# AN ADDENDUM REPORT TO THE ZANAGA IRON ORE PROJECT FEASIBILITY STUDY: ORE RESERVE REVIEW

Prepared For MPD Congo SA

**Report Prepared by** 



SRK Consulting (UK) Limited UK6016

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	SRK Consulting (UK) Limited
	5 <sup>th</sup> Floor Churchill House 17 Churchill Way City and County of Cardiff, CF10 2HH Wales, United Kingdom.
	June, 2016
	UK6016
Richard Oldcorn	Corporate Consultant (Due Diligence)
Gabor Bacsfalusi	Senior Consultant (Mining)
	MPD Congo SA Limited
	Quartier OCH Moungali III case C4-37 BP1265 Brazzaville République du Congo
	Richard Oldcorn Gabor Bacsfalusi

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SRK Consulting (UK) Limited 5th Floor Churchill House 17 Churchill Way City and County of Cardiff CF10 2HH, Wales United Kingdom E-mail: enquiries@srk.co.uk URL: www.srk.co.uk Tel: +44 (0) 2920 348 150 Fax: +44 (0) 2920 348 199

## AN ADDENDUM REPORT TO THE ZANAGA IRON ORE PROJECT FEASIBILITY STUDY: ORE RESERVE REVIEW

## 1 INTRODUCTION

### 1.1 Background

SRK Consulting (UK) Limited ("SRK") is an associate company of the international group holding company, SRK Consulting (Global) Limited (the "SRK Group"). SRK has been requested by MPD Congo SA ("MPD", hereinafter also referred to as the "Company" or the "Client") to undertaken an Ore Reserve estimate on the Mineral Assets of the Company comprising the Zanaga Iron Ore Project ("ZIOP") located in the Republic of Congo ("RoC").

This is a report to confirm that SRK Consulting (UK) Limited (SRK) has reviewed all of the key information on the Zanaga Iron Ore Project Feasibility Study (April, 2014) with consideration for current (June, 2016) consensus iron ore long term price forecasts.

SRK has not independently re-calculated Mineral Resource estimates but has, rather, reviewed the quantity and quality of the underlying data and the methodologies used to derive and classify the estimates as reported by CSA Global (UK) Ltd and made an opinion on these estimates including the tonnes, grade and quality of the iron ore planned to be exploited in the SRK authored life of mine plan. The Ore Reserve estimate has been derived and reported by SRK according to the guidelines and terminology proposed in the JORC Code (2012 version).

#### 1.2 **Project Description**

The ZIOP is planned to be a large scale iron ore operation located in the RoC (Figure 1-1). The project plans to develop to 30 Mtpa of high grade pellet feed through a two stage ramp up: 12 Mtpa followed by an 18 Mtpa expansion.

The recently completed Feasibility Study demonstrates a 30 year project life. The planned operations include an open pit and associated process plant and infrastructure at the mine area (Zanaga), a slurry pipeline for transport of iron ore pellet feed from the mine to the port facilities (Pointe Indienne) and new portside facilities and infrastructure for the dewatering and handling of the pellet feed to the global sea-borne iron ore market.







Figure 1-1: ZIOP Mine Area and Infrastructure Map

### 2 ORE RESERVE ESTIMATION

#### 2.1 Introduction

The Ore Reserve estimate has been re-stated to reflect updated long term iron ore pricing assumptions. The Ore Reserve estimate is supported by the Feasibility Study Report for the Zanaga Iron Ore Project (April, 2014) and no updates to technical design or cost estimates have been made since its completion. SRK has reviewed this document and its findings form the basis of the Ore Reserve estimate. SRK has authored the mining component of this Feasibility Study.

#### 2.2 Ore Reserve Statement

#### Table 2-1: Zanaga Iron Ore Project Ore Reserve Estimate<sup>1</sup>, 27 June 2016

Ore Reserve Category	Tonnage	Grade			
	(Bt <sub>Dry</sub> )	(%Fe <sub>⊤</sub> )	(%Al <sub>2</sub> O <sub>3</sub> )	(%SiO <sub>2</sub> )	(%P)
Proved Ore Reserves					
Hematite	0.77	37.3	4.7	35.1	0.04
Magnetite	-	-	-	-	-
Subtotal	0.77	37.3	4.7	35.1	0.04
Probable Ore Reserves					
Hematite	0.13	34.1	6.3	35.7	0.04
Magnetite	1.16	31.6	1.9	45.7	0.05
Subtotal	1.29	31.8	2.3	44.7	0.05
Total Proved and Probable Ore Re	serves				
Hematite	0.91	36.8	4.9	35.2	0.04
Magnetite	1.16	31.6	1.9	45.7	0.05
Total	2.07	33.9	3.2	41.1	0.05

<sup>1</sup>The figures in this table are rounded to reflect the precision of the estimate and include rounding errors.

