March 2018

LBMA Responsible Silver Guidance –
Summary Assessment Report
For third-party audits based on ISO19011:2011

According to LBMA provision this document has to be made publicly available by the refiner.

<table>
<thead>
<tr>
<th>Company Name:</th>
<th>Zhuzhou Smelter Group Co., Ltd.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Team Leader: Alice ZHANG</th>
<th>Audit Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Alice ZHANG</td>
<td>Team Member: NA</td>
</tr>
<tr>
<td></td>
<td>N/A</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Type of Audit</th>
<th>Date of Opening Audit</th>
<th>Date of Closing Audit</th>
<th>Total n° of man/days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full assessment Audit</td>
<td>May 15th</td>
<td>May 17th</td>
<td>3 Man days</td>
</tr>
<tr>
<td>Assessment Review</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up Assessment</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Site(s) address(es):</th>
<th>Qingshuitang, Zhuzhou City, Hunan Province, China</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Refiner Contact Person:</th>
<th>Name: Mr. Xuxiangchun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name, Title:</td>
<td>Title: Import &amp; export vice General Manager</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:zxuxiangchun@hotmail.com">zxuxiangchun@hotmail.com</a></td>
</tr>
<tr>
<td>Phone:</td>
<td>+86-13607335306</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non Compliance – risk level</th>
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</thead>
<tbody>
<tr>
<td>Compliant</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

Based on the assessment conclusions, the overall rating of the Refiner’s performance is determined to represent:

<table>
<thead>
<tr>
<th>Is a follow up visit required? (in case of high risk non-compliance)</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date(s) of follow up visit:</td>
<td>NA</td>
<td>Assigned auditor:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
</tr>
</tbody>
</table>

**AUDIT SUMMARY**

**Basic Inputs**

- Confirm if the data provided in the application/ self-assessment phase is valid.
This is the first full assessment audit (Assessment Period: 2018 (from Jan.1/2018 to Dec.31/2018)) for Silver carried out by BV. It was noted 6 low risk NCs were raised during the assessment period. One auditor and 3 man days were arranged for this audit.

See Third party Audit Checklist (GENERAL INFO POINT F) and describe bellow percentages

There are total 33 silver supplier during the year 2018 (from Jan.1/2018 to Dec.31/2018)

The number of sliver supplying counterparties is as follows:

☐ Industrial mining operations (large or small scale): 24%
  Type of companies: 7 mine supplier from domestic
  Forms of Sliver: Lead Concentrates (Sliver content around 0.08%); Zn Concentrates (Sliver content around 0.015%);
  Countries of provenance: China.

☐ Artisanal mining operations: 0%
  Type of companies: //
  Forms of Sliver: //
  Countries of provenance: //

☐ Traders / brokers: 76%
  Type of companies: 26 Trading company from 2 overseas trading companies
  And 24 domestic trading companies
  (Total 1.78 tons).
  Forms of Sliver: Lead Concentrates, Zn Concentrates
  Miner Powder; Lead ,Zn ,Bi and other metal with very low quantity
  Countries of provenance: China, Australia, Indonesia

☐ Recycled material/collectors: 0%,
  Type of companies: //
  Forms of Sliver: //
  Countries of provenance: //

☐ Industrial scrap providers: 0%
  Type of companies: //
  Forms of Sliver: //
  Countries of provenance: //

Others: 0%
  Type of companies: //
  Forms of Sliver: //
  Countries of provenance: //

All sliver suppliers were assigned as low risk level by refiner.

Description of the company activities [mandatory for all audits]:

This is the first full assessment audit in 2019 for the production period between January to December 2018.

这是一段纵横两个世纪的光辉岁月，
这是一个跨越几代人的拼搏历程。
半个多世纪的风雨沧桑，株冶集团的开拓者、建设者，栉风沐雨，披星戴月，一路走来。
This is a glory days crossing two centuries
This is a struggle dedication history with generations
With more than half a century of vicissitudes of life, the Pioneers and builders of Zhuzhou Smelter Group work hard day and night.
With the full swing of the national “First Five-Years Plan”, the factory was built on Zengpiling. The flaming fire in the blast furnace, the waving flat shovel aside the electrolytic tank, the fleet with lead and zinc ingots detouring through Cape of Good Hope, the shinning stock symbol of “Zhuzhou Smelter Group ” in The Shanghai stock exchange, are all made the history to be remembered.

In every period of this history, it seems that the burning torch leads the way.
Zhuzhou Smelter Group is forwarding as a world first-class green lead-zinc smelting enterprise.

目录
英文翻译：Catalogue
公司概况
英文翻译：Company profile
企业品质
英文翻译：Enterprise quality
品牌价值
英文翻译：Brand value
绿色冶炼
英文翻译：Green smelting
转型升级
英文翻译：Transformation and upgrading
社会责任
英文翻译：Social responsibility
市场营销
英文翻译：Marketing
科技创新
英文翻译：Technological innovation
幸福株冶
英文翻译：Happy life of Zhuzhou Smelter
展望未来
英文翻译：Prospect

公司概况
英文翻译：Company profile
珍惜有限 创造无限
英文翻译：Cherish the limited resources and make infinite creation
奋进求发展 协力站排头
英文翻译：Endeavour for development; United to stand in the first rank


