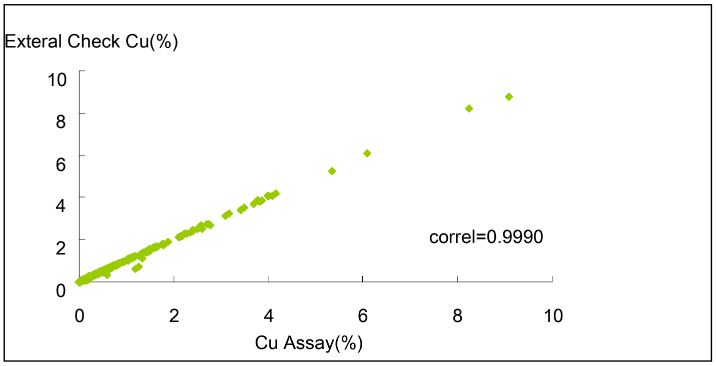
Within the Southwest Center, all analyses were conducted twice. At the same time, approximately 20% of the samples were randomly selected and were blindly coded with different sample numbers for assay precision control. State standard reference materials and blanks were inserted into every batch of samples by the laboratory to monitor the quality of the analytic results. Work performed will not be credited for the laboratory operator if less than 90% of the samples analyzed meet the quality control requirements in a batch. It was reported that all of these measures undertaken have indicated good assay results.

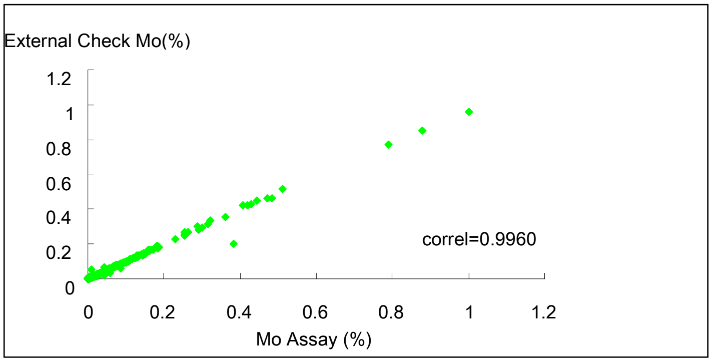
Internal check samples were selected from the duplicate samples by the Resource Institute personnel and were coded with different sample numbers blind to the laboratory. A total of 750 internal check samples were analyzed by the Southwest Center in 2008, representing 3.8% of the total analyzed samples in 2008. Internal checks were compared with the original assay results to see if they met the permitted relative deviation ranges specified by the regulations. It was reported that over 93% of the internal checks were within the permitted relative deviation ranges in 2008, which is better than the 80% requirement specified by the regulations. No systematic bias was reported between the original assay results and the internal checks.

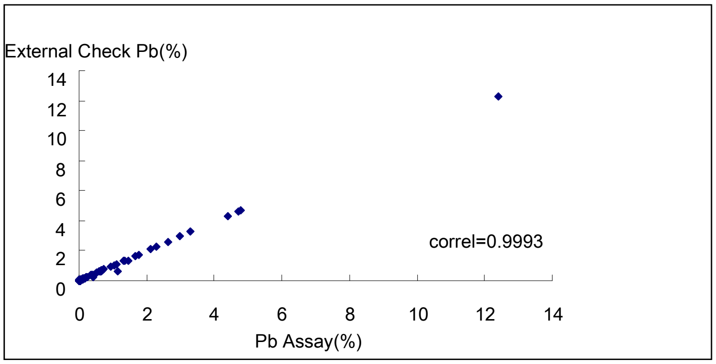
External check samples were randomly selected from the pulp rejects by the Resource Institute personnel and were sent to the State Geologic Laboratory Analytic Center in Beijing for analysis. A total of 695 external check samples were analyzed in 2008, representing 3.6% of the total analyzed samples in 2008. External checks were compared with the original assay results to see if they met the permitted relative deviation ranges specified by the regulations. It was reported that 94% to 99% of the external checks for the six different analyzed metals met the permitted relative deviation ranges in 2008. No systematic bias was reported between the original assay results and the external checks. Figure 12.1 shows the scatter plots of the 2008 original assay results and the external check assay results.


External Check Au(g/t)
50
40
30
20
10
0
0
10
20
30
40
50
correl=0.9968
Au Assay(g/t)


External Check Ag(g/t)
1000
800
600
400
200
0
0
200
400
600
800
1000
correl=0.9998
Ag Assay (g/t)


Exteral Check Cu(%)
10
8
6
4
2
0
0
2
4
6
8
10
correl=0.9990
Cu Assay(%)


External Check Mo(%)
1.2
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
1.2
correl=0.9960
Mo Assay (%)



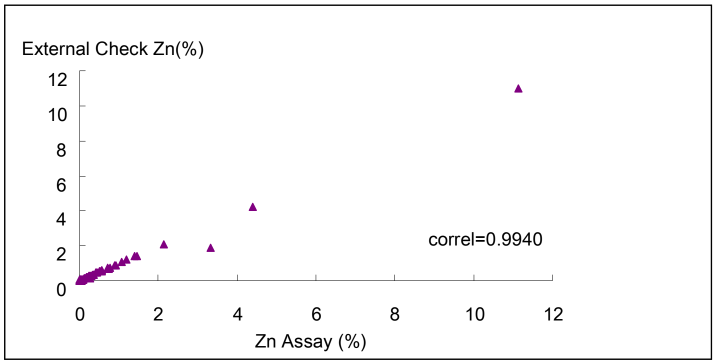


Figure 12.1. Scatter plots of original assay results and external check assay results

12.3 HUATAILONG WORK IN 2010

QA/QC programs for the Huatailong samples included regular internal check assays, external check assays, and analysis of duplicated samples, standard reference materials, and blank samples in 2010.

The basic sample assay and internal sample assay checking in 2010 were all conducted within the Southwest Center using the same assay methods and QA/QC procedures that had been used in 2008 and 2009.

External check samples were randomly selected from the pulp rejects by the Resource Institute personnel and were sent to the ALS Minerals Division, ALS Chemex (Guanzhou) Ltd. in Guangzhou, China for analysis. Eight-hundred thirty (830) external check samples for copper, molybdenum, silver, lead, and zinc minerals; 533 external check samples for gold mineral were analyzed. External checks were compared with the original assay results to see if they met the permitted relative deviation ranges specified by the regulations. It was reported that 95.93% to 99.88% of the external checks for the six different analyzed metals met the permitted relative deviation ranges (Table 12.1). No systematic bias was reported between the original assay results and the external checks. Table 12.1 shows the scatter plots of the 2010 original assay results and the external check assay results.

TABLE 12.1
EXTERNAL CHECK SAMPLES ASSAY SUMMARY FOR THE JIAMA PROJECT IN 2010

Sample Type	Total Samples	Samples Passed	Passing Ration (%)
Copper Assay Samples	830	821	98.92
Gold Assay Samples	533	458	85.93
Molybdenum Assay Samples	830	819	98.67
Silver Assay Samples	830	826	99.52
Lead Assay Samples	830	828	99.76
Zinc Assay Samples	830	829	99.88

Behre Dolbear has verified the copper-polymetallic mineralization by observing the mineralized drill cores at Huatailong's core storage facility. To ensure that the analytic results were correctly entered into the computer's drill hole database used for resource modeling, Behre Dolbear has randomly selected about 10% of the 2008 drill holes to compare the assay data in the computer's database with the scanned copies of the original assay certificates issued by the Southwest Center. The check indicates that all assay data has been correctly entered into the computer's database. Behre Dolbear has also verified the internal and external check assay data from the original assay certificates.

Based on the review of the drilling, sampling, sample preparation, and analysis, as well as the QA/QC data, Behre Dolbear is of the opinion that assay quality for the 2008 to 2010 samples for the Jiama Project meets industry standards and can be used for estimating the mineral resources present at the Jiama Project.

13.0 MINERAL PROCESSING AND METALLURGICAL TESTING

The Jiama Project is currently conducting additional metallurgical testing for the new material within the current updated resource estimate. Information on the mineral processing and metallurgical testing was reviewed in 2010 by Behre Dolbear and can be found in the previous report completed by Behre Dolbear Asia, Inc., 2010 "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region*". The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated information was available at the time of this resource update.

The metallurgical test work and development of the required processing methods and facilities to treat the Jiama copper-lead and copper-molybdenum ores is described below. The copper-lead ore as part of the mineralization at the upper portion of the Tongqianshan open pit constitutes a very small portion of the Jiama ore reserve, while the copper-molybdenum ore is the primary ore type in the Jiama ore reserve. The project will treat a mixture of both ore types for the initial 2 years of the mine life to produce separate copper, molybdenum and lead concentrates; it will treat only the copper-molybdenum ore after the initial 2 years to produce separate copper and molybdenum concentrates. Economically attractive quantities of gold will be reported with the copper concentrate while some silver will be reported with both the copper and the lead concentrates.

13.1 METALLURGICAL TESTING

Early metallurgical test work for the Jiama Project was mostly concentrated on the copper-lead ore, which accounts for only a very small portion of the Jiama resource/reserves located at the upper portion of the steeply-dipping ore zone. The test work on the copper-lead ore was conducted by the Beijing General Research Institute of Mining and Metallurgy (BGRIMM) in 1990 and 2008, the Chengdu Institute of Multipurpose Utilization of Mineral Resources of Chinese Academy of Geological Sciences, (CIMUMR) in 2000, and the Beijing General Research Institute for Nonferrous Metals (BGRINM) in 2007. Changsha Institute summarized these tests in its December 2009 feasibility study report for the Jiama Project.

The metallurgical test work on the copper-molybdenum ore was conducted by the Changsha Gold Research Institute (CGRI) in August 2009. The results of the final test on this ore are also reported in the Changsha Institute December 2009 feasibility study report. The test sample was composited from the coarse rejects of drill core assay samples. The content of metal values corresponded reasonably well to the forecast mill feed. The test sample and test results were satisfactory.

13.1.1 Test Samples

The two main types of ore to be processed during the life of the Jiama operation are the copper-molybdenum ore, with a large reserve, and the copper-lead ore, with a substantially smaller reserve. For the first ore type, the sample for testing was obtained from drill core assay sample coarse rejects. The test work samples for the second ore type were generally obtained by the channel sampling method from underground mine workings.

The 1990 BGRIMM copper-lead ore test sample was composited from high-grade ore (67.75%), low-grade ore (25.8%), and waste rock (6.45%), with average grades of 0.99% copper, 29.14% lead, 6.23% zinc, 344 g/t silver, and 0.39 g/t gold. The lead, zinc, and silver grades for the sample are extremely high and not representative of the ore to be treated by the processing plant at Jiama. Therefore, the 1990 BGRIMM test results are not discussed in this ITR.

Three test samples were collected for the 2000 CIMUMR test work, representing the copper-lead-zinc ore, lead-zinc ore, and copper-molybdenum ore. The copper-lead-zinc ore sample that was used for metallurgical test had average grades of 0.98% copper, 3.41% lead, 1.42% zinc, 63 g/t silver and 0.42 g/t gold, which are reasonably close to the forecast metal grades of the copper-lead ore for the project. Other elements in the sample include 0.0035% molybdenum, 2.93% sulfur, 9.84% iron, 0.035% arsenic, 0.37% manganese, 34.00% SiO_2, 7.04% Al_2O_3, 27.60% CaO, and 1.52% MgO.

Five samples were collected for the 2007 BGRINM test work by channel sampling from the underground mined-out areas and from surface ore stockpiles. The copper-lead-zinc ore sample that was used for the metallurgical tests has average grades of 1.28% copper, 3.60% lead, 2.06% zinc, 52 g/t silver, and 0.20 g/t gold, which are reasonably close to the forecast metal grades of the copper-lead ore for the project.

The 2008 BGRIMM copper-lead ore test sample was collected by channel sampling from underground mined-out areas, with average grades of 1.38% copper, 2.37-2.42% lead, 1.08-1.16% zinc, 61.79-64.32 g/t silver, and 0.44-0.47 g/t gold, which are reasonably close to the forecast metal grades of the copper-lead ore for the project.

The 2009 CGRI copper-molybdenum ore test sample composited from drill core assay sample coarse rejects has average grades of 1.02% copper, 0.054% molybdenum, 16.08 g/t silver, and 1.07 g/t gold, which are reasonably close to the forecast average metal grades for the copper-molybdenum ore of the Jiama Project. Other elements in the sample include 0.03% lead, 0.03% zinc, 1.01% sulfur, 8.06% iron, 0.011% arsenic, 1.36% carbon, 44.67% SiO_2, 3.66% Al_2O_3, 18.1% CaO, and 2.86% MgO.

The zinc grade in the tested copper-lead ore samples is moderately high (1.08% to 2.06%), however, the average zinc grade for the mixed copper-lead ore and copper-molybdenum ore is below 0.20%, which is too low to justify separate zinc concentrate production for the Jiama Project. Therefore, no zinc concentrate production is planned in the feasibility study.

13.1.2 Mineral Composition of Ores

The two types of ores have similar mineral composition. They differ in relative amounts of the minerals present. Table 13.1 shows the mineral composition of the typical ore.

TABLE 13.1
MINERAL COMPOSITION OF JIAMA ORE

Metallic Minerals		Non-Metallic Minerals
Name	**Chemical Formula**	
Major Minerals		
Chalcopyrite	$CuFeS_2$ (34.6% Cu)	Garnet
Bornite	Cu_5FeS_4 (63.3% Cu)	Diopside
Galena	PbS (86.6% Pb)	Plagioclase
Sphalerite	ZnS (67.1% Zn)	Wollastonite
Molybdenite	MoS_2 (59.9% Mo)	K-Feldspar
Pyrite	FeS_2 (46.5% Fe)	Quartz
Minor Minerals		
Chalcocite	Cu_2S (79.9% Cu)	Chlorite
Enargite	Cu_3AsS_4 (48.4% Cu)	Dolomite
Tetrahedrite	$(Cu,Fe)_{12}Sb_4S_{13}$ (up to 45.8% Cu)	Sericite
Covellite	CuS (66.5% Cu)	Calcite
Native Gold	Au, 100%	Tremolite
Malachite	$CuCO_3Cu(OH)_2$ (57.5% Cu)	Actinolite
Native Silver	Ag, 100%	
Hematite	Fe_2O_3	
Cobaltite	CoAsS	
Rutile	TiO_2	

Chalcopyrite is embedded in rock-forming minerals and together with galena, sphalerite, and pyrite. It may be deposited between gangue minerals in irregular shapes. Small amounts of chalcopyrite occur as inclusions in sphalerite measuring 0.001 mm to 0.1 mm in size.

Galena is found in chalcopyrite-bornite-galena-sphalerite ore, primarily embedded with sphalerite and chalcopyrite. It appears in irregular shapes or is disseminated in gangue minerals.

Sphalerite, along with galena, chalcopyrite, and bornite, is disseminated in gangue minerals in irregular shapes, or is found as interrupted veinlets along fractures or between gaps of gangue minerals together with galena and chalcopyrite.

Molybdenite is present mostly in tabular form but may be embedded in or wrapped by gangue minerals. Its distribution among different types of ore is uneven. Its size generally varies between 0.01 mm and 0.05 mm.

Gold is found mostly as native gold with a grain size generally between 0.01 mm and 0.03 mm, the largest being 0.1 mm. It occurs mostly within tetrahedrite, bornite, and gangue minerals.

Silver is found as either native silver or silver telluride. It is generally directly correlated with lead.

The elements with economic values in the deposit include copper, molybdenum, lead, zinc, gold, and silver. Deleterious elements include arsenic and magnesium, but their contents are generally low.

13.1.3 Tests and Results

The summaries of the test work results obtained from the copper-lead ore are presented in Table 13.2. Tests T1 and T2 compare the selective flotation approach with bulk flotation, followed by separation approach. Of the two approaches, the bulk flotation/separation method yielded a higher copper concentrate grade (29.11% Cu) than the selective flotation method (23.45% Cu) at similar copper recoveries for both approaches. The lead concentrate grades were similar. However, the lead recovery obtained using the bulk flotation method (90.27% Pb) was substantially higher than that for the selective flotation method (80.54% Pb). The silver assay and recovery in the lead concentrate were also significantly higher (990.0 g/t and 91.51% versus 749.5 g/t and 64.57%) for the bulk flotation approach. Therefore, the bulk flotation approach has been selected for the Jiama Project as the method will yield significantly higher net smelter returns.

TABLE 13.2
SUMMARY OF FLOTATION TEST RESULTS FOR COPPER-LEAD ORE

Test Identifier	T1	T2	T3	T4	T5
Performed by	CIMUMR, 2000	BGRINM, 2007	BGRIMM, 2008	BGRIMM, 2008	BGRIMM, 2008
Flotation Approach	Bulk Cu-Pb, then Cu-Pb separation	Selective Cu-Pb flotation; locked cycle test	Bulk Cu-Pb, then Cu-Pb separation; 100% fresh water; locked cycle test	Bulk Cu-Pb, then Cu-Pb separation; 50% fresh water; locked cycle test	Bulk Cu-Pb, then Cu-Pb separation; 15% fresh water; locked cycle test
Feed Assay					
Cu %	0.98	1.28	1.38	1.38	1.38
Pb %	3.41	3.60	2.38	2.42	2.37
Ag g/t	52.47	52.0	64.32	63.85	61.79
Au g/t	-	0.20	0.47	0.44	0.44
Copper Concentrate Assay					
Cu %	29.11	23.45	27.67	28.66	28.11
Ag g/t	39.44	274.3	785.0	762.0	736.0
Au g/t	-	3.49	6.45	6.20	5.96
Copper Concentrate Recoveries					
Cu %	85.04	85.88	91.90	90.13	89.24
Ag %	2.14	24.74	55.81	51.92	52.16
Au %		81.84	62.66	61.86	59.97
Lead Concentrate Assay					
Pb %	63.55	64.72	66.04	62.79	63.07
Ag g/t	990.00	749.5	742.0	785.0	735.0
Au g/t	-	0.47	0.69	0.76	0.72
Lead Concentrate Recoveries					
Pb %	90.27	80.54	84.44	83.63	86.75
Ag %	91.51	64.57	33.13	39.64	38.71
Au %	-	10.53	4.46	5.62	5.38

The effect of water recycling on the copper-lead bulk flotation then separation process was tested (Tests T3, T4, and T5) by BGRIMM in 2008. The test results were rather similar, taking into account possible experimental errors. However, it appears that the results obtained when using 100% fresh process water may have an edge over the fresh/recycled mix. Therefore, a recycled water treatment plant is necessary to improve the quality of the process water in general.

The copper-molybdenum processing approach of bulk flotation first followed by bulk concentrate regrinding and flotation separation of molybdenum from copper is well known and used in the majority of similar operations worldwide. This approach was successfully tested by CGRI in 2009, and the obtained test results are presented in Table 13.3.

TABLE 13.3
SUMMARY OF FLOTATION TEST RESULTS FOR COPPER-MOLYBDENUM ORE

Item	Parameter
Feed Assay	
Cu %	1.05
Mo %	0.054
Au g/t	1.07
Ag g/t	16.08
Copper Concentrate Assay	
Cu %	32.11
Mo %	0.22
Au g/t	16.65
Ag g/t	351.7
Copper Concentrate Recoveries	
Cu %	94.22
Mo %	12.50
Au %	47.88
Ag %	67.30
Molybdenum Concentrate Assay	
Cu %	3.02
Mo %	47.71
Au g/t	-
Ag g/t	-
Molybdenum Concentrate Recoveries	
Cu %	0.24
Mo %	73.20
Au %	-
Ag %	-

Both ore types will be ground to 70% minus 0.074 mm before flotation. The copper-lead flotation reagents comprise lime, xanthate collectors BK 204, BK 809, and BK 908, zinc sulfate, sodium sulfide, activated carbon, and alcohol-type frothers. The reagents for copper-molybdenum flotation ore comprise sodium silicate, sodium sulfide, No. 2 diesel oil, butyl xanthates, kerosene, and frothers. All these reagents are fairly typical for the ores being studied and are readily available in China.

Results of chemical analyses of primary components of copper and lead concentrates produced by the 2008 BGRIMM test work on copper-lead ore and copper and molybdenum concentrates produced by the 2009 CGRI test work on copper-molybdenum ore are given in Table 13.4. Behre Dolbear notes that analyses of nickel, bismuth, and antimony for concentrates are not available from the table.

TABLE 13.4
CHEMICAL ANALYSES OF FLOTATION CONCENTRATES OBTAINED FROM THE TEST WORK

Test Work	**BGRIMM, 2008**		**CGRI, 2009**	
Ore Type	**Copper-Lead**		**Copper-Molybdenum**	
Concentrate Type	**Copper**	**Lead**	**Copper**	**Molybdenum**
Cu (%)	28.66	2.11	32.11	3.02
Pb (%)	6.98	62.79	0.438	0.158
Zn (%)	1.64	4.08	0.643	0.053
Mo (%)	0.10	0.051	0.220	47.71
S (%)	29.40	16.76	23.66	35.43
Fe (%)	22.12	5.12	16.64	2.32
WO_3 (%)	0.094	0.074	-	-
As (%)	0.81	0.068	0.07	0.26
Mn (%)	0.016	0.040	-	-
SiO_2 (%)	1.33	3.72	12.46	4.59
Al_2O_3 (%)	0.14	0.32	0.98	0.36
Ca (%)	0.76	2.49	8.23 (CaO)	2.22 (CaO)
Mg (%)	0.096	0.23	2.87 (MgO)	3.52 (MgO)
Au (g/t)	6.20	0.76	16.65	-
Ag (g/t)	762	785	351.70	-

Based on the preliminary copper concentrate sales agreement signed between Huatailong and a major smelter customer, the specifications for copper concentrate are ≥Cu 18%; Ni≤ 1.5%; As≤ 0.5%; Pb+Zn ≤ 8.0%; Bi+Sb ≤ 0.5%; MgO ≤ 4.0. Copper concentrate produced by the 2009 CGRI test work on the copper-molybdenum ore generally meets these specifications, although nickel, bismuth, and antimony contents in the copper concentrate are unknown.

No molybdenum and lead concentrate sales agreements have been signed by Huatailong; therefore, the commercial specifications for molybdenum and lead concentrates for the Jiama Project are unknown. Behre Dolbear considers it important to obtain the commercial specifications for molybdenum and lead concentrates as soon as possible.

14.0 MINERAL RESOURCE ESTIMATES

The Australasian JORC Code is a mineral resource and ore reserve classification system that is widely used and is internationally recognized. It has been used previously in ITRs for mineral resource and ore reserve statements for other Chinese companies reporting to the SEHK and has been accepted as a valid reporting code by the SEHK. The JORC Code is used by Behre Dolbear to report the mineral resources and ore reserves of the Jiama Project in this ITR. Mineral resources, inclusive of reserves have been reconciled to the CIM Standards, and are the same as the mineral resources under the JORC Code.

Current mineral resources of the Jiama Project were estimated by the Resource Institute, using the Micromine® computer mining software, the December 2010 drill hole database and the Jiama 3D geological model produced by the Resource Institute geologists. To determine the resource at Jiama, the Resource Institute used four different block models that are designated as:

1) Steep Skarn
2) Shallow Skarn
3) Hornfels
4) Porphyry

For the purposes of this report, Behre Dolbear has reviewed the work completed by the Resource Institute and completed check calculations to evaluate the four models. Behre Dolbear believes that the work conforms to acceptable industry practices and is acceptable for JORC or Canadian NI 43-101 compliant mineral resource estimates.

14.1 ELECTRONIC DATABASE USED FOR RESOURCE MODELS

The drill hole database used for the current Jiama Project resource model is summarized in Table 14.1. It consists of a total of 300 DDH with a total drilled length of 120,197m. In addition, the database contains 10 surface trenches with a total length of 349m.

TABLE 14.1
DRILL HOLE DATABASE USED FOR JIAMA PROJECT RESOURCE ESTIMATION

Drilling Campaign	Number	Total Meters
1990s No. 6 Brigade DDH Holes	22	6,518.00
1990s No. 6 Brigade Surface Trenches	10	349.00
2008 Huatailong DDH Holes	150	50,616.56
2009 Huatailong DDH Holes	47	18,745.45
2010 Huatailong DDH Holes	82	45,537.22
Total	**300**	**120,196.92**

These holes were drilled on exploration lines oriented at a N30°E direction and at a line spacing of 100m or 200m. Drill hole spacing on the exploration lines is approximately 100m, 200m, or 400m, with the drill hole spacing at the central portions of the deposit at approximately 100m by 100m, increasing to 200m by 100m, 200m by 200m, or 400m by 400m toward the peripheries of the deposit. The electronic database provided by the Company contains 51,362 assay intervals, with grades for copper, molybdenum, gold, silver, lead, and zinc.

Topography used for the resource estimation was based on a 1:2000 topographic survey completed by the Huatailong Company in 2008.

For the resource modeling work, all coordinates in the electronic database have been rotated 30 degrees counter-clockwise about 3,280,000N and 16,370,000E in order to align the x-axis of the block models with the drill section lines. Hence, the coordinates shown on the figures and discussed below are in a rotated local coordinate system.