#### 2.3 Material Changes from the Previous Estimate

The long term CFR selling price assumption that supports the Ore Reserve has been updated to a reference IODEX 62% Fe concentrate price of 60.00 USD/dmt and a freight cost of 10.50 USD/wmt (RoC to China). Allowances for other price related components which have not been updated include Fe unit premiums, quality adjustments and moisture adjustments result in an average FOB selling price of:

- 54.20 USD/dmt for concentrate from hematite; and
- 56.80 USD/dmt for concentrate from magnetite.

No changes to the underlying technical studies, production, operating expenditures and capital expenditures which support the Ore Reserve have been made to the April 2014 study. Based on the updated freight assumptions, the project requires a CFR IODEX 62% Fe Concentrate price of 51.00 USD/dmt in order to provide a real terms internal rate of return of 10%.

#### 2.4 Competent Person Statement

The statement in this report relating to Ore Reserves is based on information compiled by Mr Gabor Bacsfalusi who is a Chartered Professional Member of the Australasian Institute of Mining and Metals. He is a mining engineer and Senior Consultant of SRK Consulting (UK) Ltd. He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gabor Bacsfalusi consents to the inclusion in the report of the matters based on his information in the form and context within which it appears.

### **3 CONCLUDING REMARKS**

SRK concludes that the Ore Reserve Statements presented are reported in accordance with the terms and definitions as included in the JORC Code (2012). Included in an Appendix to this report are the JORC checklist tables, which include additional details and commentary on the *"Estimation and Reporting of Ore Reserves"*.

#### For and on behalf of SRK Consulting (UK) Limited

Gabor Bacsfalusi, Senior Consultant (Mining), SRK Consulting (UK) Limited

#### Section 4 Estimation and Reporting of Ore Reserves

Criteria	JORC Code explanation	Commentary
<i>Mineral Resource estimate for conversion to Ore Reserves</i>	<ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	The Mineral Resources were estimated by CSA global and this is detailed in "JORC Technical Report on the August 2012 Mineral Resource Update, Zanaga Iron Ore Project, Republic of Congo for Xstrata Iron Ore" authored by Malcom Titley and Maria O'Connor of CSA Global.
011		The Mineral Resources are reported inclusive of the Ore Reserves.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	A site visit was undertaken by the Competent Person in January 2014.
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	The Feasibility Study (2014) assessed 3 different production options. The study level varies between pre-feasibility and feasibility for the various study disciplines. The deposit had two pre-feasibility study options completed in 2010 and 2012 which evaluated product rates of 45 Mtpa and 30 Mtpa respectively.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	A variable Fe head grade cut-off has been applied by each lithology: COL – 30% Fe (Processing Cut-Off) ITG – 11% Fe (Economic Cut-Off) ITF– 8% Fe (Economic Cut-Off) ITC – 9% Fe (Economic Cut-Off) ITT – 15% Fe (Processing Cut-Off) BIF – 15% Fe (Processing Cut-Off)
Mining factors or assumptions	<ul> <li>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc),grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>The mining recovery factors used.</li> </ul>	GeotechnicsWeathered Rock (pit depth < 30m) - 35° OSA (overall slope angle)Weathered Rock (pit depth >30m) - 30 ° OSAFootwall Fresh Rock - 40 ° OSAHangingwall Fresh Rock - 50 ° OSAThe geotechnical design criteria for the pit slopes are considered to be at a Feasibility Study level.Grade ControlStandard blasthole sampling will be used for grade control. No material pre-production drilling has been planned.