公司地处湖南省株洲市清水塘，生产区占地 121.5 万平方米，资产总额约 65 亿元，员工 5500 人。主要生产铅、锌及其合金产品，综合回收铜、金、银、铋、镉、铟等多种稀贵金属和硫酸。铅锌年生产能力 65 万吨，其中铅 10 万吨，锌 55 万吨，铅锌合金产品比例 80%，生产系统有价金属综合回收率居全国同业领先水平。公司是株洲市首家产值突破百亿元的企业，中国最大的锌及锌合金生产、出口基地，全球第四大锌生产企业。

公司于 1996 年、2002 年和 2005 年依序通过 ISO9001、ISO14001、OHSMS18001 认证，是中国铅锌行业首家通过三大体系认证的企业。“火炬”牌商标为中国驰名商标，铅锭、锌锭在伦敦金属交易所认证注册，银锭在伦敦金属协会注册，是中国首家铅、锌、银三种产品均获国际认证的企业。锌锭、铅锭、镉锭、热镀锌合金为国家金质奖产品和全国用户满意产品。锌及锌合金产品为国家出口免验产品。锌锭、铅锭、镉锭、锌合金获上海期货交易所注册认证，金锭获上海黄金交易所铸造企业认证。

2005 年 10 月，公司被国家发改委等 6 部委确定为全国首批循环经济试点企业，2008 年被确定为国家高新技术企业,2010 年被确定为国家首批“两型”试点企业。

英文翻译:

Zhuzhou Smelter Group was restructured from Zhuzhou Smeltery who was founded in 1956. Hunan Zhuye Torch Metal Co., Ltd. which belonged to Zhuzhou Smeltery was entirely restructured as Hunan Zhuye Torch Metal stock Co., Ltd in Dec., 2000. Hunan Zhuye Torch Metal stock Co., Ltd was listed in Shanghai stock exchange in Aug., 2004. By directional stock add-issuance, Hunan Zhuye Torch Metal stock Co., Ltd was renamed as Zhuzhou Smelter Group Co., Ltd and was entirely listed. The stock name was changed from “Zhuye Torch” to “Zhuzhou Smelter Group”. The company has been merged into China MINMETALS since 2010.

Zhuzhou Smelter Group is located on Qingshuitang, Shifeng district, Zhuzhou City, Hunan province, and occupied 1215 thousand square meters land with total assets of 6.1 billion Yuan and 5500 staffs. Its main products are Lead, Zinc and their alloy, also precious and rare metals such as Copper, Gold, Silver, Bismuth, Cadmium, Indium, Germanium and sulfuric acid are reclaimed. The yield capacity is 650 thousand MT with 100 thousand MT lead and 550 thousand MT zinc separately. The proportion of lead and zinc alloy is over 80% and the reclaim rate of valuable metal from production system is in the
leading level in the industry of the country. Zhuzhou Smelter Group was the first enterprise whose production value break through 10 billion Yuan in Zhuzhou city. Also the company is the largest enterprise of zinc and zinc alloy production and export base in China as well as one of the four largest zinc production enterprises in the world.

The company is the first enterprise in lead and zinc industry of China who passed through the authentications of ISO9001 quality system, ISO141001 international environmental management system and OHSMS18001 occupational health and safety system in the year of 1996, 2002 and 2005 separately. The brand “Torch” is in the list of China renowned trademark. The company is the first enterprise in China with international authentication with Lead ingot and Zinc ingot registered in LME, and silver ingot registered in LBMA. Zinc ingot and lead ingot are authenticated and registered in Shanghai futures exchange. The company was certificated as gold bullion casting enterprise by the Shanghai gold exchange. Zinc and its alloys are free of inspection for export with approval of national administration.

Zhuzhou Smelter Group was identified as one of the first batch of circulation economy experimental enterprises in Oct., 2005 by six government ministries. The company was identified as the national high and new technology enterprise in 2008, and was identified as one of the first batch of "two type" pilot enterprises in 2010.

**企业品质**
**英文翻译:** Enterprise quality
**严细实恒、精益求精**
**英文翻译:** Strict, meticulous, honesty and permanent; keep striving for excellence

Zhuzhou Smelter Group strictly executes modern enterprise standards with 5S management method, takes the whole-process clean production as its criterion, adopts rigorous production process as the basis, to build a modern management platform of “fast, efficiency, fine management and good implementation”. It’s always in the leading position in the nonferrous industry. Zhuzhou Smelter Group also won various of notable honor like "Award for excellent management national enterprise ", "National quality management award", "National level of enterprise", "National customer satisfaction Enterprise", "National quality and efficiency award for advanced enterprise", "The ideological and political work of excellent enterprise" and " National May day award".