For the 2010 report, Behre Dolbear randomly selected about 10% of the 2008 drill holes to compare the assay data in the computer database with the scanned copies of the original assay certificates issued by the Southwest Center to ensure that the analytic results were correctly entered into the computer drill hole database used for resource modeling. That check work indicated that all assay data has been correctly entered into the computer database. The updated electronic database used for this report was also checked for accuracy by the authors by again comparing the assay data for the new drilling with scanned copies of the original assay certificates. A few minor entry errors were discovered and corrected.

14.2 BULK DENSITY MEASUREMENTS

A total of 217 core and rock samples were measured for bulk density by Brigade 6 in the 1990s. However, there were no detail location descriptions and no assay for these samples. The Resource Institute has not used these bulk density measurements in its 2011 Resource Estimation Report. A total of 333 bulk density samples from the selected drill cores and underground/surface rock samples were measured by the Resource Institute in 2008 and 2010, using the industry standard wax-coating displacement method and were used in the resource estimation that includes 176 samples from the skarn-type copper-molybdenum mineralization zone, 41 samples from skarn-type lead-zinc mineralization zone, 81 from hornfels-type mineralization zone, and 35 from porphyry-type mineralization zone. All bulk density samples have been assayed after the density measurements. A correlation analysis was conducted on the bulk density measurements and the grades of the principal element mineralization samples, excluding those samples where the grade is less than the cut off grade. After this analysis, the correlation was found to be poor between the grades of the principal element and the bulk density measurements in the skarn-type copper-molybdenum mineralization samples, hornfels-type copper-molybdenum mineralization samples, and porphyry-type copper-molybdenum mineralization samples. Therefore, the average bulk density measurement values for each type of mineralization were used to determine the tonnage. Table 14.2 shows the average densities for skarn-type copper-molybdenum mineralization zone, hornfels-type copper-molybdenum mineralization zone and porphyry-type copper-molybdenum mineralization zone.

TABLE 14.2
AVERAGE BULK DENSITY FOR COPPER-MOLYBDENUM MINERALIZATION

Rock Type	Average Density (t/m^3)
Skarn	3.135
Hornfels	2.626
Porphyry	2.373

The correlation between the lead and zinc grades and the bulk density measurements, however, is good in the skarn-type lead-zinc mineralization samples and can be calculated.

$$XT = 2.9518 + 0.0297 \times Pb + 0.0041 \times Zn$$

where:

XT = bulk density
Pb and Zn are the lead and zinc grades in percent

14.3 PROCEDURES AND PARAMETERS USED FOR THE RESOURCE MODELING

14.3.1 Skarn Models

The skarn mineralization is distributed along an interlayer structural zone between underlying marbles and overlying hornfels and is believed to be formed along a detachment structural zone. Mineralization in this zone is still open in many places, especially along the down-dip direction, indicating significant additional exploration potential. Although this mineralized zone is very extensive, metal grade distribution in the zone is quite variable. In general, the upper portion of the mineralized body is copper rich, and the lower portion of the body is molybdenum rich. Lead with some zinc is enriched locally at the upper portion of the zone. As the primary mineralized zone strikes at a 120° azimuth, the coordinate system for the drill hole database was rotated counter-clockwise 30° to align the east-west axis of the rotated coordinate system with the strike of the mineralization for the resource model.

The mineralization within the skarns was divided into two separate block models for resource estimation designated as the steep skarn model and the shallow skarn model. The following procedures and parameters were used in the current resource estimation for the skarn-type mineralization of the Jiama Project.

- **3D Geologic Model:** A 3D geological model was generated by the Resource Institute geologists using the Micromine® mining software. Mineralized envelopes were constructed with the skarn using a grade envelope generated on the drill hole sections using a cut off grade of 0.3% copper or 0.03% molybdenum for the copper-molybdenum orebodies, and 0.3% lead or 0.5% zinc for the lead-zinc orebodies. The minimum mineralized zone thickness is 2m and any internal waste zones under 4m were included in the grade envelope. After determining the grade envelopes on sections, they joined the sections to form 3D solids to define the skarn mineralized bodies.

  These 3D solids divide the skarn deposit into eight mineralized resource areas. The primary mineralized body is referred to as the I1 mineralized body and the seven smaller mineralized bodies are referred to as the I2 to I8 mineralized bodies. The I1 mineralized body strikes at an approximately 120° azimuth and dips to the northeast. The upper portion of the zone has a steep dip angle averaging approximately 60° and the lower portion of the zone is flatter with an average dip angle of approximately 10°. The I1 mineralized body is approximately 2,400m long along strike and 150m to 1,900m wide in the dip direction, and its thickness ranges from less than 5m to more than 200m and occupies over 97% of the mineralized volume for the entire deposit. Figure 14.1 shows a typical cross section used to create the 3D solids with the steep and shallow skarn model outlined in red.

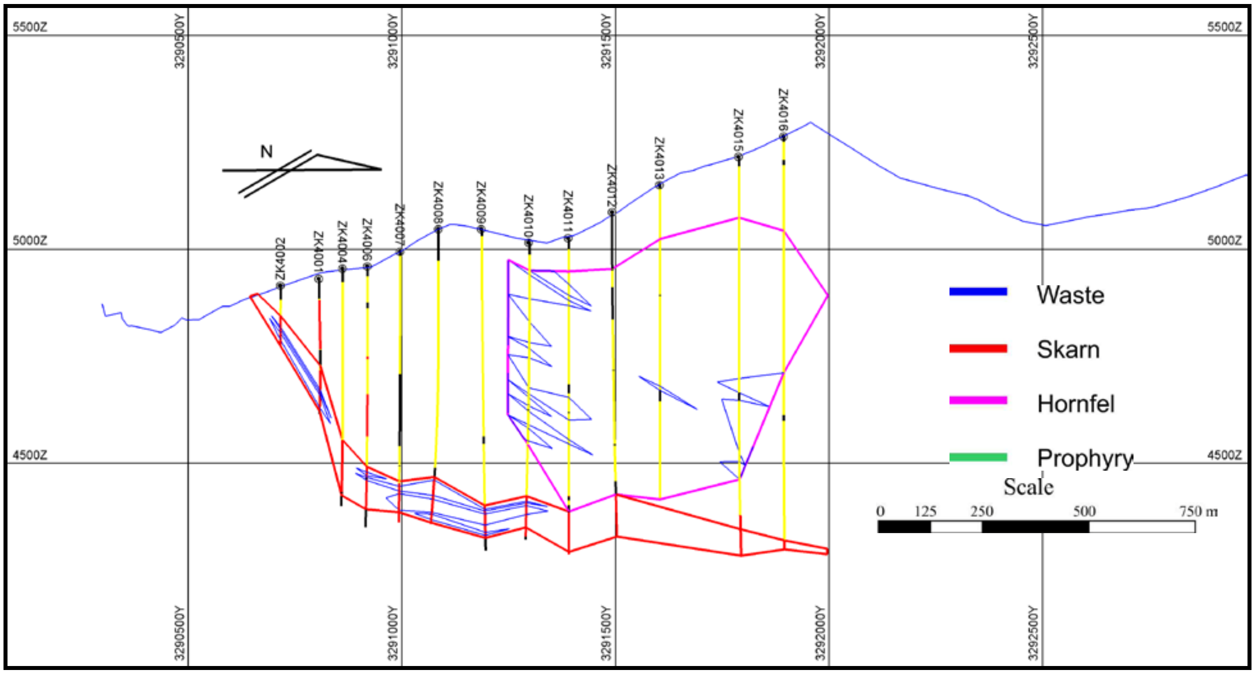


Figure 14.1. Typical cross section used to construct 3D solids

Figure 14.2 shows the 3D geologic solid used to delineate the skarn mineralization where the red illustrates the skarn model. Behre Dolbear has reviewed the geologic solids and believes they are appropriate, based on the assumptions for the grade envelopes.

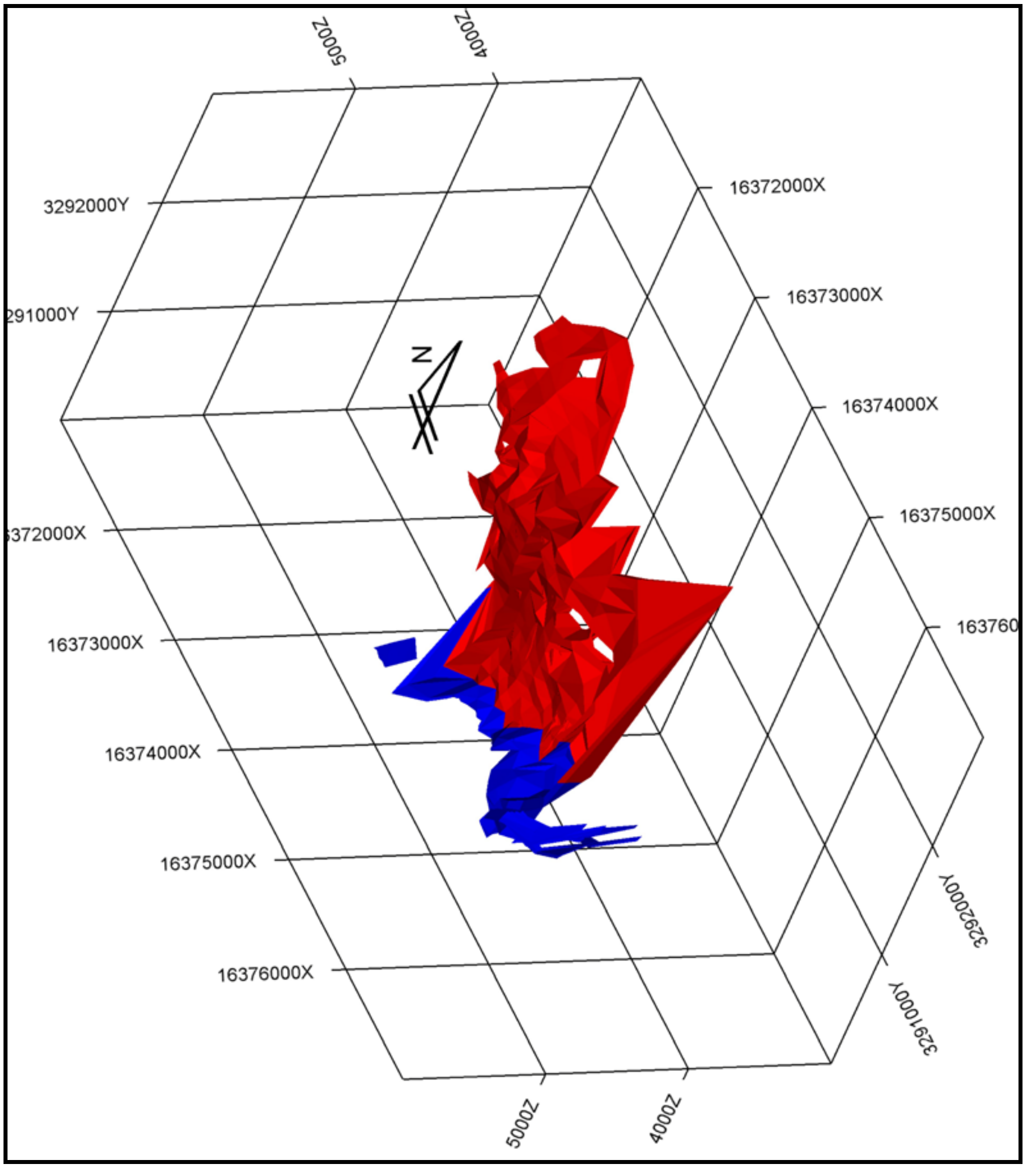


Figure 14.2. 3D geologic solids of skarn mineralization

- **Grade Capping and Assay Statistics:** Grade capping for the skarn models was based on the grade probability distributions. Capping was set at the point where the cumulative frequency curve deviated from a straight line. Figure 14.3 shows the probability curves and the capping value used for the resource estimate. The capping grade determined for the Jiama deposit is 10% for copper, 0.75% for molybdenum, 6 g/t for gold, 190 g/t for silver, 21% for lead, and 7% for zinc. Samples with metal grades above the capping grades are considered outliers, and these outlier metal grades were replaced by the capping grades before compositing, variography analysis, and grade estimation. Behre Dolbear has reviewed the capping and agrees that the selected grades are appropriate for the modeling work. Table 14.3 summarizes the uncapped and capped metal grade statistics.

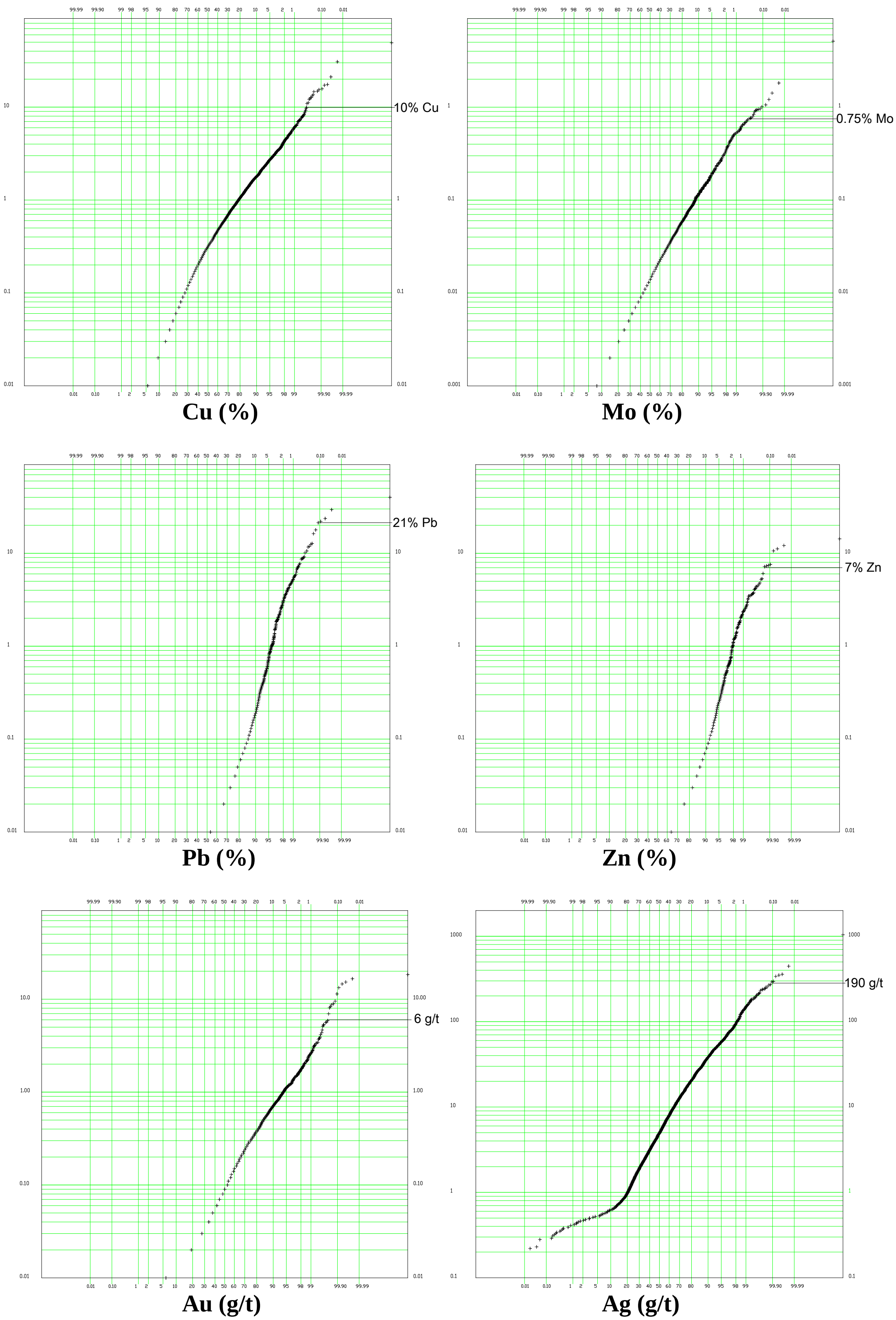


Figure 14.3. Cumulative distribution plots of metals grades

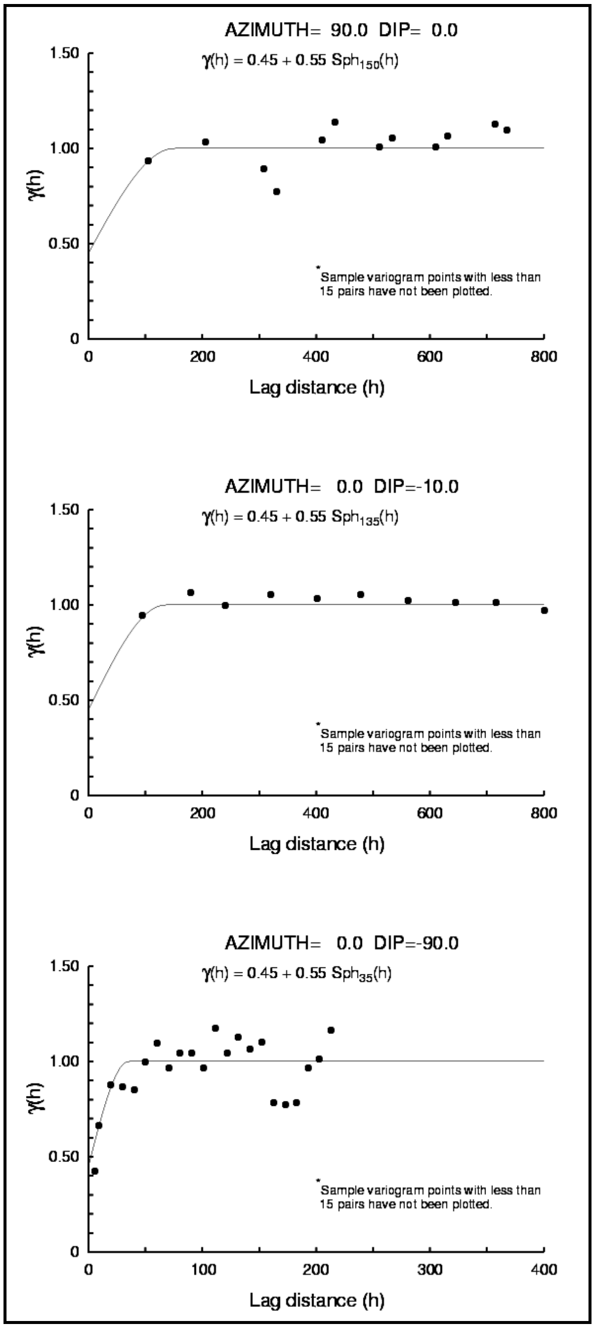
TABLE 14.3
METAL ASSAY GRADE STATISTICS INSIDE THE MINERALIZED ZONES

Metal	Uncapped			Capped			
	Mean	Standard Deviation	Coefficient of Variation	Capping Grade	Mean	Standard Deviation	Coefficient of Variation
Cu (%)	0.68	1.43	2.1	10.0	0.66	1.13	1.72
Mo (%)	0.045	0.112	2.46	0.75	0.044	0.08	2.01
Au (g/t)	0.27	1.29	4.71	6.0	0.25	0.58	2.39
Ag (g/t)	14.03	30.48	2.17	190.0	13.53	24.52	1.81
Pb (%)	0.12	0.94	8.14	21.0	0.11	0.85	7.60
Zn (%)	0.06	0.41	6.47	7.0	0.06	0.35	5.86

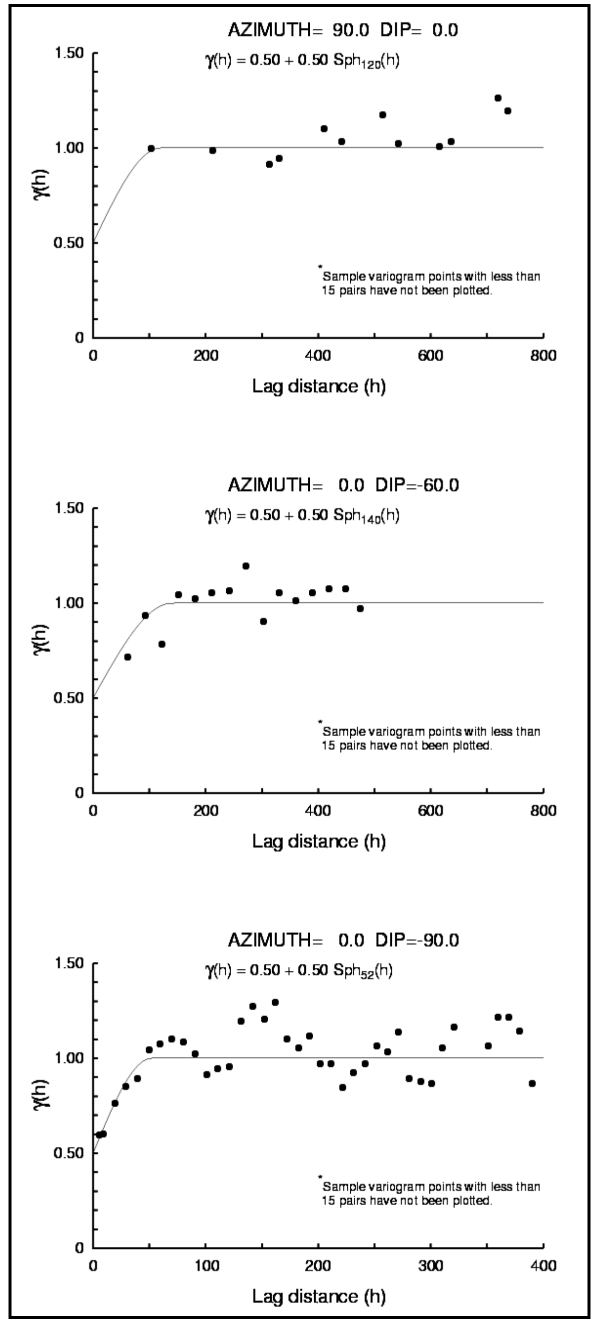
- **Compositing:** Capped metal assays inside the mineralized envelopes were composited to 5m fixed-length composites, and composites less than 1m long were merged into the previous 5m composite. The composite length was chosen to correspond to the block dimensions in the block model. Behre Dolbear believes that the composite length is appropriate for the modeling work.

- **Variography:** As the modeled mineralized zones have a steep dip angle at the upper portion and a flat dip angle at the lower portion, the mineralized zones were divided into an upper, steeply-dipping domain and a lower, flatter domain for the purpose of variogram modeling and grade estimation. The Resource Institute uses a correlogram instead of traditional variograms for the variography analysis. The correlograms are computed by standardizing the covariance by the standard deviation of the head and tail values and not the more traditional definition for correlogram. These were modeled for the 5m length composite metal grades. The holes were drilled roughly vertically on a regular drilling grid from 100m to 400m. The Resource Institute found it difficult to produce good correlogram models in any direction other than the vertical direction (or the downhole direction). The correlogram models generally show a relative nugget at around 0.5 and a correlogram range for the primary direction, or the strike of the mineralization, between 105m to 200m. Correlograms in the vertical direction were used to estimate the correlograms in the minor direction since there was the lack of sufficient data in this direction for meaning analysis. The Resource Institute assumed that the correlogram range in the minor direction is 80% of the vertical correlogram range for the flatter domain and 60% of the vertical correlogram range for the steep-dip domain.

  Figure 14.4 shows the correlograms produced by the Resource Institute for copper for both the steep skarn model and the shallow skarn model. The detailed correlograms for the other metals (molybdenum, lead, zinc, gold, and silver) can be found in Sections 16 through 18 of their 2011 report. Behre Dolbear has reviewed the variography work in detail and agrees that the correlogram models are not as robust as typically used for this sort of resource estimate. This is due primarily to the steep terrain making drilling and drill site locations less than ideal. However, Behre Dolbear believes the variography work with the extrapolation used is adequate for the current resource model.



Copper Correlogram – Shallow Skarn Model



Copper Correlograms – Steep Skarn Model

Figure 14.4. Example correlograms for the skarn models

Table 14.4 summarizes the correlogram ellipsoids determined by the Resource Institute for the two skarn models at the property.

TABLE 14.4
2011 CORRELOGRAM ELLIPSOIDS FOR THE SKARN MINERALIZATION

Model Area	Metal	Axis	Azimuth	Dip	Nugget	Sill	Range (m)
Shallow Skarn	Gold	Major	270	0	0.55	0.45	145
		Semi-Major	0	-10			138
		Minor	0	80			3
	Silver	Major	270	0	0.5	0.5	158
		Semi-Major	0	-10			132
		Minor	0	80			32
	Copper	Major	270	0	0.45	0.55	150
		Semi-Major	0	-10			135
		Minor	0	80			28
	Molybdenum	Major	270	0	0.45	0.55	110
		Semi-Major	0	-10			145
		Minor	0	80			25.6
	Lead	Major	270	0	0.48	0.52	122
		Semi-Major	0	-10			118
		Minor	0	80			20
	Zinc	Major	270	0	0.55	0.45	200
		Semi-Major	0	-10			100
		Minor	0	80			20
Steep Skarn	Gold	Major	270	0	0.45	0.55	135
		Semi-Major	0	-60			125
		Minor	0	30			30
	Silver	Major	270	0	0.48	0.52	125
		Semi-Major	0	-60			155
		Minor	0	30			28.8
	Copper	Major	270	0	0.5	0.5	120
		Semi-Major	0	-60			140.2
		Minor	0	30			31.2
	Molybdenum	Major	270	0	0.58	0.42	115
		Semi-Major	0	-60			120
		Minor	0	30			18
	Lead	Major	270	0	0.58	0.42	125
		Semi-Major	0	-60			125
		Minor	0	30			33
	Zinc	Major	270	0	0.5	0.5	125
		Semi-Major	0	-60			105
		Minor	0	30			24

The "Nugget" components of the correlograms, presented in Figure 14.4, are greater than 45% of the total structure for all metals and most of the correlogram structures are very loosely defined by the selected model. The lack of structure seen in many of the correlograms at distances below the interpreted range increases the risk of resource estimation and reduces the overall confidence of the resulting estimates.

