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Mining Consultants



# Golden Energy and Resource Limited

# PT Trisula Kencana Sakti (PT TKS)

## Independent Qualified Person Report

October 2016

# Golden Energy And Resource Ltd ("GEAR")

PT Trisula Kencana Sakti (TKS)

Independent Qualified Persons Report

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# Key Abbreviations

| | |
|---|---|
| 0 | Degrees |
| $ or USD | United States Dollar |
| adb | Air dried basis, a basis on which coal quality is measured |
| AMSL | Above Mean Sea Level |
| AMDAL | Analisis Mengenai Dampak Lingkungan Hidup- Environmental Impact Assessment (EIA), which contains three sections, the ANDAL, the RKL and the RPL |
| ANDAL | Analisis Dampak Lingkungan Hidup, component of the AMDAL that reports the significant environmental impacts of the proposed mining activity |
| ar | As received basis |
| ASR | Average stripping ratio |
| AusIMM | Australasian Institute of Mining and Metallurgy |
| bcm | bank cubic meter |
| BD | bulk density |
| CV | Calorific value |
| Mineral Resource | A 'Mineral Resource' is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade (or quality), and quantity that there are reasonable prospects for eventual economic extraction. The location, quantity, grade (or quality), continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling. Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories. |
| Coal Reserve | A 'Coal Reserve' is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.<br>The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported. |
| DGMC | Directorate General of Minerals and Coal within the Ministry of Energy and Mineral Resources |
| FC | Fixed Carbon |
| gar | gross as received, a basis on which coal quality is measured |
| GCV | Gross Calorific Value, "The Gross Calorific Value of coal is the amount of heat produced by its complete combustion of its unit quantity." It is usually expressed in kcal/kg unit. |
| GEAR | Golden Energy and Resources |

| | |
|---|---|
| ha | Hectare(s) |
| IM | Inherent Moisture |
| IPPKH | 'Izin Pinjam Pakai Kawasan Hutan' which translates to a borrow to use permit in a production forest |
| IUP | 'Izin Usaha Pertambangan' which translates to 'Mining Business License' |
| JORC | 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, Australian Institute of Geoscientists and Mineral Council of Australia |
| K | thousand |
| kcal/kg | Unit of energy (kilocalorie) per kilogram |
| kg | kilogram |
| km | Kilometers(s) |
| $km^2$ | Square kilometre(s) |
| M | Meter |
| M | Million |
| MEMR | Ministry of Energy and Mineral Resources within the central government |
| m RL | metres reduced level |
| $m^3$ | cubic metre |
| Mt | Millions of tonnes |
| Mtpa | Millions of tonnes per annum |
| NAR | Net as received |
| PKP2B | 'Perjanjian Kerjasama Pengusahaan Pertambangan Batubara' – same as CCoW |
| RD | Relative density |
| RKL | 'Rencana Pengelolaan Lingkungan' - environmental management plan |
| ROM | Run of Mine |
| RKL | Relative Level - survey reference for height of landforms above a datum level |
| RPL | 'Rencana Pemantauan Lingkungan' - environmental monitoring plan |
| Salva Mining | Salva Mining Pty Ltd. |
| SR | Strip ratio (of waste to ROM coal) expressed as bcm per tonne |
| t | Tonne |
| tpa | Tonnes per annum |
| TM | Total Moisture (%) |
| TKS | PT Trisula Kencana Sakti |
| TS | Total Sulphur (%) |
| VALMIN | 2015 Edition of the Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports |
| VM | Volatile Matter (%) |

# Executive Summary

## Introduction

Golden Energy and Mines Limited ("GEAR" or "Client") has engaged Salva Mining Pty Ltd ("Salva Mining") to prepare a mineral asset valuation and an Independent Qualified Persons Report ("Report") for the Trisula Kencana Sakti coal concession ("TKS Mine" or "TKS Concession") located in the Tanah Bumbu Regency of the South Kalimantan Province, Indonesia.

The independent valuation has been prepared in accordance with the Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (VALMIN Code 2015).

The Trisula Kencana Sakti coal concession ("TKS") located at 58 km east of the town of Muara Teweh in the Central Kalimantan province of Indonesia.

The TKS concession is beneficially owned and controlled by GEAR. The scope of Valuation covers two contiguous concessions - number 188.45/207/2010 and 188.45/208 /2010 covering a land area of 9,707 ha. These two concessions are held by TKS under IUP systems of ownership.

## Coal Resources

An independent estimate of Coal Resources within the TKS Concession was previously prepared by an independent consulting firm - PT Danmar Exlorindo in January 2015. Coal Resources have been estimated, classified and reported according to the JORC Code (2012) and the Australian Guidelines for Estimating and Reporting of Inventory Coal, Coal Resources and Coal Reserves (2014) as at 15 January 2015. The Coal Resources Estimate are detailed in Tables below.

### Coal Resources, TKS Mine, 15 January 2015

| Quantity (Insitu,Mt) | | | | | Coal Quality (Insitu) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formation | Measured | Indicated | Inferred | Total | TM adb | IM adb | Ash adb | VM adb | FC adb | TS adb | CV kcal/kg adb | HGI | RD |
| Warukin | 39 | 6 | 8 | 53 | 22.3 | 14.3 | 8.3 | 38.4 | 39.0 | 2.0 | 5,628 | 59 | 1.3 |
| Montelat | 1 | 6 | 17 | 24 | 17.0 | 12.6 | 5.2 | 40.7 | 41.5 | 1.4 | 6,215 | N/A | 1.3 |
| Total | 40 | 12 | 25 | 77 | 20.7 | 13.8 | 7.4 | 39.1 | 39.8 | 1.8 | 5,811 | 59 | 1.3 |

*Source: PT Danmar Explorindo, Qualified Persons Report, January 2015*

## Additional Exploration Target

PT Danmar Explorindo, in its Qualified Persons Report has identified 4 additional Exploration Target areas, not covered under the current Coal Resources Estimate, where a potential for the delineation of 20-110 Mt of additional coal resources of energy value between 5700-6500kcal/kg.

## Coal Reserves

The TKS concession does not have any defined coal Reserves.

## Previous Mining

Conventional open-pit coal mining operations was commenced in TKS concession in August 2010 and was continued until the mine was placed under care and maintenance mainly due to decline in coal prices in March 2012. During this period, 218,512 tonnes of coal were mined.

## Project Valuation and Range

The TKS concession has two distinct areas - Area A, where JORC complaint Coal Resources have been delineated and reported (77 Mt of JORC Resource, area of ~2,750 ha ha), and Area B, beyond the existing Coal Resource boundary where an estimate of exploration target is available with indicative coal quality information (20- 110 Mt of Exploration target, area of ~6,950 ha).

Considering the presence of two distinct zones, Salva Mining has opted to value these area separately as Area A is significant advanced project compared to Area B.

Two different valuation methods – Comparable Market Transactions and Geoscientific Rating Methods were used to assess value of the TKS Project. Based on Comparable Market Transaction and Geoscientific Rating method approach, Salva Mining has derived a mineral asset valuation range of $25.0M and $59.9M with a preferred value of $42.4M for 100% of the TKS concession. A summary of Salva Mining valuation for the TKS concession is presented in the table below.

**Valuation Summary TKS concession**

| Valuation Method | Values ($M) | | |
|---|---|---|---|
| | Low | Preferred | High |
| Market Comparable | 28.1 | **41.7** | 55.5 |
| Geo Scientific Rating | 21.8 | **43.0** | 64.2 |
| TKS Concession (100% of Project) | 25.0 | **42.4** | 59.9 |

## Project Risks

Salva Mining has identified a range of risk elements or risk factor which may materially affect the valuation of the TKS concession. Key risks items which have been identified are Resources Risks, Coal Prices Risks, Weather Risks, Mining Approval Risks and Regulatory Risks.

# 1 Introduction

Golden Energy and Mines Limited (“GEAR” or “Client”) has engaged Salva Mining Pty Ltd (“Salva Mining”) to prepare a mineral asset valuation and an Independent Qualified Persons Report (“Report”) for the Trisula Kencana Sakti coal concession (“TKS Mine” or “TKS”) located in the Tanah Bumbu Regency of the South Kalimantan Province, Indonesia.

The Qualified Persons Report is to be presented to Golden Energy and Mines Ltd. shareholders as part of continuous disclosure requirements of the company. The independent valuation has been prepared in accordance with the Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (VALMIN Code 2015).

The TKS concession is beneficially owned and controlled by GEAR. The effective date of valuation is the 31 August 2016, the date on which the Resource and Reserves that support this valuation were estimated.

## 1.1 Scope

Golden Energy and Mines Ltd. has requested that Salva Mining prepare a mineral asset valuation and an Independent Qualified Persons Report (“Report”) for the TKS concession (“TKS Concession” or “TKS”) located in the Tanah Bumbu Regency of the South Kalimantan Province, Indonesia. This report covers the mineral asset valuation the TKS concession only and not for the entire company which holds the assets.

## 1.2 Data Sources

This review is based on the information provided by Golden Energy and Mines Ltd., the technical reports of previous consultants and previous owners, PT Golden Energy Mines Tbk (“GEAR”), as well as other published and unpublished data relevant to the project area.

Salva Mining has carried out its own independent assessment of the quality of the geological and mining data. Salva Mining relied on an Independent legal firm “LasutLay and Pane Advocates”, a technical specialist that has carried out independent enquiry regarding the status of agreements, royalties or concession standing pertaining to the assets.

In developing our assumptions for this Statement, Salva Mining has relied upon information provided by the company and information available in the public domain. Key sources are outlined in this Report and all data included in the preparation of this Report has been detailed in the references section of this report. Salva Mining has accepted all information supplied to it in good faith.

## 1.3 Site Visit

For the technical assessment outlined in this report, none of the Salva Mining personnel involved in the valuation undertook a site visit to the project. However, as Salva has previously undertaken extensive technical evaluation work of coal assets in the various coal bearing regions in Kalimantan including Central Kalimantan. It has a good understanding of the assets and has no reason to question the validity of the technical information supplied. Furthermore,

the coal projects are at a relatively early stage of assessment and little perceived benefit was anticipated from an inspection.

Mr. Manish Garg, Director – Advisory / Partner conducted the visit to GEAR offices in Jakarta from 25 September 2016 to 30 September 2016 to review technical studies and commercial information.

## 1.4 Disclaimer and Warranty

This Report was commissioned by GEAR on a fee-for-service basis according to Salva Mining's schedule of rates. Salva Mining's fee is not contingent on the outcome of its valuation or the success or failure for the transaction for which the report was prepared. None of Salva Mining's partners (including Mr. Garg), directors, substantial shareholders and their associates have (or had) a pecuniary or beneficial interest in/or association with any of the GEAR or their directors, substantial shareholders, subsidiaries, associated companies, advisors and their associates prior to or during the preparation of this report.

Salva Mining's partners (including Mr. Garg), directors, substantial shareholders and their associates are independent of GEAR its directors, substantial shareholders, advisers and their associates.

A draft version of this report was provided to the directors of GEAR for comment in respect of omissions and factual accuracy. As recommended in Section 39 of the VALMIN Code, GEAR has provided Salva Mining with an indemnity under which Salva Mining is to be compensated for any liability and/or any additional work or expenditure, which:

- Results from Salva Mining's reliance on information provided by Golden Energy and Mines Ltd. and/or their Independent consultants that is materially inaccurate or incomplete, or
- Relates to any consequential extension of workload through queries, questions or public hearings arising from this report.

This report may contain or refer to forward-looking information based on current expectations, including, but not limited to timing of mineral Resource estimates, future exploration or project development programs and the impact of these events on the GEAR

Forward-looking information is subject to significant risks and uncertainties, as actual results may differ materially from forecasted results. Forward-looking information is provided as of the date hereof and Salva Mining assumes no responsibility to update or revise them to reflect new events or circumstances.

The conclusions expressed in this report are as on the 31 August 2016, the date on which the Resource and Reserves that support this valuation were estimated. The valuation is only appropriate for this date and may change in time in response to variations in economic, market, legal or political factors, in addition to ongoing exploration results. All monetary values outlined in this report are expressed in US dollars ($) unless otherwise stated. Salva Mining services exclude any commentary on the fairness or reasonableness of any consideration in relation to these assets.

## 1.5 Independent Competent Person and Expert Statement

The independent valuation has been prepared in accordance with the Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (VALMIN Code 2015). This Mineral asset techno-commercial assessment and valuation in this report was prepared by, or under the supervision of Manish Garg (B.Eng. (Minerals Engineering), MAppFinance, MAusIMM, MAICD).

Mr. Garg, Director – Consulting / Partner and a full time employee of Salva Mining has sufficient assessment and valuation experience, which is relevant to the activity he is undertaking to qualify as an Expert as defined in the 2005 Edition of the "Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports" (VALMIN Code 2015).

This report was prepared on behalf of Salva Mining by the signatory to this report, assisted by the subject specialists' competent persons whose qualifications and experience are set out in Appendix A of this report.



Mr. Manish Garg
Director – Consulting / Partner
Salva Mining

## 1.6 Statement of Independence

This Report was commissioned by Golden Energy and Mines Ltd. on a fee-for-service basis according to Salva Mining's schedule of rates. Salva Mining's fee is not contingent on the outcome of its valuation or the success or failure for the transaction for which the report was prepared. The above mentioned person(s) have no interest whatsoever in the mining assets reviewed and will gain no reward for the provision of this techno-commercial assessment.

Salva Mining's partners (including Mr. Garg), directors, substantial shareholders and their associates are independent of Golden Energy and Mines Ltd., its directors, substantial shareholders, advisers and their associates.