**品牌价值**
**英文翻译:** Brand value
株冶集团“火炬牌”商标为中国驰名商标，“火炬”牌铅锭、锌锭在伦敦金属交易所认证注册，银锭在伦敦金属协会注册，是中国首家铅、锌、银三种产品均获国际认证的企业。锌锭、铅锭、银锭在上海期货交易所认证注册，金锭通过上海黄金交易所铸锭企业认证。锌及锌合金产品为国家出口免验产品。“火炬牌”锌锭、铅锭、镉锭、热镀锌合金获国家“金质奖”、“全国用户满意产品”称号。

旗下产品覆盖铅、锌、高新材料三大系列，包括铅锭、锌锭、热镀锌合金、铸造锌合金、锌基稀土合金、铅钙合金、ITO靶材、铬靶材、硅铝合金靶、高纯镓、高纯碲等数十个品种，并综合回收铜、金、银、铋、镉、铟、碲等多种稀贵金属和硫酸。

作为中国有色金属出口产品免验单位，产品辐射到西欧、美国、日本等20多个国家和地区，首钢、宝钢、武钢、鞍钢等大型钢铁企业都在使用株冶“火炬牌”锌合金。

英文翻译:
The “Torch” brand owns by Zhuzhou Smelter Group is in the list of China renowned trademarks. The company is the first enterprise in China with international authentication of Lead and Zinc ingot registered in LME, and silver ingot registered in LBMA. Zinc ingot, lead ingot and silver ingot are authenticated and registered in Shanghai futures exchange. The company was certificated as gold bullion casting enterprise by the Shanghai gold exchange; Zinc and their alloy are free of inspection for export with approval of national administration. “Golden medal of national best quality product”, “National users satisfied product” are awarded on the brand “Torch” for zinc ingot, lead ingot, cadmium ingot and hot dip galvanizing alloy.

Zhuzhou Smelter group offers three series of production of lead, zinc, new and high tech materials which including lead ingot, zinc ingot, hot dip galvanizing alloy, casting zinc alloy, rare earth zinc base alloy, ITO target, chromium target, silicon-aluminum alloy target, high purity gallium, high purity tellurium, sulfuric acid and dozens of other products

As the company’s products are inspection free products for export, the products are widely sold to over twenty countries and districts including Western Europe, USA and Japan. The Zinc alloy with ‘Torch” brand is used by many large steel enterprises such as Shougang Group, Baoshan Iron & Steel Group, Wuhan Iron & Steel Group, Anshan Iron & Steel Group.
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1. Bismuth ingot
2. Cadmium ingot
3. ITO target, ITO powder
4. Silicon-aluminum alloy target
5. Chromium target
6. Tellurium aluminum alloy
7. Indium oxide powder

Green Smelting

Zhuzhou Smelter Group adopts lots of environmental friendly technologies. In Zhuzhou Smelter, the traditional hydrometallurgical process and atmospheric oxygen-rich direct leaching process are both used to produce Zinc and their alloys. The KIVCET direct lead smelting method is used to produce lead and their alloys. Two times transformation and two times absorption process are adopted to produce sulfuric acid. Pyrometallurgical smelting and electrolytic refining process are used for the production of gold and silver. Direct extraction process and fire-refining process are adopted for the indium and bismuth productions respectively in Zhuzhou Smelter.

Three Billion Yuan was invested for technological innovation. “Circular economy industrial mode for lead and zinc combined smelting” is formed with the world advanced level of technical process and equipments of direct leaching of zinc smelting and KIVCET direct lead smelting.

Zhuzhou Smelter Group executes ISO9001 quality standard, having national level analysis and test center. It established a sample laboratory of rapid analysis in mid-south region of China. The standard sample for bismuth spectrum analysis studied and made by the laboratory filled the gap of field in China. The quality inspection center is accredited by China National Accreditation Board for Laboratories (CNAL) in Dec., 2004. The center is accepted by 55 national and regional laboratories in the world, and is awarded as “International standards developed innovative demonstration base” in 2015. The center
became the “manufacturing base” of analysis standard of the nonferrous metal industry in China

直接炼铅系统
英文翻译：Direct lead smelting plant
锌冶炼直接浸出系统
英文翻译：Direct leaching plant
制酸系统
英文翻译：Sulfuric acid plant
109 平方米鲁奇式沸腾炉
英文翻译：109M² Lurqi Fluid Bed Furnace
锌电解厂房
英文翻译：Zinc electrolyzing plant
锌电解自动剥锌平台
英文翻译：Zinc stripping platform for electrolytic zinc

转型升级
英文翻译：Transformation and upgrading

株冶集团按照国家节能减排、循环经济的发展战略，以实现“绿色冶炼”为目标，通过技术进步，调整产业结构，促进转型升级，实现绿色发展。

英文翻译：
According to the national strategy of energy conservation and emissions reduction, recycle economy development, and to reach the goal of "green smelting", Zhuzhou Smelter Group try to achieve green development through technological progress, adjusting the industrial structure and promoting transformation and upgrading.

株冶集团科技开发有限责任公司
英文翻译：Zhuzhou smelter group technology development co., LTD

公司是集科研、技术、生产、销售、服务于一体的综合企业。建立了国家级企业技术中心、企业博士后科研工作站等研发平台，形成了生产技术、工艺装备、产品开发、检测分析四大核心技术。公司拥有JS-1、JS-2 COD废水处理药剂和成套技术、电化学微电解处理重金属、COD废水成套技术等，形成了电池级氧化铟与氢氧化铟、高级二氧化锡、超细铜粉、高纯氧化锑、绿色环保颜料铋黄、碱锰电池添加剂、无汞锌粉和高级净化锌粉等特色产品。拥有国家授权专利 80 余项，承担多项国家 863 和国家支撑计划等重大科技项目。

英文翻译：
The company is an integrated enterprise with a coalition of scientific research, technology, production, sales and service. The research and development platform such as its state-level enterprise technology center and postdoctoral scientific research workstations were set up and formed its core technology of the production, process equipment, product development and test analysis. The company owns JS-1, JS-
2 COD waste water treatment reagents and their complete set of technology, heavy metal electrochemical microelectrolysis treatment technology and COD wastewater technology, etc. Its featured products includes battery grade indium oxide and indium hydroxide, tin oxide, ultrafine copper powder, high purity antimony oxide, bismuth yellow powder, additives for alkaline manganese battery, mercury-free zinc powder products and high grade purified zinc powder and so on. And it has more than eighty patents authorized by the state, a number of projects for the state’s 863 plans. And other major projects of science and technology supported by the state are undertaken by it.