- **Block Model Definition:** A 3D block model with a block size of 10m × 10m × 10m was defined for the Jiama steep skarn model and the shallow skarn model. The Resource Institute used the sub-blocking capabilities of the Micromine® software in the models that further reduced the block size to 5m × 5m × 5m to better fit the 3D grade enveloped developed. The mineralized envelopes were coded into the block model using the center of the block, *i.e.*, a block is considered inside the mineralized envelope if the center of the block is located inside the mineralized envelope. A volume check was conducted by comparing the mineralized envelope volume and the 3D block volume, with a negligible difference. Table 14.5 shows the major definitions of the two models used for the skarn mineralization.

TABLE 14.5
SKARN BLOCK MODEL PARAMETERS

Block Model	Direction	From	To	Length (m)	Block Dimensions (m)	Number of Blocks
Shallow Skarn	East	16,372,756.00	16,375,406.00	2,650.00	10	266
	North	3,290,598.75	3,292,968.75	2,370.00	10	238
	Vertical	4,003.72	4,703.72	700.00	10	76
Steep Skarn	East	16,373,510.00	16,376,310.00	2,800.00	10	281
	North	3,290,377.25	3,291,467.25	1,090.00	10	110
	Vertical	4,337.58	5,177.58	840.00	10	85

- **Grade Estimation:** Block grade estimation was conducted using a three-pass ordinary kriging (OK) procedure. The search radii for the three passes were 120m, 150m, and 240m for the shallow skarn model and 57.6m, 96m, and 192m for the steep skarn model. Discussions with the Resource Institute indicated that the number of 5m composites used for the first and second passes ranged from 4 to 10, with a maximum of three composites from any single drill hole or surface trench. The number of 5m composites used for the third pass ranged from 2 to 10, with a maximum of three composites from any single drill hole or surface trench.

  Although the Resource Institute determined oriented correlogram ellipsoids, as shown in Table 14.4, the search ellipsoid used was spherical in nature, *i.e.*, all search axes are the same distance. Typically, each estimation pass should conform to the correlogram ellipsoids generated for the metal or estimation domain. However, check calculations, conducted by Behre Dolbear using oriented ellipsiodsellipsoids, showed only minor differences to the overall tonnage and average grade of the resource estimate.

- **Resource Classification:** Model blocks were originally classified into 331, 332, and 333 resources under the Chinese Code. All blocks with a pass one grade estimation were classified as 331; all blocks with a pass two grade estimation were classified as 332; and all blocks with a pass three grade estimation were classified as 333 by the Resource Institute.

While Chinese categories of 331, 332, and 333 are generally converted to Measured, Indicated, and Inferred mineral resources under the JORC Code, the author believes that the classification method used by the Resource Institute for their Chinese classification are aggressive for direct JORC conversion and Behre Dolbear has made appropriate modifications prior to conversion to JORC mineral resource categories. Behre Dolbear would recommend, for future work, that the Resource Institute use a base search ellipse of 80% of the correlogram range for each axis and that the first pass be completed at 50% of the base search ellipsoid to enable an appropriate conversion.

- **Validation:** Local grade bias was checked by the Resource Institute posting the block grades and composite grades on a computer screen on sections and plans, indicating the block grades are generally similar to the nearby composite grades, with a reasonable amount of smoothing. The author has repeated this exercise and believes that the model grade distribution reasonably corresponds to the drilling data.

- **Mined-out Areas:** The Resource Institute conducted a systematic survey of the adits driven by the four previous operators before the consolidation of the property. A total of 64 adits were surveyed, of which 24 were for exploration purposes only and had no mining stopes. The other 40 adits were for mining purpose and have mined-out stopes. Based on the survey results, the total mined-out volume from stopes in the 40 surveyed adits is approximately 397,000m^3. The mined-out areas are all located in the skarn mineralized zone; therefore, the skarn-type mineralization bulk density of 3.115 t/m^3 was used to calculate the mined-out tonnage of approximately 1.236 Mt. The stopes were distributed at MSL elevations ranging from 4,600m to 4,950m and between Exploration Lines 7 and 96. Behre Dolbear believes that the mined out tonnages, based on the Resource Institute's survey results, are reasonable estimates of the mineral resources consumed by historical mining for the Jiama Project. These mined out tonnages were allocated by the Resource Institute to 50m levels and were deducted from the summaries produced for the current resource model.

  Typically, mined out areas are surveyed by digitization from old operating maps and then the actual areas are removed from the model prior to the resource estimate summary. In this case, the Resource Institute has adjusted the summary tonnage and metal content to reflect past mining activities. While this will not affect the overall mineral resource statement, it may affect the mine planning and the timing of mineral exploitation at some later date as the material is still included in the model.

14.3.2 Procedures and Parameters Used for the Hornfels-Type Resource Modeling

The following procedures and parameters were used in the current resource estimation for the hornfels-type mineralization of the Jiama Project.

- **Geological Modeling:** Geological modeling was performed by the Resource Institute geologists using Micromine® mining software. The mineralized zones were modeled by a grade envelope at the cut off grade of 0.3% copper or 0.03% molybdenum or 1% lead or 1% zinc. The minimum mineralized zone thickness is 2m. Results of the geological modeling show that the hornfels-type mineralization is likely to consist of a large, massive mineralized body over 1,500m long, up to 1,000m wide, and up to 820m thick, as shown from the computer model in Figure 14.5. In general, the upper portion of the mineralized body is copper rich and the lower portion of the body is molybdenum rich.

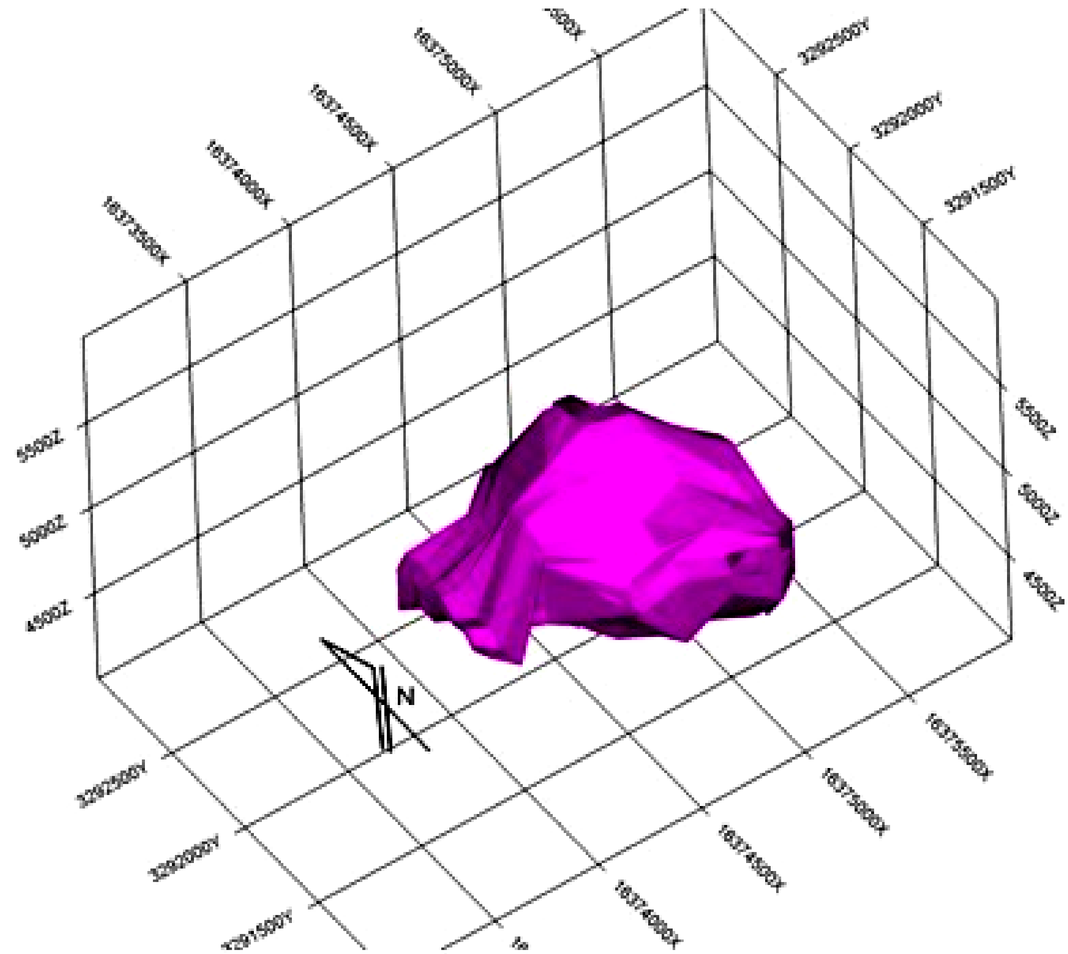


Figure 14.5. Hornfels geologic model

- **Metal Grade Statistical Analysis and Grade Capping:** A total of 10,377 assay intervals with a total length of 19,681m are located inside the defined hornfels-type mineralized envelopes for the Jiama Project. Therefore, the average assay interval length inside the hornfels-type mineralized envelopes is 1.9m. Metal grade statistics of these assay intervals are summarized in Table 14.6. No capping was conducted on the hornfels-type mineralization as all of the assay grades are below the capping grades for the skarn-type mineralization.

TABLE 14.6
METAL ASSAY GRADE STATISTICS INSIDE THE HORNFELS-TYPE MINERALIZED ZONES

Metal	Number of Samples	Mean	Standard Deviation	Minimum	Maximum	Coefficient of Variation
Cu (%)	10,377	0.23	0.167	0.00	5.27	0.70
Mo (%)	10,377	0.031	0.047	0.000	0.75	1.49
Au (g/t)	10,377	0.032	0.19	0.00	6.0	6.05
Ag (g/t)	10,377	1.03	1.23	0.09	67.8	1.20
Pb (%)	10,377	0.005	0.019	0.00	1.36	3.63
Zn (%)	10,377	0.006	0.023	0.00	2.13	3.66

- **Compositing:** Metal assays inside the mineralized envelopes were composited to 5m fixed-length composites, and composites less than 1m long were merged into the previous 5m composite. A total of 3,521 composites were produced inside the hornfels-type mineralized envelopes. Metal grade statistics for the composites are summarized in Table 14.7.

TABLE 14.7
LENGTH-WEIGHTED 5M LENGTH HORNFELS COMPOSITE METAL GRADE STATISTICS

Metal	Number of Samples	Mean	Standard Deviation	Minimum	Maximum	Coefficient of Variation
Cu (%)	3,521	0.25	0.15	0.02	2.27	0.58
Mo (%)	3,521	0.033	0.037	0.000	0.613	1.12
Au (g/t)	3,521	0.02	0.14	0.00	4.90	4.89
Ag (g/t)	3,521	1.06	1.17	0.44	53.44	1.11
Pb (%)	3,521	0.005	0.016	0.00	0.78	2.95
Zn (%)	3,521	0.007	0.018	0.00	1.00	2.83

- **Block Model Definition:** A 3D block model, with a block size of 10m × 10m × 10m, was defined for the hornfels-type mineralization at the Jiama Project. The Resource Institute used the sub-blocking capabilities of the Micromine® software in the models that further reduced the block size to 5m × 5m × 5m to better fit the 3D grade envelope developed. The mineralized envelopes were coded to the block model using the majority rule method, *i.e.*, a block is considered inside the mineralized envelope if more than 50% of the block is located inside the mineralized envelope. A volume check was conducted by comparing the mineralized envelope volume and the 3D block volume, with a negligible difference. Table 14.8 shows the definition of the block model used for the estimation of the Hornfels mineralization.

TABLE 14.8
HORNFELS BLOCK MODEL PARAMETERS

Direction	From	To	Length (m)	Block Dimensions (m)	Number of Blocks
East	16,374,002.00	16,375,212.00	1,210	10	122
North	3,291,252.25	3,292,452.25	1,200	10	121
Vertical	4,230.10	5210.10	980	10	99

- **Grade Estimation:** Block grade estimation was conducted using the inverse distance to the second power (ID^2) procedure with a three pass procedure similar to the one used for the skarn deposits. The search radius for the first-pass was 125m, for the second-pass it was 250m, and for the third-pass it was 500m. The search ellipsoid was again spherical in nature, *i.e.*, all search axes were the same distance. According to the discussions with the Resource Institute, the number of 5m composites used for the grade estimation ranged from 2 to 16, with a maximum of four composites from any single drill hole.

- **Resource Classification:** Model blocks were classified by the Resource Institute into 331, 332, and 333 resources under the Chinese Code. All blocks with a pass one grade estimation were classified as 331; all blocks with a pass two grade estimation were classified as 332; and all blocks with a pass three grade estimation were classified as 333 by the Resource Institute.

  The author believes that the classification method used by the Resource Institute for their Chinese classification for the hornfels model is also aggressive for direct JORC conversion for the same reasons discussed for the skarn models. The search radii used by the Resource Institute categorization will not have the confidence typically required for direct JORC conversion. Based on the lack of meaningful variography in this area, Behre Dolbear would recommend that the 125m search radius that was used by the Resource Institute for their 331 category be used for Indicated mineral resource categorization under JORC and double it for Inferred classification. Behre Dolbear has made appropriate adjustments to the Resource Institute model prior to conversion to JORC categories.

- **Validation:** Local grade bias was checked by the Resource Institute posting the block grades and composite grades on a computer screen on sections and plans, indicating the block grades are generally similar to the nearby composite grades, with a reasonable amount of smoothing. The author has repeated this exercise and believes that the model grade distribution reasonably corresponds to the drilling data.

14.3.3 Procedures and Parameters Used for the Porphyry-type Resource Modeling

The following procedures and parameters were used in the current resource estimation for the porphyry-type mineralization of the Jiama Project.

- **Geological Modeling:** Geological modeling was again performed by the Resource Institute geologists using Micromine® mining software and MapGIS® software. The porphyry was modeled by geologic sections generated from the drill hole geologic intersections within the porphyry and using grade envelopes. The mineralized zones were modeled by a grade envelope at the cut off grade of 0.2% copper or 0.02% molybdenum. The minimum mineralized zone thickness is 2m. In general, the grades of the porphyry are highly variable and generally low grade. The 3D geologic model for the porphyry model is shown in Figure 14.6. The high degree of angularity seen in the figures demonstrates the relatively lack of drilling definition on this part of the deposit along with its conformance to the geologic sections. Behre Dolbear has reduced the categorization of resource blocks in the porphyry to indicated and inferred resource, as a result of the lack of drilling definition along the boundaries of the geological model.

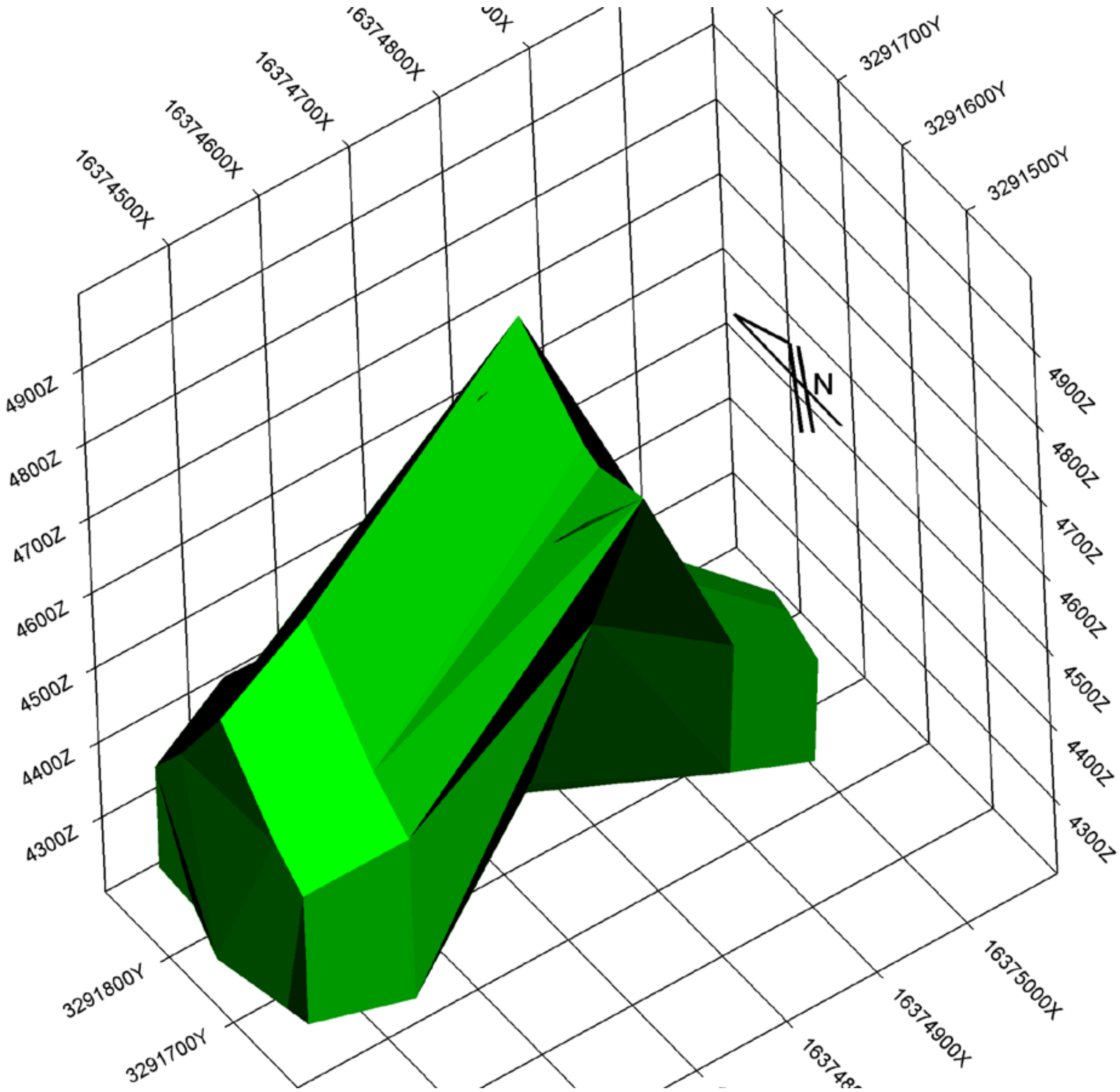


Figure 14.6. 3D geologic model of the porphyry

- **Metal Grade Statistical Analysis and Grade Capping:** A total of 1,086 assay intervals, with a total length of 2,124m, are located inside the defined porphyry-type mineralized envelopes for the Jiama Project. Therefore, the average assay interval length, inside the porphyry-type mineralized envelopes, is 1.96m. Metal grade statistics of these assay intervals are summarized in Table 14.9. No capping was conducted on the porphyry-type mineralization as all of the assay grades are below the capping grades.

TABLE 14.9
METAL ASSAY GRADE STATISTICS INSIDE THE PORPHYRY-TYPE MINERALIZED ZONES

Metal	Number of Samples	Mean	Standard Deviation	Minimum	Maximum	Coefficient of Variation
Cu (%)	1,086	0.12	0.147	0.00	1.01	1.16
Mo (%)	1,086	0.047	0.091	0.00	2.04	1.92
Au (g/t)	1,086	0.013	0.032	0.00	0.66	2.43
Ag (g/t)	1,086	0.78	0.71	0.29	14.60	0.90
Pb (%)	1,086	0.006	0.006	0.00	0.09	0.96
Zn (%)	1,086	0.005	0.007	0.00	0.08	1.25

- **Compositing:** Metal assays inside the mineralized envelopes were composited to 5m fixed-length composites and composites less than 1m long were merged into the previous 5m composite. A total of 414 composites were produced inside the porphyry-type mineralized envelopes. Metal grade statistics for the composites are summarized in Table 14.10.

TABLE 14.10
5M LENGTH PORPHYRY COMPOSITE METAL GRADE STATISTICS

Metal	Number of Samples	Mean	Standard Deviation	Minimum	Maximum	Coefficient of Variation
Cu (%)	414	0.13	0.14	0.00	0.77	1.08
Mo (%)	414	0.05	0.06	0.00	0.69	1.25
Au (g/t)	414	0.01	0.02	0.00	0.17	1.48
Ag (g/t)	414	0.77	0.46	0.33	5.25	0.60
Pb (%)	414	0.005	0.004	0.00	0.04	0.66
Zn (%)	414	0.005	0.005	0.00	0.06	1.03

- **Block Model Definition:** A 3D block model with a block size of 10m × 10m × 10m was defined for the porphyry-type mineralization at the Jiama Project. The Resource Institute used the sub-blocking capabilities of the Micromine® software in the models that further reduced the block size to 5m × 5m × 5m to better fit the 3D grade enveloped developed. The mineralized envelopes were coded to the block model using the majority rule method, *i.e.*, a block is considered inside the mineralized envelope if more than 50% of the block is located inside the mineralized envelope. A volume check was conducted by comparing the mineralized envelope volume and the 3D block volume, with a negligible difference. Table 14.11 shows the definition of the block model used for the estimation of the porphyry mineralization.

TABLE 14.11
PORPHYRY BLOCK MODEL PARAMETERS

Direction	From	To	Length (m)	Block Dimensions (m)	Number of Blocks
East	16,374,406.00	16,374,986.00	580	10	59
North	3,291,458.25	3,291,858.25	400	10	41
Vertical	4,229.01	4,989.01	760	10	77

- **Grade Estimation:** Block grade estimation was conducted using the ID^2 procedure with the same three pass procedure used for the hornfels model. The search radius for the first pass was 125m, for the second pass it was 250m, and for the third pass it was 500m. The search ellipsoid was again spherical in nature, *i.e.*, all search axes were the same distance. According to the discussions with the Resource Institute, the number of 5m composites used for the grade estimation ranged from 2 to 16, with a maximum of four composites from any single drill hole.

- **Resource Classification:** Model blocks were classified by the Resource Institute into 331, 332, and 333 resources under the Chinese Code. All blocks with a pass one grade estimation were classified as 331; all blocks with a pass two grade estimation were classified as 332; and all blocks with a pass three grade estimation were classified as 333, by the Resource Institute.

  Again, the author believes that the classification method used by the Resource Institute for their Chinese classification for the porphyry model is also aggressive for direct JORC conversion for the same reasons discussed for the skarn and hornfels models. The search radii used by the Resource Institute categorization will not have the confidence typically required for direct JORC conversion and Behre Dolbear has made appropriate modifications prior to conversion to JORC mineral resource categories. Based on the lack of meaningful variography in this area, Behre Dolbear would recommend that the 125m search radius that was used by the Resource Institute for their 331 category be used for Indicated mineral resource categorization under JORC and double it for Inferred classification for any future work until sufficient sampling data is available for meaningful variography in the porphyry.

- **Validation:** Local grade bias was checked by the Resource Institute posting the block grades and composite grades on a computer screen on sections and plans, indicating the block grades are generally similar to the nearby composite grades, with a reasonable amount of smoothing. The author has repeated this exercise and believes that the model grade distribution reasonably corresponds to the drilling data.

14.4 CHINESE RESOURCE ESTIMATION RESULTS

The Resource Institute has estimated and summarized the in-situ resource, including mined out tonnage from the block models in a variety of different ways. Although not reproduced in this report as they are not JORC or CIM compliant, the Resource Institute has tabulated estimates for:

- Resource of all models with copper as the dominant metal
- Resource of all models with molybdenum as the dominant metal
- Resource of the steep skarn with lead as the dominant metal
- Resource of the steep skarn with zinc as the dominant metal

The Chinese resource estimates are fairly complicated in that tonnages for the various contained metals are calculated only when the average grade of the block is above the industrial index assigned by the government for the deposit. Under the Chinese system, associated metals are ignored in their summaries unless they are present in payable quantities. Hence, the contained metals shown in the Chinese summaries cannot be calculated directly from the average grades. Likewise, the tonnages reported for the "other" metals (molybdenum, gold, silver, lead, and zinc) are only the portion of the total tonnage that meets the Chinese cut off requirements for reporting those metals and, the reported average grades are based only on the tonnage associated with the corresponding subset of the tonnage and not based on the average grade of the full resource. These mineral resource summaries have not been included in this report as they are not NI 43-101 compliant.

It is important to note that the Resource Institute has taken the recommendations and suggestions made by Behre Dolbear and is currently modifying their procedures, prior to finalizing and submitting a resource update report for the property to the Chinese government for approval.