Criteria	JORC Code explanation	Commentary
	<ul> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	Hematite - Stage 1 The proposed mining method is a standard truck and shovel method on a 5 m bench height. Drill and blast is only required at the ITC lithological boundary. Overland conveyors are required to transport ore from the four main mining areas to the plant.
		The resource model was regularized to a selective mining unit of 10m x 10m x 5m resulting in overall mining loss and dilution modifying factors of 1% and 6% respectively for the COL, ITG, ITF and ITC lithologies.
		The Ore Reserves are reported within a pit design which is based on a pit optimisation using a 121 US¢/dmtu metal price when constrained to the hematite material. It is noted that there is no material increase in pit size above the 80 US¢/dmtu revenue factor. The pit optimisation was run inclusive of Measured, Indicated and Inferred Classified Mineral Resources. The Inferred Classified Mineral Resources represent approximately 12% of the ore within the Stage 1 pit design.
		The pits have been designed to a minimum bench width of 30 m to accommodate a maximum truck size of 130 t capacity.
		The stage 1 plan includes Measured, Indicated and Inferred Classified Mineral Resources. The Inferred Classified material accounts for 1.2% (3 Mt), 2.2% (7 Mt) and 25.1% (115 Mt) of the ex-pit classified plant feed for years 0 to 10, 11 to 20 and 21 to year respectively. The exclusion of the Inferred Classified Mineral Resources in the financial model does not have a material difference to the project value.
		Magnetite - Stage 2 The proposed mining method is a standard truck and shovel method on a 15 m bench height. Drill and blast is required. Overland conveyors are required to transport ore from the four main mining areas to the plant.
		Global modifying factors of 5% and 5% have been applied for mining loss and dilution for the ITT and BIF lithologies. These global factors are reflective of the estimated losses and dilution modeled for the Zanaga Pre-Feasibility study in the North Region at a 15 m bench height. No grade modifications have been made to the deleterious elements.

Criteria	JORC Code explanation	Commentary
		The Ore Reserves are reported within a 33 US¢/dmtu pit shell constrained to the North Region. The pit optimization was run inclusive of Measured and Indicated Classified Mineral Resources. There are no material quantities of Inferred Classified Mineral Resources within the Stage 2 pit shell.
		The pre-feasibility study (2012) demonstrated that there is no material difference in ore and waste tonnages when the engineered pit is compared with the optimized pit shell. It is expected that an engineered design for the magnetite phase would not have a material impact on the pit shell ore and waste tonnages.
		The stage 2 plan only includes Measured and Indicated Classified Mineral Resources.
Metallurgical factors	<ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation</li> </ul>	Hematite Circuit (Stage 1):
	<ul> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work.</li> </ul>	The hematite beneficiation circuit is based on gravity separation using spirals, with a supplementary recovery stage using flotation. This is a well tested technology.
	<ul> <li>The nature, amount and representativeness of metallulgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the considered representative of the orebody.</li> </ul>	Ore is crushed and then milled using SAG mills to -0.6 mm, following which it is deslimed (slimes to tailings), then split into Coarse and Fine fractions, with each fraction subjected to two stages (rougher and cleaner) of spiral separation. The spiral stages produce Concentrate, Tailings (from the rougher stage) and Middlings (rougher middlings plus cleaner tailings). The Middlings are reground (coarse stream only) to -0.25 mm then subjected to a further two stage spiral circuit, again producing Concentrate, Tailings and Middlings.
	specifications ?	These Middlings are further reground (to 65 $\mu$ m) and deslimed (slimes to tailings), with the deslimed material subjected to reverse flotation for silica rejection. Flotation produces Concentrate and Tailings. The combined Concentrate streams are further reground to meet the requirements of the slurry pipeline.
		<ul> <li>Testwork has been undertaken in support of the development of the proposed flowsheet. However, SRK considers that the level of testwork undertaken and reported is deficient with regard to the following aspects:</li> <li>Gravity separation testwork has been undertaken using shaking tables, which provide a close but not exact reproduction of the performance of spirals. In addition, the tabling work was</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>undertaken on a "whole" sample, i.e. not in a Coarse / Fine configuration, and the entire middlings stream was reground. For a Feasibility Study level of investigation, SRK would expect a spiral pilot plant to have been undertaken. The Glencore FS report refers to some preliminary spiral work as being in progress, but no results of such a program are reported.</li> <li>Only a small number of bench scale flotation tests have been undertaken. While these were reasonably successful, the flowsheet envisages feeding much lower grade material to the flotation circuit than was tested, and the estimated mass recoveries to the floated phase are very high as a proportion of the feed material. SRK therefore expects that the flotation performance may be less successful than is being assumed. In addition, SRK notes that the flotation stage recoveries assume a constant figure irrespective of lithology type and head grade. Again, particularly given the extrapolation from testwork to the plant design criteria, SRK would expect to see much more testwork having been conducted to support a FS level of investigation. However, SRK notes that the contribution of the flotation stage to the overall product is small.</li> <li>Limited SAG mill testwork has been undertaken and the results indicate larger sized SAG mills than planned may be required. Additional testwork will be required prior to finalizing the mill sizing during basic engineering.</li> </ul>
		The methodology used to develop the operating cost for the Stage 1 beneficiation plant is appropriate for a FS. However, given the uncertainty over the specification of the SAG mills, and given that (a) power is the largest contributor to the operating cost and (b) the largest power consumers in the plant are the SAG mills, SRK believes that sufficient contingency should be added to the financial evaluation to reflect the precision of the operating cost estimate.
		Regression relationships have been developed between Fe head grade and Fe recovery for the three lithology types that represent the Phase 1 feed to the Stage 1 plant (COL, ITG and ITF). These relationships appear to be reasonable based on the testwork conducted, bearing in mind the use of a constant recovery figure used for the flotation stage. However, a constant Fe recovery of 70% is assumed for the ITC lithology type, which is a key component of the Phase 2 operation of the Stage 1 plant. This recovery figure is not well supported by testwork data.