天津金火炬合金材料制造有限公司
英文翻译：Tianjin golden torch alloy materials Co., Ltd

公司年产 3.5 万吨锌合金，坐落在京津冀一体化区域内的在天津静海县子牙循环经济产业园。以锌合金生产为基础，建立中间合金和客户所需的调整合金系列产品研发平台。该公司的设立是株冶集团“走出去”的重要一步，是充分发挥株冶“火炬”品牌优势和株冶锌冶炼及其深加工技术优势，为客户提供快捷、优质服务的又一优势平台。

英文翻译:
The company is located in Ziya circular economy area which belongs to the integration district of the Beijing-Tianjin-Hebei region in Jinghai county of Tianjin with annual output of 35 thousand tons of zinc alloy. On the basis of the zinc alloy production, the company established the intermediate alloy and customer oriented platform for adjustable alloy series product research and development. The setup of the company is an important step in the "Going out strategy" for Zhuzhou smelter group, and formed another fast and superior service platform to customers with the advantage of Torch brand and zinc smelting and deep processing technology advantages offered by Zhuzhou smelter group.

株冶集团新材料事业部
英文翻译：
Zhuzhou Smelter Group New Materials Division

株冶集团新材料事业部依托公司国家级的技术中心和博士后工作站，专门从事有色金属高新 技术材料的研发、生产和销售。

公司是系列靶材、系列高纯材料、系列合金材料的主要供应商，拥有中国最大的等静压加工中心。为广大客户提供冷等静压和热等静压来料加工业务。

英文翻译:
Relying on state-level technology center and postdoctoral workstation, Zhuzhou smelter group new material division specialized in research and development, production and sales of high-tech non-ferrous metal materials.

The company is the main supplier of series of target and series of high purity materials, alloy materials. And it has the largest isostatic pressing processing center in China. The company accepts processing business of cold isostatic pressing and hot isostatic pressing from clients

株冶集团超级蓄电池部
Zhuzhou Smelter Group Super Battery Division

Located in science and technology park of Zhuzhou city, Zhuzhou smelter super battery division was set up in 2013 and is mainly engaged in research and development, production and sales of lead-acid battery. Relying on the advantage of Zhuzhou smelter group’s technology and raw materials, the company offers the superior performance battery with “Zhuye” brand. The product is widely used in the new energy vehicles, UPS power, wind energy storage equipment, and other fields.

Social responsibility

Zhuzhou Smelter Group executes ISO14001 standard and adheres to the environmental policy of "implementing cleaner production, improving quality of the environment, promoting sustainable development for the benefit of future generations". It relentlessly pursues to coordination and unification of environmental benefits, economic benefits, social benefits, and becomes one of first batch of circular economy pilot units, "two-oriented" pilot unit of the nation. The company aims to construct “circular economy industrial mode of lead and zinc combined smelting”. There are 37 projects such as “KIVCET direct lead smelting”, “atmospheric enriched oxygen direct leaching of zinc smelting”, “residue and kiln slag treatment”, “heavy metals in wastewater recycling”. It strives to build a “green factory" of lead and zinc smelting to meet the requirement of “two-oriented society".
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株冶集团志愿服务队进社区
英文翻译: The volunteer service team of Zhuzhou smelter group in the community
捐资助学
英文翻译: Donations to students
为社区病残者捐赠轮椅
英文翻译: Donated wheelchairs for the sick person in the community
无偿献血
英文翻译: Donating blood
文化走廊
英文翻译: Cultural corridor
厂区环境绿草如茵
英文翻译: Green environment in the factory
环境管理体系认证证书
英文翻译: Certificate of environmental management system

社会责任
英文翻译: Social responsibility

1990 年以来株冶共创造工业总产值 1385 亿，实现利税总额 83 亿元，对地方 GDP 的累计贡献达 1050 亿元，并带动相关就业约 10 万人，对国民经济和社会稳定做出了重要贡献。株冶以其先进的理念、优良的生产技术管理和良好的环境绩效成为中国有色铅锌冶炼的行业标杆。

英文翻译:
Since 1990, Zhuzhou smelter group has created a gross value of industrial output of 138.5 billion Yuan, realized a profit of 8.3 billion Yuan. And its total cumulative contribution to the local GDP amounted to 105 billion Yuan. It drove the relevant employment to about 100 thousand people and made an important contribution to the national economy and social stability. With its advanced ideas, excellent production technology management and environmental friendly achievements, Zhuzhou smelter group becomes a benchmarking in China lead and zinc smelting industry.