14.5 JORC EQUIVALENT RESOURCE CONVERSION

The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia in September 1999 and revised in December 2004 (JORC Code) is a resource/reserve classification system that has been widely used and is internationally recognized. The JORC Code is used by Behre Dolbear to report the mineral resources at the Jiama property in this report. Mineral resources under the JORC Code are defined as follows:

> *A '**Mineral Resource'** is a concentration or occurrence of material of intrinsic economic interest in or on the Earth's crust in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.*
>
> *An **'Inferred Mineral Resource'** is that part of a Mineral Resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and assumed but not, verified geological and/or grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes which may be limited or of uncertain quality and reliability.*
>
> *An '**Indicated Mineral Resource'** is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.*
>
> *A '**Measured Mineral Resource'** is that part of a Mineral Resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.*

After reviewing the detailed variography and categorization in 2010, Dr. Deng recommended a categorization procedure for blocks in resource models. Behre Dolbear was asked by the Company to use those same procedures to determine the equivalent JORC Measured, Indicated, and Inferred mineral resource to maintain consistency in reporting for the current models. This method involves distance, number of samples, and number of drill holes being used to estimate the grade of each block. Table 14.12 summarizes the 2010 categorization parameters.

TABLE 14.12
BEHRE DOLBEAR 2010 PARAMETERS FOR JORC CATEGORIZATION

Category	Minimum Drill Holes within Ellipsoid	Search Ellipse			
		Search Ellipse Axis	Shallow Skarn (m)	Steep Skarn (m)	Hornfels and Porphyry (m)
Measured	3	Axis-1	81.0	64.8	NA
		Axis-2	72.9	75.6	NA
		Axis-3	15.1	25.2	NA
Indicated	2	Axis-1	135	108.0	150
		Axis-2	121.5	126.0	150
		Axis-3	25.2	28.0	50
Inferred	1	Axis-1	270.0	216.0	300
		Axis-2	243.0	252.0	300
		Axis-3	50.4	56.0	100

As the 3D models generated for each of the four block models are based on a minimum grade shell that were specified by the Chinese government, it is Behre Dolbear's opinion that the entire resource model contained within the 3D structures has reasonable prospects for eventual economic extraction and qualifies as a mineral resource under both JORC and Canadian CIM definitions. Only blocks estimated and contained within the 3D geologic solids have been summarized in the Behre Dolbear conversion.

Behre Dolbear has categorized and summarized the JORC Equivalent Mineral Resource for the four models based on the 2010 methodology. Behre Dolbear has used a cut off of either 0.3% copper or 0.03% molybdenum or 1% lead or 1% zinc. If any of the blocks meet any of the four cut off criteria then they are included in the Behre Dolbear JORC resource summary.

Table 14.13 presents the Behre Dolbear's estimate of the JORC equivalent Measured and Indicated mineral resource at the Jiama Project. Table 14.14 shows Behre Dolbear's estimate of the JORC equivalent Inferred mineral resource. These tables are based on a cut off grade for the resource estimate of either 0.3% copper or 0.03% molybdenum or 1% lead or 1% zinc.

TABLE 14.13
BEHRE DOLBEAR JORC MEASURE AND INDICATED MINERAL RESOURCE ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 2011
(CUT OFF GRADE FOR THE RESOURCE ESTIMATE IS 0.3% COPPER OR 0.03% MOLYBDENUM OR 1% LEAD OR 1% ZINC)

Model	Category	Tonnes (kt)	Average grade						Contained Metal					
			Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (kt)	Mo (kt)	Au (t)	Ag (t)	Pb (kt)	Zn (kt)
Shallow Skarn	Measured	60,579	0.82	0.057	0.33	15.47	0.04	0.03	496.7	34.5	19.8	937.2	22.4	20.6
	Indicated	210,722	0.75	0.061	0.29	14.07	0.03	0.02	1,580.4	128.5	60.7	2,964.9	52.7	50.6
	Meas+Ind	**271,301**	**0.77**	**0.060**	**0.30**	**14.38**	**0.03**	**0.03**	**2,077.2**	**163.1**	**80.5**	**3,902.0**	**75.1**	**71.2**
Steep Skarn	Measured	4,012	0.76	0.031	0.27	17.59	0.31	0.18	30.5	1.2	1.1	70.6	12.4	7.3
	Indicated	18,971	0.76	0.032	0.26	17.62	0.30	0.17	143.8	6.1	4.9	334.3	56.7	31.7
	Meas+Ind	**22,983**	**0.76**	**0.032**	**0.26**	**17.61**	**0.30**	**0.17**	**174.3**	**7.3**	**6.0**	**404.8**	**69.1**	**39.0**
Hornfels	Measured	0	0.00	0.000	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0
	Indicated	655,089	0.27	0.037	0.03	1.04	0.01	0.01	1,768.7	242.4	16.4	681.3	32.8	39.3
	Meas+Ind	**655,089**	**0.27**	**0.037**	**0.03**	**1.04**	**0.01**	**0.01**	**1,768.7**	**242.4**	**16.4**	**681.3**	**32.8**	**39.3**
Porphyry	Measured	0	0.00	0.000	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0
	Indicated	56,596	0.11	0.056	0.01	0.74	0.01	0.01	61.7	31.7	0.7	41.9	2.8	2.8
	Meas+Ind	**56,596**	**0.11**	**0.056**	**0.01**	**0.74**	**0.01**	**0.01**	**61.7**	**31.7**	**0.7**	**41.9**	**2.8**	**2.8**
All Models	**Total**	**1,005,969**	**0.41**	**0.044**	**0.10**	**5.00**	**0.02**	**0.02**	**4,082**	**444**	**104**	**5,030**	**180**	**152**

TABLE 14.14
BEHRE DOLBEAR JORC INFERRED MINERAL RESOURCE ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 2011
(CUT OFF GRADE FOR THE RESOURCE ESTIMATE IS 0.3% COPPER OR 0.03% MOLYBDENUM OR 1% LEADS OR 1% ZINC)

Model	Category	Tonnes (kt)	Average Grade						Contained Metal					
			Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (kt)	Mo (kt)	Au (t)	Ag (t)	Pb (kt)	Zn (kt)
Shallow Skarn	Inferred	94,325	0.61	0.056	0.23	11.66	0.02	0.02	576.3	52.8	21.7	1,099.8	17.0	19.8
Steep Skarn	Inferred	26,012	0.71	0.026	0.21	17.88	0.35	0.15	184.4	6.8	5.3	465.1	91.8	40.1
Hornfels	Inferred	39,460	0.23	0.039	0.03	1.02	0.01	0.01	90.8	15.4	1.0	40.2	2.0	2.4
Porphyry	Inferred	10,356	0.13	0.058	0.01	0.74	0.01	0.01	13.4	6.0	0.1	7.7	0.5	0.5
All Models	**Total**	**170,153**	**0.51**	**0.048**	**0.17**	**9.48**	**0.07**	**0.04**	**865**	**81**	**28**	**1,613**	**111**	**63**

Behre Dolbear would also note that the Inferred resource estimates have a great amount of uncertainty as to their existence and economic and legal feasibility. It cannot be assumed that all or any part of an Inferred mineral resource will ever be upgraded to a higher category. Under Canadian rules, estimates of Inferred mineral resources may not form the basis of feasibility or pre-feasibility studies or economic studies except for a preliminary economic assessment or scoping study as defined under Canadian NI 43-101. Investors are cautioned not to assume that any or all of the Inferred resources exist or are economically or legally mineable.

14.6 RESOURCE RISK FACTORS

Behre Dolbear believes that the Resource Institute has done good work in determining the in-situ resource of the mineralization at the Jiama Project. Behre Dolbear also believes that the Mineral Resource Statements, revised and issued by Behre Dolbear as of June 2011, are appropriate based on our review of the mineralized envelopes and the grade estimation methods. However, there are a number of risk factors on the resource estimate.

- **Behre Dolbear Has Not Conducted Independent Sampling:** Behre Dolbear has accepted the drilling data, mine sampling data, and assays, as presented by the Southwest Center and reviewed by the Resource Institute for this report. A few inconsistencies were discovered during the preparation of this report and were corrected. Behre Dolbear has examined selected drill cores during the preparation of this and our previous report on the property and has found the electronic database to be acceptable for the modeling work. The exploration, drilling, and electronic database were completed by government-sanctioned institutions, which should minimize the risk with their utilization; however, Behre Dolbear did not conduct any independent sampling for this report. ***Low Risk***

- **Variography:** The “Nugget” components of the correlograms presented in Table 14.3 are greater than 45% of the total structure for all metals and, most of the correlogram structures are very loosely defined by the selected model. The lack of significant structure in many of the correlograms, at distances below the interpreted range, increases the risk of errors in the resource estimation and reduces the overall confidence of the resulting estimates. In addition, Behre Dolbear believes that the range of the variography is probably a bit overstated also due to the lack of significant structure. Behre Dolbear has made adjustments in the resource categorization to minimize the risk and bring it into compliance with JORC and CIM definitions. ***Low Risk***

- **Search Radii:** Although the Resource Institute determined oriented correlogram ellipsoids for the skarn deposits, the search ellipsoid used appears to be spherical, *i.e.*, all search axes are the same distance. Behre Dolbear would recommend that each estimation pass should conform to the correlogram ellipsoids generated for the metal or estimation domain. The search ellipse for the hornfels and porphyry used were also spherical. Behre Dolbear also believes that the radii used for these models also are too large for direct Measured, Indicated, and Inferred mineral resource categorization and made the appropriate adjustments prior to mineral resource categorization. ***Low Risk***

- **Resource Categorization:** Model blocks were originally estimated and classified into 331, 332, and 333 resources under the Chinese Code, based on the recommended parameters determined for the 2010 model and reporting. Behre Dolbear has modified the resource categorization to meet JORC definitions. After future in-fill and step-out drilling programs are completed, Behre Dolbear recommends that the variography should be reviewed again in detail and appropriate adjustments made to both the grade estimation parameters and to mineral resource categorization. ***Moderate Risk***

14.7 RESOURCE CONCLUSIONS

Behre Dolbear believes that the Jiama Project, covered by this review, holds approximately 64.6 Mt of Measured, 941.4 Mt of Indicated, and 170 Mt of Inferred in-situ resources conforming to the definitions in the 2004 edition of *The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (2004 JORC Code).

Behre Dolbear believes the mineral resource estimation database, procedures, and parameters applied by the Resource Institute to the Jiama Project to generally be reasonable and appropriate. The geological constraints were adequately considered in their estimation of the resource. However, Behre Dolbear believes that the data density requirements for Chinese 331 and 332 block definition used in the Chinese estimates are generally more aggressive than that normally used for JORC Code resource estimation for similar deposits. As a result, Behre Dolbear used a modified criteria to convert the model to JORC mineral resource categories.

It is also Behre Dolbear's opinion that the Resource Institute has done good work in determining the global in-situ resource. Behre Dolbear feels the JORC-compliant grade and tonnage estimates, as presented in this report, are a reasonable estimate of the overall resource.

14.8 ADDITIONAL EXPLORATION POTENTIAL

Copper-polymetallic mineralization at Jiama lies within a large mineralized system. Over 97% of the currently defined mineral resources are contained within the primary I1 mineralized body controlled by the interlayer structure zone between the footwall Upper-Jurassic Duodigou Formation marbles and the hanging wall Lower-Cretaceous Linbuzong Formation hornfels. A total of 1,006 Mt of Measured and Indicated resources have been defined by current drilling, and there is an additional 170 Mt of Inferred mineral resource for the Jiama Project. With additional drilling and sampling, Behre Dolbear believes that a significant portion of the Inferred resource can be upgraded to the Measured and Indicated resource categories, which in turn, can be used for additional ore reserve estimation.

In addition, the I1 mineralized body is generally open in the down-dip direction to the northeast, representing significant additional exploration potential in that area, as shown in the Resource Institute's estimation of the fringe of the deposit outlined with wide-space drilling but does not have sufficient sampling density to classify the material as an Inferred mineral resource. The difference in the Chinese estimate of 1,645 Mt and Behre Dolbear's of 1,176 Mt represents exploration potential with additional infill drilling mostly around the fringe of the currently delineated deposit. Behre Dolbear would caution, however, that this tonnage has a great amount of uncertainty as to their existence and economic and legal feasibility and it cannot be assumed that all or any part will ever be upgraded to a resource category.

Furthermore, as Jiama is within a large mineralized system and as Huatailong's mining and exploration licenses covering an area of 145.5 km^2, it is possible to find other mineralized bodies similar to the I1 mineralized body and other types of mineralization, such as porphyry-type copper or copper-polymetallic mineralization, within the mining/exploration license area.

14.9 RESOURCE RECONCILIATION UNDER THE CIM STANDARDS

The CIM Standards are a resource and reserve classification system very similar to the Australasian JORC Code. There is minor difference between the two classification systems. Mineral resource estimates, reportable under the JORC Code, can be converted to mineral resource estimates under the CIM Standards. It should be noted, however, that under the JORC Code, Inferred resource can be added to Measured and Indicated resources in reporting, while such an addition is not allowed under the CIM Standards in resource statements. In this report, the Inferred resource is not added to the Measured and Indicated resources to follow the Canadian NI 43-101 report disclosure guidelines.

15.0 ORE RESERVE ESTIMATES

This report has not reviewed any updated ore reserve estimates at Jiama as the Jiama Project is in the process of revising their detailed mine plan to include the new material within the current updated mineral resource estimate. Information on the current reserves at the Jiama Project can be found in the previous report completed by Behre Dolbear Asia, Inc., 2010 "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region*." The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated mine plans were available at the time of this mineral resource update.

It important to note that all reserves discussed in this section are inclusive within the updated resource estimate discussed in Section 14.0.

The ore reserves at the Jiama Project are based on the December 2009 Changsha Institute feasibility study report which include both open-pit mining and underground mining. Two open pits, the smaller Tongqianshan pit located at the southwestern portion of the current Jiama Mining license, and the larger Niumatang pit located north of the Tongqianshan pit, have been designed for the project.

15.1 ECONOMIC VALUE CALCULATION OF THE RESOURCE MODEL

The 2009 resource block model developed by Behre Dolbear was used by the Changsha Institute in conducting mine planning and ore reserve estimation. An economic value was calculated for each model block based on the selected metal in concentrate prices and processing recoveries listed in Table 15.1 as well as mining dilution and mining recovery factors listed in Table 15.2.

TABLE 15.1
METAL IN CONCENTRATE PRICES AND PROCESSING RECOVERIES USED FOR MINE PLANNING
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	Metal	Parameter	Note
Metal in Concentrate Price	Cu	RMB48,000/t (US$7,080/t)	These metal in concentrate prices include a 17% VAT except for gold, which is not subject to VAT in China.
	Mo	RMB300,000/t (US$44,248/t)	
	Au	RMB200/g (US$918/oz)	
	Ag	RMB3,200/t (US$14.68/oz)	
	Pb	RMB12,500/t (US$1,844/t)	
	Zn	RMB12,000/t (US$1,770/t)	
Processing Recovery	Cu	83%	These processing recoveries were based on the information available at the time when the mine planning was conducted, and are slightly different from the processing recoveries used in project financial analysis.
	Mo	75%	
	Au	50%	
	Ag	80%	
	Pb	75%	
	Zn	75%	

TABLE 15.2
MINING DILUTION AND MINING RECOVERY FACTORS FOR RESERVE ESTIMATION
(FROM BEHRE DOLBEAR ASIA, 2010)

Area	Factor	Chinese Parameter (%)	Western Parameter (%)
Tongqianshan Pit	Dilution Factor	5	5.26
	Mining Recovery Factor	95	95
Niumatang Pit	Dilution Factor	3	3.09
	Mining Recovery Factor	97	97
Underground (+4,600m) Sublevel Stoping	Dilution Factor	10	11.11
	Mining Recovery Factor	85	85
Underground (-4,600m) Panel Sublevel Stoping	Dilution Factor	8	8.70
	Mining Recovery Factor	90	90

Metal in concentrate prices for copper, molybdenum, lead, and zinc in Table 15.1 represent the actual average market metal prices for the last 3 to 5 years in China. Gold and silver prices are slightly higher than the past 3-year actual averages, but they represent the Changsha Institute's expectation for the long-term prices for these two metals. Behre Dolbear notes that the gold and silver prices in Table 15.1 are metal prices instead of metal in concentrate prices. Compared to the metal in concentrate prices used in the base case financial analysis of the Jiama Project (Table 22.1), the gold in concentrate price in Table 15.1 is 22.0% higher, and the silver in concentrate price is 20.3% higher.

Processing recoveries used for mine planning were based on the available data at the time when the mine planning was conducted and are not exactly the same as those for the base-case project economic analysis, except for gold. The copper recovery of 83% in Table 15.1 is lower than the 85% (when the average copper grade is not more than 0.8%) or 90% (when the copper grade is above 0.8%) copper processing recovery used for project financial analysis; the molybdenum recovery of 75% in Table Table 15.1 is higher than the 70% molybdenum processing recovery used in the project financial analysis; the lead recovery of 75% in Table 15.1 is less than the 80% lead recovery used in the project financial analysis; and the silver recovery of 80% in Table 15.1 is the same for most of the years in the mine life in the project financial analysis except for the initial 2 years of the mine life, when the silver recovery is 85%, as both the copper and lead concentrates will be produced for these 2 years. A zinc value was calculated for the mine planning, but this metal is not recovered and payable in the project financial analysis; however, this should only produce a minimum impact on the mine plan, as the zinc grade is generally very low in the resource model.

As copper is the primary economic metal in the deposit and as the copper processing recovery used in the mine plan is 2% to 7% lower than the copper recovery in the project financial analysis, Behre Dolbear considers that the net effect of the different metal in concentrate prices and processing recoveries used between the mine plan and the project economic analysis is that the mine plan is slightly more conservative and, therefore, is considered acceptable by Behre Dolbear for the Jiama Project.

The Jiama resource model was constructed using an ordinary kriging procedure, and a certain amount of mining dilution and mining losses have been built into the resource model because of the grade smoothing effect of the kriging grade estimation process. The Changsha Institute has applied additional mining dilution and mining recovery factors to the resource model as listed in Table 15.2. The Tongqianshan pit is mining the upper, steeply-dipping portion of the I1 mineralized body, and the additional mining dilution factor applied is 5% and the mining recovery factor applied is 95%. The Niumatang pit is mining the lower, flatter portion of the I1 mineralized body, and the additional dilution factor is 3% and the mining recovery factor is 97%. The underground reserve will be mostly mined by open stoping methods, and the additional mining dilution factor is 10% for the upper, steeply-dipping portion of the I1 mineralized body (plus 4,600m), and 8% for the lower, flatter, and thick portion of the mineralized body. The mining recovery factor applied is 85% for the upper, steeply-dipping ore zone and 90% for the lower, flatter, and thick ore zone. Behre Dolbear considers these mining dilution factors and mining recovery factors to be appropriate for the planning stage. However, Behre Dolbear recommends that Huatailong closely monitor the actual mining dilution and mining recoveries in the actual mining operation and calculate the actual mining dilution factors and mining recovery factors based on the production reconciliation data.

It should be noted that the definition of the mining dilution factor in China is different from that in most Western countries. The mining dilution factor in China is defined as the ratio of the waste tonnage in the concentrator feed to the total concentrator feed tonnage, while the mining dilution factor in the West is defined as the ratio of the waste tonnage in the concentrator feed to the ore tonnage in the concentrator feed. Therefore, when using the same data for calculation, the Western mining dilution factor is always higher than the Chinese mining dilution factor, with the difference getting larger when the dilution factor is higher. For example, the Chinese mining dilution factor of 6.0% is equivalent to a Western mining dilution factor of 6.4%, and the Chinese mining dilution factor of 9.0% is equivalent to a Western mining dilution factor of 9.9%. The mining dilution factors discussed in the text above all refer to the Chinese mining dilution factors; the corresponding Western mining dilution factors are listed in Table 15.2.

15.2 JORC ORE RESERVE STATEMENT FOR THE JIAMA PROJECT

Ore reserves under the JORC Code were summarized based on the block/stope unit economic values calculated for the resource blocks within the final Tongqianshan pit and Niumatang pit designs and for stopes within the planned underground mining areas. The cutoff unit economic values used to separate ore and waste by the Changsha Institute are listed in Table 15.3.

TABLE 15.3
CUTOFF UNIT ECONOMIC VALUE FOR RESERVE ESTIMATION OF THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Area	Cutoff Unit Economic Value	Total Unit Ore Operating Cost in Project Financial analysis
Tongqianshan Pit	RMB276.5/t (US$40.78/t)	RMB133.2/t (US$19.65/t)
Niumatang Pit	RMB249.0/t (US$36.73/t)	RMB128.9/t (US$19.01/t)
Underground (+4,600m) Sublevel Stoping	RMB276.5/t (US$40.78/t)	RMB201.0/t (US$29.65/t)
Underground (-4,600m) Panel Sublevel Stoping	RMB249.0/t (US$36.73/t)	RMB201.0/t (US$29.65/t)

For comparison purposes, total unit ore operating costs (including ore mining, transportation, processing, G&A, sales, and financing costs) used for the project financial analysis for each mining area of the Jiama Project are also listed in Table 15.3. It can be seen that the cutoff unit economic values are considerably higher than the total unit ore operating costs used in the project financial analysis, especially for the two open pits. This means that the marginally profitable resource blocks or stopes are not included in the ore reserve estimate by the Changsha Institute.

Only the measured and indicated resource block/stopes were used for reserve estimation. The economic measured resource was converted to a proved reserve and the economic indicated resource was converted to a probable reserve. Appropriate mining dilution factors and mining recovery factors have been incorporated into the reserve estimates.

Behre Dolbear considers that the Changsha Institute’s reserve estimates are relatively conservative and meet the JORC reserve definition. As the ore reserves for the Jiama Project are sufficient for the planned production rate for approximately 30 years, eliminating some of the low-profit-margin ore blocks from production will actually help the project economics. Therefore, the Changsha Institute’s reserve estimates are adopted by Behre Dolbear in this ITR. Table 15.4 summarizes the JORC reserve estimates for the Jiama Project as of June 30, 2010. The waste tonnage and strip ratio for the two open pits have also been summarized in the table. These reserve estimates are also compliant with the CIM Standards as the JORC and CIM reserve classifications are exactly the same.

TABLE 15.4
JORC ORE RESERVE ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 30, 2010
(FROM BEHRE DOLBEAR ASIA, 2010)

Type	kt	Grade						Metals					
		Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (kt)	Mo (kt)	Au (t)	Ag (t)	Pb (kt)	Zn (kt)
Tongqianshan Pit													
Proved	1,208	0.64	0.015	0.20	10.0	0.21	0.05	7.7	0.18	0.24	12	2.5	0.6
Probable	2,524	0.77	0.012	0.24	13.4	0.51	0.09	19.4	0.29	0.60	34	13.0	2.3
Subtotal	3,733	0.73	0.013	0.23	12.3	0.41	0.08	27.1	0.47	0.84	46	15.5	2.8
Waste	20,826												
Strip Ratio	5.58												
Niumatang Pit													
Proved	14,473	1.04	0.039	0.45	21.6	0.03	0.03	150.9	5.66	6.56	313	4.2	3.9
Probable	5,423	1.06	0.035	0.49	21.7	0.03	0.03	57.7	1.89	2.63	118	1.8	1.7
Subtotal	19,897	1.05	0.038	0.46	21.6	0.03	0.03	208.6	7.55	9.19	430	6.0	5.6
Waste	146,224												
Strip Ratio	7.35												
Total Open Pits													
Proved	15,682	1.01	0.037	0.43	20.7	0.04	0.03	158.6	5.83	6.80	325	6.7	4.5
Probable	7,948	0.97	0.027	0.41	19.1	0.19	0.05	77.2	2.18	3.23	151	14.8	4.0
Subtotal	23,630	1.00	0.034	0.42	20.1	0.09	0.04	235.8	8.02	10.03	476	21.5	8.5
Waste	167,050												
Strip Ratio	7.07												
Underground Reserve													
Proved	37,860	0.75	0.038	0.27	14.5	0.06	0.04	284.2	14.48	10.3	550	22.9	16.9
Probable	44,410	0.82	0.042	0.27	16.0	0.09	0.05	365.6	18.77	12.0	712	40.6	23.2
Subtotal	82,269	0.79	0.040	0.27	15.3	0.08	0.05	649.8	33.25	22.3	1,262	63.5	40.1

TABLE 15.4
JORC ORE RESERVE ESTIMATES FOR THE JIAMA PROJECT AS OF JUNE 30, 2010
(FROM BEHRE DOLBEAR ASIA, 2010)

Type	kt	Grade						Metals					
		Cu (%)	Mo (%)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	Cu (kt)	Mo (kt)	Au (t)	Ag (t)	Pb (kt)	Zn (kt)
Total Reserves													
Proved	53,541	0.83	0.038	0.32	16.3	0.06	0.04	442.8	20.31	17.1	874	29.6	21.3
Probable	52,358	0.85	0.040	0.29	16.5	0.11	0.05	442.8	20.96	15.2	864	55.4	27.2
Total	105,899	0.84	0.039	0.31	16.4	0.08	0.05	885.6	41.27	32.3	1,738	85.0	48.6

15.3 MINE LIFE ANALYSIS

Based on the December 2009 Changsha Institute feasibility study report, the current proved and probable ore reserves for the skarn-type mineralization of the Jiama Project are 105.9 Mt. At the planned long-term production rate of 3.6 Mtpa, the current reserve mine life for the Jiama Project is approximately 29.4 years.