Criteria	JORC Code explanation	Commentary
		<ul> <li>Magnetite circuit (Stage 2):</li> <li>The magnetite beneficiation circuit assumes a conventional magnetite separation configuration based on the use of sequential stages of wet Low Intensity Magnetic Separation (LIMS). This is well tested technology.</li> <li>The flowsheet envisages three stages of grinding, each followed by a stage of LIMS. The first grinding stage will be using AG mills, the second using pebble mills, and the third using a ultrafine grinding mill, such that the feed to the third stage of LIMS is already of a size suitable for slurry pipeline transportation.</li> <li>The Stage 2 plant design is only at a PFS stage of investigation and cost estimation. SRK concurs with this assessment; the previous study into the processing of this material utilised a different flowsheet, and so the testwork used to support the proposed flowsheet uses relatively basic Davis Tube Test results. However, this type of testwork is appropriate for magnetite ores, certainly up to a PFS level of investigation.</li> <li>Constant Fe recovery figures have been used for the two Magnetite Circuit lithology types: 75% for ITT and 80% for BIF. The Davis Tube Test results reported indicate that a non-linear relationship is more appropriate, however as an average figure, the figure of 80% for the BIF material is probably reasonable. The Glencore FS report notes that the 75% figure assumed for the ITT material is "now considered too aggressive", however given that the ITT material represents only 12% of the planned Stage 2 ore feed (the remainder being the BIF material), the overall impact of the difference between the assumed figure of 75% and a more reasonable "flat line" figure of the order of 70% is probably not material.</li> </ul>
Environmental	<ul> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</li> </ul>	An ESIA for the project has been undertaken and the ESIA report was submitted to the regulatory authorities in early 2014 for review and approval. Receipt of the environmental permit is a prerequisite to receipt of the mining licence. The ESIA states that the underlying rocks do not contain compounds with acid generation potential, and therefore the risk of acid rock drainage or metals leaching is unlikely. Separate environmental approvals for waste storage facilities are not currently required in the Republic of Congo.

Criteria	JORC Code explanation	Commentary
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<b>Infrastructure</b> A series of terraced plateaux are required to support the proposed mine site infrastructure, which will be expanded to match the increase in production. Run of mine will be transported by overland conveyor to the beneficiation and concentrate slurry batching plant.
		The RoC government will be responsible for developing all local, diversion and access roads.
		During Stage 1, 12 Mtpa of concentrate will be transported by a 367 km long slurry pipeline to a new port facility 30 km from Pointe Noire. A second slurry pipeline will be required to transport the additional 18 Mtpa of concentrate during Stage 2.
		Raw and processing water will be drawn from a series of surface water attenuation reservoirs, recycling within the process circuit and reclamation from the tailings storage facilities. Package water treatment and waste water plants will be provided to supply drinking water and treat foul water.
		Labour will be predominantly sourced from within RoC with requirements for expatriates planned to reduce over the initial 11 years of operation. Dedicated workforce camps will be provided at the mine and port sites.
		Two 158 km and 200 km long, 220 kV transmission lines will connect the mine site with existing national power infrastructure. There is sufficient existing generation capacity to support Stage 1, although daily blackouts present a project risk. Additional generation capacity is required to support Stage 2. The RoC power authority will be responsible for all power infrastructure capital investment.
		At the port site, following dewatering activities, concentrate will be stored in conventional open stockyards.
		During Stage 1, concentrate will be transported along a 625 m long jetty and loaded onto 12,500 DWT transshipment vessels, protected by a detached 385 m long breakwater. Transshipment operations will load 250,000 DWT Capsize ocean going vessels approximately 3 nautical miles from shore.