株冶文化
英文翻译: Culture of Zhuzhou smelter group
原全国人大常委会委员长吴邦国在公司视察
英文翻译: Wu Bangguo, the former chairman of the NPC Standing Committee, inspected in the company
中国五矿集团公司董事长何文波到株冶视察
英文翻译: He Wenbo, China Minmetals chairman of the board of, inspected the company
整洁明亮的锌电解生产现场
英文翻译: Neat and bright zinc electrolysis production field
中共湖南省委副书记、省长杜家毫视察株冶集团公司
March 2018

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英文翻译:
Du Jiahao, deputy secretary of The CPC Hunan Provincial Committee and Hunan Governor, inspected the company.
中国五矿有色金属控股有限公司董事长李福利到公司考察调研

英文翻译: Li fuli, chairman of the board of China Minmetals nonferrous metals holding co., ltd., supervised and investigated the company.

市场营销
英文翻译: Marketing

株冶集团始终坚持诚信为本的经营理念，以一流的产品质量、强大的技术服务能力获得市场的信赖，公司多次获得“全国用户满意企业”称号。株冶致力于满足客户需求的铅锌合金领域研究，开发出100余种铅锌合金投放市场，赢得了市场先机。

株冶集团营销网络的主框架是以本部为中心，上海、北京、深圳等子公司为骨架，在华中、华东、华南、华北地区进行辐射，旗下产品行销全国21个省市90多个地区，并出口至东南亚。锌产品市场占有率为10%，其中热镀锌合金市场占有率为50%，中国90%以上大型钢企与株冶集团建立了长期合作的战略伙伴关系。

湖南株冶火炬金属进出口有限公司作为株冶的全资子公司，拥有进出口经营权，代理出口公司生产的“火炬”牌高品质铅、锌及其合金、银锭、铟锭等产品，并进口公司生产所需的原材料和设备。产品已销售到欧美、日本等20多个国家和地区，形成了全球化的产品出口和原材料进口营销网络。

英文翻译:
Zhuzhou smelter group always adhere to the business philosophy of honesty and integrity, with first-class product quality, strong technical service ability to gain market trust. The company won the "national customer satisfaction enterprise" title for many times. Zhuzhou smelter group is committed to meet customer demand, researched and offer more than 100 kinds of lead and zinc alloy to the market, and won the market opportunities.

The main frame of marketing network takes the headquarters as the center, Shanghai, Beijing, Shenzhen and other subsidiary as the skeleton, which radiates the markets in central China, east China, south China and north China. Its products are sold to more than 90 regions in 21 provinces and cities in China, and exported to Southeast Asia. Its zinc product takes 10% of the market share, in which galvanizing alloy takes 50% of the market share. More than 90% of China's large steel mills have established long-term strategic partnerships of cooperation with Zhuzhou smelter group.

As a wholly owned subsidiary of Zhuzhou smelter group, Zhuzhou Smelter Imp.& Exp. Co., Ltd. is the agent of the Group to export the "torch" brand high quality lead, zinc and its alloys, silver ingot, indium ingot, and other products, and import raw materials and equipment for the production. The products have been sold to over 20 countries and regions such as Europe, America, Japan, and formed a global marketing network for product exports and imports of raw materials.

株冶集团客户答谢会
英文翻译: Return banquet to Customers
市场营销部
英文翻译：Marketing department
硫酸产品槽车
英文翻译：Tanks for sulfuric acid
锌成品库一角
英文翻译：A corner view of Zinc products
火炬产品装船外运
英文翻译：Shipping for products with “Torch” brand

科技创新
英文翻译：Technological innovation

株冶集团的科技开发能力，在同行业中一直处于领先地位。公司致力于研究开发先进的铅锌冶炼工艺和技术装备，形成了国内领先的铅锌冶炼生产线；致力于创新研发重金属环境污染治理工艺，形成了废水处理“零排放”、废渣综合利用和无害化处理等关键技术；致力于国家循环经济和两型社会示范建设，形成了具有独特优势的“铅锌联合绿色冶炼生产模式”和高效率资源回收的“综合生产模式”。

近年来，先后设立了国家级企业技术中心、国家级实验室和博士后工作站，并成功开发了包括铅锑合金、铅钙合金、热镀锌合金、压铸锌、高纯铋、镉、铟、ITO靶材、无汞锌粉等系列产品，深加工产品率达到80%以上，是国家高新技术企业。

公司已申请专利近300件（其中发明专利190件），有效授权专利184件（其中发明专利96件），公司的专利申请和授权数量居国内同行业领先地位。已获国家科技进步奖二等奖1项，国家技术发明奖二等奖1项，省部级科技进步奖70余项。

公司人才发展遵循“引培并举，兼容并蓄，广聚博纳，诚信规范，梯次有序，整体推进”的指导方针，实现“株冶成就人才，人才成就株冶”的宏伟目标。

公司现有经营管理人才436人、专业技术人才858人，高技能人才1509人，三支人才队伍数量占职工总数的54%。其中高级以上职称人员有182人，中级职称人员476人，“新世纪百千万人才工程”国家人选1人，湖南省“新世纪121人才工程”第二层次人选1人，湖南省优秀专家1人，享受政府津贴的有6人，株洲市学术带头人3人，国家科技发展战略专家库9人；公司技术专家48人，公司技术尖子21人。

英文翻译：
The technology development and research capabilities of Zhuzhou smelter group, has been in the leading position in the industry. The company is committed to research and exploit lead and zinc smelting process and advanced technology equipment, which formed a leading lead and zinc smelting production line in domestic market;
Zhuzhou Smelter is always dedicated to innovative research and development on the environmental pollution of heavy metals, and made success in key technology such as “zero emissions” wastewater treatment, comprehensive utilization of waste residue and disposal. It committed to the national circular economy demonstration and “two type society” construction, and formed a unique advantage of “lead
and zinc joint green smelting production mode" and "comprehensive production mode" of highly efficient resource recycling.