16.0 MINING METHODS

The Jiama Project is currently in the process of revising their detailed mine plan to include the new material within the current updated resource estimate and no new information was available at the time of this resource update. Information on the current mining methods is presented the previous report completed by Behre Dolbear Asia, Inc., 2010 "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region*." The following has been reviewed and extracted from various portions of the previous 2010 report.

16.1 MINING OPERATIONS

The current Jiama project mine plan contemplates mining approximately 105.9 Mt of ore by open-pit and underground mining operations at a production rate of 3.6 Mtpa or 12,000 tpd based on 300 working days per annum over a mine life of 31 years. Open-pit mining operation started in late July 2010 from the smaller Tongqianshan pit at a rate of 3,000 tpd or 900,000 tpa; open-pit mining at the Niumatang pit is planned to start in April 2011 at a rate of 6,000 tpd or 1.8 Mtpa, increasing the total open-pit mining production to 9,000 tpd or 2.7 Mtpa; underground mining is planned to start in January 2012 at a rate of 3,000 tpd or 900,000 tpa, increasing the total mine production to 12,000 tpd or 3.6 Mtpa. Underground mining is planned to ramp up to 6,000 tpd or 1.8 Mtpa in 2014 when the Tongqianshan pit will be depleted. Therefore, after January 2012, the mine will maintain a total production rate of 12,000 tpd or 3.6 Mtpa. At the depletion of the Niumatang pit in 2021, underground capacity will be increased to 12,000 tpd or 3.6 Mtpa. Ore from the open pits will be hauled by truck to a crusher and ore pass within close proximity to the Niumatang pit, which will connect to a rail haulage system that will haul the ore underground to the processing plant, a distance of approximately 8.4 km.

Open-pit mining is planned to use conventional mining methods, using hydraulic excavators and trucks for loading and haulage of ore and waste. The Tongqianshan open pit is a relatively small open pit located at the southern section of the I1 mineralized zone, where the ore zone is relatively steeply-dipping. The open-pit design was not based on a pit optimization analysis but was designed to meet the waste-to-ore strip ratio that ensured the pit's profitability and provided early production for the start up of the operation. In addition, the open pit met the project's need to provide sufficient waste rock to establish an operational work area at the base of the valley for surface infrastructure for the underground mine. The designed final pit contains approximately 3.7 Mt of ore and 20.8 Mt of waste at a strip ratio of 5.6:1 (waste:ore) by weight. Ore and waste rocks within the Tongqianshan pit are competent rocks, with no significant faulting or structures. The pit has been designed with an overall pit slope of 45°.

The design of the Niumatang open pit that contains the majority of the open-pit reserves was based on optimization work undertaken by the Changsha Institute and reviewed by Behre Dolbear. Mine parameters used in the analysis were similar to, or slightly more conservative than, those used in the life-of-mine financial model. The selected shell from the pit optimization analysis was chosen to maximize profitability and minimize the strip ratio. The open-pit design followed the selected optimization shell, with the designed final pit containing approximately 19.9 Mt of ore and 146.2 Mt of waste at a strip ratio of 7.4:1 (waste:ore) by weight. The open-pit slope parameters for the design are similar to the Tongqianshan pit, with an overall open-pit slope angle of 45°. The maximum wall height within the pit is 570m, and further geotechnical analysis on the final slope angles is justified.

The underground mine will be accessed via two inclined shafts and a decline ramp for trackless equipment. In planning the mine, the Changsha Institute divided the ore zone into the steeply-dipping (approximately 60°) section above the 4,550m level and the flatter (dipping at an average of 10°) and relatively thick section below the 4,550m level. The resource split within the two ore zones is approximately 20% and 80%, respectively. The mining method planned for both the steeply-dipping and flatter, thick zones is open stope mining with variations based on access, stope dimensions, and sublevel intervals. Stopes within the flatter section are planned to be backfilled with classified tailings, with and without cement depending on the requirements for accessing ore adjacent to each stope. Trackless electric load-haul-dump (LHD) units will be used to extract ore from the stopes and tipped to intermediate level rail haulage that will transport the ore to the main ore pass connecting to the main rail transport system to the processing plant. Trackless equipment will also be used for development, production drilling, and blasting, as well as for the provision of services.

The two mining methods described above account for around 90% of the ore reserves. For zones where open stoping mining methods are not appropriate due to ore dimensions, room-and-pillar or shrinkage stoping mining methods are planned depending on the thickness of the ore zone and the dip. Ground conditions are anticipated to be good within the skarn orebody, where the majority of underground development is planned; ground conditions for the mine infrastructure in the surrounding wall rocks are also expected to be good.

16.2 OPEN-PIT MINING

The open pit operations consist of the smaller Tongqianshan pit and the larger Niumatang pit, which were designed by the Changsha Institute in its December 2009 feasibility study for the Jiama Project.

The feasibility study assumed production drilling and blasting of 15m benches, with a drill hole diameter of 165 mm. The study assumed a mining fleet of 8m^3 CED1850-7 hydraulic excavators for waste stripping and 4m^3 CED650-6 hydraulic excavators for ore mining, with 45 tonne and 20 tonne trucks allocated to the respective excavators. The fleet sizes were calculated based on appropriate efficiencies, but no detailed haulage modeling was completed. Open-pit mining costs calculated from the fleet are within the range of costs from the open-pit contractor currently carrying out the pre-strip mining at both the Tongqianshan and Niumatang pits. The excavator size planned for mining ore from the 15m blasted benches will require loading in sections or flitches (sub-benches) to ensure a safe work place and sufficient control of ore mining. The ore zone is relatively continuous, but Behre Dolbear considers that Huatailong should consider reducing the height of the work bench to provide more control of ore mining, particularly in the early stage of the pit when grade control practices are being refined. Ancillary equipment, including bulldozers, water trucks, and front-end loaders, is included within the mining fleet for the open pit.

16.2.1 Mine Planning for the Tongqianshan Pit

The Tongqianshan pit is a relatively small open pit located at the southern section of the I1 mineralized body, where the ore zone is relatively steeply-dipping and exposed on the surface. The open-pit design was not based on an optimization analysis but was designed to meet the waste-to-ore strip ratio that ensured the pit’s profitability and provided early ore production for the start up of the operation. In addition, the open pit met the project needs to provide sufficient waste rock to establish an operational work area above the base of the valley at the level of the planned entrance (around the MSL elevation of 4,600m) to the underground mine.

The open-pit slope parameters for the design are 15m benches with a 4m-wide berm followed by a second bench with a 14m-wide safety berm; the berm width alternates between 4m and 14m down the pit slope. The haul road width is designed at 12m, although the majority of pit benches will not require a haul road within the bench due to the topography of the pit and only the last three benches being continuous, *i.e.*, not day lighting. The bench face slope angle is 70°, giving an overall open-pit slope angle of 45°.

The pit is located within the valley between the Tongshan and the Qianshan mountains, with the main walls of the pit being on the east and west walls cut into the sides of the two mountains. The dimensions of the pit are approximately 640m east-west and 580m north-south. The highest pit wall is 270m. The final pit is only 45m below the floor of the valley, with all other benches day lighting. The defined final pit contains approximately 3.7 Mt of ore and 20.8 Mt of waste at a strip ratio of 5.6:1 (waste:ore) by weight.

Within the planned open pit, there has been some localized extraction of ore from previous underground workings, as mentioned previously in this ITR. The Changsha Institute has noted that these mining areas can create a risk to the open-pit mining operation and recommended that the Jiama Project take measures to protect the open-pit operation with procedures to identify these voids within the mining area as the open pit progresses.

16.2.2 Mine Planning for the Niumatang Pit

The design of the Niumatang open pit, which contains the majority of the open-pit reserves, was based on optimization work undertaken by the Changsha Institute and reviewed by Behre Dolbear. An optimization procedure, using the Lerchs Grossman algorithm in SURPAC, was used to create optimized pit shells from the resource block model.

The mining cost parameters used in the pit optimization analysis were based on the unit mining costs of RMB17.5/t (US$2.58/t) for ore mining and RMB15.5/t (US$2.29/t) for waste stripping. Other unit costs, including processing, G&A, sales, and financing, total RMB145.0/t (US$21.39/t) of processed ore. These costs are generally higher than the unit costs used for the project financial analysis (unit ore mining cost RMB16.4/t (US$2.42/t), unit waste stripping cost RMB13.2/t (US$1.95/t), unit ore transportation, mining management, processing, G&A, sales, and financing costs RMB112.5/t (US$16.59/t)).

The assumption for the pit slopes for all walls was 45º.

The analysis was based on a block economic value calculated from the block metal grades, processing recoveries, and metal in concentrate prices.

The selected shell for final pit design from the optimization analysis was chosen to maximize profitability and minimize the strip ratio. The open-pit design followed the selected optimization shell, with the designed final pit containing approximately 19.9 Mt of ore and 146.2 Mt of waste at a strip ratio of 7.4:1 (waste:ore) by weight. The dimensions of the pit are approximately 900m east-west and 840m north-south. The highest pit wall is 570m. The final pit is only 80m below the floor of the valley, with all other benches day lighting. The open-pit slope parameters for the design are similar to the Tongqianshan pit.

Behre Dolbear notes that the optimization analysis did not consider the marginal cost of mining the ore zones within the open pit by underground mining. The overall unit open-pit unit mining costs for the Niumatang pit are higher than the unit underground mining costs. Behre Dolbear recommends that further optimization of the mine plan be carried out to better define the boundary between the open-pit and underground mining method. Any adjustment in the boundary would need to be assessed with respect to the impact on the mine scheduling and timing of the capital cost of increasing the underground production capacity.

16.2.3 Geotechnical Parameters

Some geotechnical assessment of the rocks within the mining area has been carried out and various rock parameters determined. The rocks within the planned Tongqianshan and Niumatang pits range from very hard rocks (mostly silicified hornfels) to hard rocks (hornfels and slates) and less hard rocks (carbonaceous shales, marble, limestone, and skarns). The majority of the pit walls are within the skarn, marble, limestone, and hornfels. No major faults have been identified within the mining area; the Xiapu fracture zone is a large brittle-ductile thrust-detachment fault zone located south of the mining area.

The natural slopes of the surrounding topography are of the range between approximately 30° and 45°. No detailed geotechnical assessment has been completed for the pit designs for either the Tongqianshan or the Niumatang pit slopes, but the designed slopes have been set at a relatively conservative 45°, which is similar to many of the natural slopes within the mining area.

The Changsha Institute has recommended to the Jiama Project that further analysis of the final boundary of the Niumatang open pit be carried out to further optimize the pit slope. The pit slope angles, particularly for the larger Niumatang open pit, can be better defined with detailed geotechnical assessment. There is some potential to reduce operating costs for the open pit if the pit slopes can be steepened without increasing the risk of wall failure above acceptable limits.

As part of the pit wall management program, the Jiama Project has commenced pit slope monitoring of both open pits and will continue this program as mining progresses.

16.3 UNDERGROUND MINING

It is planned to use drill jumbos for stope development and electric LHD units equipped with a $4m^3$-capacity bucket for loading material to ore and waste passes. Ore passes will connect to interim haulage levels for each 50m-thick block, where ore will be transported to a major ore pass to the main transportation system detailed in Section 16.4. Waste will be hauled up one of the inclined shafts and tipped initially within the Xiagongpu valley, with excess waste being taken to the open-pit waste dump. Waste rock may also be used as stope fill (negating the need to hoist the waste) where no cement is required. Drilling of production blast holes within the stopes is planned using Atlas Copco Simba 1254 units or similar equipment.

Ground conditions are anticipated to be good within the orebody, where the majority of underground development is planned in skarn that has been assessed as hard competent rock; other wall rocks are also expected to be competent. Given the quality of the orebody and adjacent rocks, Behre Dolbear recommends that the stope dimensions within the zone below 4,550m level be geotechnically reviewed to determine if stope sizes can be increased without significantly affecting the production risk. Overall, Behre Dolbear considers that further optimization of the mine design is warranted and has the potential to improve the profitability of the underground mine. There is potential to extend the underground mine if the significant inferred resources can be better defined; any significant extension to the mine area would also justify a review of the mine plan.

The ventilation plan for the mine is for fresh air to be drawn into the mine through the decline and the two inclined shafts. All return air will be exhausted initially through a return air system that will be mined to the north of the mine within the valley above where the Niumatang waste dump is planned. A second return air system will be developed for the mining of the ore zone above the 4,550m level in the south of the mine area. Total design airflow through the mine is planned at about $190m^3$ per second.

Drainage of water from the mine will be via the main transport haulage tunnel, which is located below the underground mine area. The haulage tunnel is being mined at a gradient of 0.3% from the surface adit, allowing free flow of all mine drainage water to the 4,261m level adit northwest of the mine area. No significant water flows are anticipated from the country rock; any unforeseen water flows will have minimal impact on the operation given the general mine layout.

16.4 ORE RAIL TRANSPORTATION SYSTEM

Ore from the Tongqianshan and Niumatang open pits is planned to be trucked to a crusher (crushing to minus 500 mm), where the crushed ore will discharge into an ore pass to feed an ore rail transport system. Ore from underground will be tipped into a separate pass to feed the same ore rail transport system.

The ore from both open pit and underground is planned to be tipped into ore passes that feed a rail system that transports the ore approximately 8.4 km to the ore bins above the main plant crushers. Due to the elevation difference between both the underground and open-pit operations and the plant, ore can be hauled with positive gradient fall between the levels below the mining operations and the level above the plant. The rail system consists of an initial section of 3.9 km on the 4,261m level and progresses to the surface where the ore is transferred via an ore pass to the second underground rail section of 4.5 km on the 4,087m level, exiting from underground at the adit above the plant crusher where a rail haulage car tipple is positioned above the ore bins. A duplicate tipple will be installed above the second plant. The rail haulage is planned to be a dual rail system, with 20 tonne electric locomotives pulling ten $20m^3$ mine cars.

Other options were considered for transporting the ore to the processing plant, including truck haulage and aerial ropeway, but the proposed system provided reduced surface disturbance, low operating costs, and protection from the adverse weather conditions.

16.5 LIFE-OF-MINE FORECAST MINE PRODUCTION PLAN

Initial production of ore is from the Tongqianshan pit, with ore production targeted at 900,000 tpa or 3,000 tpd starting from late July 2010. Initial pre-production stripping is scheduled to be around 6.0 Mt of material, mostly waste, in 2009 and a similar material movement in 2010, with peak movement of material in 2011 of 6.8 Mt. Material movement will then reduce each year over the short life of the pit.

Pre-production stripping of waste in the Niumatang pit had commenced during Behre Dolbear’s site visit in December 2009 and is planned to take until the end of 2010; a total of 35.5 Mt of material is scheduled over the 2-year period. From 2011, ore production is targeted to achieve 1.8 Mtpa or 6,000 tpd over a mine life of approximately 11 years. Total material movement is scheduled at 17.1 Mtpa for the first 4 years, reducing to 13.9 Mtpa for the next 3 years before further reducing to below 9.7 Mtpa as the pit is mined out. With the flat-lying ore zone within the pit, the pit is planned to be mined in three stages as it advances back to the final pit wall. The stages allow the mining of waste rock to be scheduled at a relatively constant rate in exposing the ore.

Open-pit mining is conducted by contractors. Two mining contractors are used to mine the Tongqianshan pit and the Niumatang pit separately. The mining contractors are required to provide sufficient equipment to meet the life-of-mine schedule and mine the required ore and waste tonnages. At the time of Behre Dolbear’s site visit in December 2009, pre-production stripping of the two open pits was generally progressing as scheduled, and pre-production ore was hauled by truck to two small ore stockpiles (one for higher-grade ore and one for lower-grade ore) next to the primary crusher at the Phase I processing plant. No detailed pre-production waste stripping and ore production data, however, were available to Behre Dolbear during the visit.

Initial underground mining is planned from the ore zone below the 4,550m level and is scheduled at a rate of 1.8 Mtpa or 6,000 tpd after an initial ramp up in production of 50% in 2012 and 2013 and 94% in 2014 before full production in 2015. The underground mine will double in capacity in 2022 when the Niumatang open pit is mined out. A large capital program is planned during 2020 and 2021 to develop the new production areas, including above the 4,550m level ore zone, and to purchase additional new and replacement mine equipment.

Behre Dolbear would note that mine production is susceptible to any disruption in the power supply. Behre Dolbear would also note that the production ramp-up process is dependent upon the capital expenditures incurred by mine/concentrator construction. Any delays in construction will cause a longer ramp-up period, increasing the operating costs of the initial years and the capital costs of the project.

The life-of-mine forecast mine production plan for the open pits and underground mine is detailed in Table 16.1.

TABLE 16.1
LIFE-OF-MINE FORECAST MINE PRODUCTION FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tongqianshan Pit																	
Development Waste Striping (kt)	5,803																
Development Ore Mining (kt)	174																
Production Waste Striping (kt)		4,875	5,850	3,600	675	23											
Production Ore Mining (kt)		750	900	900	900	109											
Niumatang Mount Pit																	
Development Waste Striping (kt)	12,790	22,537															
Development Ore Mining (kt)	0	197															
Production Waste Striping (kt)			15,300	15,300	15,300	15,300	12,060	12,060	12,060	7,920	2,700	1,620	1,278				
Production Ore Mining (kt)			1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,700				
Total Open-pit Production																	
Development Waste Striping (kt)	**18,593**	**22,537**															
Development Ore Mining (kt)	**174**	**197**															
Production Waste Striping (kt)		**4,875**	**21,150**	**18,900**	**15,975**	**15,323**	**12,060**	**12,060**	**12,060**	**7,920**	**2,700**	**1,620**	**1,278**				
Production Ore Mining (kt)		**750**	**2,700**	**2,700**	**2,700**	**1,909**	**1,800**	**1,800**	**1,800**	**1,800**	**1,800**	**1,800**	**1,700**				
Underground Ore Mining (kt)				**900**	**900**	**1,691**	**1,800**	**1,800**	**1,800**	**1,800**	**1,800**	**1,800**	**1,900**	**3,600**	**3,600**	**3,600**	**3,600**
Total Ore Production (kt)	**174**	**947**	**2,700**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Tongqianshan Pit																
Development Waste Striping (kt)																**5,803**
Development Ore Mining (kt)																**174**
Production Waste Striping (kt)																**15,023**
Production Ore Mining (kt)																**3,559**
Niumatang Mount Pit																
Development Waste Striping (kt)																**35,326**
Development Ore Mining (kt)																**197**
Production Waste Striping (kt)																**133,200**
Production Ore Mining (kt)																**19,700**
Total Open-pit Production																
Development Waste Striping (kt)																**41,129**
Development Ore Mining (kt)																**371**
Production Waste Striping (kt)																**148,223**
Production Ore Mining (kt)																**23,259**
Underground Ore Mining (kt)	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**2,700**	**1,500**	**82,270**
Total Ore Production (kt)	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**3,600**	**2,700**	**1,500**	**105,900**

17.0 RECOVERY METHODS

The Jiama Project is currently in the process of revising their detailed plant design to process the new material within the current updated mineral resource estimate. Information on the current recovery methods and plant design was reviewed in 2010 by Behre Dolbear and can be found in the previous report titled "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region.*" The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated information is available at the time of this resource update.

17.1 PLANT DESIGN

The mineral processing facilities for the Jiama Project were designed by the Changsha Institute and were presented in the December 2009 feasibility study report. The bases for the design comprised the metallurgical test work results by well-regarded Chinese mining and metallurgical institutes (including BGRIMM, CIMUMR, BGRINM, and CGRI) as well as the sets of principles, regulations, and safety codes required by law.

The facilities required to treat a total of 12,000 tpd or 3.6 Mtpa of ore when in full production will be brought on stream in two phases. The first 6,000 tpd phase was near completion during Behre Dolbear's site visit in December 2009; it was put into trial production in July 2010 and commercial production started in September 2010. Construction of the second 6,000 tpd plant is expected to start in December 2010; production from the second phase plant will likely be delayed beyond the original plan (starting production in early 2011 and ramping up to full production capacity at the end of 2011). The two plants will be physically separated by a valley and independent of each other except for the shared concentrate dewatering system and power substation.

The plants will operate 300 days per year, in three shifts of 6 hours each for crushing, concentrate dewatering, and tailings filtering and 8 hours each for flotation and tailing thickening.

17.2 PROCESS AND FLOWSHEET DESCRIPTION

The processing of the Jiama ores is based on the 2008 BGRIMM test work on the copper-lead ore and 2009 CGRI test work on the copper-molybdenum ore, as well as the sound and modern practices employed on similar ores elsewhere in China and worldwide. The flowsheet presented in Figure 17.1 shows the basic processing steps, *i.e.*, crushing and screening; grinding and classification; bulk flotation roughing, cleaning, and scavenging; separation of concentrates by flotation; and thickening and filtration as the final stages in the finished concentrate production.

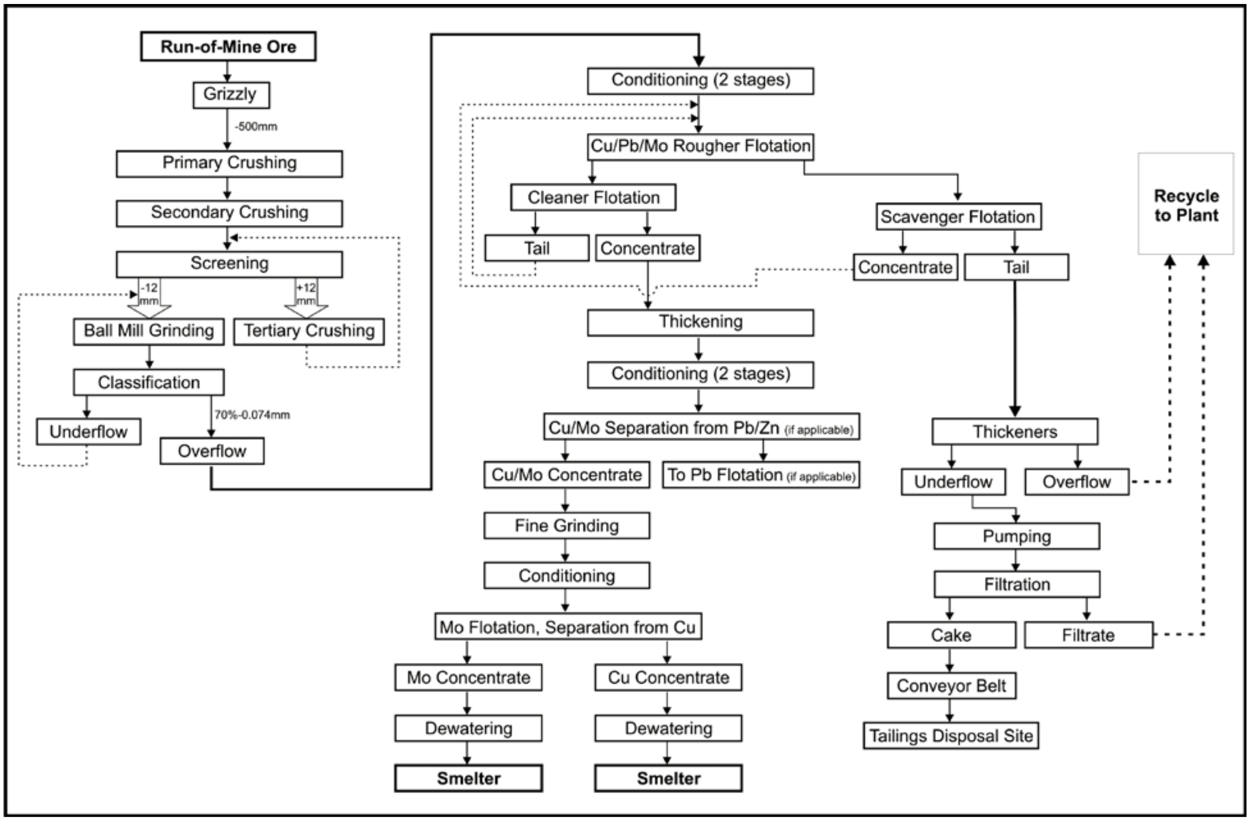


Figure 17.1 Processing flowsheet for the Jiama ore

The processing is described as follows.

- The Jiama ores, a mixture of both copper-lead ore and copper-molybdenum ore for the initial 2 years of the mine life and copper-molybdenum ore alone thereafter, will be treated in the same plant, using the same equipment. Changes in the pulp flows and flotation reagent types will accommodate the differences in ore types and process requirements.

- The run-of-mine ore will be crushed in three stages to the size of minus 12 mm. A jaw crusher, in an open circuit, will perform the primary crushing. Gyratory crushers in a closed circuit with a 12 mm screen will perform the secondary and tertiary crushing. The crushed, minus 12 mm ore will be ground in ball mills operating in a closed circuit with a battery of cyclones. The cyclone underflow (sand) will be returned to the ball mills. The overflow (fines), sized at 70% minus 0.074 mm, will be sent to conditioning, where the ground ore is prepared for flotation by reagents introduction.