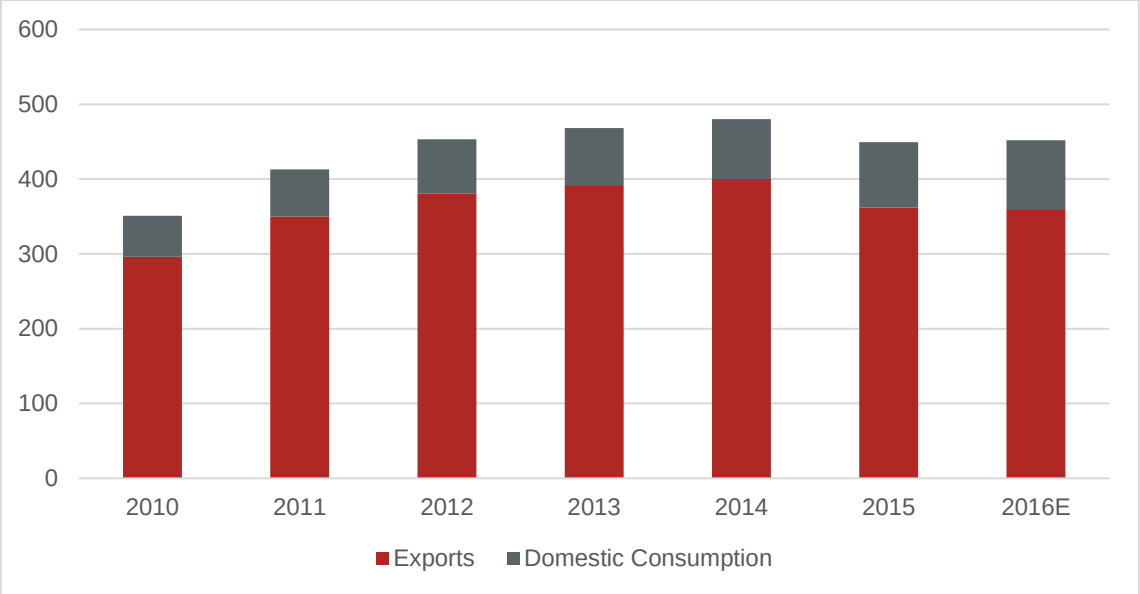
None of Salva Mining's partners (including Mr. Garg), directors, substantial shareholders and their associates have (or had) a pecuniary or beneficial interest in/or association with any of the Golden Energy and Mines Ltd., or their directors, substantial shareholders, subsidiaries, associated companies, advisors and their associates prior to or during the preparation of this report.

# 2 Indonesian Coal Mining Overview

Indonesia is easily the world's largest exporter of seaborne thermal coal, producing over 466 Mt in 2015, and exporting 362Mt around 50% of the total market, and nearly one and half times the next largest supplier, Australia with 203Mt.

Indonesian exports in 2015 fell for the first time in over a decade, down to 362 Mt and expected to be flat in 2016. The decline in exports was led by shipments of thermal coal to India, which fell by 14.7 Mt, to 42.3 Mt. Indonesia plans to reduce its production target further in 2017, by 2.3%, to 409 Mt. The Indonesian government is encouraging miners to cut national production by 11% in 2016, to 419 Mt, down from 466 Mt in 2015.

**Figure 2:1 Recent Trend in coal production and Exports- Indonesia**




*Data source: IHS, MEMR, Salva Mining*

Given the recent weakness of global demand of thermal coal, a number of Indonesian coal companies started to diversify business into domestic downstream sectors such as mine mouth power plant to fulfil the burgeoning domestic demand for thermal coal following the Indonesian government's plan to build 35 GW coal fried projects until 2019.

The government has made its clear intention about the continuation of domestic market obligation (DMO) policy. The DMO is administered by the Ministry of Energy and Mineral Resources (MEMR), and is set each year based on coal requirement forecasts from domestic end users, with these forecasts submitted to the MEMR in March for the following year's requirements. The MEMR assess this domestic requirement against the coal production plans submitted by mining companies for that year. Once agreed upon, the DMO is expressed as a proportion of expected annual production

The DMO is applicable to all coal mining companies including holders of coal contract of work (PKP2B), the state owned coal miner and mining business permit (IUPs). DMO policy is currently mostly imposed on the low to medium rank coal with calorific value of 4,000-6,500 kcal/ kg GAR that used in electricity projects and other industries such as cement, fertilizer, pulp and metallurgy.

In the last two years, the focus of government has been resolving the key issues on as grant of new IUPs, boundary issues of IUPs, which currently reached 10,364. The IUP is issued by the local administration in the level of regency. As per MEMR out of 10,364 IUPs, around 3,966 IUPs have not obtained "Clean and Clear" (C&C) certification due to various reasons including overlapping of permits and failure of the miners to fulfil its financial obligations to the state.

Furthermore, Indonesia government has also managed to amend the existing contract of 22 PKP2B mining companies to comply with the regulation as set out in the 2009 mining law These negotiations was based on six key issues including the extension of mining operations, state revenues, processing and refining obligations, working areas and the obligation to use domestic goods and services.

In summary, the coal mining sector is heading towards new “normal” level where coal producers have taken numerous measure to improve overall profitability of business while diversifying the risk by entering into downstream business. At the same time, government has laid out its clear intention to move towards broader control on coal mining activities and protection of national interest.

## 2.1 Indonesian Coal Inventory

As per the latest estimates made by the geological agency of MEMR, as of 2015, Indonesia has approximately 126.6 Bt of delineated coal assets with 32.6 Bt of minable coal. The overall coal inventory has shown as drop from 2014 published numbers. The delineated coal assets have fell by 1.8 Bt while minable coal has declined by 121Mt.

The majority of Indonesian coal inventory are located in Sumatran (50%) and Kalimantan (45%) provinces. As per the Geological Agency of Indonesia reported Kalimantan island - West, Central, South, East and North - hold the highest amount of minable coal of 18.8 Bt with some 68.1 Bt of delineated coal assets. While Sumatran provinces Aceh, North Sumatra, Riau, West Sumatra, Jambi, Bengkulu, South Sumatra and Lampung has total minable coal of 13.3 while total resources (includes Non JORC estimates) of 58.0 Bt.

The Indonesian coal quality is commonly classified as low rank coal (<3500kcal/kg, adb) to very high grade bituminous coal (> 7,000 kcal/kg; adb). However, majority of Indonesian exported coal lies between 4200 kcal/kg, gar to 6000 kcal/kg, gar.

**Figure 2:2 Indonesia Coal Basin and Coal Resources, 2015**




| | Delineated Coal Assets | | | | | Minable Coal | | |
|---|---|---|---|---|---|---|---|---|
| Coal Rank | Hypothetic | Inferred | Indicated | Mesaured | Total | Probable | Proved | Total |
| Low | 1978.83 | 9650.04 | 10432.15 | 12258.65 | 34319.67 | 6203.69 | 3271.78 | 9475.47 |
| Medium | 16882.22 | 22413.42 | 17441.12 | 24286.35 | 81023.1 | 16485.65 | 3858.21 | 20343.86 |
| High | 889.19 | 2804.47 | 2186.22 | 3243.11 | 9122.99 | 545.2 | 974.33 | 1519.53 |
| Very high | 13.61 | 1276.46 | 394.02 | 459.49 | 2143.58 | 761.51 | 163.31 | 924.82 |
| Total | 19673.84 | 36144.39 | 30453.51 | 40247.6 | 126609.34 | 23996.05 | 8267.63 | 32263.68 |

Classification of coal quality is based on Presidential Decree No. 1312000 and Government Regulation No. 45/2003: Low (< 5100 kcal/ kg; adb); Medium (< 5100 -6100 kcal/kg; adb); High (>6100 -7100 kcal/kg: adb); Very High (> 7100 kcal/kg; adb)

# 3 TKS Project

## 3.1 Property Description and Access

The TKS project is comprised on two contiguous IUPs. These IUPs are located at 58km east of the town of Muara Teweh in the Central Kalimantan province of Indonesia. The nearest village close to the project area are Malateken, Gandring and Panaendan Liang Buah.

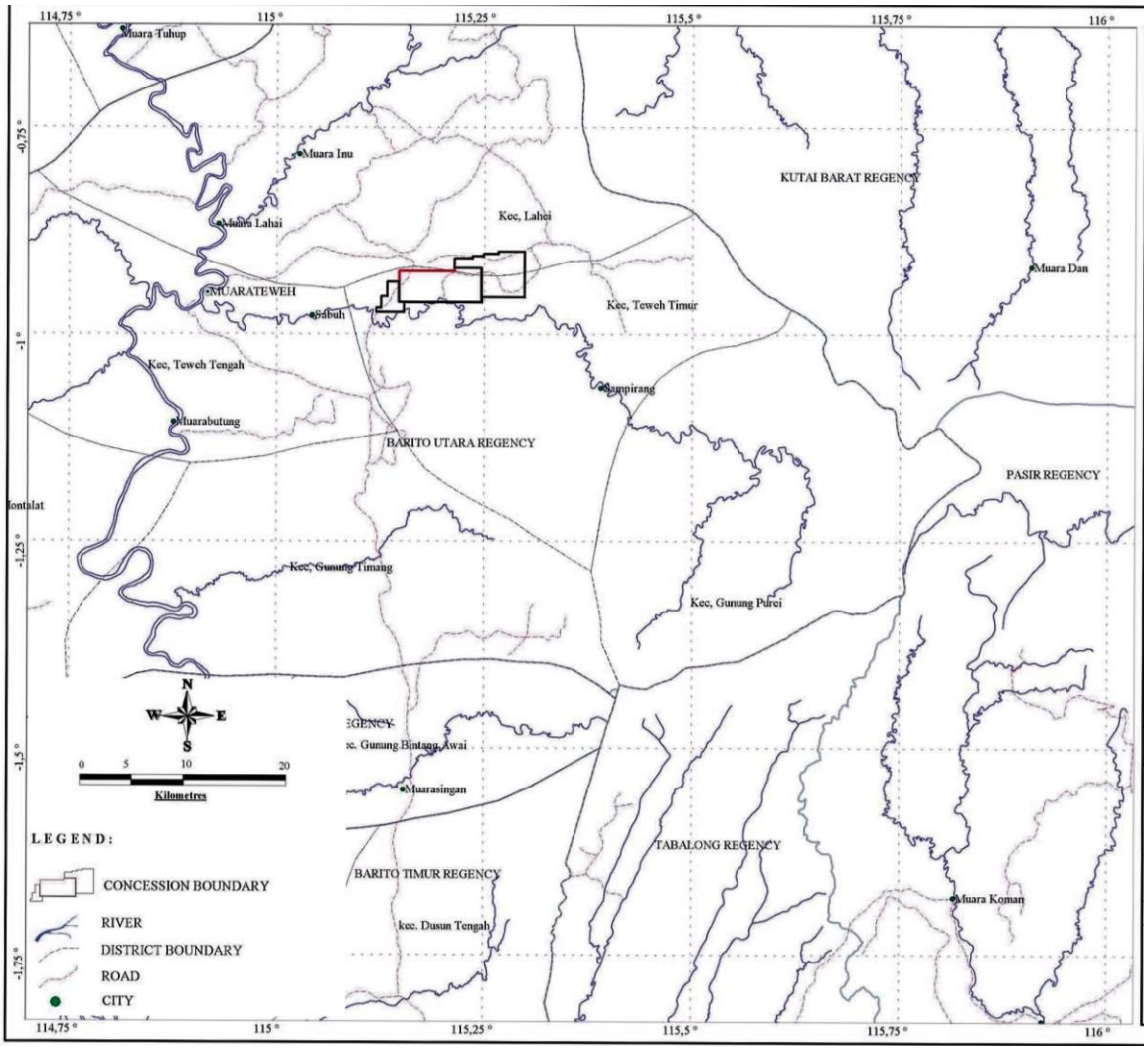
Access to the project area from the city of Muara Teweh is mainly via public regency roads, heading east and then via a private logging road owned by PT Austral Byna, and is of 1.5hrs to 2 hours' drive. The nearest town Muara Teweh is serviced by light commercial aircraft both form Balikpapan and from Banjarmasin (capital city of East and South Kalimantan, respectively). A sealed provincial road connects Muara Teweh with the city of Banjarmasin, a 220km road journey of approximately eight hours. Banjarmasin has regular commercial flights to Jakarta and other Indonesian centers. The project location and concession plan have been shown in Figure 3:1 and Figure 3:2 respectively.

**Figure 3:1 Location of TKS Project**




*Source: Modified after Bing maps*

**Figure 3:2 TKS Concessions**




Source: Modified after PT Danmar Explorindo, Qualified Persons Report, January 2015

## 3.2 Ownership and Tenure

Golden Energy and Mines (GEAR) holds the mining rights to the TKS concession through its subsidiary PT Trisula Kencana Sakti. The detail of the coal concession is given in Table 3:1.

TKS is the beneficial holder of three Operation and Production IUPs, two of which are the subject of this Report. The two IUPs of interest are:

- 188.45/207/2010 tenting Penyesuaian Izin KP Eksploitasi Menjadi Izin Usaha Pertambangan Operasi Produksi a/n PT Trisula Kencana Sakti / concerning the Adjustment of Mining Exploitation Permit to Production Operation Mining Permit. Issued by North Barito Regent, Kalimantan Tengah province and valid from 26 April 2010 until 26 April 2026, covering an area of 4,748ha, located at North Barito Regency, Central Kalimantan Province.
- 188.45/208/2010 tentang Penyesuaian Izin KP Eksploitasi menjadi IUP Operasi Produksi a/n PT Trisula Kencana Sakti / concerning the Adjustment of Exploitation Permit to Production Operation Mining Permit. Issued by North Barito Regent, Kalimantan Tengah

province and valid from 26 April 2010 until 26 April 2028, covering an area of 4,959ha, located at North Barito Regency, Central Kalimantan Province.

**Table 3:1 TKS Concession Details**

| Concession Number | Concession Type | Area (ha) | Status | Granted | Expiry Date | GEAR Net Holding* |
|---|---|---|---|---|---|---|
| **TKS Coal Indonesia – 188.45/207/2010** | IUP- Operation and Production | 4,748 | Granted | 26 April 2010 | 26 April 2026 | 46.899% |
| **TKS Coal Indonesia – 188.45/208/2010** | IUP- Operation and Production | 4,959 | Granted | 26 April 2010 | 26 April 2028 | 46.899% |

*GEMS has 70% shares in TKS and GEAR has 66.9998% shares in GEMS

Clause 67 of the VALMIN Code states that status of tenement is Material and requires disclosure. Determination of the status of Tenements is necessary and must be based on a recent independent inquiry, either by the Expert or a Specialist.

LasutLay & Pane ("LLP"), a Jakarta based legal firm, was commissioned to prepare a report in respect of the legal aspects of the mining activities within the TKS concession, solely from the perspective of Indonesian laws. LLP's scope was to confirm that

- TKS has good title to its mining concessions; and
- TKS has complied with material, applicable provisions of the Mining Law 2009 and its implementing regulations, environmental law, forestry law and other relevant laws (as applicable).

LLP issued its final report on 24 October 2016. The LLP report was made available to Salva Mining for reference in preparing this Report.