In recent years, a state-level enterprise technology center, national laboratory and postdoctoral workstation have been set up. And products including lead-antimony alloy, lead-calcium alloy, hot dip galvanized alloy, die casting zinc alloy, high purity bismuth, cadmium, indium, ITO target materials, mercury-free zinc powder series products all have been successfully developed. Deep processing product rate is above 80%. And the company becomes a national high and new technology enterprise. The company has applied for nearly 300 patents (of which 190 patents are invention patent), and in which 184 pieces of patent got effective authorization (including 96 pieces of invention patent). The number of patent application and authorization in the industry in China is in the leading position. A second class prize of national science and technology progress award and a second class prize of the state technological invention award had been won separately, and more than 70 items of provincial science and technology progress awards also have been won by Zhuzhou Smelter.

The Company follows the guidelines of "introduce and train talents simultaneously, be inclusive and equitable, echelon ordered and keep progressing with plan", and achieves the grand goal of "fostering the talent and the talent make the company successful".

There are 436 staffs of management, 858 staffs of professionals and 1509 staffs of high skilled. Those three types of staffs accounted for 54% of the total number of staffs. 182 of them are in senior title, 476 of them are in intermediate title, and one of them is national candidate in "the new century talents project", and one of them is the second level candidate in Hunan provincial "new century 121 Talents Project", one of them is an outstanding experts in Hunan province. And six of them enjoy the government subsidy, three of them are the academic leaders of Zhuzhou city, nine of them are listed in the expert database of the national science and technology development strategy, 48 of them are technical expert and 21 of them are excellent technicians of company level.

科技以人为本
英文翻译：People-oriented technology

谢平根劳模示范创新工作室
英文翻译：The demonstration innovation studio from the model worker Xie Pinggen.

博士后工作站博士工作中
英文翻译：Doctors are working in the postdoctoral workstation

博士后工作站授牌仪式
英文翻译：Postdoctoral workstation award ceremony

幸福株冶
英文翻译：Happy life of Zhuzhou Smelter

株冶集团将企业文化与“资源掌控”、“人才成长”、“品牌价值”一并为公司发展战略，共同构成企业发展框架，营造“美丽有色、幸福株冶”。”在这里，湖湘文化的精髓全面彰显，诚信至上、务实创新、崇尚科学、尊重人才的大环境浸染着每一个株冶员工。秉承“奋进
LBMA Responsible Silver Guidance – Summary Assessment Report
For third-party audits based on ISO19011:2011

求发展、协力站排头”的企业精神，“严细实恒、精益求精”的工作作风，以打造中国铅锌冶炼最有价值的公司，为客户提供从产品、物流到技术支持的一体化服务，株冶集团一步步演绎着有色传奇、世纪辉煌。

公司这种朴素而又内涵丰富的企业文化理念，经过几代株冶人的共同努力，如今正不断成为全体株冶员工共同的价值取向和目标追求，它凝聚员工的忠诚，激发出员工的创造力，提升着企业的品牌价值和美誉度，并相伴企业全部的发展时期，抵御企业所面临的各种风险。

英文翻译:
Zhuzhou smelter group takes the enterprise culture along with "Resource control", "Talent training", "Brand value" as the development strategies which constitute the enterprise development framework to build the "colorful and happy life" in Zhuzhou Smelter. The soul of Huxiang culture is appeared all round in the company; every staff is imbued with the environment of paramount spirit of trustworthy, practicability, innovation, science advocating and talents respecting. Taking “Endeavour for development, United to stand in the first rank” as the enterprise spirit, “Strict, meticulous, honesty and permanent” as its work style, Zhuzhou Smelter aims to build China's most valuable company in lead and zinc smelting industry and provides an integration service of product, logistics and technical support. Zhuzhou Smelter Group is showing the legend of nonferrous industry and made the centurial achievements step by step.

Through joint efforts of several generations in Zhuzhou Smelter, This concept of corporate culture with simple but with rich connotations, are now constantly become the common value orientation and goal pursued by all employees of Zhuzhou smelter Group. It condensed the loyalty of employees, motivated staffs' creativity, enhanced the enterprise's brand value and reputation with the whole period of development of the enterprises to face all kinds of risks.

歌咏比赛
英文翻译：Singing tournament
株冶集团火炬足协获得 2013 年“交通银行杯”株洲市首届青年足球赛亚军
英文翻译：Torch Football Association of Zhuzhou Smelter Group was the runner up in the first youth soccer tournament of "Zhuzhou city traffic bank Cup" in 2013.
株冶代表队入场式英姿
英文翻译：March-in of Zhuzhou Smelter Group team
羽毛球比赛
英文翻译：Badminton tournament
走上领奖台的女将们
英文翻译：The girls on the podium
春节游艺活动
英文翻译：Recreational activities during the Spring Festival

展望未来
英文翻译：Prospect
Manual adequacy:

Key clauses in LBMA Responsible Silver Guidance are addressed in the LBMA compliance policy statement that is prepared by the LBMA compliance committee.