- The first flotation stage is the bulk rougher flotation of copper, lead, and molybdenum minerals from the mixture of copper-lead and copper-molybdenum ores in the initial 2 years of mine life (copper and molybdenum in the case of the copper-molybdenum ore thereafter). This stage yields two products: rougher bulk concentrate and rougher tail. The tail is scavenged, and its concentrate is sent back to the bulk rougher flotation head, while the tail of this stage is the final plant tail, which is thickened and filtered. The water from thickening and filtering is recovered for reuse in the plant, and the filtered cake is transported to a tailing disposal site by a conveyor system (a portion of the tails will be used for stope backfill when the underground mining is in operation starting in 2012). The bulk rougher flotation concentrate is cleaned, and the cleaner tail is pumped back to the rougher head. The bulk cleaner concentrate is then subjected to separation into the lead concentrate and bulk copper-molybdenum concentrates.

- The separation into lead concentrate and bulk copper-molybdenum concentrate begins with thickening of the bulk concentrate, followed by two stages of conditioning with required reagents. The flotation separation yields the final lead concentrate and the bulk copper-molybdenum concentrate. The bulk copper-molybdenum concentrate is then reground to 90% minus 0.045 mm, conditioned, and then separated into copper concentrate and molybdenum concentrate. Multiple cleaner stages in column flotation and standard flotation cells are used to produce the final copper and molybdenum concentrates. The lead concentrate requires fewer cleaner steps. The final concentrates, after dewatering and bagging, are ready for shipping.

17.3 EQUIPMENT

The major pieces of equipment to be employed in each of the two 6,000 tpd plants comprise a C110 jaw crusher for primary crushing, an HP4-EC Ultra Coarse standard gyratory crusher, and an HP500C Coarse short-head gyratory crusher for secondary and tertiary crushing. These crushers are imported equipment.

Three double-deck vibrating screens (2YKR2460) will be used for screening of the crushed product. The minus 12 mm size will be ground in two Ø4000 × 8,000 mm ball mills working in a closed circuit with two batteries of Ø500 × 6 mm hydrocyclones. The rougher flotation is carried out in 35 40m^3 cells, the cleaning in 60 4m^3 cells. Prior to copper-molybdenum separation, the bulk copper-molybdenum cleaner concentrate is reground in a Ø1,500 × 3,000 mm ball mill working in a closed circuit with a battery of Ø250 × 4mm hydrocyclones. Copper and molybdenum separation takes place in 2.5 × 12m, 0.9 × 12m, and Ø0.6 × 12m flotation columns. Copper concentrate is thickened in a Ø30m thickener, lead concentrate in a Ø18m thickener, and molybdenum concentrate in a Ø9m thickener. These thickened concentrates are filtered in a 36m^2 ceramic filter, a 21m^2 ceramic filter, and a 20m^2 pressure filter, respectively. The molybdenum concentrate filter cake is additionally dewatered in a 20m^2 vacuum dryer. The two tailings thickeners are Ø60m each, and the thickened tailings are filtered on eight 600m^2 pressure filters. The equipment is all Chinese made.

17.4 CONCENTRATE PRODUCTION AND PROCESSING RECOVERIES

Based on the December 2009 Changsha Institute feasibility study report, three concentrates (copper, lead, and molybdenum) will be produced for the initial 2 years of the mine life when the processing plants treat a mixture of the copper-lead ore and the copper-molybdenum ore. Only two concentrates (copper and molybdenum) will be produced thereafter when the plants treat the copper-molybdenum ore alone.

The final copper concentrate is expected to assay approximately 26% copper. Copper recovery is expected to be approximately 90% when average copper grade of the processed ore is at least 0.8% and to be approximately 85% when the copper grade of the ore is less than 0.8%.

The final lead concentrate is expected to assay 60% lead at a lead recovery of 80% when the lead grade of the ore is at least 0.3%. No lead concentrate will be produced when the ore lead grade is less than 0.3%.

The final molybdenum concentrate is expected to assay 45% molybdenum and will recover approximately 70% of the molybdenum when the molybdenum grade of the ore is at least 0.011%.

Gold will be recovered in the copper concentrate only, with an expected recovery of approximately 50%. The gold grade in the copper concentrates is expected generally to range from 5 g/t to 6 g/t.

Silver will be recovered to both copper and lead concentrates. Silver recovery is expected to be 50% to the copper concentrate and 35% to the lead concentrate when both copper and lead concentrates are produced. Silver recovery is expected to be 80% to the copper concentrate when no lead concentrate is produced. The silver grade is expected generally to range from 300 g/t to 500 g/t in the copper concentrate and above 500 g/t in the lead concentrate.

18.0 PROJECT INFRASTRUCTURE

The Jiama Project is currently in the process of revising their detailed mine and plant designs to extract and process the new material within the current updated mineral resource estimate. Information on the current project infrastructure was reviewed in 2010 by Behre Dolbear and can be found in the previous report titled "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region.*" The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated information is available at the time of this resource update.

Access to the Jiama Project area is excellent. A newly-paved access road of approximately 8 km connects the Jiama Project site office and processing plant to the Sichuan-Tibet Highway (G318) in the north. The distance from the turning point to Lhasa in the west is approximately 60 km, and the distance to the Metrorkongka county town in the east is approximately 8 km. Lhasa is connected to other locations in China by railroad, highways, and air. There are a number of daily flights from Lhasa to Chengdu, Beijing, and other cities in China. Concentrates produced from the Jiama Project will be trucked to the Lhasa rail station and then shipped by rail to the current smelter customer in the Gansu Province ,China and may be shipped to other places in China in the future.

Electricity for mine production at the Jiama Project is provided by a newly constructed, 110 kV electricity transmission line from the Metrorkongka substation located approximately 20 km north of the Jiama Project area. Electricity supply in the central Tibet region was generally insufficient for mining operations in the past. The Tibet government and Central Government of China have been executing a power-supply development plan for the period from 2006 to 2010. Several new power generation plants have been constructed, and the Central Tibet power grid will be connected to the national power grid in China. Electricity supply will be sufficient for the Phase I mine production as well as for the Phase II expansion at the Jiama Project, when the development plan is completed. Prior to that, however, the mine could experience power shortages for production. The Jiama Project has been designated as one of the most important projects in Tibet and has been granted priority in electricity supply by the Tibet government.

Although water is scarce in the general area, the Jiama Project area has obtained sufficient surface water rights to support the planned mining and processing operation. Fresh water for production and for the mine camp will be obtained from the Chikang River that is a tributary of the Lhasa River. Water from the flotation tail thickeners and the tailing filtering system will be recycled for the use in production.

A significant portion of the mining personnel for the Jiama Project came from other China National Gold Group Corporation and/or from other mining operations outside Tibet. Huatailong has also recruited a significant number of local Tibetan workers and some of them were being trained outside Tibet for the Jiama Project during Behre Dolbear's site visits in December 2009 and April 2011.

19.0 MARKET STUDIES AND CONTRACTS

The Jiama Project is currently in the process of revising their detailed mine and plant designs to extract and process the new material within the current updated mineral resource estimate. Information on market studies and contracts for the concentrate was reviewed in 2010 by Behre Dolbear and can be found in the previous report titled "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region.*" The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated information was available at the time of this resource update.

Copper, molybdenum, and lead concentrates produced from the Jiama Project will be sold to smelters located in various places in China. A preliminary sales contract was signed between Huatailong and a smelter customer in Gansu Province for the copper concentrate produced from the Jiama Project. The copper concentrate specifications include Cu grade (≥ 18%), contents of Ni (≤ 1.5%), As (≤ 0.5%), Pb+Zn (≤ 8.0%), Bi+Sb (≤ 0.5%), MgO (4.0%), and moisture (≤ 12%). All concentrates produced from the Jiama Project must be fully analyzed for all elements required by the eventual buyers. According to the preliminary contract, the sales price for copper in copper concentrate (Cu≥ 18% and ≤ 20%) will be based on the monthly average copper price on the Shanghai Metal Exchange less treatment charges ranging from 9.5% to 18% based on the copper price range. When the copper concentrate grade is more than 20%, there is a bonus of RMB1.0/t (US$0.15/t) for each 0.01% incremental increase in copper grade until the copper concentrate grade reaches 30%, where no additional grade bonus will be applied. Gold and silver in the copper concentrate will be payable when the minimum grade of 1 g/t for gold and 20 g/t for silver is reached based on the monthly average gold and silver prices on the Shanghai Metal Exchange adjusted by a price coefficient. The price coefficient for gold ranges from 80% when the gold grade equals or is more than 1 g/t and is less than 2 g/t to 87% when the gold grade equals or more is than 20.0 g/t. The price coefficient for silver ranges from 72% when the silver grade equals or is more than 20.0 g/t and is less than 50.0 g/t to 85% when the silver grade equals or is more than 1,000.0 g/t. Concentrate transportation will be paid by the seller, but the buyer will add a RMB200.0/t (US$29.50/t) price for the copper metal contained in the copper concentrate for the concentrate sale. No molybdenum and lead concentrate sales contracts had been signed for the Jiama Project at the time of Behre Dolbear's site visit in December 2009. The sales of these concentrates will be generally based on prevailing sale conditions in China.

The Jiama Project does not have any metal hedging contracts.

Open-pit mining operations are conducted by two mining contractors, one for the Tongqianshan pit and one for the Niumatang pit. The unit Niumatang contract mining price, including drilling and blasting, is RMB16.4/t (US$2.42/t) for ore and RMB13.2/t (US$1.95/t) for waste; the unit Tongqianshan contract mining price is higher, RMB20.7/t (US$3.05/t) for ore and RMB17.5/t (US$2.58/t) for waste.

Mining operations at the Jiama Project are subject to a resource tax of RMB15/t (US$2.21/t) of processed ore and a resource compensation levy of 2% for the sales revenue generated from the operation. Copper, molybdenum, lead, zinc, and silver produced from the mine are subject to a VAT of 17%. Gold production is exempted from VAT in China. The Jiama Project is also subject to a city-maintenance-and-construction tax of 7% of the VAT and an education tax of 3% of the VAT. The corporate income tax rate for Huatailong is 15%.

The Jiama Project is required to post to an environmental reclamation bond of approximately RMB35 million (US$5.2 million). A first payment of RMB1.5 million (US$0.22 million) was made in

2009, and the remainder will be paid in 5 years following the commencement of Phase I production of the Jiama Project.

20.0 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

The Jiama Project is currently in the process of revising their detailed mine and plant designs to extract and process the new material within the current updated mineral resource estimate. Information on environmental studies, permitting and social or community impacts was reviewed in 2010 by Behre Dolbear and can be found in the previous report titled "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County*, *Tibet Autonomous Region.*" The following has been reviewed and extracted from various portions of the previous 2010 report as no new or updated information was available at the time of this resource update.

20.1 ENVIRONMENT

Environment protection is being taken seriously by the management at the Jiama Project, who are complying with Chinese requirements to achieve a responsible standard of environmental protection. On September 28, 2008, an environmental permit was issued for the construction phase of Jiama Project by the Ministry of Environment Protection of China in Beijing. An environmental assessment for the Project will be produced by government authorities following review of documents and a site inspection by an expert panel at their pre-operations phase inspection, which is anticipated to take place around September 2010. A site soil and water conservation plan was approved by the Tibetan Autonomous Region Water Bureau on October 8, 2008.

Due to the high alpine, semi-desert conditions, where the evaporation rate is approximately twice the precipitation rate, the project is being developed as a zero discharge operation, hence it only requires a water supply (and not a water discharge) permit by the regulatory authorities. The current water permit, granted on October 8, 2008, allows 7,300m^3/day to be pumped from the Chikang River, a tributary of the Lhasa River, which eventually flows into the Brahmaputra River.

Waste water from the processing plant thickeners' overflow and the tailing filtering system will be recycled back to the flotation plant's production lines. Water consumption for the project is estimated at 43,396m^3/day, of which 36,547m^3/day will comprise recycled water.

Environment protection measures for the mine site comprise:

- **Water Management:** The site is being developed as a zero discharge operation, with an expectation of recycling all used process and TSF drainage water. A recycling rate of at least 84% is expected. Huatailong holds a current water permit for the extraction of 7,300m^3/day for top up and domestic water, which is taken from the nearby Chikang River, which also receives any surplus waste water from the site following treatment in accordance with Chinese national standards. Wastewater treatment includes sewage treatment and reuse in the replanting program.

- **Solid Waste:** Waste rock from the open pits will initially be used to construct infrastructure foundations, particularly roads, after which surplus waste material will be placed on constructed waste dumps. Underground waste will be mainly left underground. Tailings will be mixed with cement for use as stope fill, while TSFs will be constructed in adjacent valleys to store the remaining tailings material.

- **Dust and Air Quality Mitigation:** Including use of dust collectors (cyclones) and bag houses for the boiler houses, incinerator, the crushing and screening plant, and fine ore bin. Treated flue gas from these sources will be vented via stacks ranging in height from 20m (crushing, screening, and fine bin areas) to 40m (boilers). Other mitigation measures include the use of water sprays, including water trucks, use of paved or watered roads to reduce dust generated from mining and truck transport activities, and enclosure of dusty activities where possible. Personal protection devices are issued to workers to provide additional personal protection from dust.

- **Noise Control:** Methods of noise control include use of silencers, noise and vibration dampening on mobile equipment, enclosure of noisy equipment, use of insulation, and regular equipment maintenance. Company policy requires PPE use, such as ear muffs or ear plugs, for noise-affected workers.

- **Environmental Monitoring:** A comprehensive air, water, and climatic monitoring plan will be put in place to build up an environmental baseline database. All analytical results are to comply with Chinese National Standards.

- **Rehabilitation:** A mine closure plan has been produced and approved as part of the Soil and Water Conservation Plan. The plan will be updated as the operation progresses. An Environmental Bond of RMB35 million (US$5.2 million) is to be lodged with the Government within the first 5 years of operations.

20.2 TAILING STORAGE FACILITY (TSF)

The TSF is being constructed in the valley above the Phase I mill site, with a storage capacity of 23.53 million m^3. At a production rate of 12,000 tpd (or 2.34 million m^3 per annum), the tailings will be pumped to a pressure filter station above the TSF, the moisture level of the tailings will be reduced to 15% to 18%, and the filtered tailings will then be conveyed to the TSF and stacked. The initial concrete faced, earth-fill dam wall will be 70m high and 6m wide and an upstream method of deposition adopted. The TSF is being designed with a 1 in 500-year flood design factor and seismic intensity Level 7, with a basic earthquake acceleration value of 0.15 g. When complete, the height of the stacked tailings will be 260m, with an average slope of 1:4.

The TSF has a catchment of 2.82 km^2. A drainage system is to be installed at the base of the tailings pile and side drains catching surface water, as well as drainage layers at 10m intervals utilizing geotextile fabric mats and drainage pipes, will direct seepage water into this TSF drainage system. The water will be collected, treated, and then recycled through the processing plant.

The surface of the TSF will be treated with a dust suppressant chemical to bind the material and minimize both erosion and dust generation.

The small existing TSFs will be top soiled and re-vegetated (as will the new TSF when it is full), as part of the implementation of the soil and water conservation plan.

The TSF is designed to accommodate approximately 10 years production at the 12,000 tpd rate. This design life may be extended if significant quantities of tailings are used as goaf fill underground.

Once the TSF is full a new TSF will be constructed in one of the many nearby valleys.

20.3 COMMUNITY RELATIONS

The Jiama Project has a policy of social responsibility toward the local community, with a focus on providing assistance and contributing towards social development, through financially supporting local economic development, education, employment, training initiatives, local transport, communications, drinking water supply, and other social initiatives such as assisting poor families and rectifying both contamination issues and outstanding debts due to the community that were generated by previous mining operations on the Jiama mine site.

Prior to mining operations being established in the area, the mine site was used for low-intensity grazing of yak and sheep with occasional scattered temporary shelters used by members of the nearby Jiama township, which is located about 4 km away. Land was acquired for the mine site and associated infrastructure corridors in compliance with PRC laws through both short-term and long-term leasing agreements, signed and approved by the local government authorities. Compensation for land and land use rights was and will be paid under these lease agreements in line with standard PRC guidelines. The community has, in general, welcomed the opportunity for employment in the area and has participated in ongoing dialogue with both Huatailong and the local government through the “Jiama Project Coordination and Development Management Committee” concerning the development and operation of the mine, potential environmental impacts and their management, and the scope and nature of community benefits to be generated by the development. Over RMB50 million (US$7.4 million) has been expended to date by Huatailong through the implementation of its community development plan.

Huatailong intends to employ approximately 125 local Tibetan mine workers, is providing training and around thirty tertiary education scholarships to local people, has already employed approximately 26,000 days of contracted local labor at a cost of around RMB20 million (US$2.9 million) and is ensuring that non-Tibetan staff are learning the local language.

20.4 OCCUPATIONAL HEALTH AND SAFETY

The Jiama Project has been under construction since June 2008 and is (or will be) conducting its operations in accordance with specific national laws and regulations covering occupational health and safety (OH&S) in construction, mining, underground mining, production blasting and explosives handling, mineral processing, TSF design, hazardous wastes, environmental noise, fire protection and fire extinguishment, sanitary provisions, power provision, lightning and seismic protection, labor, and supervision.

To manage the health and safety of the workforce, the mine is implementing an OH&S management system in line with national standards, with OH&S training of 30 workers currently in progress and regular medical checks for all employees. When mining operation commences, there will be a medical clinic on site with one doctor and three nurses, but in the mean time the Jiama Community Hospital serves the mine community. Safety statistics for the mine to date show a record of no significant injuries. An environmental emergency response plan is in place for the management of chemical spill, flood, fire, etc.

The mine holds current pre-evaluation approvals issued by the Tibet Autonomous Region Safety and Supervision Bureau for both the mine and the TSF. Safety Assessments are expected to be conducted by the end of 2010, following which safety permits for the mine and the TSF are expected to be issued.

20.5 MINING AND EXPLORATION LICENSES

The Jiama Project currently holds two permits for mining rights and two permits for exploration rights. The Jiama Project mining license, with an area of 2.1599 km^2 for the Jiama Project, is held by Huatailong; the license is valid until July 2, 2013 and extendable, thereafter. The license number is 5400000820009 that was issued by the Land and Resource Department of Tibet Autonomous Region.

The Niumatang mining license, with an area of 0.7352 km^2 and located at the northwest side of the Jiama Project mining license, is for the Niumatang open pit mining portion of the Jiama Project. The license is valid until July 15, 2015 and extendable thereafter. The license number is C5400002010073210070276 that was issued by the Land and Resource Department of Tibet Autonomous Region.

The Jiama exploration license surrounding two mining licenses, with an area of 76.19 km^2 (exclusive from the mining permits), is also held by Huatailong. The license number is T54520080702010972 that is issued by the Land and Resource Department of Tibet. This license expires on March 1, 2013 and is extendable thereafter.

In addition to the Jiama/Niumatang mining licenses and Jiama exploration license, Huatailong also holds the exploration license for the Bayi Ranch area located southwest of the Jiama mining/exploration licenses. This license has an area of 66.41 km^2 and was issued by the Land and Resource Department of Tibet. The license number is T54520080702010979. The license expires on March 1, 2013 and is extendable thereafter.

The two mining licenses and two exploration licenses for the Jiama Project cover a total area of 145.50 km^2. Additional details are discussed in Section 4.0 of this report.

21.0 CAPITAL AND OPERATING COSTS

The Jiama Project is currently revising their detailed mine and processing plans to include the new material within the current updated resource estimate. Information on the current capital and operating costs can be found in the previous report completed by Behre Dolbear Asia, Inc., 2010 "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region.*" No new information was available on capital and operating costs at the time of this resource update.

21.1 OPERATING COSTS

The life-of-mine forecast operating costs for the Jiama Project are set out in Table 21.1. The operating costs have been estimated by the Changsha Institute and were presented in its December 2009 feasibility study report for the Jiama Project. Behre Dolbear has made an adjustment for contract mining costs for the Tongqianshan pit based on the current mining contract and for the underground mining cost.

Open-pit contract mining unit costs are forecast to be RMB16.4/t (US$2.42/t) of ore and RMB13.2/t (US$1.95/t) of waste for the Niumatang pit and RMB20.7/t (US$3.05/t) for ore and RMB17.5/t (US$2.58/t) for waste for the Tongqianshan pit. These contract mining costs are based on the current mining contracts that Huatailong has with the mining contractors. There is an additional open-pit management cost of RMB5.6/t (US$0.83/t) in the period from 2011 to 2013 increasing up to RMB8.4/t (US$1.24/t) at the completion of the Tongqianshan pit.

The underground mining unit cost is estimated to be RMB117.9/t (US$17.39/t) for approximately the first 2.5 years of production as production capacity increases to the forecast rate of 1.8 Mtpa. Once this rate is achieved, the unit mining cost reduces to RMB98.2/t (US$14.48/t) until production capacity increases from 1.8 Mtpa to 3.6 Mtpa, when mining unit cost further reduces to RMB92.1/t (US$13.58/t). The life-of-mine average unit underground mining cost is RMB94.5/t (US$13.94/t). Behre Dolbear has made a 15% positive adjustment over the unit underground mining cost estimated by the Changsha Institute as Behre Dolbear considers that the Changsha Institute's estimate is not well defined and considers it prudent to make the adjustment to unit costs. Behre Dolbear notes that the mine plan can be modified to absorb the increased costs, for instance by increasing sublevel intervals within the stopes and thereby reducing development requirements.

Table 21.1 shows that the life-of-mine unit total open-pit mining cost, including ore mining, waste mining, and mining management, is forecast to be RMB97.8/t (US$14.42/t) of processed ore, which is higher than the life-of-mine unit underground mining cost of RMB94.5/t (US$13.94/t) of processed ore. Behre Dolbear believes that optimization of the ratio of open-pit mining and underground mining should be conducted, which will result in the reduction of the high strip ratio, *i.e.*, high-cost portion, of the open-pit mining operation; the increase of underground mining operation; and an overall reduction of unit total mining cost for the Jiama Project. Table 21.2 summarizes the operating costs by categories.