LLP reports that TKS's granted Operation and Production IUPs are in good standing, with permanent rent requirements met. TKS has complied with all applicable environmental regulations and there are no pending investigations by government agencies on environmental issues. Both IUP's were granted "Clean and Clear" status by the General Director of Mineral and Coal on the 28 February 2012.

## 3.3 Clean and Clear - Forestry Status

The JORC Resource Report prepared by PT Danmar that both IUPs are within a designated Production Forest, and therefore a Forestry Borrow and Use Permit (IPPKH) is required for mining report. As pre LLP, following Borrow and Use Permit which is of relevance to this Report:

**SK.319/MENHUT-II/2010** *tentang Izin Pinjam Pakai Kawasan Hutan untuk Eksploitasi Batu Bara dan Sarana Penunjangnya pada Kawasan Hutan Produksi Terbatas dan Kawasan Hutan Produksi yang dapat Dikonversi a/n PT Trisula Kencana Sakti seluas 698.58 Ha /* concerning borrow and use permit for Coal Exploitation and its

Infrastructure in Limited Production Forest Area and Production Forest which can be converted to PT Trisula Kencana Sakti with an Area of 698.58 Ha. Issued by the Minister of Forestry and valid from 19 May 2010 until 19 May 2020. Table 3:2 below details the IPPKH permits held by TKS and same has been depicted in Figure 3:3 below.

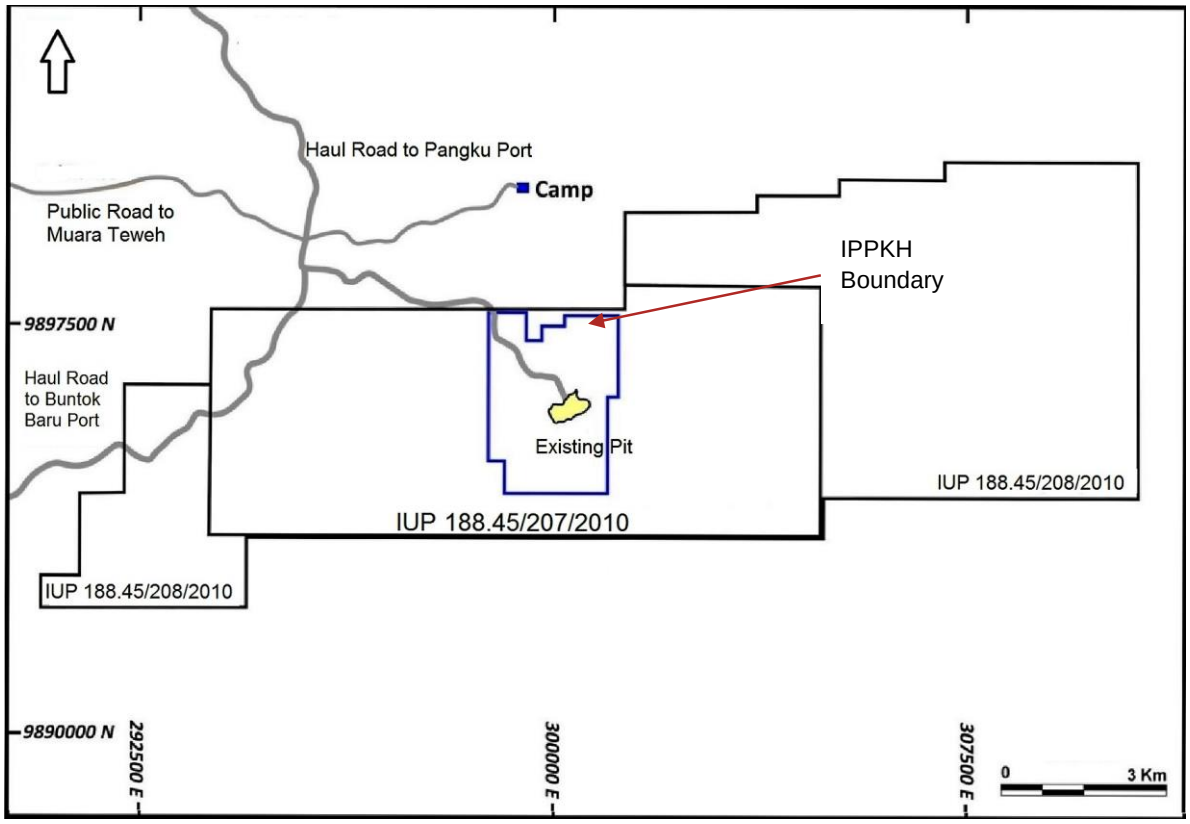
**Table 3:2 Details of Forestry Area Borrow and Use Permit**

| Concession Number | Permit Type | Area (ha) | Granted | Expiry | Period |
|---|---|---|---|---|---|
| **TKS Coal Indonesia – 188.45/207/2010** | IPPKH (Forestry Area Borrow and Use Permit) | 699 | 19 May 2010 | 19 May 2020 | 10 years |

As per the regulatory requirement, the mining activities can only be carried out within the this IPPKH permit however, in line with the industry practice, the IPPKH area can be progressively adjusted as mining operation progresses.

LLP also confirms that TKS's granted Forestry Area Borrow and Use Permits ("IPPKH") are in good standing. Based on the report by LLP, Salva Mining considers the tenement tenure and permits to be in good standing.

**Figure 3:3 TKS concessions with IPPKH Boundary**




*Source: Modified after CSA Global, Qualified Persons Report, January 2015*

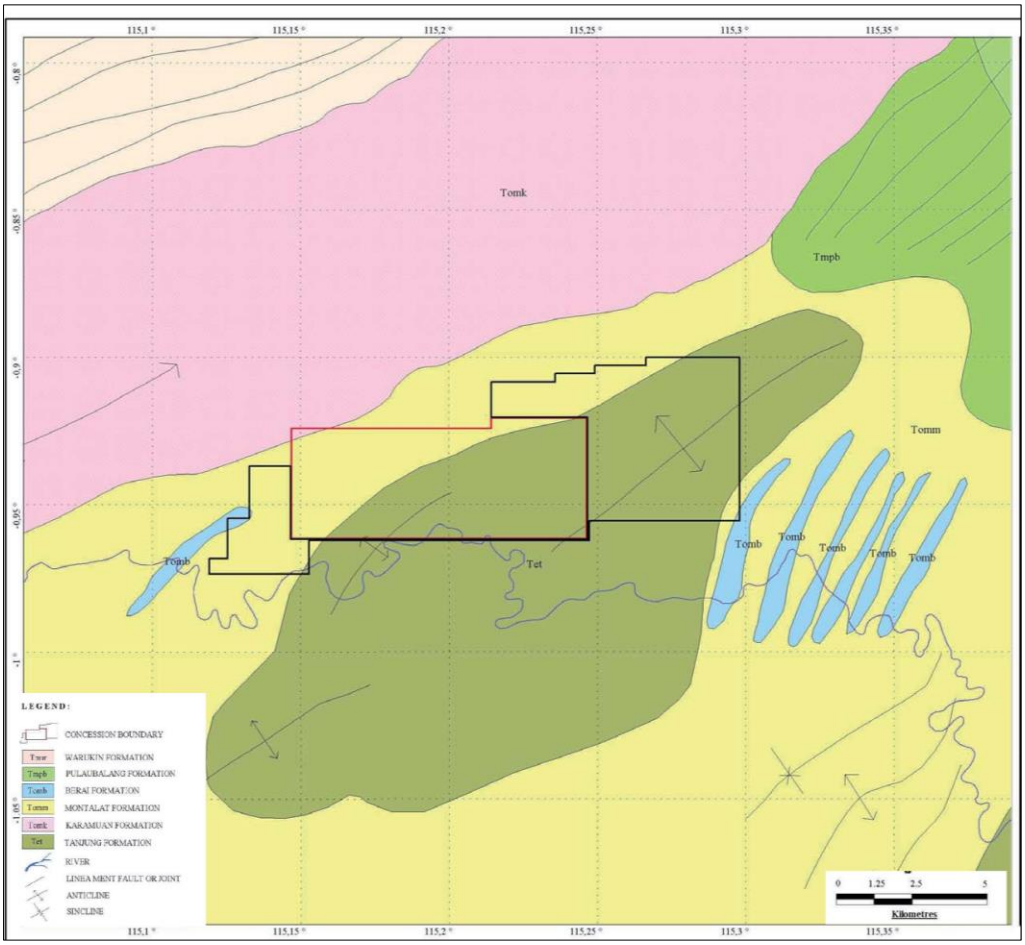
# 4 Regional and Local Geology

## 4.1 Regional Geology

The concessions lie in the Barito Basin of Central Kalimantan. The Barito Basin is defined by the Meratus Mountains to the east and separated from the Kutai Basin to the north by a flexure parallel to the WNW-ESE orientated Adang Fault. The Barito Basin began to develop in the Late Cretaceous following a micro-continental collision between the Paternoster and the SW Borneo micro continents (Darman and Sidi, 2000). Early Tertiary extensional deformation occurred as a tectonic consequence of that oblique convergence, producing a series of NW-SE trending rifts (Figure 4:1).

According to the published geology, the lease is within an anticlinal structure containing the Tanjung and Montelat formations These rocks are Eocene to Middle Miocene in age and are well known to contain extensive seams of thermal coal. Based on the work to date, a more likely interpretation of the regional geology is that the deposit area is in a syncline where relatively thick seams of Warukin age coal, are surrounded by hills containing older coal seams of the Montelat Formation. This would better explain why the coal in the central part of the deposit is relatively lower grade and these coal seams are surrounded by higher grade coal, around the edges of the basin.

**Figure 4:1 Regional Geology- TKS Concessions**




Source: Modified after PT Danmar Explorindo, Qualified Persons Report, January 2015

The Warukin Formation coal measure is estimated to occur within sediments of the mid to late Miocene age (16-10 M years ago).

## 4.2 Local Geology

Published 1:250,000 scale geological maps identify coal outcrops of the Tanjung Formation, Montalat Formation and Warukin Formation within the TKS IUPs., however, whilst TKS's mapping and drilling have confirmed that these coal seams are present, Danmar believes that the published geological maps for the area are inaccurate. Danmar's interpretation, based upon 1,361 points of observation, describes lower quality Warukin coal seams in the core of a syncline, grading to higher quality Montalat coal seams toward the outer edges of the structure.

The Warukin-Montalat boundary is important in the geologic record as it approximates the change in sedimentation from a transgressive to regressive regime. The Tanjung Formation geology within the TKS project is less well understood because exploration has been limited to coal outcrop mapping. It is expected that coal seams discovered in the older Tanjung Formation will have a higher calorific value and generally better quality

characteristics than the younger Warukin and Montalat coal seams. It is inferred that the 12-million-year unconformity between the Tanjung Formation and the Montalat Formation has been the loci for regional scale shearing/faulting.

## 4.3 Previous Exploration

The TKS concession has been subject to detailed exploration since 2005 onwards. The exploration activities were targeted to confirm the occurrences of coal seams found by initial exploration campaigns. Following sections details the previous exploration activities conducted on the concessions.

### 4.3.1 Exploration Drilling (2005 and 2010)

In total, 605 vertical drill hole have been drilled within the concession. Out of 605 drill holes, 111 holes from the exploration programs were excluded as there was insufficient information to validate the holes. Balance 494 holes have been validated Total cumulative depth of the validated drilling is 40,168m in drill holes averaging around 80m depth. To ensure the most accurate and reliable results from the drilling down hole geophysical logging was used. The tool measures gamma ray and density and produces an electronic signature of the geology intersected in each drill hole (Figure 4:2).

**Figure 4:2 Exploration drilling and down the hole geophysical logging**




Source: PT Danmar Explorindo, Qualified Persons Report, January 2015

PT Danmar used these 494 Information 494 holes were used to construct Geological model.

### 4.3.2 Topographic Mapping (2010 and 2011)

Detailed topographic mapping using airborne LiDAR survey method to a 1:1000 scale was carried out over the entire 9,711 Ha which completely covers the area of coal potential delineated in the initial drilling area.

All drillhole collars were also picked up by ground survey using total station survey equipment. To tie the survey into the Indonesian national grid a geodetic survey including 21 permanent benchmarks were established for survey reference. The overall topography in the main coal deposit area is characterized by relatively low relief.

### 4.3.3 Core and Outcrop Sampling (2010 and 2011)

709 samples from drill holes were analysed to determine the coal quality at the TKS concession. In addition, 30 outcrop samples were also tested during the mapping program. The drill hole and coal outcrop locations have been shown in Figure 4:4.

### 4.3.4 Geological Mapping (March 2011)

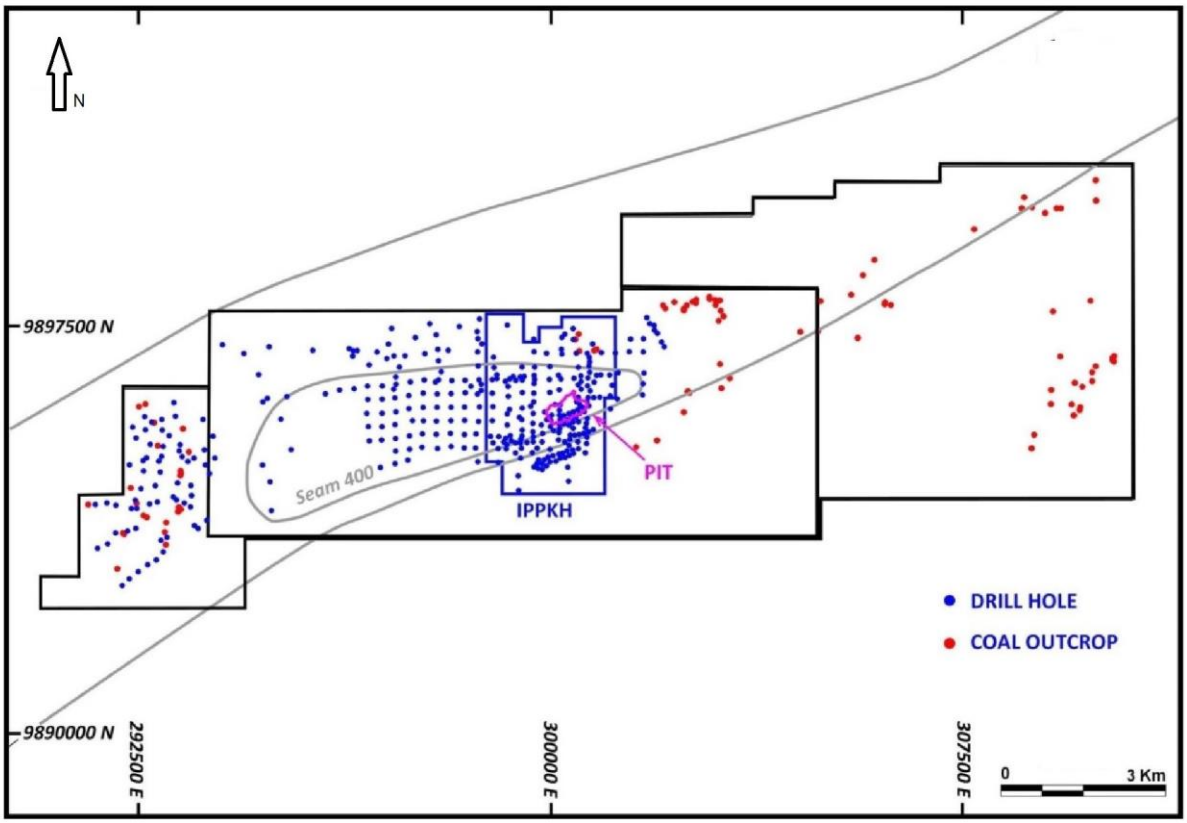
Geological mapping within the concession was carried out targeting areas where there was no previous exploration work done. The mapping work was used to determine the overall geological structure of the concession and to optimise the positioning of potential future drill holes. The coal outcrop mapping included 200 observations and analysis of 30 samples (Figure 4:3).