Criteria	JORC Code explanation	Commentary
		To support direct loading of 250,000 DWT vessels during Stage 2, the jetty will be extended by 1.33 km, with additional capital dredging required to create an approach channel and turning basin. Dewatering and stockyard infrastructure will also be expanded.
		During operation all spares and consumables will be received at the existing PAPN port and transported to the mine site by road. There is an opportunity to export 2 to 6 Mtpa of DSO during Stage 1 using road haulage, existing rail infrastructure and a new berth at existing PAPN port. This opportunity has not been considered in depth and is dependent upon access to existing rail infrastructure.
		<b>Tailings</b> The first cell within the facility (TMF 1) will be developed in the catchment area located immediately west of the plant site. This will provide sufficient storage for 295 Mt of tailings over the first 15 years of operations. The second tailings dam (TMF 2) will be constructed during Year 15 of operations, thus allowing deposition to commence in this area at year 16. This area will provide storage for a total of 369 Mt of tailings.
		The stage 2 option involves deposition of 295 Mt in TSF 1 over a period of 12 years and follows the same initial sequence as stage 1. Upon reaching full capacity, deposition will switch to a new cell (TSF 3) located to the west of the northern extent of the mineralised zone. Previously called the 'North TSF Option' (SRK, 2010), this catchment will be developed due to the proximity to a second plant (Plant 2), which will be commissioned as part of the expanded case. The remaining 1,043 Mt of tailings will be stored in TSF 3, which will be raised to a maximum elevation of 596.5m RL.
Costs	<ul> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	Capital and operating costs have been estimated for both Stage 1 and Stage 2 of the project for a 30 year project period to achieve a 30 Mtpa product rate. The capital costs are estimated in USD with a Q1 2014 base date. Estimations of project capital costs are based on first principals build up. Some cost estimates from the previous ZIOP PFS's have been escalated and incorporated into the FS. Adjustments have been made to the IODEX 62% pricing to include a Fe unit and quality adjustment for the two products.
		Transport changes are based on the slurry pipeline, port and transshipping operating costs.

Criteria	JORC Code explanation	Commentary
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	All costs and revenues have been estimates in USD using the following exchange rates:       GBP       UK Pound       0.6667         EUR       Euro       0.8065         CHF       Swiss Franc       0.9896         AUD       Australian Dollar       0.9500         XAF       CFA Franc       562.00         ZAR       SA Rand       10.3777         A 3% royalty on revenues is payable to the government.       The government maintains 10% free carry equity in the project.         Long term price assumptions used in the optimisation of the mining study, as at May 2014, were based on an IODEX 62% Fe forecast of 100       US\$/dmt (162 US¢/dmtu at 62% Fe) with adjustments for quality, deleterious elements, moisture and freight. Freight costs of approximately 22.50 US\$/wmt were used to determine FOB pricing from RoC to China (Quingdao).         The June 2016 financial evaluation is based on reduced long term CFR iron ore price forecasts of 60 US\$/dmt at 62% Fe with adjustments for quality, deleterious elements, moisture and freight to support the Ore Reserve. Freight costs of 10.50 US\$/wmt have been used to determine FOB pricing from RoC to China (Quingdao). Allowances for Fe unit premiums, quality adjustments and moisture adjustments result in an average FOB selling price assumption of:         •       54.20 USD/dmt for concentrate from hematite; and       •
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	The products targeted by the Zanaga Iron Ore Project are two pellet feed products: -From Hematite: 66% Fe, 3% SiO <sub>2</sub> , 0.8% Al <sub>2</sub> O <sub>3</sub> , 0.04% P -From Magnetite: 68.5% Fe, 3.3% to 3.7% SiO <sub>2</sub> , 0.3% to 0.4% Al <sub>2</sub> O <sub>3</sub> , <0.01% P No fundamental analysis of supply, demand and price and volume forecasts specific to the Zanaga Iron Ore Project has been undertaken. The basis for the long term pricing assumption which supports the Ore Reserves has been sourced by The Company from consensus IODEX 62% Fe forecast (Standard Chartered, June 2016).