All applicable statutory requirements are mandatory implemented and maintained.

Assessment of level of compliance of Refiner’s systems, processes, procedures and practices according to the LBMA Responsible Silver Guidance:

**Step 1: Establish strong Refiner management systems**

See Third party Audit Checklist

1. Adopt a Refiner policy regarding due diligence for supply chains of Silver. Provide an overview of the management systems governing the due diligence policy for Silver supply chains.
2. Set up an internal management structure to support supply chain due diligence. Review the management structure for due diligence, including the methods of communication to internal and external parties.
3. Establish a strong internal system of due diligence, controls and transparency over Silver supply chains, including traceability and identification of other supply chain actors. Inventory Control Mechanism: Conduct a review of the inventory control mechanism and the documentation kept on file for Silver bearing material.
4. Strengthen Refiner engagement with Silver supplying counterparties, and where possible, assist Silver supplying counterparties in building due diligence capacities. Review the due diligence policy communicated to the Silver bearing counterparties.
5. Establish a Refiner-wide communication mechanism to promote broad employee participation and risk identification to management. Review the internal communication mechanisms in place at the Refiner focusing on the mechanism for voicing concerns over the Silver supply chain.

The refiner has developed the LBMA compliance policy regarding due diligence for supply chain of silver in compliance with LBMA Responsible sliver Guidance. The policy required that Silver supplying counterparties participate in conflict financing, abuse of human rights, money laundering and terrorism financing. The policy was publicly available. Website: http://www.torchcn.com/content/?629.html

The refiner has implemented an internal management structure to support supply chain of Silver in compliance with LBMA Responsible Sliver Guidance. The LBMA compliance team is led by the Mr. Xiazhongwei /Vice-GM with more than 20 years’ work experience in the field of technical, production department. The compliance director attend open meeting during this audit, it was able to conduct relevant management interviews. Evidence shows that measures and necessary resources the refinery will take to support the operation and monitoring of the due diligence process.

The refiner has communicated the procurement policy to all suppliers 33 and 14 customers through written commitment letter, and spread the policy on company website to communication externally.

The refiner provided training to achieve internal communication to all related employees base on training record on May.2019. Those people are clear their responsibilities and due diligence requirement.

The refiner has stopped production since October 2018. Through observation onsite, there were no production in the refiner, no silver-bearing material in the raw materials warehouse and no employees in the sliver refiner. Therefore, the type of material cannot be confirmed by auditor onsite, and it is limited to be interviewed with production employees.

The refiner has appointed a compliance officer responsible for enforcing the implementation of the due diligence procedures and who reports to the management.

Document defined clearly about of the documentation requirement that should maintain at least five years. And Responsible people also know this requirements.

The refiner has requested that Silver-supplying counterparties have committed to and acknowledged in writing compliance with the refiner’s own company policy, total 33 suppliers and 14 customers have signed agreement which silver supplying counterparties should commit to and acknowledge in writing compliance with the refiner’s own silver supply chain policy and OECD requirement.

The refiner has not established the internal communication mechanisms in place which the refiner focusing on the mechanism for voicing concerns over the Silver supply chain. One NC was raised during this audit.

Total 2 low risks raised in step 1 during this audit.

**STEP 2: Identify and assess risk in the supply chain**

**See Third party Audit Checklist**

1. Identify risks in the Silver supply chain. Assess the risk assessment policy for all Silver supply chains.
2. Assess risks in light of the standards of their supply chain due diligence system: Supply chain due diligence: Review “Silver supplying counterparty” files to verify if the Refiner collects the required basic information for all business entities
3. Risk assessment reporting. Evaluate the risk assessment reporting mechanisms, organization chart and communication
The refiner establishes system for assessing risk among Silver supplying counterparties according to the LBMA Responsible Silver Guidance.

The refiner set up supply chain due diligence system in place, 33 suppliers and 14 suppliers performed due diligence, all 7 mine suppliers provided compliance of local law, 1 supplier mining licence over due end of 2018, but they are processing to get new with government, there are following, and another 1 mine supplier is transforming to trader a company, ask refiner to track. 2 low risks opened here.

Risk assessment procedure in place, the refiner has defined high-risk supplier. All Silver suppliers were assigned as low risk level by refiner, risk assessment consider supplier site, customer, but not clear evidence shows other supplier chain covered even risk is low after communication and real situation of refiner, so 1 low risk opened on the audit.

No subcontractor is used by the refiner.

The refiner has mechanism or procedure for monitoring transactions to ensure that these are consistent with information on the counterparties' supply chain and risk profile.

The refiner has established risk assessment reporting process in place.

Total 4 low risks were raised in step 2 during this audit.

**STEP 3: Design and implement a management strategy to respond to identified risks**

<table>
<thead>
<tr>
<th>See Third party Audit Checklist</th>
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<tbody>
<tr>
<td>1. Policy: formal risk mitigation strategy in place.</td>
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<td>2. Improvement plans: strategy regarding the procedures for following up on improvement plans.</td>
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</table>

Established formalized risk mitigation strategy and improvement plan of risk mitigation strategy.

No improvement plan available to performed due to all low risks both suppliers and customers. The refiner has established formalized risk mitigation strategy and due diligence was inadequate.

Total 1 low risk raised (see step 2) in step 3 during this audit.