**Figure 4:3 Geological Mapping**



Source: PT Danmar Explorindo, Qualified Persons Report, January 2015

**Figure 4:4 Drill hole and coal outcrop locations**




*Source: Modified after CSA Global, Qualified Persons Report, January 2015*

## 4.4 Coal Seam Occurrences

Drilling has confirmed that there are twenty-one (21) coal seams within the Warukin and Montalat Formations within the TKS IUPs (Appendix 2, Table 2). Nine (9) occur in the Warukin Formation and twelve (12) in the Montalat Formation. Seam S400 is the basal seam of the Warukin Formation and S1200 the basal seam of the Montalat Formation. The S100, S200, S300 and S400 seams are the most significant economic grouping with an average of 5m of combined coal thickness within a 31m sedimentary sequence main seam is S200 with an average thickness of 1.80m. Interburden sediments are generally mudstone. A massive 37m thick sandstone unit marks the end of Montalat sedimentation period.

# 5 Reported Coal Resource and Exploration Target

An independent estimate of Coal Resources within the TKS Concession was prepared by Mr Daniel Madre, Director of PT Danmar Exploindo in January 2015 and reported in accordance to the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC 2012).

In estimating these coal resources PT Danmar has made following area of influence from the points of observations:

**Measured Resources** are based on 200m influence of the coal seam from a high reliability observation point for all coal seams with a minimum of 5 overlapping observations and 3 or more observations with coal quality analysis

**Indicated Resources** are based on 400m influence of the coal seam from high reliability observation point for all coal seams with a minimum of 4 overlapping observations and 2 or more observations with coal quality analysis

**Inferred Resources** are based on 800m influence of the coal seam from an observation point for all coal seams with a minimum of 3 overlapping observations and 1 or more observations with coal quality analysis.

Following were the other assumptions used:

- A 3-meter weathering halo is applied to the Resource estimate to allow for the depth of weathering as indicated by the average soil thickness measured during the drilling. This assumes that on average no coal exists within 3 meters of the ground's surface as it has been replaced by soil;
- minimum coal thickness in model is 0.4m;
- a bottom limit of -200m R.L mean sea level elevation was applied to the model, which assumes maximum depth limit of coal;
- a maximum depth cut-off of 100m was assumed to comply with reasonable expectations of eventual economic extraction;
- coal seam intersections were based on reconciled geophysical logs;
- no coal recovery factor was used for estimating insitu Resources;
- Resources are restricted to the area of topographic surface by LiDAR;
- Resources are restricted to within the boundary of lease area;
- a density for coal of was taken from coal sample analysis results for each individual seam and adjusted by the Preston Sanders Formula, to better represent the density of the coal insitu.

Based on the Independent assessment, Mr Daniel Madre, of PT Danmar Exploindo reported and prepared the statement of Coal Resources in January 2015 (Table 4:1).

**Table 5:1 Coal Resources, TKS Concession, 15 January 2015 (Extracted from PT Danmar Explorindo' Qualified Person Report, 2015)**

| COAL TYPE | COAL RESOURCES INSITU (Mt) | | | | COAL QUALITY (INSITU) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | TM | IM | ASH | VM | FC | TS | CV | CV | CV | HGI | RD (insitu) |
| FORMATION | MEASURED | INDICATED | INFERRED | TOTAL | ar | air dried basis | | | | | | ar | daf | | |
| WARUKIN | 39 | 6 | 8 | 53 | 22.31 | 14.29 | 8.33 | 38.35 | 39.02 | 1.97 | 5628 | 5102 | 7265 | 59 | 1.32 |
| MONTELAT | 1 | 6 | 17 | 24 | 17.00 | 12.62 | 5.19 | 40.67 | 41.51 | 1.39 | 6215 | 5904 | 7559 | n/a | 1.30 |
| GRAND TOTAL ALL RESOURCES | 40 | 12 | 25 | 77 | 20.65 | 13.77 | 7.35 | 39.07 | 39.80 | 1.79 | 5811 | 5352 | 7356 | 59 | 1.32 |

Source: PT Danmar Explorindo, Qualified Persons Report, January 2015

More detailed discussion of the Resource estimate is available in the PT Danmar Exploindo's Resource Report.

## 5.1 Coal Reserves

There are no coal Reserves reported for TKS concession.

## 5.2 Reported Exploration Potential

PT Danmar Explorindo, in its Qualified Persons Report dated January 2015 has identified 4 Exploration target areas where a potential for the delineation of 20-110 Mt of additional coal resources of energy value between 5700-6500kcal/kg (Table 4:2).

**Table 5:2 Coal Resources, TKS Concession, 15 January 2015**

| Concession Zone | Targets | Area (ha) | Resource (Mt) | Exoploration Target (Mt) |
|---|---|---|---|---|
| Area A | Target A | ~2750 | 77 | 5-28 |
| Area B (6950 ha) | Target 1 | 4200 | 0 | 5-50 |
| | Target 2 | 1500 | 0 | 5-25 |
| | Target 3 | 1250 | 0 | 5-10 |
| Total | | 9707 | 77 | 20- 113 |

### Area covered by Coal Resource (Area A, ~2750 ha):

- Target Area A - potential of 5-28 Mt of coal in Warukin and Montelat formations, 100-200m below the existing coal seams defined in Coal Resources.

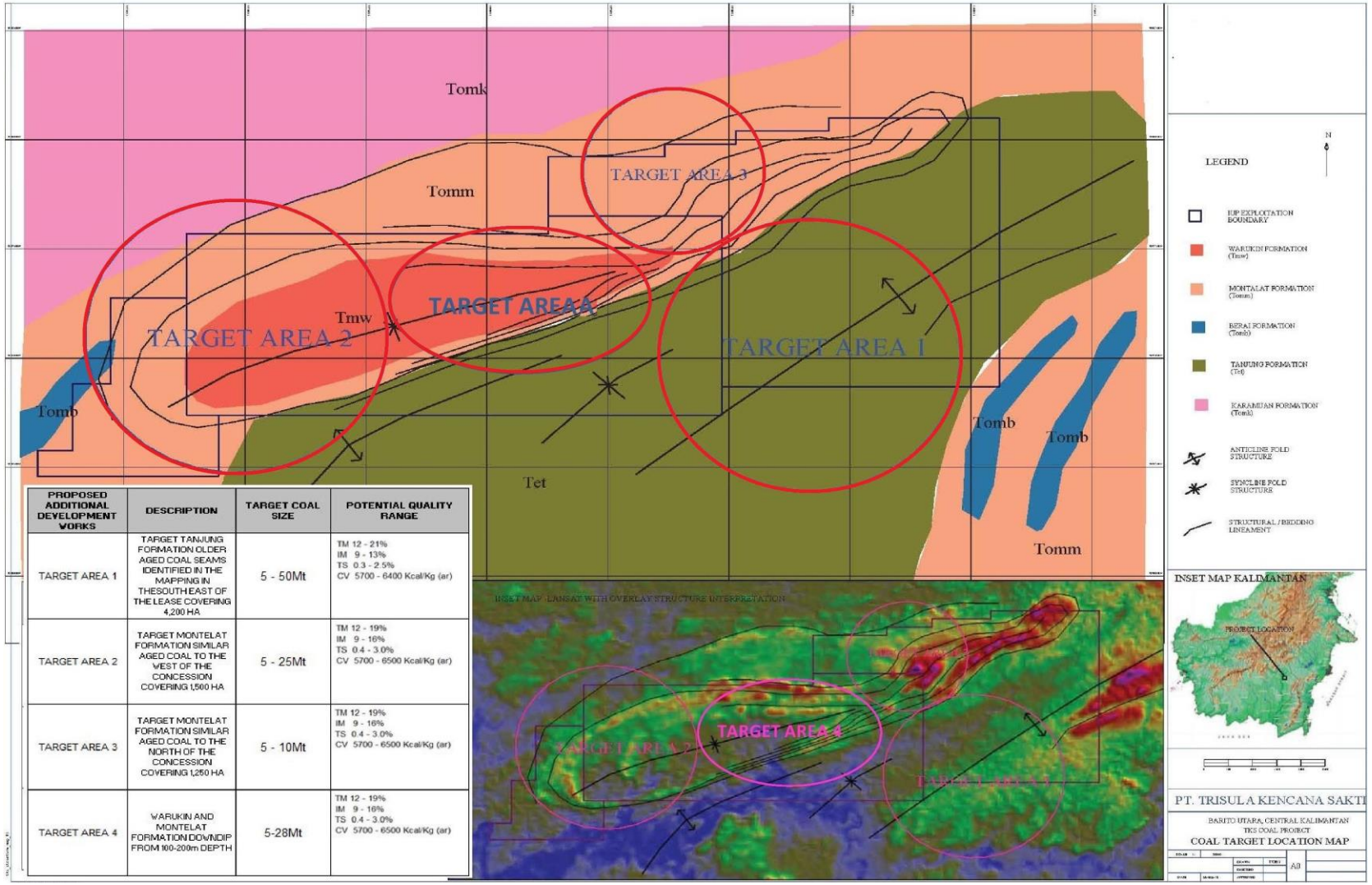
### Other Area prospective for defining Exploration Targets (Area B, 6950 ha):

- Target Area B1 - potential exploration target of 5Mt to 50Mt in a previously untested area and new geological setting within the Tanjung Formation on more than 20 coal outcrops of 0.1- 0.67 m thickness identified in Geological mapping over 10km strike range of 4,200 ha area

- Target Area B2 - potential of 5-25 Mt of target coal within Montelat formation based on 18 coal outcrops ranging from 1-1.6m thick over 5km of strike and 30 wide spaced drill holes in an area of 1,500 ha
- Target Area B3 - A potential of 5-10 Mt of target coal within Montelat formation northeast of main Resource area in 1,250ha

Salva Mining has appraised TKS project as 2 sub-projects – Area A and Area B. The target area has been shown in the Figure 4:5.

**Figure 5:1 Target Area for future exploration (Area A and Area B)**




| PROPOSED ADDITIONAL DEVELOPMENT WORKS | DESCRIPTION | TARGET COAL SIZE | POTENTIAL QUALITY RANGE |
|---|---|---|---|
| TARGET AREA 1 | TARGET TANJUNG FORMATION OLDER AGED COAL SEAMS IDENTIFIED IN THE MAPPING IN THESOUTHEAST OF THE LEASE COVERING 4,200 HA | 5 - 50Mt | TM 12 - 21%<br>IM 9 - 13%<br>TS 0.3 - 2.5%<br>CV 5700 - 6400 Kcal/Kg (ar) |
| TARGET AREA 2 | TARGET MONTELAT FORMATION SIMILAR AGED COAL TO THE WEST OF THE CONCESSION COVERING 1,500 HA | 5 - 25Mt | TM 12 - 19%<br>IM 9 - 16%<br>TS 0.4 - 3.0%<br>CV 5700 - 6500 Kcal/Kg (ar) |
| TARGET AREA 3 | TARGET MONTELAT FORMATION SIMILAR AGED COAL TO THE NORTH OF THE CONCESSION COVERING 1,250 HA | 5 - 10Mt | TM 12 - 19%<br>IM 9 - 16%<br>TS 0.4 - 3.0%<br>CV 5700 - 6500 Kcal/Kg (ar) |
| TARGET AREA 4 | WARUKIN AND MONTELAT FORMATION DOWNDIP FROM 100-200m DEPTH | 5-28Mt | TM 12 - 19%<br>IM 9 - 16%<br>TS 0.4 - 3.0%<br>CV 5700 - 6500 Kcal/Kg (ar) |

Source: PT Danmar Explorindo, Qualified Persons Report, January 2015

# 6 Previous Mining Operations

## 6.1 Coal Production

TKS has been also a subject to previous mining operations targeting production from seams S100, S200 and S300. Mining at TKS pit was commenced in August 2010 and was continued until mine was kept under care and maintenance mainly due to decline in coal prices in March 2012. The mining equipment fleet included 4 excavators, 12 trucks and 2 dozers. During this period 218,512 tonnes were mined (Table 6:1)

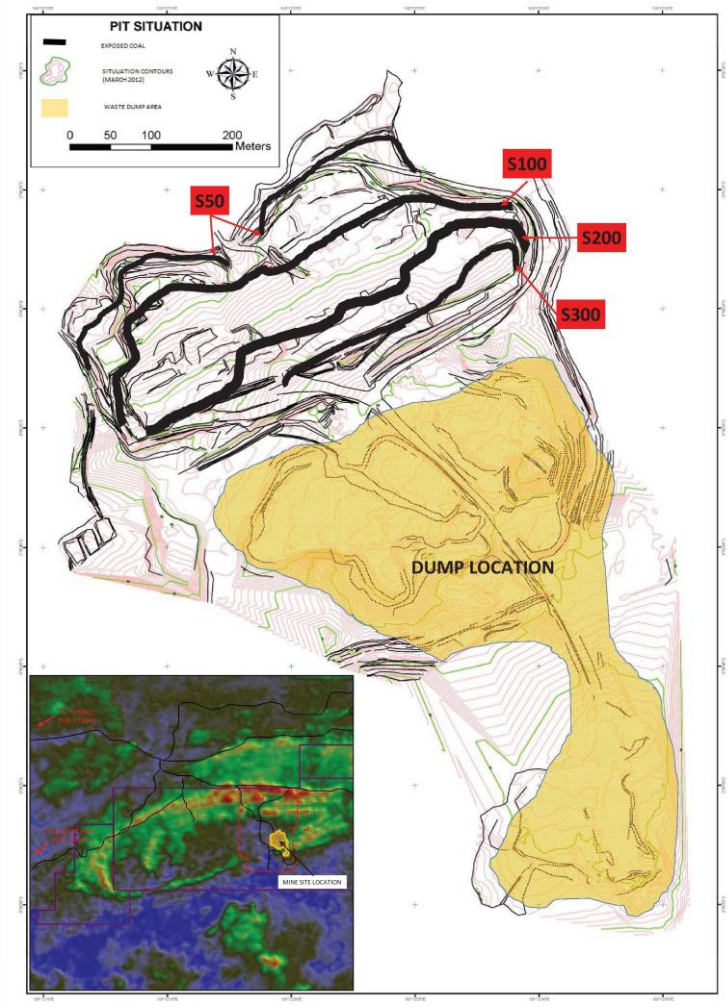
**Table 6:1 Previous Mining, TKS Concession**

| Period | OB (bcm) | Coal (tonnes) | SR |
|---|---|---|---|
| Aug- Dec 2010 | 491,011 | 9,156 | 53.6 |
| Jan- Dec 2011 | 1,392,413 | 158,729 | 8.8 |
| Jan- Mar 2012 | 214,989 | 50,637 | 4.2 |

Source: PT Danmar Explorindo, Qualified Persons Report, January 2015

Figure 6:1 below shows the situation of pit at the time of cessation of mining.