Criteria	JORC Code explanation	Commentary
		Seaborne iron ore supply is dominated by Australia and Brazil, with South Africa, Canada the CIS and others making a smaller contribution to the total.
		The primary market competition will come from existing and expanding pellet feed supply in Brazil and new supply from Australia.
		A 60 US\$/dmt at 62% Fe CFR long term price (real terms) has been used in the financial evaluation to support the Ore Reserve. This long term price is based on the analysis of consensus IODEX price forecasts as at June 2016. Shipping rates of 10.50 USD/wmt have been estimated from RoC to China to determine FOB pricing. Allowances for Fe unit premiums, quality adjustments and moisture adjustments result in an average FOB selling price assumption of: • 54.20 USD/dmt for concentrate from hematite; and • 56.80 USD/dmt for concentrate from magnetite.
Economic	<ul> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	The financial modeling undertaken inclusive of only Measured and Indicated Classified Mineral Resources produces a positive NPV project at an appropriate discount rate.
		Based on the updated freight assumptions, the project requires a CFR IODEX 62% Fe Concentrate price of 51.00 USD/dmt in order to provide a real terms internal rate of return of 10%.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	The land acquisition, resettlement and the associated compensation process will led by the government. Land acquisition and resettlement for the areas occupied by the mine site and transport corridor have not been initiated. Delays to the land acquisition, compensation and resettlement processes could delay initiation of the construction phase. The project development schedule envisages resettlement of villages in the mine area in the first year of construction.
		Resettlement is a key issue for the project. At the mine site, 3,100 people are expected to be resettled (700 people for stage 1 and the remainder for stage 2). Resettlement planning has not commenced. As part of the process of preparing a resettlement action plan the resettlement agreement/ entitlement framework needs to be negotiated. It is not uncommon for it to take more than two years after the start of resettlement planning (i.e. after the announcement of the census cut-off date).

Criteria	JORC Code explanation	Commentary
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	Applications for an environmental permit have been submitted to the Government. There is no information on how far through the permitting process the environmental permit application is. Delays in the issue of the environmental permit may impact the Project schedule. On 14th August 2014, a mining licence was awarded over a single permit area – Zanaga – covering 499.3 km <sup>2</sup> . This mining licence replaces two exploration licences that had previously covered the same area (Zanaga- Bambama and Zanaga-Mandzoumou). The mining licence has been granted for a duration of 25 years, with options to extend as per the Mining Code of Republic of Congo. The Zanaga deposit lies wholly within the licence boundary. SRK is not aware of any issues that would prevent renewing the mining licence to cover the full life of mine plan. The Project plans a two stage development to produce 30 Mtpa of high grade iron ore concentrate plus the potential for up to 2 Mtpa of DSO. The application for environmental permit pertains to the Stage 1 development only. There is an existing Mining Convention between MPD and the Government that applies in respect of exploration works within the exploration licences. A Mining Convention between MPD and Government that will regulate the operating conditions for all components of the project has been negotiated and was signed on the 14 <sup>th</sup> August 2014. This Mining Convention was approved by the Supreme Court in March 2015, and by the Council of Ministers in October 2015, ratified by the Parliament of the Republic of the Congo ("RoC") in April 2016 and is expected to be published in the Official Gazette' of the RoC on in July 2016.
Classification	<ul> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	There are Measured, Indicated, and Inferred Classified Mineral Resources within the block model. Hematite Only Measured and Indicated Classified Mineral Resources with the design pits have been converted to Proved and Probable (Measured to Proved, Indicated to Probable). Magnetite

Criteria	JORC Code explanation	Commentary
		Only Measured and Indicated Classified Mineral Resources with the pit shells have been converted to Probable (Measured and Indicated to Probable). All of the Measured Mineral Resources attributable to the Stage 2 magnetite expansion have been downgraded to Probable Ore Reserves due to the reduced study level as compared with Stage 1.
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Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	CSA Global (December 2012) following the completion of a pre-feasibility study evaluating a 30 Mtpa production rate.
Discussion of relative accuracy/confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.</li> <li>Documentation should include assumptions made and the procedures used.</li> <li>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	The Mineral Resources which the Ore Reserves are based upon constitute 2,400 Mt of Measured Resources at 34.0% Fe, 2,2900 Mt of Indicated Resources at 30.8% Fe and 2,100 Mt of Inferred Resources at 31.0% Fe as authored by the Competent Person, Malcolm Titley , an employee of CSA Global ("CSA"). Overall, SRK does not consider there to be material bias in the underlying data or grade estimate and modelling methodology employed by CSA that would affect the classification of the Mineral Resources. However the assignment of average densities to lithological units gives lower confidence to local tonnage estimates. In addition the bulk density sampling and determination methodology may result in a bias and is likely to overstate the tonnages.