**Step 4: Arrange for an independent third-party audit of the supply chain due diligence**

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This is the first year that the refiner completes an LBMA Silver Guidance, with audits completed once a year. The refiner has ensured that these audits are diligently completed in accordance with the LBMA Guidance and the OECD Guidance.

**STEP 5: Report on supply chain due diligence**

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Refiners should make available their company policy regarding Silver supply chain and the LBMA Summary Report.

This is the first LBMA full assessment was conducted in April 2019 by BV, and the assessment was conducted based on the ISO 19011:2011 standard, and the assessment period was January to December 2018. The refiner has ensured that these audits are diligently completed in accordance with the LBMA Guidance and the OECD Guidance.

The refiner will publish the LBMA summary report after approval on their website ([http://www.jin-wang.com.cn/news_detail/newsId=781.html](http://www.jin-wang.com.cn/news_detail/newsId=781.html)).
The policy has published on their website (http://www.torchcn.com/content/?629.html).

<table>
<thead>
<tr>
<th>ASSESSMENT CONCLUSIONS</th>
<th>Non compliance – risk level</th>
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<tr>
<td>CATEGORY</td>
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<td>General Information</td>
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<td>Step 2:</td>
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<td>Step 5:</td>
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Based on the above assessment conclusions, the overall rating of the Refiner’s performance is determined to represent:

**Assessment scope:**

- **Refiner location(s) included in the assessment scope**

- **Assessment Period** 2018 (from Jan.1/2018 to Dec.31/2018)

**Assessment methodology:**

The Assessment teams used a triangulation of findings to evaluate the existence and implementation of appropriate systems at the Refiner, addressing all areas covered by the LBMA Responsible Silver Guidance.
Each area of the LBMA Responsible Silver Guidance was verified by documentation review and management/employee interviews, as well as observation during the facility tour.

The evidence of compliance that was reviewed included:

- Silver Supplier Chain Policy,
- LBMA Management system document (not provided),
- Document and record control procedure (not provided),
- Supplier identification and management procedure (not provided),
- Raw material procurement traceability procedure (not provided),
- Risk mitigation strategy procedure (not provided),
- Compliance team appointment,
- Training Record (not provided),
- Risk assessment record,
- Due diligence record,
- Business Certification,
- Transaction Record,
- Silver Receiving Book,
- Sliver Assay Record,
- Etc.

- The following areas of the facility were visited during the tour: (Note: The refiner has stopped production in October 2018, no production resumed during the audit period.)
  - Office,
  - Raw Materials Warehouse (no silver-bearing material in the raw materials warehouse),
  - Silver ingots Warehouse (no Silver ingots in warehouse),
  - Smelting workshop (no production),
  - Bismuth electrolysis workshop (no production),
  - Lead Electrolysis Workshop (no production),
  - Silver Electrolysis Workshop (no production),
  - Melting workshop (no production),
  - Casting Workshop (no production),
  - Lab,
  - All the activities production area related silver product.

- The following interviews were conducted with management:
  - Mr. Xiazhongwei / Vice general manager;
  - Mr. Zhuxiangchun/ import-export Vice general manager
  - Mr. Liu Hu/ Quality leader
  - Mr. Chang Min/ Operation department,
  - Ms. Yuyinchun/ Purchasing & sales manager,
  - Ms. Qiuyuanlin/ Finance department

- The following interviews with employees were conducted: (Note: The refiner has stopped production in October 2018, no production resumed during the audit period, the auditor cannot perform interview with production employees)
  - One employee from financial,
### LBMA Responsible Silver Guidance – Summary Assessment Report
For third-party audits based on ISO19011:2011

#### March 2018

- One employee from Sales dept.
- One employee from purchasing dept.
- Two employees from Import & export
- One employee from Quality

Any significant or inherent limitations or areas not covered that were within the assessment scope:

The refiner has stopped production in October 2018, no production resumed during the audit period. Through observation onsite, there were no production in the refiner, no silver-bearing material in the raw materials warehouse and no employees in the sliver refiner. Therefore, the type of material cannot be confirmed by auditor onsite, and cannot be interview with production employees. In addition.

#### Assessment criteria:

- The auditor or assessment team took into account all relevant objective evidence provided by the Refiner. Relevant evidence was either qualitative or quantitative in as far as it is appropriate and sufficient to support the auditor or assessment team's conclusions. Appropriate evidence is evidence that is relevant and reliable. Sufficient evidence refers to the amount of evidence provided to allow the auditor or assessment team to reach a conclusion.

- Any actual or potential gaps in the Refiner's systems in regards to the LBMA requirements are rated in accordance to the level of risk each presents to the credibility and integrity of the LBMA Responsible Silver Programme for the responsible sourcing of silver-bearing materials.

The Auditors confirm that:

- ✓ The information provided by the Refiner is true and accurate to the best knowledge of the Auditor(s) preparing this report.

- ✓ The findings are based on verified Objective Evidence relevant to the time period for the assessment, traceable and unambiguous.

- ✓ The Auditor(s) have acted in a manner deemed ethical, truthful, accurate professional, independent and objective.

- ✓ The Auditor(s) are properly qualified to carry out the assessment at this Refiner's facility.

**Lead Auditor: Ms. Alice ZHANG**

**Signature:** Alice ZHANG 张利英

**Date:** May 17th, 2019