**Figure 6:1 TKS Pit**



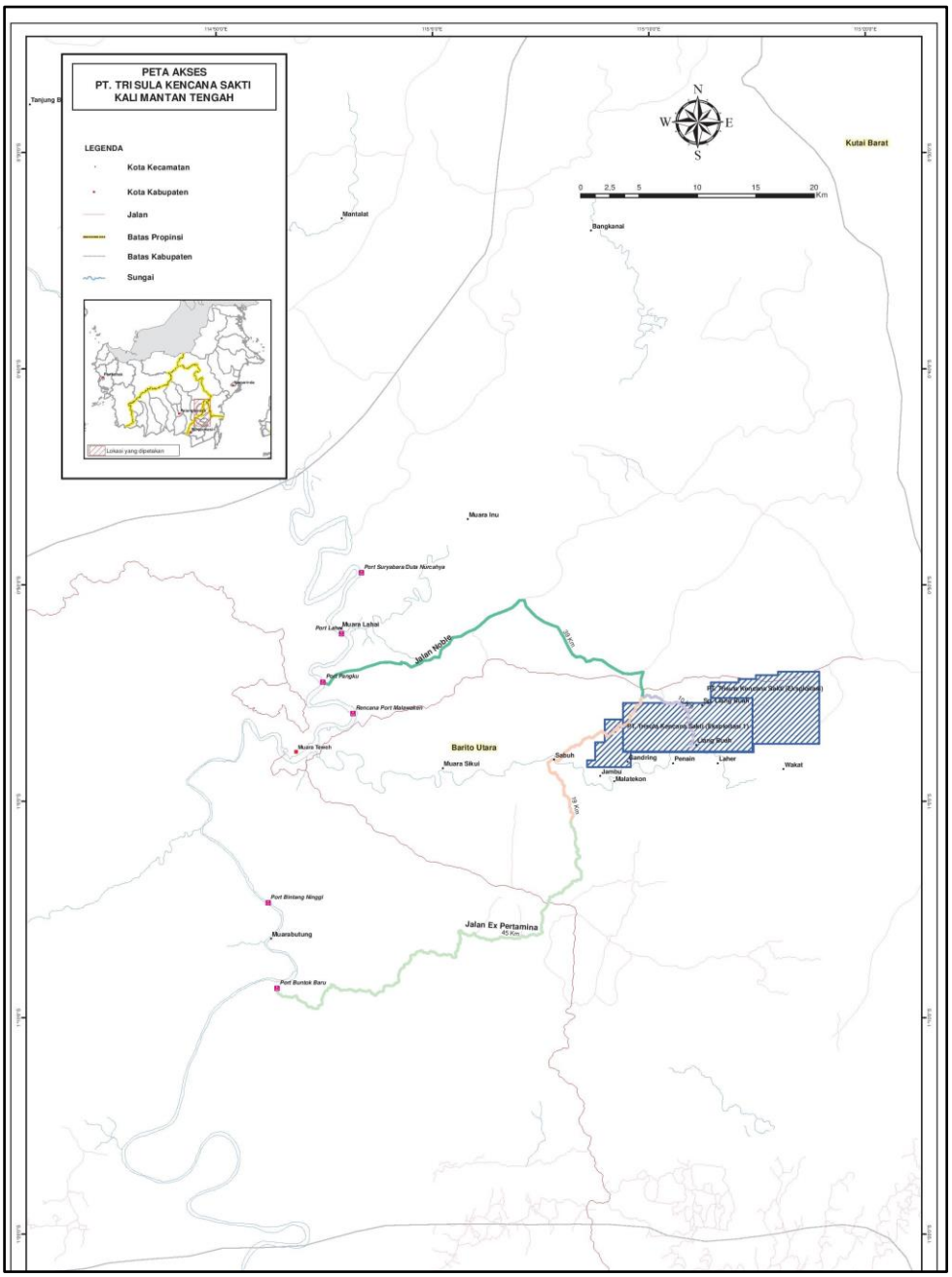

*Source: PT Danmar Explorindo, Qualified Persons Report, January 2015*

## 6.2 Coal Transport and Logistics

The mine out coal was hauled by Jalan Noble to the Jetty facility at Port Pangku located at distance of 39km from the concession. Alternatively, the mined out coal was transported to Jetty facility at Port Buntok Baru. The coal was loaded into barges and barged to Taborneo Transhipment point. Barging distance from port to transhipment point is as follows:

- Port Pangku to Taborneo –approximately 235 km;
- Port Buntok Baru to – approximately 200 km.

**Figure 6:2 Coal Transport and Logistics**




*Source: PT Danmar Explorindo, Qualified Persons Report, January 2015*

# 7 Valuation

## 7.1 Valuation Approaches

There are a number of methods used in valuing mineral assets. The applicability of these methods depends on project specific factors including the level of maturity of the mineral assets.

In determining the appropriate method(s) to be used for valuation of these assets, Salva Mining has taken into consideration the classification of these assets as defined in the VALMIN Code and the different methodologies that are generally accepted as industry practice for each classification. Generally, there are three broad methods of valuation that are used for valuing mineral assets. These are the cost approach, income approach and market approach. The asset classifications that may be applied to a project are set out in Table 7:1 below.

**Table 7:1 Typical Valuation Methods**

| Classification | General Description | Key Valuation Methods |
|---|---|---|
| **Exploration Areas** | Properties where mineralisation may or may not have been identified, but a Resource has not been identified. | Rule of Thumb, Geo-scientific method, Comparable Transactions. |
| **Advanced Exploration Areas** | Properties where considerable exploration has been undertaken and specific targets identified. Resource estimation may or may not have been made. Good understanding of mineralisation present. | Geo-scientific method, Appraised Value Method, Comparable Transactions. |
| **Pre- development Projects** | Properties where mineral Reserve have been identified but decision to proceed with development have not been made. | The above methods and DCF/NPV valuation. |
| **Operating Mines** | Properties where mining activities are already commenced. | DCF/NPV valuation. |

## 7.2 Valuation Approach for Assessing the TKS concession

TKS concession has two distinct zones:

- Area A - where JORC complaint coal resources have been delineated and reported (77 Mt of JORC Resource, ~2950 ha);
- Area B - targeted area beyond coal resource boundary where exploration target is available and indicative coal quality information is available (Exploration target of 15-85 Mt of coal, area of ~6,950 ha).

In Salva Mining's opinion, the TKS Project is a pre development project where JORC 2012 Resources have already been delineated and trial mining undertook during 2010-2012. However, TKS project does not have any defend Reserves and there is no definitive feasibility study relevant to the current circumstances.

Therefore, the Information on the project economics is not at sufficiently advanced stage for determination of a meaningful NPV of the project based on Income based valuation method. Therefore, Salva Mining has preferred to apply a combination of two methods to value the project due to the uncertainties attached to its progress, despite its comprehensive resource base.

Considering the presence of two distinct zones (Area A with defined Coal Resource and Area B with Coal Exploration Target), Salva Mining has opted to value both these zones separately.

Salva Mining has used two different valuation methods - Comparable market Transactions and Geoscientific Rating Method to form its opinion on the mineral asset valuation of the TKS Project.

## 7.3 Comparative Market Transaction Method

### 7.3.1 Area A - Comparable Market Transactions with Resource

To determine the fair market value for the resources for the TKS Project, Salva Mining has reviewed recent market transactions for the tenements with identified coal assets in Indonesia. To find out implied value relevant to current time and circumstances, Salva Mining has considered only those transactions which involved the sale and purchase of coal assets that occurred during recent time (after 2012 onwards).

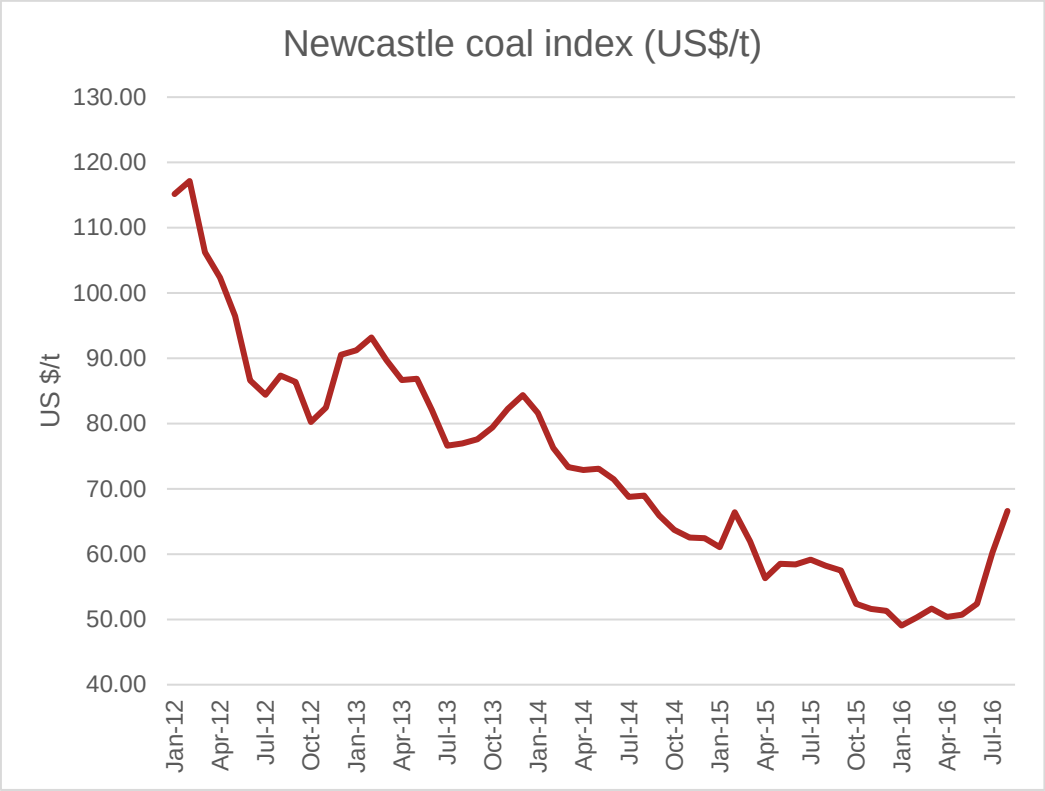
Salva Mining was able to identify 29 transactions for the coal assets at various stage of development. Furthermore, to find out transactions relevant to the area consisting delineated Resources at TKS concession, Salva Mining has considered only 8 transactions in with expect PT Tambang Sekarsa Adadaya, all assets delineated JORC resources, for further assessments. These transactions are given in Table 7:2.

Furthermore, Salva Mining notes that the thermal coal prices have been rebounded in the past three months after showing a continuous decline since January 2011. The rebound in coal price has been attributed mainly because of following reasons:

- Mine closures in China, domestic coal production in China has registered a decline of 9.7% in H1, 2016 after falling by 3.5% in 2015;
- Mine closures in coal exporting countries such as Indonesia, Australia, USA and Canada;
- Limitation imposed by Chinese government on coal mine to restrict operations to only 276 days in a year;
- Strong growth in coal demand from south east Asian countries; and
- Recovery in Euro zone.

Thermal coal prices have gained remarkably after remained oversupplied since late 2011 onwards (Figure 7:1). Miners in traditional coal producing countries such as Indonesia, Australia and Colombia are the big winners after they survived through the downturn by imposing cost cutting strategies.

**Figure 7:1 Recent Trends in Newcastle Coal Benchmark Index**




*Source: IHS McCloskey*

Despite a recent surge in thermal coal price, the coal price is expected to remain volatile in next few years.

Therefore, to minimise the coal price effect in the comparable transactions, Salva Mining has opted to normalize transactions based on the coal prices at the time of transaction to the coal price as in October 2016. This has been done by adjusting of the implied value of the transaction based on current prices and the spot price of coal at the time of the transaction.