TABLE 21.1
LIFE-OF-MINE FORECAST OPERATING COSTS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Open-pit Contract Ore Mining (RMB/t of ore)	20.7	17.9	17.9	17.9	16.7	16.4	16.4	16.4	16.4	16.4	16.4	16.4				
Open-pit Contract Waste Mining (RMB/t of waste)	17.5	14.4	14.0	13.4	13.3	13.2	13.2	13.2	13.2	13.2	13.2	13.2				
Open-pit Strip Ratio	4.3	7.8	7.0	5.9	8.0	6.7	6.7	6.7	4.4	1.5	0.9	0.8				
Open-pit Management (RMB/t of ore)	13.3	5.5	5.5	5.5	7.8	8.3	8.3	8.3	8.3	8.3	8.3	6.8				
Total Open-pit Mining (RMB/t of ore)	110.0	136.2	121.7	102.8	130.8	113.4	113.4	113.4	83.0	44.6	36.6	33.1				
Underground Mining (RMB/t of ore)			117.9	117.9	100.9	98.2	98.2	98.2	98.2	98.2	98.2	95.9	92.1	92.1	92.1	**92.1**
Ore Transportation (RMB/t of ore)	10.3	6.2	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	**5.1**
Total Mining Cost (RMB/t of ore)	**120.3**	**142.4**	**125.8**	**111.6**	**121.8**	**110.9**	**110.9**	**110.9**	**95.7**	**76.5**	**72.5**	**71.4**	**97.2**	**97.2**	**97.2**	**97.2**
Total Processing Cost (RMB/t of ore)	**75.8**	**61.7**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**
Total G&A and Other Cost (RMB/t of ore)	**63.0**	**43.2**	**43.1**	**39.2**	**37.9**	**44.5**	**40.5**	**40.1**	**40.9**	**42.4**	**35.2**	**40.1**	**40.4**	**40.1**	**39.3**	**39.2**
Total Operating Cost (RMB/t of ore)	**259.1**	**247.4**	**229.5**	**211.4**	**220.4**	**216.0**	**212.0**	**211.6**	**197.1**	**179.4**	**168.3**	**172.1**	**198.2**	**197.9**	**197.0**	**196.9**
Total Operating Cost (US$/t of ore)	**38.21**	**36.48**	**33.85**	**31.18**	**32.50**	**31.85**	**31.27**	**31.21**	**29.07**	**26.46**	**24.83**	**25.38**	**29.23**	**29.19**	**29.06**	**29.04**
Depreciation and Amortization (RMB/t of ore)	80.2	45.3	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	48.1	46.3	37.2	37.2	37.2	**36.6**
Total Production Cost (RMB/t of Ore)	**339.3**	**292.6**	**277.6**	**259.5**	**268.4**	**264.0**	**260.1**	**259.7**	**245.2**	**227.5**	**216.4**	**218.4**	**235.4**	**235.1**	**234.3**	**233.5**
Total Production Cost (US$/t of Ore)	**50.05**	**43.16**	**40.94**	**38.27**	**39.59**	**38.94**	**38.36**	**38.30**	**36.16**	**33.55**	**31.92**	**32.21**	**34.72**	**34.68**	**34.55**	**34.44**
CuEq in Concentrate Production (t)	**12,656**	**33,385**	**49,256**	**42,522**	**39,413**	**50,307**	**42,106**	**41,285**	**42,881**	**46,568**	**35,631**	**40,594**	**37,769**	**39,645**	**38,634**	**37,304**
CuEq Operating Cost (RMB/t)	**22,948**	**20,006**	**16,772**	**17,899**	**20,128**	**15,455**	**18,126**	**18,453**	**16,549**	**13,870**	**17,007**	**15,260**	**18,888**	**17,969**	**18,361**	**19,003**
CuEq Operating Cost (US$/t)	**3,385**	**2,951**	**2,474**	**2,640**	**2,969**	**2,279**	**2,673**	**2,722**	**2,441**	**2,046**	**2,508**	**2,251**	**2,786**	**2,650**	**2,708**	**2,803**
CuEq Total Production Cost (RMNB/t)	**30,055**	**23,665**	**20,286**	**21,969**	**24,518**	**18,894**	**22,236**	**22,645**	**20,585**	**17,586**	**21,864**	**19,367**	**22,436**	**21,350**	**21,830**	**22,535**
CuEq Total Production Cost (US$/t)	**4,433**	**3,490**	**2,992**	**3,240**	**3,616**	**2,787**	**3,280**	**3,340**	**3,036**	**2,594**	**3,225**	**2,857**	**3,309**	**3,149**	**3,220**	**3,324**

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Open-pit Contract Ore Mining (RMB/t of ore)																**17.1**
Open-pit Contract Waste Mining (RMB/t of waste)																**13.7**
Open-pit Strip Ratio																**5.3**
Open-pit Management (RMB/t of ore)																**7.5**
Total Open-pit Mining (RMB/t of ore)																**97.8**
Underground Mining (RMB/t of ore)	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	104.2	113.9	**94.5**
Ore Transportation (RMB/t of ore)	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	6.2	9.8	**5.3**
Total Mining Cost (RMB/t of ore)	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**97.2**	**110.4**	**123.8**	**100.5**
Total Processing Cost (RMB/t of ore)	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**60.6**	**80.8**	**73.7**	**61.5**
Total G&A and Other Cost (RMB/t of ore)	**40.5**	**35.2**	**35.5**	**35.2**	**35.0**	**36.1**	**35.3**	**36.0**	**34.8**	**37.2**	**36.8**	**38.5**	**34.1**	**39.1**	**36.9**	**38.7**
Total Operating Cost (RMB/t of ore)	**198.3**	**192.9**	**193.2**	**193.0**	**192.8**	**193.9**	**193.1**	**193.8**	**192.5**	**195.0**	**194.5**	**196.3**	**191.9**	**230.3**	**234.4**	**200.7**
Total Operating Cost (US$/t of ore)	**29.24**	**28.46**	**28.50**	**28.46**	**28.43**	**28.60**	**28.48**	**28.58**	**28.40**	**28.76**	**28.69**	**28.95**	**28.30**	**33.97**	**34.57**	**29.60**
Depreciation and Amortization (RMB/t of ore)	32.8	32.8	32.8	32.8	32.8	31.3	31.3	31.3	31.1	31.1	31.1	25.0	25.0	33.2	31.7	**38.5**
Total Production Cost (RMB/t of Ore)	**231.0**	**225.7**	**226.0**	**225.8**	**225.6**	**225.2**	**224.4**	**225.1**	**223.6**	**226.1**	**225.6**	**221.3**	**216.9**	**263.5**	**266.0**	**239.2**
Total Production Cost (US$/t of Ore)	**34.08**	**33.29**	**33.34**	**33.30**	**33.27**	**33.22**	**33.10**	**33.20**	**32.98**	**33.34**	**33.28**	**32.64**	**31.99**	**38.87**	**39.23**	**35.28**

TABLE 21.1
LIFE-OF-MINE FORECAST OPERATING COSTS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
CuEq in Concentrate Production (t)	38,450	30,625	31,467	30,673	29,980	32,241	30,992	33,835	32,687	33,862	33,568	35,152	28,869	24,898	13,087	1,090,340
CuEq Operating Cost (RMB/t)	18,563	22,681	22,108	22,650	23,148	21,650	22,426	20,619	21,206	20,728	20,862	20,100	23,926	24,976	26,860	19,366
CuEq Operating Cost (US$/t)	2,738	3,345	3,261	3,341	3,414	3,193	3,308	3,041	3,128	3,057	3,077	2,965	3,529	3,684	3,962	2,856
CuEq Total Production Cost (RMNB/t)	21,633	26,535	25,859	26,499	27,086	25,148	26,065	23,952	24,629	24,033	24,196	22,663	27,046	28,576	30,488	23,082
CuEq Total Production Cost (US$/t)	3,191	3,914	3,814	3,908	3,995	3,709	3,844	3,533	3,633	3,545	3,569	3,343	3,989	4,215	4,497	3,404

TABLE 21.2
LIFE-OF-MINE FORECAST OPERATING COSTS BY CATEGORIES FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Contract Mining (RMB/t of ore)	110.0	136.2	120.7	106.5	116.8	105.8	105.8	105.8	90.6	71.4	67.4	66.3	92.1	92.1	92.1	92.1
Workforce Employment and Transport of Workforce[1] (RMB/t of ore)	47.3	28.3	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
Consumables (RMB/t of ore)	17.2	18.8	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6
Fuel, Electricity and Water (RMB/t of ore)	21.7	20.8	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4
On and Off-Site Management (RMB/t of ore)	31.8	13.2	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9
Environmental Protection and Monitoring[2] (RMB/t of ore)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Product Marketing and Transport (RMB/t of ore)	17.7	15.6	16.6	14.3	12.9	16.8	14.7	14.6	14.9	15.5	11.0	14.6	13.6	12.9	12.3	12.5
Non-Income Taxes, Royalties and Other Governmental Charges (RMB/t of ore)	13.5	14.5	16.6	15.0	15.1	17.8	15.9	15.7	16.1	16.9	14.4	15.6	16.9	17.3	17.1	16.8
Contingency Allowances[3] (RMB/t of ore)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Cost (RMB/t of ore)	**259.1**	**247.4**	**229.5**	**211.4**	**220.4**	**216.0**	**212.0**	**211.6**	**197.1**	**179.4**	**168.3**	**172.1**	**198.2**	**197.9**	**197.0**	**196.9**
Total Operating Cost (US$/t of ore)	**38.21**	**36.48**	**33.85**	**31.18**	**32.50**	**31.85**	**31.27**	**31.21**	**29.07**	**26.46**	**24.83**	**25.38**	**29.23**	**29.19**	**29.06**	**29.04**

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Contract Mining (RMB/t of ore)	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	92.1	104.2	113.9	95.3
Workforce Employment and Transport of Work Force[1] (RMB/t of ore)	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	35.1	34.1	27.3
Consumables (RMB/t of ore)	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	18.6	24.8	26.5	18.9
Fuel, Electricity and Water (RMB/t of ore)	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	20.4	27.2	22.9	20.6
On and Off-Site Management (RMB/t of ore)	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	9.9	13.2	14.2	10.4
Environmental Protection and Monitoring[2] (RMB/t of ore)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Product Marketing and Transport (RMB/t of ore)	13.6	10.1	10.2	10.1	10.1	10.7	10.1	10.2	9.2	11.4	11.0	12.4	9.4	10.1	7.2	12.4
Non-Income Taxes, Royalties and Other Governmental Charges (RMB/t of ore)	17.0	15.2	15.4	15.2	15.0	15.6	15.3	15.9	15.7	16.0	15.9	16.3	14.8	15.8	15.4	15.9
Contingency Allowances[3] (RMB/t of ore)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating Cost (RMB/t of ore)	**198.3**	**192.9**	**193.2**	**193.0**	**192.8**	**193.9**	**193.1**	**193.8**	**192.5**	**195.0**	**194.5**	**196.3**	**191.9**	**230.3**	**234.4**	**200.7**
Total Operating Cost (US$/t of ore)	**29.24**	**28.46**	**28.50**	**28.46**	**28.43**	**28.60**	**28.48**	**28.58**	**28.40**	**28.76**	**28.69**	**28.95**	**28.30**	**33.97**	**34.57**	**29.60**

Notes:
[1]Cost for transport of workforce was included in the workforce employment cost in the feasibility study report.
[2]Environmental protection and monitoring cost was not separated from other cost items in the feasibility study report.
[3]Contingency allowance was not separated from other cost items in the feasibility study report.

An additional ore transportation unit cost for both the open pit and underground mines is forecast to be RMB5.3/t (US$0.78/t) for the life-of-mine once the rail system is commissioned in 2011. Prior to the commissioning of the rail system, ore will be trucked down the valley from the mine to the processing plants and is currently being stockpiled above the processing plant crushers. Unit transport costs are higher during this short trucking phase. Transportation costs include electricity for powering the trains and operating the ore pass chutes and repairs for locomotives, rail, mine cars, and chutes.

The long-term processing unit cost when the plants are in full operation is estimated to be RMB60.6/t (US$8.94/t). This unit cost is forecast to be slightly higher for the ramp up period in the initial 2 years as well as during the last 2 years of the mine life when the plants will be operating at a reduced rate. Behre Dolbear considers the processing cost estimates to be reasonable.

The unit G&A and other costs include the administrative costs, concentrate sale and transportation costs, and the resource compensation levy at 2% of the profit and range from RMB34.1/t (US$5.03/t) to RMB44.5/t (US$6.56/t) of processed ore except for the first year of operation. The life-of-mine average unit G&A and other costs are RMB38.7/t (US$5.71/t).

The total unit operating cost ranges from RMB168.3/t (US$24.82/t) to RMB234.4/t (US$34.57), with a life-of-mine average of RMB200.7/t (US$29.60/t). The total unit production cost, which consists of total unit operating cost and unit depreciation and amortization costs, ranges from RMB216.9/t (US$31.99/t) of processed ore to RMB339.3/t (US$50.04/t), with a life-of-mine average of RMB239.2 (US$35.28/t).

Behre Dolbear has calculated a copper-equivalent (CuEq) production in concentrate for the Jiama Project based on the metal in concentrate sale prices (without VAT), as listed in Table 22.1, using the following formula:

$$\text{CuEq (t)} = \text{Cu (t)} + \text{Mo (t)} \times \frac{256{,}410.26}{42{,}115.39} + \text{Pb (t)} \times \frac{10{,}683.76}{42{,}115.39} + \text{Au (g)} \times \frac{166.00}{42{,}115.39} + \text{Ag (kg)} \times \frac{2{,}318.38}{42{,}115.39}$$

Unit CuEq operating cost and unit CuEq total production have also been calculated and presented in Table 21.2.

Behre Dolbear would note that no inflation factor has been built into the operating cost estimates for the Jiama Project.

21.2 CAPITAL COSTS

Table 21.3 shows the Changsha Institute's initial capital investment estimates for the 12,000 tpd Jiama Project in its December 2009 feasibility study. The capital cost estimates cover the pre-production stripping for the two open-pit mining areas, underground development, and construction of the ore transportation system, as well as Phase I and Phase II processing plants with a production rate of 6,000 tpd each, infrastructure, administration and supporting facilities, land acquisition, and other capital expenditures, and a 10% contingency for all of the estimated capital expenditures.

TABLE 21.3
INITIAL CAPITAL COST ESTIMATES FOR THE 12,000 TPD PRODUCTION CAPACITY OF THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	Development	Construction	Equipment	Engineering and Installation	Other	Total	Percentage (%)
Geology and Construction Exploration (RMB×10^3)		16,041	2,067			18,108	0.68
Open-pit Pre-production Stripping (RMB×10^3)							
Tongqianshan Pit (RMB×10^3)	89,111					89,111	
Niumatang Pit (RMB×10^3)	502,770					502,770	
Subtotal (RMB×10^3)	591,881					591,881	22.21
Underground Development (RMB×10^3)	205,505	6,156	180,797	22,822		415,280	15.58
Ore Transportation System (RMB×10^3)	99,316	20,778	35,181	27,242		182,517	6.85
Concentrating Plant and TSF (RMB×10^3)		249,042	297,522	48,524		595,088	22.33
Infrastructures (RMB×10^3)		163,563	72,925	63,170		299,658	11.24
Administration and Supporting Facilities (RMB×10^3)		19,472	4,077	1,600		25,149	0.94
Land Acquisition and Other Costs (RMB×10^3)					295,184	295,184	11.08
Contingency (RMB×10^3)					242,286	242,286	9.09
Total (RMB×10^3)	**896,702**	**475,052**	**592,569**	**163,358**	**537,470**	**2,665,151**	**100.00**
Total (US$×$10^3$)	**132,257**	**70,067**	**87,400**	**24,094**	**79,273**	**393,090**	**100.00**

Table 21.4 shows the life-of-mine forecast capital expenditures for the Jiama Project. Based on the project construction progress, the Changsha Institute estimated that the total expenditures in 2008 and 2009 were approximately RMB1,480 million (US$218.3 million), which is quite close to the actual total capital expenditures in 2008 and 2009 based on information available from Huatailong. The 2008 and 2009 capital expenditures represent approximately 56% of the total initial capital cost estimates. The remaining capital expenditures are mostly for the pre-production stripping of the Niumatang open pit, development and equipping of the underground mine, and construction of the Phase II processing plant. Additional capital cost estimates of RMB519 million (US$76.5 million) in 2021 and 2022 will be used to expand underground capacity, including the development of the steeply-dipping ore zone above the 4,550m level. Replacement capital expenditures of RMB276 million (US$40.7 million) in 2022, RMB366 million (US$54.0 million) in 2026, and RMB421 million (US$62.1 million) in 2032 have also been estimated for the Jiama Project. This replacement capital may be spread over several years of the operation rather than two distinct amounts as forecast, but the general amount is considered by Behre Dolbear to be reasonable.

Total working capital required for the Jiama Project was estimated at RMB129.5 million (US$19.1 million).

Behre Dolbear considers that the capital cost estimates for the Jiama Project are reasonable and achievable. The total capital cost estimate for the two processing plants of RMB595 million (US$87.8 million) is high due to the construction of two physically separated plants that will be built in two stages at the available site, instead of one larger facility.

TABLE 21.4
LIFE-OF-MINE FORECAST CAPITAL COSTS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Capital Expenditures (RMB×10^3)	657,000	823,000	628,000	557,151									233,550	561,087			
Total Capital Expenditures (US$×$10^3$)	96,903	121,386	92,625	82,176									34,447	82,756			
Working Capital (RMB×10^3)			52,637	55,347	21,536												
Working Capital (US$×$10^3$)			7,764	8,163	3,176												

Item	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Total Capital Expenditures (RMB×10^3)	365,973						420,885									-107,500	4,139,146
Total Capital Expenditures (US$×$10^3$)	53,978						62,077									-15855	610493
Working Capital (RMB×10^3)														-25,974	-44,152	-59,394	0
Working Capital (US$×$10^3$)														-3,831	-6,512	-8,760	0

22.0 ECONOMIC ANALYSIS

The Jiama Project is currently revising their detailed mine and processing plans to include the new material within the current updated mineral resource estimate. No new economic analysis has been completed at the time of this resource update. Information on the current economic analysis can be found in the previous report completed by Behre Dolbear Asia, Inc., 2010 "*Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region.*"

22.1 BASE CASE ECONOMIC ANALYSIS

Metal prices used for the base case economic analysis of the Jiama Project in the Changsha Institute's December 2009 feasibility study report are listed in Table 22.1. A VAT of 17% is applied to all metal sales except for gold in China. Commonly, a concentrate producer in China sells its concentrate production to the smelter customers. Sale prices for metals in concentrate are discounted by a certain percentage from the metal sale prices based on the smelter's concentrate treatment costs and the prevailing metal market prices in China. The discount factors (if applicable) taken by the Changsha Institute in Table 22.1 represent the conditions set out in the preliminary copper concentrate sales contract discussed in Section 19.0 or the current industry averages in China. The copper, molybdenum, and lead prices selected by the Changsha Institute represent the actual average metal market prices for the last 3 to 5 years in China. Gold and silver prices selected by the Changsha Institute are slightly higher than the past 3-year actual averages, but they represent the Changsha Institute's expectation for the long-term prices for these two metals. Behre Dolbear accepts these metal price selections and has used the same metal prices in the base case economic analysis of the Jiama Project in this ITR. The prices for metals in concentrate without VAT are used in the following economic analysis. In addition to the metal prices in Table 22.1, a copper concentrate transportation credit of RMB200/t (US$29.50/t) of copper metal contained in the copper concentrate will be applied based on the current preliminary sales contract with the copper concentrate buyer.

Behre Dolbear conducted a base case economic analysis for the Jiama Project using the technical and economic parameters previously discussed. A discount rate of 9% for the NPV calculation was provided by the Company, which Behre Dolbear considers generally reasonable for the Jiama Project. The middle of the year discount method was used in calculating the NPV. The cash flow is presented in Table 22.2.

TABLE 22.1
METAL PRICES USED FOR BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Metal	Metal with VAT Price[1]		Metal in Concentrate with VAT Price		Metal in Concentrate without VAT Price	
	RMB	US$	RMB	US$	RMB	US$
Copper	55,000/t	8,112.09/t	49,275/t[2]	7,267.70/t	42,115.39/t	6,211.71/t
Molybdenum			300,000/t	44,247.79/t	256,410.26/t	37,818.62/t
Gold	200/g	917.51/oz	166/g	761.53/oz	166/g	761.53/oz
Silver	3,500/kg	16.06/oz	2,712.5/kg	12.44/oz	2,318.38/kg	10.64/oz
Lead			12,500/t	1,843.66/t	10,683.76/t	1,575.78/t

[1]VAT is 17% for all metals except gold; gold sales are not subject to VAT.
[2]Cu price in copper concentrate includes a grade bonus of RMB600/t based on the concentrate sales contract as the copper concentrate to be produced by Jiama is expected to have an average Cu grade of 26%, which is 6% higher than the base Cu grade of 20%.

TABLE 22.2
BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Metal Production																
Cu Production in Cu Concentrate (t)	8,401	23,255	35,598	30,662	27,485	35,929	31,771	31,428	32,148	33,310	23,237	31,547	29,502	27,600	26,268	26,855
Au Production in Cu Concentrate (kg)	146	522	726	625	505	750	691	684	738	784	546	788	538	587	554	648
Ag Production in Cu Concentrate (t)	9.67	25.81	55.49	50.32	46.49	61.43	49.65	52.58	55.95	62.38	41.28	50.04	47.49	49.08	54.86	50.87
Mo Production in Mo Concentrate (t)	115	758	1,281	1,096	1,220	1,330	808	707	786	1,115	1,317	529	586	1,163	1,185	844
Pb Production in Pb Concentrate (t)	8,241	4,278														
Ag Production in Pb Concentrate (t)	6.77	18.06														
Metal Sales Income																
Cu Production in Cu Concentrate (RMB million)	354	979	1,499	1,291	1,158	1,513	1,338	1,324	1,354	1,403	979	1,329	1,242	1,162	1,106	1,131
Au Production in Cu Concentrate (RMB million)	24	87	120	104	84	125	115	114	123	130	91	131	89	97	92	107
Ag Production in Cu Concentrate (RMB million)	22	60	129	117	108	142	115	122	130	145	96	116	110	114	127	118
Mo Production in Mo Concentrate (RMB million)	30	194	328	281	313	341	207	181	202	286	338	136	150	298	304	216
Pb Production in Pb Concentrate (RMB million)	88	46														
Ag Production in Pb Concentrate (RMB million)	15	41														
Total Sales Revenue (RMB million)	**533**	**1,407**	**2,077**	**1,793**	**1,662**	**2,121**	**1,775**	**1,740**	**1,808**	**1,963**	**1,503**	**1,711**	**1,592**	**1,672**	**1,629**	**1,573**
Total Sales Revenue (US$ million)	**79**	**208**	**306**	**264**	**245**	**313**	**262**	**257**	**267**	**290**	**222**	**252**	**235**	**247**	**240**	**232**
Sales Tax 10% of VAT (RMB million)	6	14	23	20	18	25	20	19	21	25	18	21	19	20	19	18
Cu Concentrate Transportation Credit (RMB million)[1]	2	5	7	6	5	7	6	6	6	7	5	6	6	6	5	5

TABLE 22.2
BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Income after Sales Tax (RMB million)	**529**	**1,398**	**2,060**	**1,779**	**1,650**	**2,103**	**1,762**	**1,728**	**1,793**	**1,946**	**1,489**	**1,697**	**1,579**	**1,657**	**1,615**	**1,560**
Operating Costs																
Mining Cost (RMB million)	135	385	453	402	439	399	399	399	344	275	261	257	350	350	350	350
Processing Cost (RMB million)	85	167	218	218	218	218	218	218	218	218	218	218	218	218	218	218
G&A and Other Costs (RMB million)	71	117	155	141	136	160	146	145	147	152	127	144	145	144	141	141
Total Operating Costs (RMB million)	**290**	**668**	**826**	**761**	**793**	**777**	**763**	**762**	**710**	**646**	**606**	**619**	**713**	**712**	**709**	**709**
Total Operating Costs (US$ million)	**43**	**99**	**122**	**112**	**117**	**115**	**113**	**112**	**105**	**95**	**89**	**91**	**105**	**105**	**105**	**105**
Depreciation and Amortization (RMB million)	90	122	173	173	173	173	173	173	173	173	173	167	134	134	134	132
Resource Tax at RMB15/t of ore (RMB million)	17	41	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Taxable Income (RMB million)	**132**	**567**	**1007**	**791**	**629**	**1,099**	**772**	**739**	**857**	**1,073**	**656**	**857**	**678**	**757**	**718**	**665**
Income Tax at 15% (RMB million)	20	85	151	119	94	165	116	111	128	161	98	129	102	114	108	100
After Tax Income (RMB million)	**112**	**482**	**856**	**672**	**535**	**934**	**656**	**628**	**728**	**912**	**558**	**728**	**576**	**643**	**610**	**566**
Total Capital Costs (RMB million)	628	557									234	561				366
Working Capital (RMB million)	53	55	22													
Environmental Bond/Closing Costs (RMB million)[2]	2	7	7	7	7	7										
VAT Refund (RMB million)	58	30														
Fixed Asset Remnant Value (RMB million)																
After Tax Cash Flow (RMB million)	**-422**	**15**	**1001**	**839**	**701**	**1,100**	**829**	**801**	**901**	**1,085**	**497**	**334**	**710**	**777**	**744**	**331**
After Tax Cash Flow (US$ million)	**-62**	**2**	**148**	**124**	**103**	**162**	**122**	**118**	**133**	**160**	**73**	**49**	**105**	**115**	**110**	**49**

TABLE 22.2
BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Years to Discount at End of 2009	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5
Discount Factor at 9%	0.9578	0.8787	0.8062	0.7396	0.6785	0.6225	0.5711	0.5240	0.4807	0.4410	0.4046	0.3712	0.3405	0.3124	0.2866	0.2630
Discounted Cash Flow (RMB million)	**-404**	**13**	**807**	**620**	**476**	**685**	**473**	**420**	**433**	**478**	**201**	**124**	**242**	**243**	**213**	**87**
Discounted Cash Flow (US$ million)	**-59.6**	**1.9**	**119.0**	**91.5**	**70.2**	**101.0**	**69.8**	**61.9**	**63.9**	**70.6**	**29.7**	**18.3**	**35.7**	**35.8**	**31.5**	**12.9**

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Metal Production																
Cu Production in Cu Concentrate (t)	29,379	21,626	21,778	21,712	21,687	22,897	21,646	21,498	19,197	24,408	23,496	26,638	20,043	15,959	6,029	**772,990**
Au Production in Cu Concentrate (kg)	681	439	425	458	446	450	418	452	391	496	493	465	304	221	149	**16,120**
Ag Production in Cu Concentrate (t)	56.21	42.11	45.26	44.66	50.01	54.55	40.49	41.49	36.00	48.90	42.90	43.47	25.32	17.97	11.46	**1,364.19**
Mo Production in Mo Concentrate (t)	547	819	913	777	626	756	905	1367	1646	796	954	710	1030	1169	964	**28,820**
Pb Production in Pb Concentrate (t)																**12,519**
Ag Production in Pb Concentrate (t)																**24.84**
Metal Sales Income																
Cu Production in Cu Concentrate (RMB million)	1,237	911	917	914	913	964	912	905	808	1,028	990	1,122	844	672	254	**32,555**
Au Production in Cu Concentrate (RMB million)	113	73	71	76	74	75	69	75	65	82	82	77	50	37	25	**2,676**
Ag Production in Cu Concentrate (RMB million)	130	98	105	104	116	126	94	96	83	113	99	101	59	42	27	**3,163**
Mo Production in Mo Concentrate (RMB million)	140	210	234	199	161	194	232	351	422	204	245	182	264	300	247	**7,390**
Pb Production in Pb Concentrate (RMB million)																**134**

TABLE 22.2
BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Ag Production in Pb Concentrate (RMB million)																**56**
Total Sales Revenue (RMB million)	**1,621**	**1,291**	**1,327**	**1,293**	**1,264**	**1,359**	**1,307**	**1,427**	**1,379**	**1,428**	**1,415**	**1,482**	**1,217**	**1,050**	**552**	**45,973**
Total Sales Revenue (US$ million)	**239**	**190**	**196**	**191**	**186**	**201**	**193**	**210**	**203**	**211**	**209**	**219**	**180**	**155**	**81**	**6,781**
Sales Tax 10% of VAT (RMB million)	19	14	15	14	14	15	14	16	16	16	16	17	13	11	6	**520**
Cu Concentrate Transportation Credit (RMB million)	6	4	4	4	4	5	4	4	4	5	5	5	4	3	1	**155**
Income after Sales Tax (RMB million)	**1,608**	**1,282**	**1,317**	**1,284**	**1,255**	**1,349**	**1,297**	**1,415**	**1,367**	**1,416**	**1,404**	**1,470**	**1,208**	**1,042**	**548**	**45,607**
Operating Cost																
Mining Cost (RMB million)	350	350	350	350	350	350	350	350	350	350	350	350	350	298	186	**105,78**
Processing Cost (RMB million)	218	218	218	218	218	218	218	218	218	218	218	218	218	218	111	**6,471**
G&A and Other Costs (RMB million)	146	127	128	127	126	130	127	130	125	134	132	139	123	106	55	**4,068**
Total Operating Costs (RMB million)	**714**	**695**	**696**	**695**	**694**	**698**	**695**	**698**	**693**	**702**	**700**	**707**	**691**	**622**	**352**	**21,116**
Total Operating Costs (US$ million)	**105**	**102**	**103**	**102**	**102**	**103**	**103**	**103**	**102**	**104**	**103**	**104**	**102**	**92**	**52**	**3,114**
Depreciation and Amortization (RMB million)	118	118	118	118	118	113	113	113	112	112	112	90	90	90	47	**4,052**
Resource Tax at RMB15/t of ore (RMB million)	54	54	54	54	54	54	54	54	54	54	54	54	54	41	23	**1,578**
Taxable Income (RMB million)	**722**	**415**	**449**	**417**	**389**	**484**	**435**	**551**	**508**	**549**	**538**	**620**	**373**	**290**	**126**	**18,862**
Income Tax at 15% (RMB million)	108	62	67	63	58	73	65	83	76	82	81	93	56	43	19	**2,829**
After Tax Income (RMB million)	**614**	**353**	**382**	**354**	**330**	**411**	**370**	**468**	**432**	**466**	**457**	**527**	**317**	**246**	**107**	**16,032**

TABLE 22.2
BASE CASE ECONOMIC ANALYSIS FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

Item	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	Total
Total Capital Costs (RMB million)						421										**2,767**
Working Capital (RMB million)													-26	-44	-59	
Environmental Bond/Closing Costs (RMB million)																**35**
VAT Refund (RMB million)																**88**
Fixed Asset Remnant Value (RMB million)															107	**107**
After Tax Cash Flow (RMB million)	**732**	**471**	**500**	**472**	**449**	**103**	**483**	**581**	**544**	**578**	**569**	**617**	**433**	**380**	**322**	**17,477**
After Tax Cash Flow (US$ million)	**108**	**69**	**74**	**70**	**66**	**15**	**71**	**86**	**80**	**85**	**84**	**91**	**64**	**56**	**47**	**2,578**
Years to Discount at End of 2009	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5	30.5	
Discount Factor at 9%	0.2412	0.2213	0.2031	0.1863	0.1709	0.1568	0.1438	0.1320	0.1211	0.1111	0.1019	0.0935	0.0858	0.0787	0.0722	
Discounted Cash Flow (RMB million)	**177**	**104**	**101**	**88**	**77**	**16**	**69**	**77**	**66**	**64**	**58**	**58**	**37**	**30**	**23**	**6,157**
Discounted Cash Flow (US$ million)	**26.0**	**15.4**	**15.0**	**13.0**	**11.3**	**2.4**	**10.2**	**11.3**	**9.7**	**9.5**	**8.6**	**8.5**	**5.5**	**4.4**	**3.4**	**908.1**

[1]A copper concentrate transportation credit of RMB200/t (US$29.50/t) of copper metal in concentrate is provided by the copper concentrate buyer based on the current preliminary sales contract.
[2]An environmental bond of RMB35 million (US$5.2 million) was added to the economic analysis by Behre Dolbear, which is used as the closing cost for the Jiama Project.