## Table 7:2 Comparable Market Transactions

| Date | Project | Buyer | Seller | Location | Interest % | 100% Valuation of Asset (M) | Total Resources | Rank | Implied Value ($/t) | Coal Price Adjustment Factor | Normalised Implied Value ($/t) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jun-16 | Indomet | Adaro Energy | BHP | Central Kalimantan | 75% | 160 | 1270 | High Rank Thermal and Coking | 0.13 | 1.37 | 0.17 |
| Aug-15 | BBM and other neighbouring concessions | PT Cakra Minerals | Cokal Limited | Central Kalimantan | 60% | 116.7 | 266.6 | Coking and PCI | 0.44 | 1.08 | **0.54** |
| Jun-15 | PT Trans Coal Minergy (TCM) | Pan Asia | Universal Coal Pte | South Kalimantan | 75% | 22.2 | 128.8 | High CV | 0.17 | 1.23 | **0.21** |
| Jul-13 | Bumi Barito etc. | Blumont Group | Cokal Limited | Central Kalimantan | 60% | 68.9 | 46.2 | PCI and Coking | 1.49 | 0.94 | 1.39 |
| Jan-13 | PT Tambang Sekarsa Adadaya | PHI Group | PT Tambang Sekarsa Adadaya | West Sulewasi | 70% | 15 | 276 | High Rank | 0.05 | 0.79 | 0.04 |
| Jan-13 | B26 Project | PT Mega Coal | Orpheus Energy | East Kalimantan | 51% | 3.9 | 1.13 | High CV | 3.47 | 0.79 | 2.73 |
| Nov-12 | PT Indita Pertama | Yinfo Gold Corp | Hitric Resources Pte | South Kalimantan | 41% | 3.1 | 1.76 | High Rank | 1.74 | 0.87 | 1.51 |
| Mar-12 | Mitra Energi Agung | PT Indika Energy | Pacific Emperor Holding | East Kalimantan | 60% | 27 | 100 | Low Rank | 0.45 | 0.67 | 0.3 |
| Average | | | | | | | | | | | 0.86 |

Salva Mining's assessment of the above transaction with respect to TKS has been discussed in paragraph below:

In Nov 2012, Indika Energy acquired an indirect 60.0% stake in Mitra Energi Agung (MEA), a greenfield coal asset located in East Kalimantan with a IUP concession area covering 5,000 hectares. More than 90% of the MEA concession was explored and 100 Mt of coal resources was delineated.

Compared to TKS, MEA was located closer to the coast in the established mining province of East Kalimantan and its resource base is comparable. However, the coal resource present at MEA were of low rank. Additionally, at the time of acquisition, some of the necessary licences to commence coal mining was not been granted. Therefore, in Salva Mining's opinion, compared to TKS, MEA is an inferior project and should be valued at a lower rate.

Yinfu Gold Corporation acquired a 51% interest in Hitric Resources., a Singapore limited company, which owns 80% rights of a coal project PT Indita Pertama (IP) located in South Kalimantan concession is located in established mining province of South Kalimantan and had an IUP production permit with an history intermittent mining operation. In terms of coal rank, IP concession had relatively superior coal quality with GCV in range of 6000- 6500kcal kg. Additionally, at IP concession, zone for potential additional Resource were established. Therefore, on account for the reasons mentioned above, in comparison with TKS, in Salva Mining's opinion IP project is a relatively better project and should be valued at higher rate.

Orpheus Energy sold its 51% stake in B26 project back to the company's Joint Venture partner, PT Mega Coal. B26 project is located approximately 90km the south of Balikpapan and only 26km from the barge loading facility. The existing coal resources at B26 project was comprised of both Semi soft coking and high grade thermal coal. Therefore, compared to TKS in Salva Mining's opinion B26 is a superior project and should be valued at a higher rate.

PT Tambang Sekarsa Adadaya project was a greenfield coal mining site located in West Sulawesi where negligible coal is produced. The project is located in a reason devoid of any infrastructure facilitates. Additionally, PT Tambang Sekarsa Adadaya had resources based on local reporting standard not internationally accredited reporting standard like JORC. Therefore, compared to TKS in Salva Mining's opinion PT Tambang Sekarsa Adadaya is an inferior project and should be valued at a lower rate

Cokal's concession (BBM and others) are located in Central Kalimantan province of Indonesia The concessions total land holding of more than 60,000 hectares, comprising of both IUP production and IUP exploration. The project is located next to Adaro's Indomet project (ex BHP Juloi concession) The total resources delineated in the concession was 77 Mt consisting of 70% coking with CSN up to 9 and 30% PCI coal with GCV 8100 kcal/kg, occurring at depth lesser than 300 m. Furthermore, the future exploration in the concessions were targeted to delineate primarily coking coal. Therefore, in Salva Mining's opinion, implied value of Cokal concession should be more than TKS Project.

In 2015, PT Cakra Minerals tbk offered to acquire all share's Cokal's director (60%) for 10.327 Cakra share or 0.16 cash per share of cokal or combination of cash and shares. However, this deal did not go through as Cakra's right issues was not approved, priced and completed.

PT Transcoal Minergy (TCM) concession covers an area of 3,440 ha and located east of Arutmin's open pit mine (Ata block). At the time of this announcement, the concession had been explored in detailed with JORC complaint 177 Mt of coal resources was delineated. The coal is of relatively high calorific value of 6200 kcal/kg gar. However, the coal seams are located at significant depth and amenable to be exploited by underground mining methods. Mining is proposed to be conducted underground using long-wall mining methods.

Although in terms of resource base and location TCM concession is superior to the TKS, however because of its deep seams which can't be exploited by open pit mining methods and there is no active underground longwall mine running in Indonesia, Salva Mining will assign a lower valuation with respect to TKS project.

Indomet project was owned by BHP and has a significantly larger Resource base with delineated coking coal Resources and Reserves. Compared to TKS, Indomet is undoubtedly a superior project.

However, the implied value of Indomet is low as BHP sold its interest in Indomet to Adaro Energy (BHP's JV partner) as a part of its Indonesian coal market exit strategy. The amount paid to BHP was well below the $335 M Adaro paid for a 25 percent stake in IndoMet in 2010.

### 7.3.2 Market Comparable Based Valuation of TKS Project Area A (with 77 Mt Resource)

Considering the location, geological factors and other micro and macro-economic parameters which could affect the project economics in Salva Mining's opinion the implied value of delineated coal resources within TKS concessions should be in the range of $0.23/t (10% premium to the implied value of TCM) to $0.54/t (implied value derived from Cakra's offer to Cokal) with a preferred value of $0.39/t of resources. This valuation range can be considered appropriate for the project at its this stage of development.

Therefore, based on market transactions, the valuation of the TKS Project is in the range of $17.7M to $41.6M with a preferred value of $29.6M is deemed appropriate, reflecting the uncertainty of eventual extraction of a coal seams. A summary of Salva Mining's market based valuation is presented in Table 6:3.

**Table 7:3 Market Based Valuation, TKS Area A (with Resource)**

| Item | Resource (Mt) | Market Comparable Value (US $/t) | | | Market Comapaable Value (US $ M) | | |
|---|---|---|---|---|---|---|---|
| | | Lower | Preferred | Upper | Lower | Preferred | Upper |
| Area A | 77 | 0.23 | **0.39** | 0.54 | 17.7 | **29.6** | 41.6 |

### 7.3.3 Area B - Comparable Market Transactions beyond defined Resource Boundary

To find out transactions relevant to the area beyond delineated Resources at TKS concession (Area B), Salva Mining has considered only 7 transactions as given in Table 7:4.

As indicated in table 7:4, the implied value of land is varied widely from $13/ha to $3000/ha, with the weightage average of 2,496/ha.

The implied value derived from Transaction 1 may not represent a true fair market value rather than a distress sale as Cokal identified these concession as non-core assets and sold these Jinantra Karya Raya to focus on its flag ship project.

Similarly, transaction 2 is a transaction for an early stage concession located in West Sumatra region, an intermittently operating small scale anthracite mines hence in Salva Mining's opinion is not comparable to TKS non resource delineated area.

Transaction 3 (Kilara- PT Borneo Emas Hitam). At the time of acquisition PT Borneo Emas Hitam concession was in clean and clear' by Indonesia's department of Energy and Mineral Resources and covers a 1,002ha area The project is located in the East Kalimantan Province and closer to the coast (barging around 150km). In terms of coal quality, the coal samples tested from the outcrops ranged from 5,459kcal/kg1 - 7,546kcal/kg with an average of 6,948kcal/kg. In Salva Mining's opinion, PT Borneo Emas Hitam is a superior project than TKS area beyond the current Resource boundary and should be valued at a higher rate

Transaction 4 in Table 6:4 reportedly involved resources of 276Mt, however, these were not JORC Code compliant and were not based on any drilling. It is therefore considered reasonable to include transaction 7 in the land-only dataset, which indicates an average land value of $1,548/ha. However, TKS is more scientifically explored and located in Central Kalimantan region where significant coal Resources has already been delineated Hence in Salva Mining's opinion TKS should be valued higher than the implied value obtained from transaction 4.

Transaction 5 is done for the concession located in Jambi province where coal is formed in different geological environment. However, in terms of regional prospectively both Jambi and Central Kalimantan has significant upside potential and can be comparable. However, the coal quality for Transaction 5 is inferior to the coal quality at the target area, therefore in Salva Mining's opinion, the implied value of transaction 5 should be lesser than implied value for TKS area beyond the current Resource boundary.

Transaction 6 (PT Harum Energy PT Karya Wijaya Aneka Minerals) was done for the concession located close to the concession owned by Harum Energy the Karya Usaha Pertiwi concession, which was sold to Harum Energy was better explored with multiple evidence of coal occurrences. Additionally, the Karya Usaha Pertiwi concession is located in established mining region of East Kalimantan with sufficient coal hauling infrastructure. Therefore, in Salva Mining's opinion the Karya Usaha Pertiwi concession is a superior project than TKS area beyond the current Resource boundary and should be valued at a higher rate.

**Table 7:4 Comparative Market Transaction, Area B - Coal Concessions with no defined Resources**

| Date | Project | Buyer | Seller | Location | Interest % | 100% Valuation of Asset (US $M) | Rank | Area (Ha) | Implied Value/Ha (US$) |
|---|---|---|---|---|---|---|---|---|---|
| May-16 | PT Silingkop Nusa Raya and PT Kentungau Raya | Jinantra Karya Raya | Cokal Limited | West Kalimantan | 75.20% | 0.2 | Coking and High Rank | 17000 | 13 |
| Jun-14 | PT Tuggal Putra Nusantara | Cokal | PT Tuggal Putra Nusantara | West Sumatra | 70% | 0.2 | Anthracite Mine | 100 | 1500 |
| May-13 | PT Borneo Emas Hitam | Kilara Resources | PT Borneo Emas Hitam | East Kalimantan | 80% | 2.8 | High Rank | 1002 | 2745 |
| Jan-13 | PT Tambang Sekarsa Adadaya | PHI Group | PT Tambang Sekarsa Adadaya | West Sulewasi | 70% | 15 | High Rank | 9690 | 1548 |
| Jan-13 | PT Batubara Energi Prima and PT Berlian Mahkota | Indus Coal | PT Batubara Energi Prima and PT Berlian Mahkota | Jambi | 38% | 17.1 | Low Rank | 14394 | 1188 |
| Sep-12 | PT Karya Usaha Pertiwi | PT Harum Energy | PT Karya Wijaya Aneka Minerals | East Kalimantan | 50.50% | 4 | | 2662 | 2973 |
| Weighted Average ($/ha) | | | | | | | | | 2,496 |

### 7.3.4 Market Comparable Based Valuation of TKS Project Area B (Area outside defined Coal Resource)

Considering the location, geological factors and other micro and macro-economic parameters which could affect the project economics in Salva Mining's opinion the implied value of Area B (targeted area beyond current resources boundary) within TKS concessions should be in the range of $1500/ha-$2000/ha with a preferred value of $1750/ha. This valuation range can be considered appropriate for the project at its this stage of development.

Therefore, based on market transactions, the valuation of the TKS Project area beyond current resources boundary is in the range of $10.4M to $13.9M with a preferred value of $12M is deemed appropriate, reflecting the uncertainty of eventual extraction of a coal seams. A summary of Salva Mining's market based valuation is presented in Table 7:5.

**Table 7:5 Market Based Valuation, TKS Area B (Area outside Resource)**

| Item | Area (ha) | Selected Value (US $/ha) | | | Market Value (US $ M) | | |
|---|---|---|---|---|---|---|---|
| | | Lower | Preferred | Upper | Lower | Preferred | Upper |
| Area B | 6,950 | 1,500 | **2,050** | 2,500 | 10.4 | **13.9** | 17.4 |

### 7.3.5 Summary - Market based Valuation of the TKS Project

Salva Mining has estimated the valuation of the TKS concession using the assumptions and inputs detailed in this report. Salva Mining's opinion of the market based project value (on 100% basis) as at 31 August 2016 is shown in Table 7:5 below, which takes into account the high and low cases and the sensitivity of the project.

**Table 7:6 Market Based Valuation Summary of TKS**

| Item | Valuation based on Market Comparabes (US $M) | | |
|---|---|---|---|
| | Lower | Preferred | Upper |
| Area A (with Resource) | 17.7 | 29.6 | 41.6 |
| Area B (area beyond current resource boundary) | 10.4 | 12.1 | 13.9 |
| Valuation of TKS Concession (100%) | **28.1** | **41.7** | **55.5** |

## 7.4 Valuation using Geo-Scientific Rating Method

Geo-Scientific rating (or Kilburn method), is used to value early stage exploration assets. This method is an attempt by the valuation expert to quantify the various technical aspects of a property through the use of multipliers which are applied to a base or intrinsic value (Goulevitch J & Eupene G S, 1994 and Kilburn, 1990). This intrinsic value is known as the base holding cost (BHC) which represents "the average cost to identify, apply for and retain a base unit of area of title".

To arrive at a value for a mineral asset, the valuation expert considers four key attributes which either enhance or downgrade the BHC of each property. The technical factors considered are:

- the Off-property factor – nearby properties containing physical indications of favourable mining conditions such as old workings and/or mines;
- the On-property factor – the property being assessed hosts favourable mining indications such as historic workings or mines. Importantly any mineralisation capable of supporting a Mineral Resource estimate, compliant according to the guidelines of the JORC Code, will also be assessed using other valuation methods;
- the Anomaly factor – assesses the degree of exploration completed over the property and the number of resultant mineralised targets identified; and
- the Geological factor – assesses the area covered by and degree of exposure of favourable rock types and/or structures (if this is related to the mineralisation style being assessed) within the property.

These attributes are given incremental, fractional or integer ratings to arrive at a series of multiplier factors. These multipliers are then applied sequentially to the BHC to estimate the Technical Value of each mineral property. This is adjusted for local market conditions to determine the Fair Market Value of the project as at the effective valuation date. The strength of the geo-scientific method is that it makes an attempt to implement a systematic system. Whilst it does require a subjective assessment of the various multipliers, it also demands a degree of detached rigor to account for the key factors that can be reasonably considered to impact on the exploration potential of a property.

Salva Mining multipliers or ratings and the criteria for rating selection are summarised in Table 6:6.

**Table 7:7 Geo-Scientific Rating Criteria**

| Rating | Off property Factor | On Property Factor | Anomaly Factor | Geological Factor |
|---|---|---|---|---|
| 0.1 | | | No anomaly identified | Unfavourable geological setting |
| 0.5 | | | Extensive previous exploration gave poor results | Poor geological setting |
| 0.9 | | | Poor results to date | Generally favourable geological setting, under cover |
| 1.0 | No known mineralisation in district | No known mineralisation on lease | No targets outlined | Generally favourable geological setting |
| 1.5 | Minor workings | Minor workings or mineralised zones exposed | Target identified, initial indications positive | |
| 2.0 | Several old workings in district | Several old workings or exploration targets identified | | Favourable geological setting with structures or mineralised zones |
| 2.5 | | | Significant grade intercepts evident but not linked on cross or long section | |
| 3.0 | Mine or abundant workings with significant previous production | Mine or abundant workings with significant previous production | | Significant mineralised zones exposed in prospective host rocks |
| 3.5 | | | Several economic grade intercepts on adjacent sections | |
| 4.0 | Along strike from a major deposit(s) | Major mine with significant historical production | | |
| 5.0 | Along strike of world class deposit | | | |
| 10.0 | | World class mine | | |

(Kilburn, modified by Salva Mining)

To determine fair market value for the TKS prject based on Geo-scientific method, Salva Mining has assumed a Base Holding Cost of $375/km2. This base holding cost is estimated as the minimum cost to hold the tenement per annum. Typically, it includes license and minimum expenditure requirements.

Appropriate multiplying factors have been chosen for the TKS concession and technical value has been calculated. In Salva Mining's opinion, based on Geo-Scientific Method of Valuation, the value of the TKS Project lies in the range between $21.8 M to $64.2 M with a preferred value of $43.0 M (Table 7:7).

**Table 7:8 Geo-Scientific Method Valuation, TKS Project**

| Range | Area (km2) | BAC ($/km2) | Geo-Scientic Factors | | | | Value ($M) |
|---|---|---|---|---|---|---|---|
| | | | Off Property Factors | On Property Factors | Anomaly Factors | Geological Factors | |
| Low | 97.07 | 375 | 4 | 5 | 6 | 5 | 21.8 |
| High | | | 6 | 7 | 7 | 6 | 64.2 |
| Preferred Value ($M) | | | | | | | **43.0** |

# 8 Valuation Summary

In forming its opinion of the fair market value of the TKS Concession, Salva Mining has taken guidance from the Geoscientific Rating method and comparable transactions method.

Based on Comparable Market Transaction and Geoscientific Rating method, Salva Mining has derived a valuation range for 100% of the TKS concession of between $25.0M and $59.9M with a preferred value of $42.4M. A summary of Salva Mining valuation for the TKS concession is presented in Table 8:1 below.

**Table 8:1 Valuation Summary**

| Valuation Method | Values ($M) | | |
|---|---|---|---|
| | Low | Preferred | High |
| Market Comparable | 28.1 | **41.7** | 55.5 |
| Geo-Scientific Rating | 21.8 | **43.0** | 64.2 |
| TKS Concession (100% value) | 25.0 | **42.4** | 59.9 |

## 8.1 Discussion on Salva Mining's Valuation Range

In assigning its valuation range and preferred value, Salva Mining has relied largely upon the geoscientific rating method, with minor adjustments to Salva Mining's value range as indicated by other valuation techniques. Salva Mining is mindful of the large valuation range outlined by the geoscientific rating method but considers this is also indicative of the uncertainty associated with early stage exploration assets.

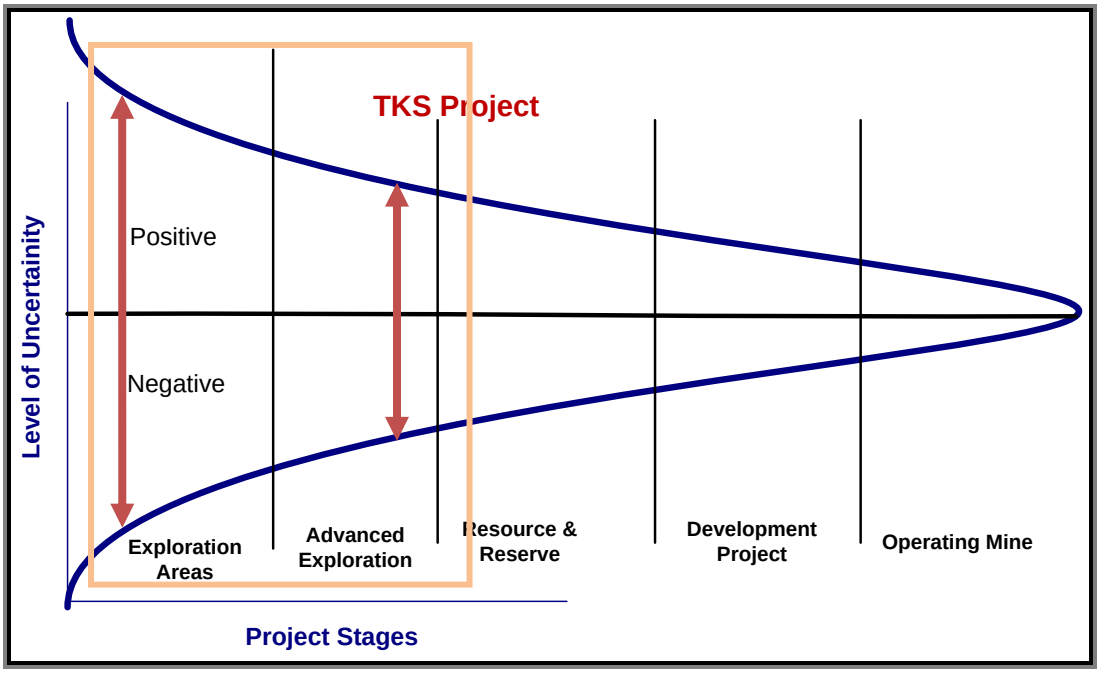
The wide range in value is driven by the confidence limits placed around the size and quality of the exploration targets assumed to occur within each project area. Typically this means that as exploration progresses and a prospect moves from an early to advanced stage prospect, through Inferred, Indicated or Measured Resource categories to Ore Reserve status, there is greater confidence around the likely size and quality of the contained mineralization and its potential to be extracted profitably. Table 7-2 presents a general guide of the confidence in targets, resource and reserve estimates, and hence value, referred to in the mining industry (Bouchard, 2001; Snowden et al., 2002; Mackenzie and Cusworth, 2007; Macfarlane, 2007).

**Table 8:2 General Guide regarding Confidence for Target and Resource Estimates**

| Classification | Estimate Range (90% Confidence Limit) |
|---|---|
| Proven/Probable Reserves | ±5 to 10% |
| Measured Resources | ±10 to 20% |
| Indicated Resources | ±30 to 50% |
| Inferred Resources | ±50 to 100% |
| Exploration target | +100% |

This level of uncertainty with advancing project stages can be seen in Figure 7-1.

**Figure 8:1 Uncertainty by Exploration Stage**



Estimate confidence of plus or minus 60% to 100% or more are not uncommon for exploration targets and are within acceptable bounds given the level of uncertainty associated with early stage exploration assets. By applying narrower confidence ranges, one is actually implying a greater degree of certainty regarding these assets than may be the case in reality.

TKS's tenements are exploration assets in the early to advanced stages of assessment and therefore there are significant uncertainties around their attributes. This results in a wide valuation range. Where possible, Salva Mining has endeavoured to narrow its valuation range. Where Salva Mining is not aware of any reason why the value should be towards the higher or lower end of its value range, Salva Mining has applied the midpoint of its value range as its preferred value.

## 8.2 Previous Valuation

CSA Global, an independent geological firm had previously carried out the valuation of the TKS Project (31 July 2014) and assigned a fair market value range of $28M to$40M, with a most likely value of $33M. At that time, CSA formed their opinion that only 53Mt out of 77Mt of the Coal Resource satisfies the requirement for reasonable prospects for eventual economic extraction.

However, under current circumstance with relatively higher coal prices, the entire reported Coal Resources of 77Mt is likely to be extracted economically as it is shallower than 100m cut off depth (as reported by Daniel Madre and considered as prospective for eventual economic extraction in his resource report dated 15 Jan 2015).

In Salva Mining opinion, the present value range ($25M to $60M with preferred value of $42M) is reasonable and reflects the improved market sentiment at the current time as reflected in recent transactions.

# 9 Risk Factors

Salva Mining has identified a range of risk elements or risk factor which may affect the future operations and financial performance of the TKS concessions. Some of the risk factors are completely external, which is beyond the control of management. However, the project specific risk can be mitigated by taking proper measure in advance. Key Project risks that have been identified are discussed below.

## 9.1 Project Risks

### 9.1.1 Resources and Reserves

While the majority of coal with Resource classification is in Measured and Indicated Resources classification (67% of total delineated Resources), the TKS concession does have any JORC complaint Reserves.

Moving forward it may be possible that further exploration and technical studies may result in a reduction or an increase of Resource which would have a material impact on the technical value of the concession.

### 9.1.2 Coal Price Risk

Coal prices and the demand for coal are cyclical in nature and subject to significant fluctuations, and any significant decline in the prices of coal or demand for coal could materially and adversely affect the Company's business and financial condition results of operations and prospects. Coal markets are highly competitive and are affected by factors beyond the Company's control which include but not limited to:

- Economic conditions in Indonesia and globally;
- Government actions; and
- Fluctuations in industries with high coal demand such as Power Sector and other industries using thermal coal.

Although sufficient analysis and studies have been conducted to ascertain future long term forecasts, if there is a fall in long term prices there would be a substantial reduction in the value of the project.

### 9.1.3 Impact on Weather on Production

Cental Kalimantan has tropical climate with a high rainfall. During rainy season, weather is expected to impact on the mining production due to the project being an open-pit mining operation. However, this has been factored into account for potential weather related impacts by having a provision of sufficient coal stockpiles and sufficient mine dewatering pumps.

### 9.1.4 Mine Infrastructure Associated Risk

Conventional open pit mining at TKS concession started in 2010 but ceased in 2012 because of low coal price. At the time of cessation of coal mining activity all necessary infrastructure was in place. For restart of the mining operation, the condition of these infrastructure needs to be reassessed and it may be possible that some of these may have to be refurbished.

While a reasonable timeframe has been allowed for obtaining approvals and design and construction of this infrastructure, the construction of new facilities. The ramp up of production may exceed the currently envisaged timeframe cost for a variety of reasons both within and outside the control of the Project's management. These may include delays in obtaining approvals, construction of mine infrastructure, delivery of new equipment, site establishment, recruitment of the workforce and many others.

### 9.1.5 Mining Approvals, Tenure and Permits

During the course of mining, a number of government permits and approvals may be required to ramp up the capacity of the TKS Mines and the associated infrastructure facilities. Any delays in obtaining the required approvals may affect the production expansion and the mine plan. This may likely to cause the project to overrun which may significantly affect project capital and operating costs.

The risk associated with the tenure of concession is considered to be significantly lower than many other nearby mines, as the tenure is held is secured under IUP operation and production until 2026, which may be extended. However, the existing borrow and use permit (IPPKH) is set to expire in 2020 which may or may not be renewed. As per the regulatory requirement, the mining activities in the production forest can only be carried out once the IPPKH permit is obtained.

However, in line with the industry practice, the IPPKH area can be progressively adjusted as mining operation progresses.

### 9.1.6 Land Acquisition

Most mining operations in Indonesia are facing issues in acquiring land for their projects. Acquiring land and compensating land owners is considered to be a significant issue, especially in areas which are densely populated.

In order to achieve the value estimated in this study, TKS will need to identify key land owners in advance so that an appropriate settlement can be reached and no interruptions to the development of the project will occur. Land compensation will be required for mining areas, dumping areas and infrastructure construction. Salva Mining is not aware of any specific land compensation issues with the TKS concession at the current time that may affect this valuation. However, it is considered possible that delays to land compensation and associated interruptions to the project may occur in the future and that this may have a material impact on the value of the concession.

### 9.1.7 Environmental and Social Risks

While environmental and social risks have been identified and management plans are in place, it is possible that failure to comply with the environment criteria or failure to maintain good relationships with the local community will have an impact on project value. These risks are not considered to be greater for the TKS Mine than for other operating coal mines operating in Indonesia.

### 9.1.8 Political and Regulatory Risk

Since 2009, Indonesian mining has been governed by the Central Government's "New Mining Law", enacted to provide greater opportunity for the industry to expand to meet growing Asian demand. The Mining Law aimed to reflect the Government of Indonesia's ("GoI") desire to recognise the financial benefits of its own natural resources, by ensuring that the GoI had greater input into resource extraction. The major developments from the 2009 Mining Law have been the Domestic Market Obligation (DMO) and Export Benchmark Pricing (HBA).

Some future regulations may include a coal export tax or ban on certain qualities, stricter coal road transportation rules and alignment of IUP and CCOW royalty rates. The actual implementation of these new aspects of the law is still unclear and many contract holders are currently in negotiation with the Indonesian government regarding this issue. Issues likes DMO, Coal upgrading requirements, Export taxes, Minimum Pricing Regulations and Foreign Ownership Restriction of the new law may affect the valuation of the TKS concession. Some of these provisions, such as export ban and increase in royalty rate may have material impact on the project valuation

# References

CSA Global, Independent Qualified Person's Report and Valuation Coal Assets of PT Trisula Kencana Sakti, Regency of Barito Utara, Central Kalimantan, dated 19 January 2015

JORC, 2012. Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – The JORC Code – 2012 Edition [online], The Australian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Mineral Council of Australia. Available from: http://www.jorc.org/docs/jorc_code2012.pdf [Accessed: 12 October 2015].

LasutLay & Pane Advocates, Report On GEMS Group Mining Rights For TKS Coal Concessions dated 24 October 2016.