Based on the assumptions listed above, the Jiama Project had a total after-tax discounted cash flow of RMB6,157 million (US$908.1 million) as of December 31, 2009. Subtracting the debt of approximately RMB888 million (US$131.0 million) at December 31, 2009, the after-tax NPV of the Jiama Project as of December 31, 2009 was RMB5,269 million (US$777.2 million). The payback period to recover all the capital investment for the Jiama Project is approximately 5.2 years starting from January 1, 2010.

22.2 SENSITIVITY ANALYSES

Sensitivity analyses (Table 22.3 and Figure 22.1) indicate that the NPV of the Jiama Project is very sensitive to variations in the metal prices and processing metal recoveries, moderately sensitive to variations in operating costs, and less sensitive to variations in capital costs.

TABLE 22.3
SENSITIVITY ANALYSIS FOR AFTER-TAX NPV AS OF DECEMBER 31, 2009
FOR THE JIAMA PROJECT
(FROM BEHRE DOLBEAR ASIA, 2010)

	After-Tax NPV Variation (RMB million)				
Sensitivity Item Variation	**-20%**	**-10%**	**Base Case**	**+10%**	**+20%**
Metal Prices	2,401	3,835	5,269	6,703	8,138
Metal Recoveries	2,401	3,835	5,269	6,703	8,138
Operating Costs	6,520	5,895	5,269	4,644	4,019
Capital Costs	5,580	5,425	5,269	5,114	4,958

	After-Tax NPV Variation (US$ million)				
Sensitivity Item Variation	**-20%**	**-10%**	**Base Case**	**+10%**	**+20%**
Metal Prices	354.1	565.7	777.2	988.7	1,200.2
Metal Recoveries	354.1	565.7	777.2	988.7	1,200.2
Operating Costs	961.7	869.4	777.2	684.9	592.7
Capital Costs	823.1	800.1	777.2	754.2	731.3

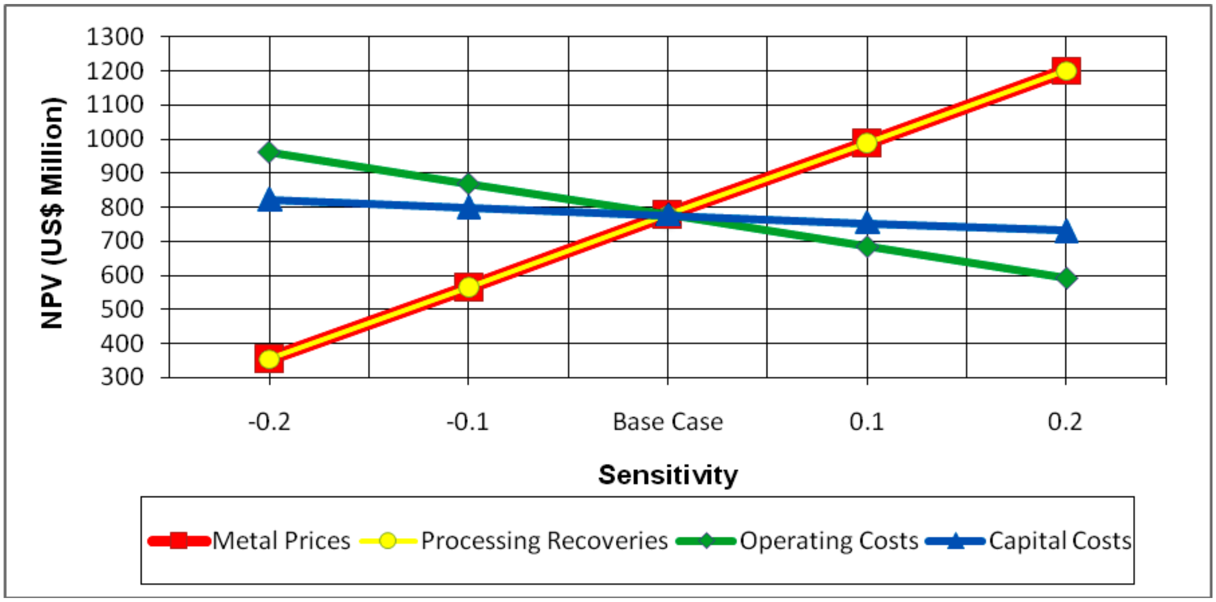


Figure 22.1 After-tax NPV sensitivity analysis for the Jiama Project

23.0 ADJACENT PROPERTIES

Figure 23.1 shows the Jiama Copper polymetallic deposit in context within the Gangdise-Nianqing Tanggula metallogenic belt and the surrounding region. Several major and minor porphyry type deposits share similar geological settings to Jiama deposit, including:

- Qulong porphyry copper-molybdenum deposit is about 20 km southwest in the Maizhokunggar County, Tibet Autonomous Region, China. It is reported to have a resource of 7 Mt of contained copper metal, 0.35 Mt of contained molybdenum metal; 4,000t of contained silver metal and 6 Mt of contained sulfur (*numbers are taken from a Resource Institute Report dated on March 30, 2011, are not 43-101 compliant, have not been verified and are not necessarily indicative of the mineralization at Jiama).*

- Bangpo molybdenum-copper porphyry deposit is located 30 km northeast to the Jiama property in the Maizhokunggar County, Tibet Autonomous Region. It is reported to have a resource of 0.45 Mt of contained molybdenum metal and 0.9 Mt of contained copper metal (*numbers are taken from a Resource Institute Report dated on March 30, 2011, are not 43-101 compliant, have not been verified and are not necessarily indicative of the mineralization at Jiama).*

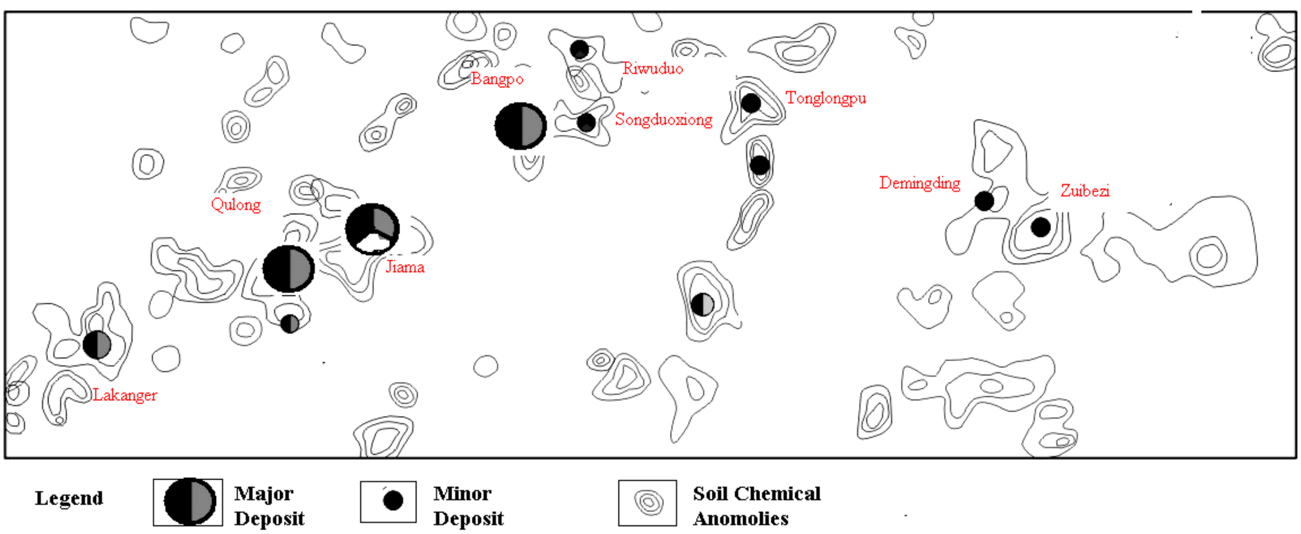


Figure 23.1. Major and minor porphyry type deposits in the Jiama surrounding area

24.0 OTHER RELEVANT DATA AND INFORMATION

There is no other relevant data and information.

25.0 INTERPRETATION AND CONCLUSIONS

The Jiama Project is a large copper-polymetallic deposit with well-defined mineral resources and ore reserves. In addition, there is a large, defined, Inferred resource, and the additional exploration potential is very good. The currently defined mineral resources and ore reserves will likely be increased in the future with additional exploration work. The Tibet government is supportive of the development of the Jiama Project, and the pending mining license issue is unlikely to affect the defined resources of the Jiama Project.

Behre Dolbear believes that the Jiama Project, covered by this review, holds approximately 64.6 Mt of Measured, 941.4 Mt of Indicated, and 170 Mt of Inferred in-situ resources conforming to the definitions in the 2004 edition of *The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves* (2004 JORC Code).

Behre Dolbear believes the mineral resource estimation database, procedures, and parameters applied by the Resource Institute to the Jiama Project generally to be reasonable and appropriate. The geological constraints were adequately considered in their estimation of the resource. However, Behre Dolbear believes that the data density requirements for Chinese 331 and 332 block definition used in the Chinese estimates are generally more aggressive than that normally used for JORC Code resource estimation for similar deposits. As a result, Behre Dolbear used modified criteria to convert the model to JORC mineral resource categories.

The estimation procedures and resource categorization used for the resource update were those recommended by Dr. Deng in 2010. Behre Dolbear believes that since there are an additional 82 drill holes completed since the 2010 report and more drilling is in progress, the 2011 variography should be reviewed in detail, and adjustments made to both the grade estimation parameters and to the methodology for determining JORC Mineral Resource categories for future estimates.

It is also Behre Dolbear's opinion that the Resource Institute has done good work in determining the global in-situ resource. Behre Dolbear feels the grade and tonnage estimates are a reasonable estimate of the overall resource.

26.0 RECOMMENDATIONS

26.1 EXPLORATION

Further in-fill drilling and step-out drilling are likely to significantly increase the currently defined mineral resources and ore reserves for the Jiama Project. However, Behre Dolbear does not consider additional drilling to be a high priority task at the current stage of the Jiama Project development as the defined ore reserves are sufficient to support the mining operation. If mining operations over the next several years prove to be successful, Huatailong should consider increasing the currently planned production capacity of the Jiama Project, and additional drilling to increase the mineral resources and ore reserves of the Jiama Project may become necessary. Cost for the additional drilling could range from less than RMB20 million (US$3.08 million) to more than RMB50 million (US$7.71 million).

26.2 FUTURE RESOURCE MODELING

It is Behre Dolbear's opinion that the Resource Institute has done good work in determining the overall grade and tonnage of the mineral resource and feels the grade and tonnage estimates in the models are a reasonable estimate of the overall resource. The models, however, need to be augmented by more data before being used for future feasibility level mine planning work (particularly the skarn models) to incorporate more directionally oriented grade structures and to reduce the overall localized averaging of the block grades.

The estimation procedures and resource categorization used for the resource update were those recommended by Dr. Deng in 2010 and are adequate for the current resource update. After future in-fill and step-out drilling programs are completed, Behre Dolbear recommends that the variography should be reviewed again in detail and appropriate adjustments made to both the grade estimation parameters and to mineral resource categorization.

The current electronic database was developed by the Changsha Institute and has been reviewed by the Resource Institute. Behre Dolbear believes it is adequate for the purposes of this resource estimate.

27.0 REFERENCES

Mineral Resource Research Institute of Chinese Academy of Geological Sciences, 2009: Mineral Resource and Reserve Evaluation Report for the Jiama Polymetallic Deposit in Metrorkongka County, Tibet Autonomous Region (an unpublished internal company report), 271 pages, November 2009.

Mineral Resource Research Institute of Chinese Academy of Geological Sciences, 2010: Mineral Resource and Reserve Evaluation Report for the Jiama Polymetallic Deposit in Metrorkongka County, Tibet Autonomous Region (an unpublished internal company report), 223 pages, January 2010.

Mineral Resource Research Institute of Chinese Academy of Geological Sciences, 2011: Mineral Resource and Reserve Evaluation Report for the Jiama Polymetallic Deposit in Metrorkongka County, Tibet Autonomous Region (an unpublished internal company report), 141 pages, March 2011.

Changsha Engineering and Research Institute of Nonferrous Metals Metallurgy, 2009: Feasibility Study Report for the 12,000 tpd Mining/Processing Operation for the Jiama Copper-Polymetallic Project of Tibet Huatailong Mining Development Company Limited (an unpublished internal company report), 331 pages, December 2009.

Changsha Engineering and Research Institute of Nonferrous Metals Metallurgy, 2010: Preliminary Economic Assessment of the 50 ktpd of Mining/Processing Operation for Copper-Polymetallic Resources at Jiama for Tibet Huatailong Mining Development Company Limited (an unpublished internal company report), 167 pages, July 2010.

Behre Dolbear Asia, Inc, 2010: Independent Technical Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, China, 105 pages, June 2010

DATE PAGE AND CERTIFICATES

The undersigned prepared this Technical Report, titled "Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People's Republic of China" dated 16 March 2012.

The format and content of the report are intended to conform to Form 43-101F1 of National Instrument 43-101 (NI 43-101) of the Canadian Securities Administrators.

Signed and Sealed

16 March 2012

Robert Cameron, Ph.D., QP MMSA — Date

16 March 2012

Bernard J. Guarnera, F.AusIMM-CP, MMSA-QPM, CMA — Date

16 March 2012

Peter D. Ingham, FAusIMM, CEng — Date

16 March 2012

Janet M. Epps, FAusIMM — Date

16 March 2012

Vuko M. Lepetic Q.P.Metallurgy — Date

CERTIFICATE OF QUALIFICATIONS

Robert Cameron, Ph.D.

I, Robert E. Cameron, Ph.D., MMSA QP, do hereby certify that:

1. I am a consulting Resource and Reserve Specialist doing business as Robert Cameron Consulting at the address of 200 Dubois Street, Black Hawk Colorado, USA, 80422.
2. I am a Qualified Person – No. 01357QP of the Mining and Metallurgical Society of America.
3. I am a graduate of The University of Utah with a B.S., M.S. and Ph.D. degrees in Mining Engineering.
4. I have practiced my profession since 1977. My relevant experience for the purpose of the Technical Report is Acting as a consulting resource and reserve specialist for 30 years specializing in the due diligence review, computerized mine design, mine optimization, geostatistical review, and resource and reserve audits of a wide variety of minerals.
5. I have read the definition of “Qualified Person” as set out in Canadian National Instrument 43-101 *Standards of Disclosure for Mineral Properties* (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a “Qualified Person” for the purposes of NI 43-101.
6. I am responsible for preparation of Sections 1.4, 14.0 and jointly responsible for Sections 1.0 through 28.0 of the Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People’s Republic of China” dated 16 March 2012 (Technical Report).
7. I have personally visited to the properties that are the subject of this report from April 6 to April 10, 2011.
8. I have had no prior involvement with the properties that are the subject of the Technical Report.
9. I am independent of China Gold International Resources Corporation, as set out in Section 1.5 of Canadian National Instrument 43-101.
10. I have read Canadian National Instrument 43-101 and the Technical Report has been prepared in compliance with Canadian National Instrument 43-101 and Form 43-101F1.
11. As of the date of the certificate, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
12. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public.

Dated this 16th day of March 2012

“Signed and Sealed”

Robert E Cameron, Ph.D., MMSA 01357QP

CERTIFICATE OF QUALIFICATIONS

Bernard J. Guarnera

I, Bernard J. Guarnera, CMA, P. E., P.G., C. P. (Geology), do hereby certify that:

1. I am currently the president and chairman of the board of directors of the minerals industry advisory firm, Behre Dolbear Group Inc., a Delaware corporation, with business office at 999 Eighteenth Street, Denver, Colorado, 80202 USA, Telephone: 303.620.0020; Facsimile: 303.620.0024; Email: guarnera@dolbear.com.
2. I graduated from the Michigan College of Mining and Technology (now Michigan Technological University) with a Bachelor of Science degree in Geological Engineering (Mining) in 1965 and a Master of Science in Economic Geology in 1967.
3. I am a registered member of the following professional and technical societies:
   - American Institute of Mineral Appraisers – Certified Mineral Appraiser
   - Australasian Institute of Mining and Metallurgy – Fellow and Chartered Professional (Geology)
   - Texas Board of Professional Engineers – Professional Engineer 41852
   - Idaho Board of Registration for Professional Geologists – Registered Geologist 510
   - Oregon Board of Geologist Examiners – Registered Geologist 070
   - Mining and Metallurgical Society of America – Qualified Professional Member
   - Canadian Institute of Mining, Metallurgy and Petroleum – Member
   - Prospectors and Developers Association of Canada – Member
   - Society of Economic Geologists – Fellow
   - Society of Mining Engineers – 45-year member university and have acted in a responsible professional manner throughout this period.
4. I have read the definition of "Qualified Person" as set out in Canadian National Instrument 43-101 *Standards of Disclosure for Mineral Properties* (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
5. I am jointly responsible for Sections 1.0 through 28.0 except for Section 1.4 and all of Section 14.0 of the Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People's Republic of China" dated 16 March 2012 (Technical Report).
6. I have not personally visited to the properties that are the subject of this report.
7. I have had no prior involvement with the properties that are the subject of the Technical Report.
8. I am independent of China Gold International Resources Corporation, as set out in Section 1.5 of Canadian National Instrument 43-101.
9. I have read Canadian National Instrument 43-101 and the Technical Report has been prepared in compliance with Canadian National Instrument 43-101 and Form 43-101F1.
10. As of the date of the certificate, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
11. I consent to the filing of this Technical Report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public.

Dated this 16th day of March 2012

"Signed and Sealed"

Bernard J Guarnera

Bernard J. Guarnera, F.AusIMM-CP, MMSA-QPM, CMA

CERTIFICATE OF QUALIFICATIONS

Peter D. Ingham

I, Peter D. Ingham (B.Sc., M.Sc, FAusIMM, MIMMM, CEng), do hereby certify that:

1. I am General Manager Mining of Behre Dolbear Australia Pty Limited of Level 9, 80 Mount Street, North Sydney, NSW 2060, Australia.
2. I graduated with a Bachelor of Science degree in Mining from Leeds University, England in 1975 and a Master of Science degree in Mineral Production Management from Imperial College of Science and Technology in 1980.
3. I am a Fellow of the Australasian Institute of Mining and Metallurgy and Member of the Institute of Materials, Minerals and Mining, UK. I am a Chartered Engineer (CEng) of the Engineering Council of UK.
4. I have worked as a mining engineer and a project manager for a total of 34 years since my graduation from university. I have been involved in both open-pit and underground mining projects in Europe, Africa, Australia, and Asia. My experience includes operational expertise in operations management, mining contract management, project assessment and acquisition, operational audits and trouble-shooting, and tenement and title issues.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the preparation of Section 16.0 of the Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People's Republic of China" dated 16 March 2012 (Technical Report).
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. As of the date hereof, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
9. I am independent of the issuer applying all of the tests in Section 1.4 of NI 43-101.

10 I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 16th day of March 2012

"Signed and Sealed"

Peter D. Ingham, FAusIMM, CEng

CERTIFICATE OF QUALIFICATIONS

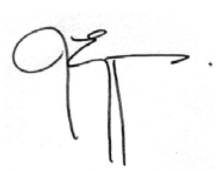
Janet M. Epps

I, Janet M. Epps, M.Env.Stud., FAusIMM, do hereby certify that:

1. I am a Senior Associate of Behre Dolbear Australia Pty Limited of Level 9, 80 Mount Street, North Sydney, NSW 2060, Australia.
2. I graduated with degrees in Bachelor of Science in Geology (1971) from the University of New England, Armidale, and Master of Environmental Studies (1980) from Macquarie University, Sydney, both in NSW, Australia.
3. I am a Fellow of the Australasian Institute of Mining and Metallurgy (Member number 101317).
4. I have worked as a professional Environmental Specialist for 35 years and previously worked as a geoscientist for a further 3 years.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for Section 20.1 to Section 20.4 of the Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People's Republic of China" dated 16 March 2012 (Technical Report).
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. As of the date hereof, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
9. I am independent of the issuer applying all of the tests in Section 1.4 of NI 43-101.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 16th day of March 2012

"Signed and Sealed"



Janet M. Epps, FAusIMM

CERTIFICATE OF QUALIFICATIONS

Vuko M. Lepetic

I, Vuko M. Lepetic, Dipl.Ing., M.SC., Q.P.Metallurgy, do hereby certify that:

1. I am currently a Senior Associate of Behre Dolbear International, Ltd. with an address of 3rd International House, Dover Place, Ashford, Kent, TN23 1HU, United Kingdom.
2. I graduated with a degree of Dipl.Ing. in Mining Engineering at the School of Mining and Geology, University of Belgrade, Yugoslavia in 1961. I received a M.Sc. degree in Mineral Engineering from the Henry Krumb School of Mines, Columbia University, New York, USA in 1964.
3. I am a Qualified Professional Member (Metallurgy) in good standing with the Mining and Metallurgical Society of America (certification number 01382QP).
4. I have worked as a mineral processing specialist for 45 years in the mining industry since my graduation. I have been involved in mineral processing and mining projects in North, Central, and South America, Asia, Australia, Africa, and Europe.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the Sections 13.0 and 17.0 of the Resource Update Report on the Jiama Copper-Polymetallic Project in Metrorkongka County, Tibet Autonomous Region, The People's Republic of China" dated 16 March 2012 (Technical Report).
7. I have not had prior involvement with the property that is the subject of the Technical Report.
8. As of the date hereof, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.
9. I am independent of the issuer applying all of the tests in Section 1.4 of NI 43-101.
10. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

Dated this 16th day of March 2012

"Signed and Sealed"

Vuko M. Lepetic Q.P.Metallurgy