Lucarelli B, 2010, The History and Future of Indonesia's Coal Industry: Impact of Politics and Regulatory Framework on Industry and Performance, Working Paper No93, PESD Stanford, Program of Energy and Sustainable Development (July 2010)

Perusahaan Listrik Negara, Annual Report 2015

Petromindo, 2015, Indonesian coal book 2015/2016

PT Danmar Explorindo PT Trisula Kencana Sakti, Qualified Person's Report of Coal Resources, Teweh Tengah dan Teweh Timur, 15 January 2015

VALMIN, 2015. Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports (VALMIN Code) Available from: http://www.valmin.org/docs/VALMIN_Code_2015_final.pdf [Accessed: 12 October 2016].

# Appendix A – CVs

| Person | Role |
|---|---|
| **Manish Garg (Director - Consulting) / Partner** | |
| Qualification | B. Engg (Hons), MAppFin |
| Prof. Membership | MAusIMM; MAICD |
| Contribution | Overall Supervision, Valuation (VALMIN 2005) |
| Experience | Manish has more than 25 years' experience in mining Industry. Manish have worked for mining majors including Vedanta, Pasminco, WMC Resources, Oceanagold, BHP Billiton - Illawarra Coal and Rio Tinto Coal. Manish has been in consulting roles for past 5 years predominately focusing on due diligence, valuations and M&A area. A trusted advisor, Manish has qualifications and wide experience in delivering due diligences, feasibility studies and project valuations for banks, financial investors and mining companies on global projects, some of these deals are valued at over US$5 billion. |
| **Sonik Suri (Senior Consultant - Geology)** | |
| Qualification | B. Sc. (Hons), M.Sc. (Geology) |
| Prof. Membership | MAusIMM |
| Contribution | Geology, Resource (JORC 2012) |
| Experience | Sonik is a tertiary qualified geologist (MSc, Hons) with more than 10 years of industry experience in the field of exploration, resource modelling and geological database management.<br>In addition to the significant technical experience as an exploration geologist, Sonik had developed various resource models using modern state of art software such as Minescape and Minex to estimate coal resources in accordance with JORC 2012 reporting standard for the various coal projects located in Australia, Indonesia, India, Poland and Mongolia. |
| **Sachin Sudhanshu (Senior Consultant - Mining)** | |
| Qualification | B. Engg. (Mining), MBA |
| Contribution | Mine Scheduling, Reserve (JORC 2012) |
| Experience | Sachin is qualified mining engineering with Masters in Business Administration. He has almost 10 years of industry experience and has worked as both a mining engineer and an economic analyst. He has benefited from this diverse experience, from working in operational roles, such as in one of the world's largest open-pit lead zinc mines, to consulting to numerous global mining companies and financial investors.<br>His work as a consulting economic analyst has included global coal demand supply assessments, market studies for various project studies, preparing financial models, conducting market research, due diligence studies and independent expert assessments. This experience has spanned several commodities including coal, iron ore and base metals for projects located across Australia, Asia, Europe and North America. |

# Appendix B: SGX Mainboard Appendix 7.5

*Cross-referenced from Rules 705(7), 1207(21) and Practice Note 6.3*

Summary of Mineral Resources

Name of Asset / Country: Trisula Kencana Sakti / Indonesia

| Category | Mineral Type | Gross (100% Project) | | Net Attributable to GEAR | | Remarks |
|---|---|---|---|---|---|---|
| | | Tonnes (millions) | Grade | Tonnes (millions) | Grade | |
| **Reserves** | | | | | | |
| **Proved** | Coal | N/A | N/A | N/A | N/A | N/A |
| **Probable** | Coal | N/A | N/A | N/A | N/A | N/A |
| **Total** | Coal | N/A | N/A | N/A | N/A | N/A |
| **Resources*** | | | | | | |
| **Measured** | Coal | 40 | Bituminous A | 40 | Bituminous A | |
| **Indicated** | Coal | 12 | Bituminous A | 12 | Bituminous A | |
| **Inferred** | Coal | 25 | Bituminous A | 25 | Bituminous A | |
| **Total** | Coal | 77 | Bituminous A | 77 | Bituminous A | |

** Mineral Resources are reported inclusive of the Mineral Reserves.*

# Appendix C – Valuation Approaches

## Valuation Considerations

To ensure compliance with the ASX's listing rules and Australian Corporations Law, this Report has been prepared in accordance with the VALMIN Code.

Under the VALMIN Code, mineral assets are classified according to their maturity. A *mineral asset* includes all property held for the purpose of near term or eventual mineral extraction, including but not limited to:

real property
intellectual property
concessions, plant, equipment and associated infrastructure.

Most mineral assets can be classified as outlined in Table below.

### Mineral Asset Classification

| Project development stage | Criterion |
|---|---|
| **Exploration areas** | Mineralisation may or may not have been defined, but where a Mineral Resource has not been identified. |
| **Advanced exploration areas** | Considerable exploration has been undertaken and specific targets identified. Sufficient work has been completed on at least one prospect to provide a good geological understanding and encouragement that further work is likely to result in the determination of a Mineral Resource. |
| **Pre-development / Resource** | Mineral Resources and/or Ore Reserves have been identified estimated. A positive development decision has not been made. This includes properties where a development decision has been negative and properties are either on care and maintenance or held on retention titles. |
| **Development** | Committed to production but not yet commissioned or not initially operating at design levels. |
| **Operating** | Mineral properties, in particular mines and processing plants, which have been fully commissioned and are in production. |

*Source: VALMIN, 2005*

Under the VALMIN Code, *value* is the fair market value of a mineral asset (2005). Fair market value is the amount of money or the cash equivalent that a willing buyer and seller would exchange on the valuation date in an arm's length transaction (VALMIN, 2005). Each party is assumed to have acted knowledgeably, and without compulsion. In essence, fair market value is comprised of:

Underlying or 'technical value' - a mineral asset's future economic benefit under a set of assumptions, excluding any premium or discount for market, strategic, or other considerations.
Market component - a premium relating to market, strategic or other considerations, which can be either positive, negative, or zero.

The market value should include all material information to the asset. For projects with extensive technical detail, the valuer determines materiality of information based on whether its inclusion would result in the valuation reaching a different conclusion.

There is no single method of valuation that is appropriate for all situations. Rather, there are several valuation methods, each of which have some merit and are more or less applicable depending on the circumstances. Mineral assets are generally valued based on approaches that assess income, cost, and the open market. As the VALMIN Code is not prescriptive in this regard, the 2008 Edition of *The South African Code for the Reporting of Mineral Asset Valuation* (SAMVAL) and the Canadian 2003 Edition of *The Standards and Guidelines for Valuation of Mineral Properties* (CIMVAL) provide insight into applicable approaches, as shown in the Table below.

### Valuation Approaches for Different Types of Mineral Assets

| Approach | Project development stage | | | |
|---|---|---|---|---|
| | Exploration | Resource | Development | Operating |
| **Income** | No | Rarely | Yes | Yes |
| **Cost** | Yes | Rarely | No | No |
| **Market** | Yes | Yes | Yes | Yes |

Source: VALMIN, 2015

## Income-Based Approach:

### Discounted Cash Flow Analysis

The DCF method is the dominant valuation tool used in the mining industry for Pre-development, Development and Operating Mine projects. While the DCF method is not typically used for the valuation of Exploration Assets given the inherent uncertainties associated with the projects, Xstract has used a conceptual DCF model in applying the geological risk approach to assist in forming its opinion of the South Blackwater project.

The DCF method is based upon the widely accepted theory that the value of a project depends upon the anticipated future cash flows discounted back to a NPV at an appropriate discount rate. This process allows perceived capital and operating costs, royalties, taxes, and project financing requirements to be analysed in conjunction with a discount rate to reflect the risk profile of the project. The process is typically based on the prevailing economic conditions or a specified set of assumptions.

The DCF method requires the Expert to predict the cash flow profile and an appropriate rate of return for the project over its entire economic life. As such, the method requires that the Ore Reserves, or at least Measured and Indicated Resources, and mining / processing parameters are relatively well defined.

The critical input into the DCF model is the life-of-mine ("LOM") plan, which is normally produced as part of a pre-feasibility or definitive feasibility study. These studies should provide detailed information regarding:

- the project's resource/reserve position
- the forecast mine production profile (in tonnes on a monthly or annual basis)
- grade distribution and recoveries
- forecast operating costs
- anticipated start-up
- ongoing capital requirements and closure costs (including rehabilitation and retrenchment)

- other specific liabilities (i.e. royalties, taxes, etc) associated with the project.

The applied discount rate is often highly subjective, but should reflect the perceived technical and financial risks as well as the depleting value of the mineral asset over time.

## Market-Based Approach:

The Market-Based Approach uses the transaction prices of projects in similar geographical, geopolitical, and geological environments to derive a market value using a process similar to that in the real estate industry (CIMVAL, 2003). The market-based approach may use the assumption either of joint venture terms or outright acquisitions, and can be presented in range of unitised values including on a dollar per ounce or tonne of contained metal/mineral; dollar per square kilometre; or as a percentage of the prevailing commodity price.

In the HDR's opinion, a market-based approach is well suited to establishing a likely value for mineral deposits and exploration projects, as it inherently takes into account all value drivers.

### Related Comparable Transactions

Recent comparable transactions can be relevant to the valuation of projects and concessions. While it is acknowledged that it can be difficult to determine to what extent the properties and transactions are indeed comparable, unless the transactions involve the specific parties, projects or concessions under review, this method can provide a useful benchmark for valuation purposes. The timing of such transactions must be considered as there can be substantial change in value with time.

HDR has considered whether any comparable relevant transactions have taken place in recent years which can be used as a basis for estimation of value of the mining assets assessed herein.

As no two mineral assets are the same, the Expert must be cognisant of the quality of the assets in the comparable transactions, with specific reference to:

the grade of the resource
the metallurgical qualities of the resource
the proximity to infrastructure such as an existing mill, roads, rail, power, water, skilled work force, equipment, etc.
likely operating and capital costs
the amount of pre-strip (for open pits) or development (for underground mines) necessary
the likely ore to waste ratio (for open pits)
the size of the concession covering the mineral asset, and
the overall confidence in the resource.

### Alternative Offers and Joint Venture Terms

If discussions have been held with other parties and offers have been made on the project or concessions under review, then these values are certainly relevant and worthy of consideration. Similarly, joint venture terms where one party pays to acquire an interest in a project, or spends exploration funds in order to earn an interest, provide an indication of value.

### Rules of Thumb or Yardsticks

Certain industry ratios are commonly applied to coal mining projects to derive an approximate indication of value. The most commonly used ratios are dollars per tonne of coal in resources, dollars per tonne of coal in reserves, and dollars per tonne of annual production. The ratios used commonly cover a substantial range which is generally attributed to the 'quality' of the coal, the infrastructure to reach markets and the status of the tonnes estimates. Low cost of production tonnes are clearly worth more than high cost tonnes. Where a project has substantial future potential not yet reflected in the quoted resources or reserves a ratio towards the high end of the range may be justified.

### Other Expert Valuations

Where other independent experts or analysts have made recent valuations of the same or comparable properties, these opinions clearly need to be reviewed and to be taken into consideration.

## Cost-Based Approaches:

### Appraised Valuation or Multiple of Exploration Expenditure Method (MEE)

Past expenditure, or the amount spent on exploration of a concession is commonly used as a guide in determining the value of exploration concessions, and 'deemed expenditure' is frequently the basis of joint venture agreements. The assumption is that well directed exploration has added value to the property. This is not always the case and exploration can also downgrade a property and therefore a 'prospectively enhancement multiplier' (PEM), which commonly ranges from 0.5-3.0, is applied to the effective expenditure. The selection of the appropriate multiplier is a matter of experience and judgement.

To eliminate some of the subjectivity with respect to this method, HDR applies a scale of PEM ranges as follows to the exploration expenditure:

**Prospectively Enhancement Multipliers**

| PEM | Rationale |
|---|---|
| 0.5 -1.0 | Previous exploration indicates the area has limited potential. |
| 1.0 -1.5 | The existing (historical and/or current) data consists of pre-drilling exploration and the results are sufficiently encouraging to warrant further exploration. |
| 1.5 -2.0 | The prospect contains one or more defined targets warranting additional exploration. |
| 2.0 -2.5 | The prospect has one or more targets with significant drill hole intersections. |
| 2.5 -3.5 | Exploration is well advanced and in-fill drilling is required to define a Resource. |
| 5.0 | A Resource has been defined but a (recent) pre-feasibility study has not yet been completed |

Over-riding any mechanical or technical valuation method for exploration ground must be recognition of prospectivity and potential, which is the fundamental value in relation to exploration properties.

## Geoscientific Rating

The Geoscientific rating, or Kilburn approach, attempts to quantify the technical aspects of a property through the use of multipliers which are applied to a base or intrinsic value. This intrinsic value is known as the BAC which represents "the average cost to identify, apply for and retain a base unit of area of title". Different practitioners use slightly differing approaches to calculate the BAC.

The value of each property is determined through grading four technical attributes, which either enhance or degrade the value of a property. The factors comprise off-property attributes, on-property attributes, anomalies and geology. The attributes are given incremental ratings to arrive at a series of multiplier factors. These multipliers are applied sequentially to the BAC to estimate the Technical Value of each mineral property. A fifth factor reflecting the current state of the market is applied to estimate the Market Value.

Salva Mining's multipliers or ratings and the criteria for rating selection are summarised in table below.

**Metal Rating Criteria (modified by Salva Mining)**

| | | | | |
|---|---|---|---|---|
| 0.1 | | | | Unfavourable geological setting |
| 0.5 | | | Extensive previous exploration gave poor results | Poor geological setting |
| 0.9 | | | Poor results to date | Generally favourable geological setting, under cover |
| 1.0 | No known mineralisation in district | No known mineralisation on lease | No targets outlined | Generally favourable geological setting |
| 1.5 | Minor workings | Minor workings or mineralised zones exposed | Target identified, initial indications positive | |
| 2.0 | Several old workings in district | Several old workings or exploration targets identified | | Favourable geological setting with structures or mineralised zones |
| 2.5 | | | Significant grade intercepts evident but not linked on cross or long section | |
| 3.0 | Mine or abundant workings with significant previous production | Mine or abundant workings with significant previous production | | Significant mineralised zones exposed in prospective host rocks |
| 4.0 | | | Several economic grade intercepts on adjacent sections | |
| 5.0 | Along strike from a major mine(s) | Major mine with significant historical production | | |
| 7.0 | Along strike of world class mine | | | |
| 10.0 | | World class mine | | |

The Geoscientific method was extended by Sandri and Abbott in 2000 to incorporate additional multipliers for location and marketability.